

APPENDIX C
SITE INVESTIGATION REPORT DOCUMENTATION



1430 Broadway, 10th Floor
New York, NY 10018

T 212.221.7822
TRCcompanies.com

May 5, 2020

Ms. Wendi Zheng
NYSDEC - Region 2, PBS Unit
Hunters Point Plaza
Division of Environmental Remediation
47-40 21st Street
Long Island City, NY 11101

RE: Underground Storage Tank Closure Report
PBS No. 2-613138
Remediation and Reconstruction of Ball Fields 5-8
Red Hook Recreation Area, 98 Lorraine Street, Brooklyn, NY

Ms. Zheng,

At the request of the New York City Department of Parks and Recreation (DPR), TRC is providing the attached underground storage tank (UST) Closure Report for Red Hook Ball Fields 5 to 8 located within in the Red Hook Recreation Area, Brooklyn, NY (the Site). The UST Closure Report was prepared by AARCO Environmental Services Corporation (AARCO) for DPR to document the permanent closure of a former petroleum UST discovered during construction activities at 98 Lorraine Street in Brooklyn, NY. The construction activities are associated with the implementation of an USEPA-approved remedy the Site.

As indicated by the attached report, the post removal soil verification sample analyses indicate no volatile organic compound (VOC) detections and low concentrations of several semivolatile organic compounds (SVOCs) consisting of polycyclic aromatic hydrocarbons (PAHs).

Based on a comparison of the post UST excavation end point soil sample data to the 2016 site investigation data, the SVOCs were detected at concentrations similar to those documented by prior site soil investigation data for the historic fill across the former smelter site. The elevated SVOCs were found in historic fill containing ash and cinders which are also present in the UST excavation soils.

The planned park development includes the construction of a clean cover remedy for the entire site that will restrict direct contact with the underlying contaminated historic soils/fill. In addition, institutional controls consisting of an environmental notice along with a site management plan will be implemented to ensure long-term maintenance of the remedy. Therefore, potential human health exposure concerns associated with the historic site fill including that at the former UST location will be addressed with the planned site cover remedy.

We trust this provides you with the information that you require regarding the subject UST closure. Should you have any questions on the report or require additional information on the closure, please contact Ms. Kay Zias at DPR.

Underground Storage Tank Closure Report

PBS No. 2-613138

Red Hook Recreation Area, Ball Fields 5 through 8, Brooklyn, New York

May 5, 2020

Page 2 of 2

Sincerely,

TRC

James Peronto, P.E.

Principal Engineer

Enclosure – AARCO Underground Storage Tank Closure Report

c: Kay Zias/DPR
Kevin Horgan/DPR
Leszek Zielinski/NYSDEC
Jane O'Connell/NYSDEC

RED HOOK PARK SUPERFUND SOIL SAMPLING 2014-2015 FIELD REPORTS AND CONTAMINANT RESULTS



July 30, 2015

Marty Rowland, Ph.D., P.E.
New York City Department of Parks & Recreation
Capital Projects Division - Olmsted Center
Flushing, New York



NYC Parks

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Executive Summary

The New York City Department of Parks & Recreation (DPR) participated in the collection of soil samples at the various play areas within Red Hook Park, located in Brooklyn, NY between the months of October 2014 and April 2015. The United States Environmental Protection Agency's (EPA) remediation contractor Weston Solutions, Inc. performed the sampling and delivery of the samples to the EPA Laboratory located at 2890 Woodbridge Ave., Bldg 209, MS-230, Edison, NJ 08837. The results of the sampling demonstrated that releases from the Columbia Smelting & Refining Works (located in the infield portion of Ballfield 7) during the 1930s had impacted soils not only in the block (that includes Ballfields 5, 6, 7, and 8) surrounded by Lorraine St., Henry St., Bay St., and Hicks St., but areas downwind, including Soccer Fields 1, 2, 3, and 6, and Ballfield 9. One unexpected finding was the presence of cadmium, significantly surrounding Soccer Field 1, but also Ballfields 5, 6, 7, and 8. Appropriately, Ballfields 5, 6, 7, and 8 are to be remediated first as the smelter release is evident over the entire upper 24 inches of soil there, followed by Ballfield 9 that has between 6 to 12 inches of compliant soil over the smelter-related chemicals. The field reports document what occurred each day of the sampling events.

Introduction

This report is the compilation of fourteen daily reports, written to document activities during the period EPA and its contractor collected soil samples to a depth of 24 inches in five areas at Red Hook Park. The daily reports contain narratives and representative photographs of soil brought to the surface, a map of the sample locations, and a table of the laboratory results that are coded to reflect whether the lead concentrations in soil are correlated to concentrations of antimony and tin, a condition that confirms that the chemicals were emitted from the smelter. Arsenic is another metal that is often associated with smelter releases, but that was not evident at Red Hook Park. It is not known where the cadmium originated. In each location, five borings were completed and the soil removed was composited into a single sample that was analyzed. Soil not sampled was returned to the borehole and site returned to its pre-sampling condition. Samples representing the following depths were collected: 0-1 inch; 6-12 inches; 12-18 inches; and 18-24 inches.

October Daily Reports

The sampling on October 15, 2014 was conducted outside of Ballfields 5, 6, 7, and 8. Although the prevailing direction of wind is to the southeast, it was found that the smelter had released contaminants to the northeast. Elevated concentrations of lead, antimony, and tin were present over the entire 24 inches of sampled soil (locations S01 and S02). Similar results for locations S11 and S12 were expected. Smelter chemicals below one foot in an upwind direction are noted (S03 and S15). On October 16, 2014, six samples were collected within Ballfields 5, 6, 7, and 8;

all had smelter chemicals in the entire 24 inches of sampled soils. In two locations (S13 and S14), across Bay St. at Hicks St., the smelter chemicals were below 6 inches of compliant soil.

Date: Wednesday, October 15, 2014

From: Marty Rowland Ph.D., P.E., Senior Project Manager for Environmental Remediation
DPR Capital Projects / Environmental Unit

Red Hook Park / US EPA Superfund Sampling – October Round

Weather Conditions: Rain (0.01 inches); 76 degrees F (JFK Airport weather station)

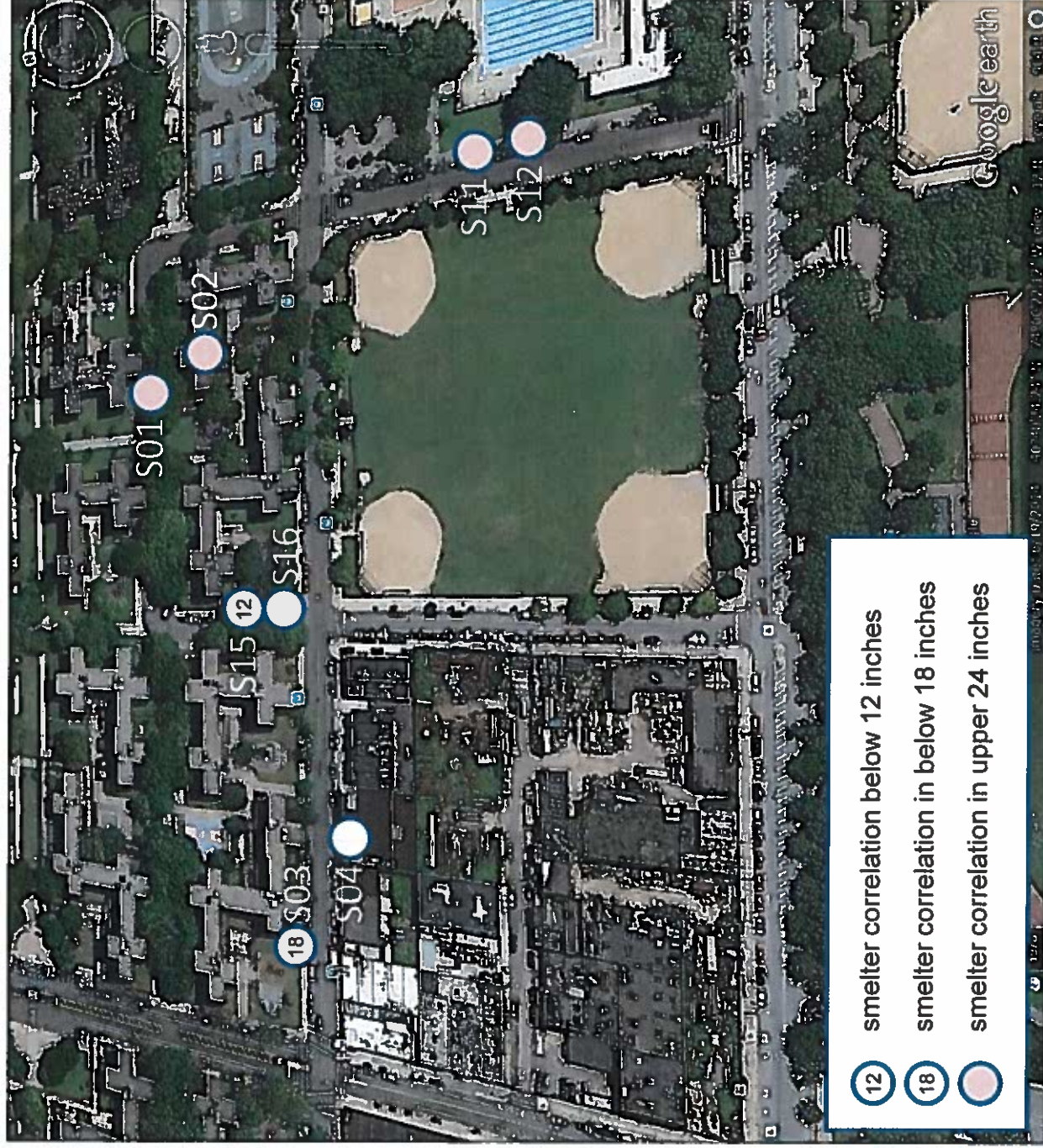
1. Arrived at the site near Ballfield 7 (corner of Lorraine St. and Hicks St.) at 7:30 am.
2. Light rain. The sampling crews set up a sample prep table within the ballfield fence area.
3. All samples were collected outside of Ballfield 7, the focus of the sampling activity; locations were selected based on upwind and downwind directions from the historic lead smelter facility that had been present on the infield area of Ballfield 7. Samples S01, S02, S03, S15, and S16 are located adjacent to Red Hook East Houses; sample S04 is located outside of a daycare facility; and samples S11 and S12 are located along Henry St., across the street from Ballfields 5 and 8. Samples S01, S02, S11, and S12 are considered downwind of the smelter and S03, S04, S15, and S16 are considered upwind.
4. Sampling crews wore appropriate personal protective equipment (PPE), including synthetic gloves to protect hands.
5. Left site at 4:45 pm.
6. See attached table for the results for samples collected today: S01, S02, S03, S04, S11, S12, S15, and S16.



Location S11



Location S12



October 15, 2014 Sampling Event

Test Results for Samples Collected on October 15, 2014 - Red Hook Park
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Contaminant	Restricted Residential SCO mg/kg	S01					S02					S03				
		0 - 1"	1-6"	6-12"	12-18"	18-24"	0 - 1"	1-6"	6-12"	12-18"	18-24"	0 - 1"	1-6"	6-12"	12-18"	18-24"
LEAD	400	500	300	580	710	1,000	460	400	1100	920	4800	220	140	230	68	490
ANTIMONY	1.7*	3.7	3.2	3.4	4.9	7.9	3.1	2.7	2.5	3.9	15	2.4	1.8	2.3	1.9	1.8
TIN	3.2*	36	28	86	140	110	40	47	180	77	150	13	7.1	16	3.4	31
ARSENIC	16	12	13	12	12	11	15	11	17	16	110	6.8	8.7	15	5.7	7.2
CADMIUM	4.3	1.7	1.4	2.0	1.4	1.2	1.8	0.85	2.7	1.1	3.7	0.6	0.7	1.7	0.3	1.1

Contaminant	Restricted Residential SCO mg/kg	S04					S11					S12				
		0 - 1"	1-6"	6-12"	12-18"	18-24"	0 - 1"	1-6"	6-12"	12-18"	18-24"	0 - 1"	1-6"	6-12"	12-18"	18-24"
LEAD	400	160	290	140	270	160	790	1300	1100	940	850	680	790	1900	1300	1700
ANTIMONY	1.7*	2.6	2.0	2.0	2.2	2.3	8.3	16	7.7	5.5	7.7	5.9	5.1	9.7	7.8	14.0
TIN	3.2*	7.4	5.2	6.3	15	3.5	180	1200	250	180	210	150	200	370	310	570
ARSENIC	16	7.6	5.5	6.0	8.7	8.7	13	16	18	19	17	12	14	27	21	28
CADMIUM	4.3	0.6	0.3	0.38	1.1	0.8	1.8	1.5	1.4	3	1.9	2.6	2.1	3.4	2.2	2.7

Exceeds SCO < 2X
Exceeds SCO > 2X
Exceeds SCO > 10X

* These are the lowest concentrations for these chemicals found during the April round of sampling; no SCO assigned
Note: Appears to be a "lead smelter correlation" among values for lead, antimony, and tin for all depths for S01, S02, S11 and S12.

Test Results for Samples Collected on October 15, 2014 - Red Hook Park
Page 2 of 2

Contaminant	Restricted Residential SCO mg/kg	S15					S16				
		0 - 1"	1-6"	6-12"	12-18"	18-24"	0 - 1"	1-6"	6-12"	12-18"	18-24"
LEAD	400	170	110	120	650	670	150	120	240	320	370
ANTIMONY	1.7*	2.4	1.8	2	2.5	6.9	2.8	2.2	2.2	2.1	2.1
TIN	3.2*	17	5.6	5.3	110	130	7.8	3	18	22	36
ARSENIC	16	10	11	9.7	22	65	13	6.8	6.2	5.5	6.7
CADMIUM	4.3	0.79	0.4	0.32	0.7	0.62	0.89	0.4	0.56	0.8	1.2

Exceeds SCO < 2X
Exceeds SCO > 2X
Exceeds SCO > 10X

* These are the lowest concentrations for these chemicals found during the April round of sampling; no SCO assigned
Note: Appears to be no "lead smelter correlation" among values for lead, antimony, and tin at any depth, for S15 and S16.

Date: Thursday, October 16, 2014

From: Marty Rowland Ph.D., P.E., Senior Project Manager for Environmental Remediation
DPR Capital Projects / Environmental Unit

Red Hook Park / US EPA Superfund Sampling – October Round

Weather Conditions: Rain (0.78 inches); 71 degrees F (JFK Airport weather station)

1. Arrived at the site near Ballfield 7 (corner of Lorraine St. and Hicks St.) at 7:45 am.
2. Moderate rain. The sampling crews continued to use a sample prep table within the ballfield fence area.
3. Except for samples S13 and S14, all were collected within the Ballfields 5, 6, 7, and 8 enclosed by Lorraine St., Henry St., Bay St., and Hicks St., including S05, S06, S07, S08, S09, and S10. Locations S13 and S14 are in a picnic area across Bay St. from Ballfield 6, downwind of the historic smelter. Samples S09 and S10 are directly downwind of the smelter.
4. Sampling crews wore appropriate personal protective equipment (PPE), including synthetic gloves to protect hands.
5. Sampling crews encountered a hard debris layer at locations S05, S06, and S08 at approximately 12 to 18 inches. Sample collection was suspended in those locations for that reason.
6. Left site at 5:00 pm.
7. See attached table for the results for samples collected today: S05, S06, S07, S08, S09, S10, S13, and S14.



Augering soil at location S05.



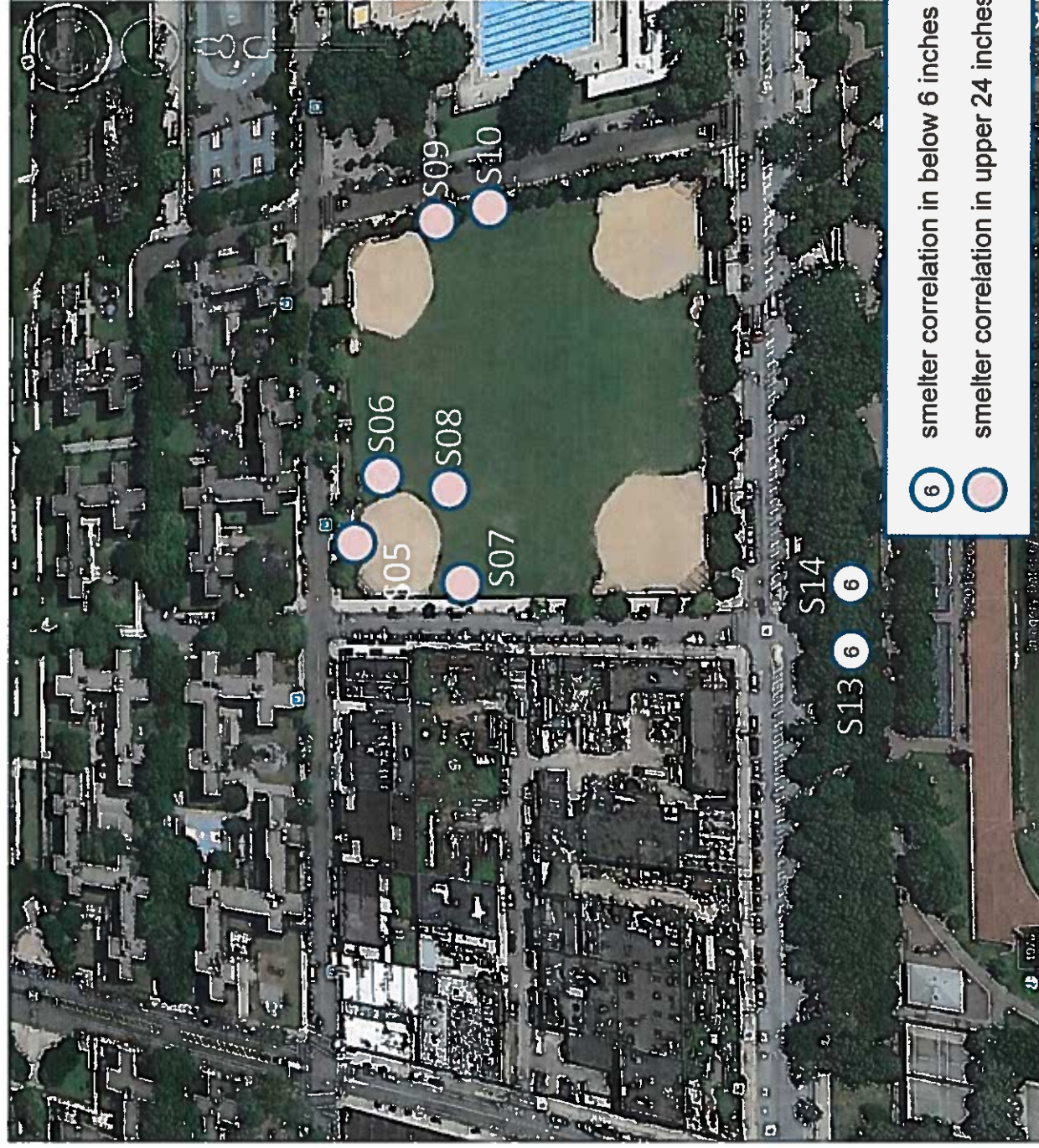
Location S06



Location S08



Location S13



October 16, 2014 Sampling Event

Test Results for Samples Collected on October 16, 2014 - Red Hook Park
Page 1 of 2

Contaminant	Restricted Residential SCO mg/kg	S05					S06					S07				
		0 - 1"	1-6"	6-12"	12-18"	18-19"	0 - 1"	1-6"	6-12"	12-18"	no sample	0 - 1"	1-6"	6-12"	12-18"	18-24"
LEAD	400	560	1000	2000	2600	1,800	240	2400	2500	2000	--	550	770	3200	390	130
ANTIMONY	1.7*	6.1	10	62	52	36	2.5	28	17	30	--	4.1	9.4	25	1.9	2.2
TIN	3.2*	130	130	590	620	370	37	690	260	390	--	120	150	1100	43	15
ARSENIC	16	14	12	19	33	30	4.4	79	18	22	--	14	27	32	4.6	5.2
CADMIUM	4.3	1.1	1.0	2.4	3.5	2.3	0.5	9.2	1.7	3.4	--	1.4	5.9	3.8	3.0	1.8

Contaminant	Restricted Residential SCO mg/kg	S08				S09				S10						
		0 - 1"	1-6"	6-12"	no sample	no sample	0 - 1"	1-6"	6-12"	12-18"	18-24"	0 - 1"	1-6"	6-12"	12-18"	18-24"
LEAD	400	980	2800	5700	--	--	500	1400	2000	2500	2600	980	1900	760	700	1400
ANTIMONY	1.7*	14	52	88	--	--	4.3	14	39	6.9	25	8.8	21	6.5	2.8	16.0
TIN	3.2*	220	950	2100	--	--	110	230	410	140	98	250	350	170	100	330
ARSENIC	16	21	53	83	--	--	9.9	35	15	24	18	18	34	8.9	8.7	21
CADMIUM	4.3	2.8	7.4	7.9	--	--	0.7	1.5	1.6	1.2	4.7	2.1	4.7	0.8	0.6	1.7

Exceeds SCO < 2X
Exceeds SCO > 2X
Exceeds SCO >10X

Note: These are the lowest concentrations for these chemicals found during the April round of sampling; no SCO assigned
Appears to be a "lead smelter correlation" among values for lead, antimony, and tin for all depths for all six of these locations.

Test Results for Samples Collected on October 16, 2014 - Red Hook Park
Page 2 of 2

Contaminant	Restricted Residential SCO mg/kg	S13					S14				
		0 - 1"	1-6"	6-12"	12-18"	18-24"	0 - 1"	1-6"	6-12"	12-18"	18-24"
LEAD	400	170	100	2300	4000	8300	140	100	670	970	3300
ANTIMONY	1.7*	2.5	2.2	17	27	11	2.7	1.9	6.5	20.0	100
TIN	3.2*	19	11	480	320	370	11	14	80	300	700
ARSENIC	16	21	21	31	26	33	14	11	38	23	44
CADMIUM	4.3	0.91	0.6	4.7	5.0	11	0.7	0.56	3	2.8	7.4

Exceeds SCO < 2X

Exceeds SCO > 2X

Exceeds SCO >10X

* These are the lowest concentrations for these chemicals found during the April round of sampling; no SCO assigned
Note: Appears to be a "lead smelter correlation" among values for lead, antimony, and tin below six inches for all three locations.

March Daily Reports

Between March 16 and May 19, 2015, EPA returned to Ballfields 5, 6, 7, and 8 for additional testing to better delineate the extent of smelter chemicals. All 18 samples had smelter chemicals in the entire 24 inches of sampled soils. Unexpectedly, cadmium was found at the ground surface in locations SS006, SS007, SS008, SS010, SS011, SS012, and SS015 too. On May 18th, Soccer Fields 2 and 3, and Ballfield 9 were sampled. Both soccer fields had smelter chemicals in the entire 24 inches of sampled soils, but at Ballfield 9 there were 6 to 12 inches of compliant soil over smelter chemicals. Cadmium was also found at the ground surface at Soccer Field 2 (location SS024). On May 19th, Soccer Fields 1 and 6 were sampled. Only at Soccer Field 1 were smelter chemicals found in the entire 24 inches of sampled soils. At Soccer Field 6, one location had relatively clean soil (SS029), while another had one foot of compliant soil over smelter chemicals. The two locations at Soccer Field 1 had cadmium at the ground surface.

Date: Monday, March 16, 2015

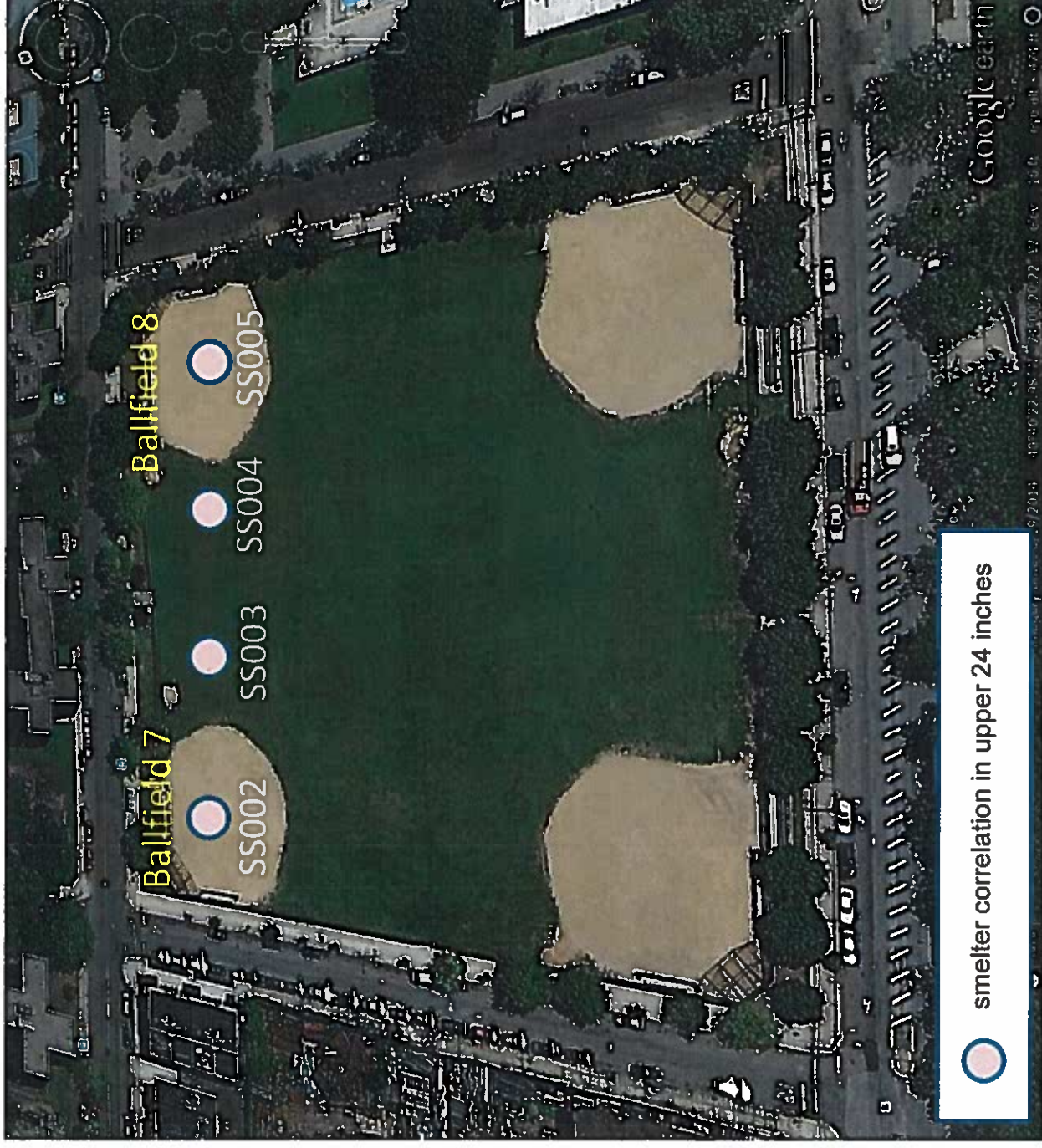
From: Marty Rowland Ph.D., P.E., Senior Project Manager for Environmental Remediation
DPR Capital Projects / Environmental Unit

Red Hook Park / US EPA Superfund Program Sampling – March Round

Weather Conditions: Partly Cloudy, no precipitation, 50 degrees F (JFK Airport weather station)

1. Arrived at Ballfield 7 at 7:30 am, at corner of Lorraine St. and Hicks St.
2. Although the high was 50 degrees, the morning was in the 30s; the wind chill may have been in the 20s.
3. Four locations were sampled today; two in Ballfield 7, and two in Ballfield 8.
4. Left site at 5:00 pm.
5. See attached table for the results for samples collected today: SS002, SS003, SS004, and SS005.

Typical Soil Characteristics – The soil profile at the 0-6 inch depth interval is characterized by a topsoil layer consisting of moist, black silty-sand with high concentrations of organic material grading to well sorted, brown silty sand. The 6-24 inch depth interval is characterized by fill material consisting of moist, poorly sorted, dark-brown to black crushed rock and asphalt, rock fragments, bricks and ash material. In select sample locations, a suspect native layer starts at approximately 23 inches bgs and consists of moist, well sorted, light brown silty-sand. (extracted from page 4 of the Weston Solutions, Inc., Final Soil Sampling Trip Report, Columbia Smelting & Refining Works, dated April 9, 2015; concerning the March round of sampling)



March 16, 2015 Sampling Event

Test Results for Samples Collected on March 16, 2015 - Red Hook Park

Contaminant	Restricted Residential SCO mg/kg	SS002					SS003					SS004				
		0 - 1"	1-6"	6-12"	12-18"	18-24"	0 - 1"	1-6"	6-12"	12-18"	18-24"	0 - 1"	1-6"	6-12"	12-18"	18-24"
LEAD	400	410	430	2600	4700	7600	760	2900	2500	1300	960	910	2500	940	2900	950
ANTIMONY	1.7*	3.8	5.3	39	92	190	7.0	52	54	19	15	9.8	170	10	3.6	8.4
TIN	3.2*	99	100	780	1600	2400	230	1300	690	330	220	210	900	190	70	290
ARSENIC	16	10	13	38	92	89	15	48	54	14	14	15	19	12	13	11
CADMIUM	4.3	0.99	1.3	4.8	3.0	4.7	2.0	4.2	3.2	1.5	1.8	2.5	3.0	1.7	0.54	0.59

Contaminant	Restricted Residential SCO mg/kg	SS005				
		0 - 1"	1-6"	6-12"	12-18"	18-24"
LEAD	400	110	750	1300	1100	1900
ANTIMONY	1.7*	1.9	7.1	11	9.7	4.1
TIN	3.2*	25	140	240	200	130
ARSENIC	16	4.9	21	17	14	15
CADMIUM	4.3	0.29	3	1.9	0.86	0.56

Exceeds SCO < 2X
Exceeds SCO > 2X
Exceeds SCO > 10X

* These are the lowest concentrations for these chemicals found during the April round of sampling; no SCO assigned
Appears to be a "lead smelter correlation" among values for lead, antimony, and tin for all depths for each location.

Note:

Date: Tuesday, March 17, 2015

From: Marty Rowland Ph.D., P.E., Senior Project Manager for Environmental Remediation
DPR Capital Projects / Environmental Unit

Red Hook Park / US EPA Superfund Program Sampling – March Round

Weather Conditions: Rain (0.02 inch), 60 degrees F (JFK Airport weather station)

1. Arrived at Ballfield 7 at 7:30 am, at corner of Lorraine St. and Hicks St.
2. Although the high was 60 degrees, the morning was in the 30s; the wind chill may have been in the 20s.
3. Four locations were sampled today; two in Ballfield 7, and two in Ballfield 8.
4. Left site at 5:00 pm.
5. See attached table for the results for samples collected today: SS006, SS007, SS008, and SS009.

Typical Soil Characteristics – The soil profile at the 0-6 inch depth interval is characterized by a topsoil layer consisting of moist, black silty-sand with high concentrations of organic material grading to well sorted, brown silty sand. The 6-24 inch depth interval is characterized by fill material consisting of moist, poorly sorted, dark-brown to black crushed rock and asphalt, rock fragments, bricks and ash material. In select sample locations, a suspect native layer starts at approximately 23 inches bgs and consists of moist, well sorted, light brown silty-sand. (extracted from page 4 of the Weston Solutions, Inc., Final Soil Sampling Trip Report, Columbia Smelting & Refining Works, dated April 9, 2015; concerning the March round of sampling)



Using jack hammer to dislodge debris at 18 to 24 inch depth at SS008



March 17, 2015 Sampling Event

Test Results for Samples Collected on March 17, 2015 - Red Hook Park

Contaminant	Restricted Residential SCO mg/kg	SS006					SS007					SS008				
		0 - 1"	1-6"	6-12"	12-18"	18-24"	0 - 1"	1-6"	6-12"	12-18"	18-24"	0 - 1"	1-6"	6-12"	12-18"	18-24"
LEAD	400	2100	2600	2700	2800	1500	2900	3400	5500	4500	6000	2300	3200	2900	2100	1900
ANTIMONY	1.7*	20	28	30	30	15	29	35	79	90	93	21	30	41	32	19
TIN	3.2*	560	800	850	760	470	820	870	1700	1500	1900	630	780	810	660	390
ARSENIC	16	39	84	250	58	22	56	58	69	49	70	42	48	53	26	25
CADMIUM	4.3	4.8	5.8	5.4	6.7	1.6	6.6	8.6	8.7	6.3	8.0	5.9	8.2	7.0	3.6	4.0

Contaminant	Restricted Residential SCO mg/kg	SS009				
		0 - 1"	1-6"	6-12"	12-18"	18-24"
LEAD	400	2900	2800	2000	2700	2100
ANTIMONY	1.7*	25	38	23	22	14
TIN	3.2*	780	610	580	1000	560
ARSENIC	16	36	32	31	24	19
CADMIUM	4.3	6.9	5.2	2.9	2.8	2.2

Exceeds SCO < 2X
Exceeds SCO > 2X
Exceeds SCO > 10X

* These are the lowest concentrations for these chemicals found during the April round of sampling; no SCO assigned
Note: Appears to be a "lead smelter correlation" among values for lead, antimony, and tin for at all depths for each location.
Cadmium concentrations above the SCO at the ground surface.

Date: Wednesday, March 18, 2015

From: Marty Rowland Ph.D., P.E., Senior Project Manager for Environmental Remediation
DPR Capital Projects / Environmental Unit

Red Hook Park / US EPA Superfund Program Sampling – March Round

Weather Conditions: Snow (trace), 41 degrees F (JFK Airport weather station)

1. Arrived at Ballfield 7 at 7:30 am, at corner of Lorraine St. and Hicks St.
2. The overnight low as in the 20s, so it was a cold sampling event.
3. Four locations were sampled today; two in Ballfield 5, and two in Ballfield 6.
4. Left site at 5:00 pm.
5. See attached table for the results for samples collected today: SS010, SS011, SS012, SS013, SS019, SS020, SS021, SS022, SS023, SS024, and SS025.

Typical Soil Characteristics – The soil profile at the 0-6 inch depth interval is characterized by a topsoil layer consisting of moist, black silty-sand with high concentrations of organic material grading to well sorted, brown silty sand. The 6-24 inch depth interval is characterized by fill material consisting of moist, poorly sorted, dark-brown to black crushed rock and asphalt, rock fragments, bricks and ash material. In select sample locations, a suspect native layer starts at approximately 23 inches bgs and consists of moist, well sorted, light brown silty-sand. (extracted from page 4 of the Weston Solutions, Inc., Final Soil Sampling Trip Report, Columbia Smelting & Refining Works, dated April 9, 2015; concerning the March round of sampling)



Location SS010 near entrance between Ballfields 6 and 7



Close up of soil from SS010 boring



Location SS012



Location SS013



Location SS025, at Soccer Field 2



March 18, 2015 Sampling Event (map 1 of 2)



March 18, 2015 Sampling Event (map 2 of 2)

Test Results for Samples Collected on March 18, 2015 - Red Hook Park
Page 1 of 2

Contaminant	Restricted Residential SCO mg/kg	SS010					SS011					SS012				
		0 - 1"	1-6"	6-12"	12-18"	18-24"	0 - 1"	1-6"	6-12"	12-18"	18-24"	0 - 1"	1-6"	6-12"	12-18"	18-24"
LEAD	400	1700	1800	2800	1400	17,000	2600	2900	4400	4300	7300	1300	1700	1800	1500	1800
ANTIMONY	1.7*	13	13	18	8.1	28	23	65	75	40	150	23	28	22	35	57
TIN	3.2*	390	440	490	250	590	650	710	1400	1200	1600	650	660	570	570	1100
ARSENIC	16	45	50	170	110	84	39	40	33	32	77	37	33	29	33	27
CADMIUM	4.3	31	7.4	2.8	1.7	3.3	6.3	9.2	5.0	3.8	6.1	7.0	7.3	3.5	3.0	4.3

Contaminant	Restricted Residential SCO mg/kg	SS013						SS019						SS020					
		0 - 1"	1-6"	6-12"	12-18"	18-24"	0 - 1"	1-6"	6-12"	12-18"	18-24"	0 - 1"	1-6"	6-12"	12-18"	18-24"			
LEAD	400	1300	1700	1800	1500	1800	260	590	1300	1500	1600	260	150	1600	1900	1000			
ANTIMONY	1.7*	11	21	16	14	28	2.9	5.5	230	11	39	3.0	1.9	18	19	13			
TIN	3.2*	310	440	430	490	290	36	57	100	180	300	28	14	210	160	120			
ARSENIC	16	18	18	16	15	18	12	21	17	17	23	10	9.5	26	23	15			
CADMIUM	4.3	3.0	2.4	1.9	1.7	1.1	0.7	5.3	2.5	1.2	8.4	0.8	0.4	3.6	0.5	2.0			

Exceeds SCO < 2X
Exceeds SCO > 2X
Exceeds SCO > 10X

* These are the lowest concentrations for these chemicals found during the April round of sampling; no SCO assigned
Note: Appears to be a "lead smelter correlation" among values for lead, antimony, and tin for at all depths for SS010-SS013, but below upper few inches for SS019-SS020.
Cadmium concentrations elevated at SS10, SS11, and SS12.

Test Results for Samples Collected on March 18, 2015 - Red Hook Park
Page 2 of 2

Contaminant	Restricted Residential SCO mg/kg	SS021					SS022					SS023				
		0 - 1"	1-6"	6-12"	12-18"	18-24"	0 - 1"	1-6"	6-12"	12-18"	18-24"	0 - 1"	1-6"	6-12"	12-18"	18-24"
LEAD	400	190	480	550	870	800	270	250	320	610	580	72	170	75	1000	2300
ANTIMONY	1.7*	2.0	1.8	4.8	9.8	8.6	2.1	1.7	3.2	4.9	3.3	2.0	1.9	1.9	8.2	13
TIN	3.2*	17	25	44	240	110	27	22	41	50	33	5.1	23	5.1	130	330
ARSENIC	16	14	12	20	23	15	9.8	11	15	22	23	11	13	12	23	38
CADMIUM	4.3	1.5	1.9	3.7	2.9	5.7	2.8	4.2	6.5	4.9	1.7	0.48	0.7	0.4	6.6	13.0

Contaminant	Restricted Residential SCO mg/kg	SS024					SS025				
		0 - 1"	1-6"	6-12"	12-18"	18-24"	0 - 1"	1-6"	6-12"	12-18"	18-24"
LEAD	400	350	1900	230	540	840	340	230	550	760	680
ANTIMONY	1.7*	4.1	18	2.5	7.5	16	4.0	2.2	4.0	68	5.8
TIN	3.2*	44	130	24	56	140	38	27	37	390	180
ARSENIC	16	20	24	14	19	17	20	11	20	16	15
CADMIUM	4.3	5.0	7.0	2.9	3.5	8.9	3.9	2.3	3.6	16	2.1

Exceeds SCO < 2X
Exceeds SCO > 2X
Exceeds SCO >10X

* These are the lowest concentrations for these chemicals found during the April round of sampling; no SCO assigned
Note: Appears to be a "lead smelter correlation" among values for lead, antimony, and tin below one foot for SS022 and SS023; below six inches for SS025; and below one inch for SS021 and SS024. Cadmium elevated only at SS024.

Date: Thursday, March 19, 2015

From: Marty Rowland Ph.D., P.E., Senior Project Manager for Environmental Remediation
DPR Capital Projects / Environmental Unit

Red Hook Park / US EPA Superfund Program Sampling – March Round

Weather Conditions: Partly cloudy, no precipitation, 44 degrees F (JFK Airport weather station)

1. Arrived at Ballfield 7 at 7:20 am, at corner of Bay St. and Hicks St.
2. The overnight low as in the 20s, so it was a cold sampling event.
3. Several locations were sampled today; Ballfield 5, Ballfield 6, Soccer Field 1, Soccer Field 6, and the outside perimeter between Ballfields 7 and 8, and Ballfields 5 and 6.
4. Left site at 5:15 pm.
5. See attached table for the results for samples collected today: SS001, SS014, SS015, SS016, SS017, SS018, SS026, SS027, SS028, and SS029.

Typical Soil Characteristics – The soil profile at the 0-6 inch depth interval is characterized by a topsoil layer consisting of moist, black silty-sand with high concentrations of organic material grading to well sorted, brown silty sand. The 6-24 inch depth interval is characterized by fill material consisting of moist, poorly sorted, dark-brown to black crushed rock and asphalt, rock fragments, bricks and ash material. In select sample locations, a suspect native layer starts at approximately 23 inches bgs and consists of moist, well sorted, light brown silty-sand. (extracted from page 4 of the Weston Solutions, Inc., Final Soil Sampling Trip Report, Columbia Smelting & Refining Works, dated April 9, 2015; concerning the March round of sampling)



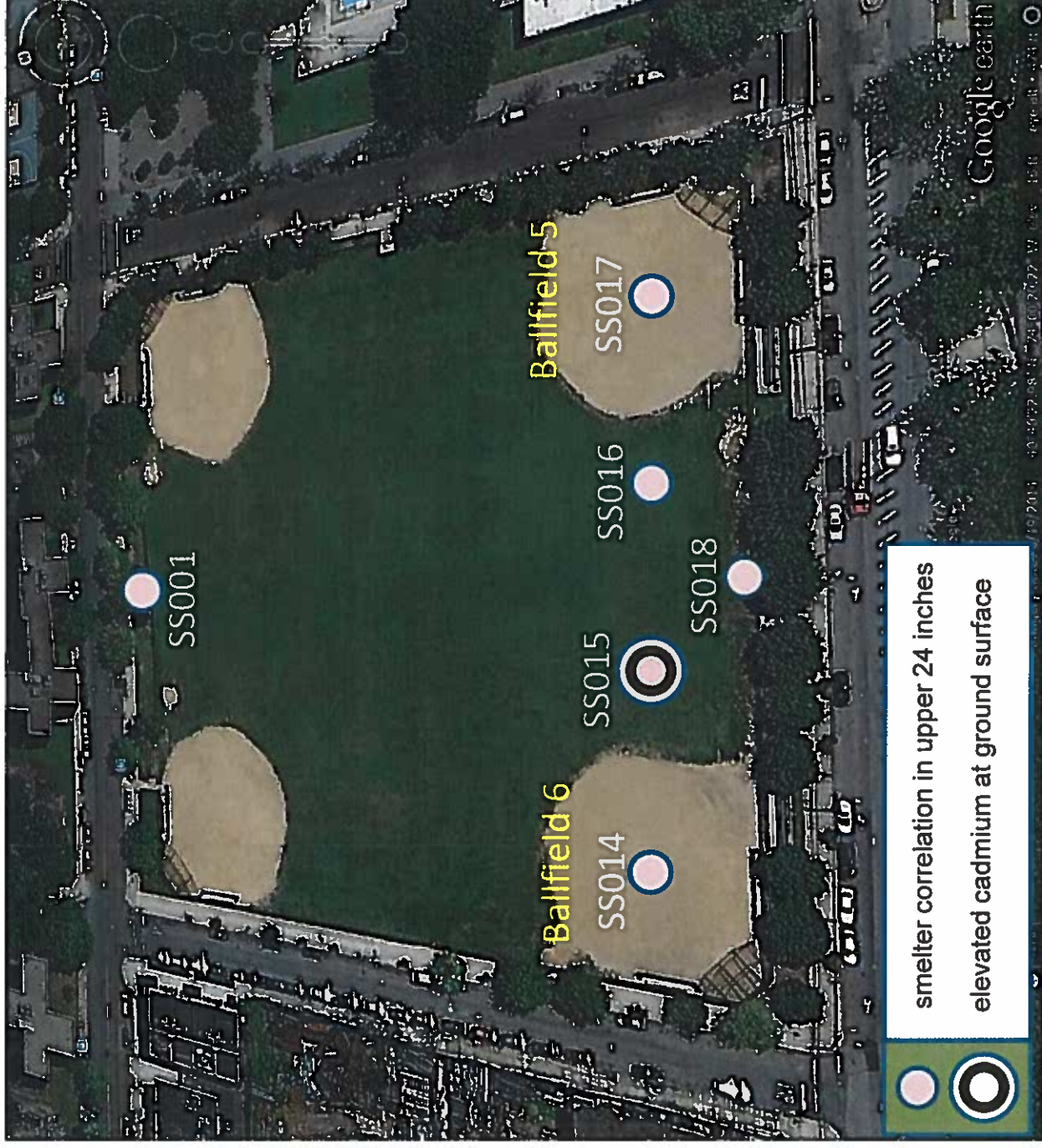
Location SS015



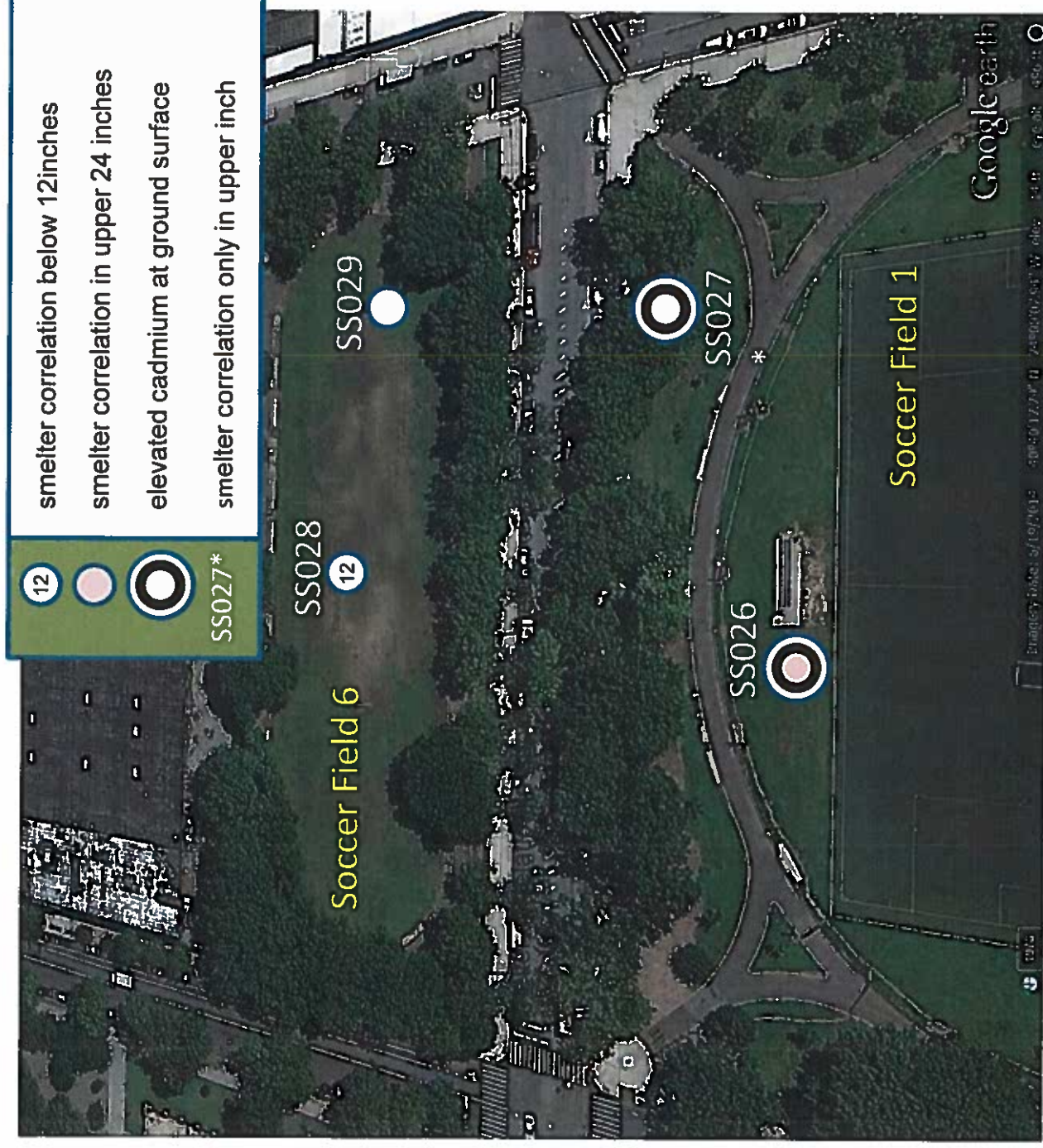
Location SS016



Close up at SS016



March 19, 2015 Sampling Event (map 1 of 2)



March 19, 2015 Sampling Event (map 2 of 2)

Test Results for Samples Collected on March 19, 2015 - Red Hook Park
Page 1 of 2

Contaminant	Restricted Residential SCO mg/kg	SS014					SS015					SS016				
		0-1"	1-6"	6-12"	12-18"	18-24"	0-1"	1-6"	6-12"	12-18"	18-24"	0-1"	1-6"	6-12"	12-18"	18-24"
LEAD	400	730	1100	2700	6200	5,600	2000	2900	3100	2600	1500	1700	2200	1800	1900	1700
ANTIMONY	1.7*	7.4	22	28	56	44	26	33	24	19	13	14	25	15	9.2	6.6
TIN	3.2*	180	290	630	2200	1000	500	660	850	310	250	430	600	370	300	730
ARSENIC	16	14	28	75	140	170	25	38	29	49	41	19	26	20	22	19
CADMIUM	4.3	1.8	2.6	5.8	7.0	9.6	4.8	8.7	4.6	5.1	3.6	3.9	5.2	3.3	2.0	2.1

Contaminant	Restricted Residential SCO mg/kg	SS017					SS026					SS027				
		0-1"	1-6"	6-12"	12-18"	18-24"	0-1"	1-6"	6-12"	12-18"	18-24"	0-1"	1-6"	6-12"	12-18"	18-24"
LEAD	400	73	2100	1700	2800	1900	600	320	720	640	340	960	290	350	390	130
ANTIMONY	1.7*	1.9	19	15	22	23	5.0	3.5	6.7	4.7	2.3	5.2	2.9	2.6	4.9	2.0
TIN	3.2*	15	390	340	500	610	38	17	55	36	29	57	13	21	14	5.3
ARSENIC	16	4.5	19	17	13	16	16	9.4	23	14	8.3	23	37	50	290	77
CADMIUM	4.3	0.3	2.5	2.7	3.3	3.0	27	18	6.1	12	3.2	100	18	4.2	12	5.1

Exceeds SCO < 2X
Exceeds SCO > 2X
Exceeds SCO > 10X

* These are the lowest concentrations for these chemicals found during the April round of sampling; no SCO assigned
Note: Appears to be a "lead smelter correlation" among values for lead, antimony, and tin for all depths for SS014-SS017; effect less pronounced at SS026 and SS027.
Elevated cadmium concentrations found at SS026 and SS027 (very high) at ground surface.

Test Results for Samples Collected on March 19, 2015 - Red Hook Park
Page 2 of 2

Contaminant	Restricted Residential SCO mg/kg	SS028					SS029					SS001				
		0 - 1"	1-6"	6-12"	12-18"	18-24"	0 - 1"	1-6"	6-12"	12-18"	18-24"	0 - 1"	1-6"	6-12"	12-18"	18-24"
LEAD	400	170	120	97	910	700	190	110	100	65	22	2400	1300	3300	2200	550
ANTIMONY	1.7*	2.1	1.9	1.6	13	5.3	2.2	1.9	1.9	1.7	1.6	26	26	67	36	11
TIN	3.2*	8.2	7.3	4.9	170	65	11	6.4	6.5	3.0	0.81	600	340	290	430	84
ARSENIC	16	7.9	5.2	5.6	15	6.5	7.2	4.5	4.0	4.8	4.6	38	17	24	24	10
CADMIUM	4.3	1.6	2.1	4.4	3.4	1.1	1.6	0.79	0.96	0.29	0.2	4.7	2.3	2.5	5.2	0.8

Contaminant	Restricted Residential SCO mg/kg	SS018				
		0 - 1"	1-6"	6-12"	12-18"	18-24"
LEAD	400	750	1500	1700	1700	1200
ANTIMONY	1.7*	8.1	20	22	21	5.3
TIN	3.2*	190	380	440	450	270
ARSENIC	16	17	33	27	24	14
CADMIUM	4.3	2.1	3.6	3.5	3.3	2.2

Exceeds SCO < 2X
Exceeds SCO > 2X
Exceeds SCO > 10X

Note: These are the lowest concentrations for these chemicals found during the April round of sampling; no SCO assigned
Appears to be a "lead smelter correlation" among values for lead, antimony, and tin below at all depths at SS001 and SS018
SS029 is relatively clean at all depths, and SS028 is clean in the upper foot of soil.

April Daily Reports

Between April 20 and 21, 2015, samples were collected at Soccer Field 2. Six inches of compliant soil were found over smelter chemicals over the entire field except for two locations nearest Bay St. (SS044 and SS045), where smelter chemicals were evident in the entire 24 inches of sampled soils. On April 22, between 6 and 12 inches of compliant soils were found over smelter chemicals in seven locations at Ballfield 9. Between April 23 and 24, 2015, four locations on the eastern end of Soccer Field 1 were sampled and found to have smelter chemicals in the entire 24 inches of sampled soils (SS056, SS057, SS063, and SS064). The other eight locations there had between 6 and 18 inches of compliant soils over smelter chemicals. All 12 locations had elevated concentrations of cadmium at the ground surface, with one location having a very high concentration (290 mg/kg, where 4.3 mg/kg is considered safe for active recreational use). On April 27th, the sampling crew returned to Ballfield 9. One location had relatively clean soil, and the other three locations had between 6 and 12 inches of compliant soil over smelter chemicals. On April 28th, two additional samples at Ballfield 9 were collected; one had smelter chemicals in the entire 24 inches of sampled soils (although the location was on over the right field fence (SS042), and the other one had 12 inches of compliant soils over smelter chemicals. Also on that day, two samples were collected on the eastern end of Soccer Field 6. Both had smelter chemicals in the entire 24 inches of sampled soils, and elevated concentrations of cadmium at the ground surface. On the last day of sampling, April 29th, six locations were sampled at Soccer Field 6. Two locations had smelter chemicals in the entire 24 inches of sampled soils (SS065 and SS069) and three locations had between 6 and 18 inches of compliant soil over smelter chemicals. Four locations had elevated concentrations of cadmium at the ground surface (SS065, SS066, SS067, and SS071).

Date: Monday, April 20, 2015

From: Marty Rowland Ph.D., P.E., Senior Project Manager for Environmental Remediation
DPR Capital Projects / Environmental Unit

Red Hook Park / US EPA Superfund Program Sampling – April Round

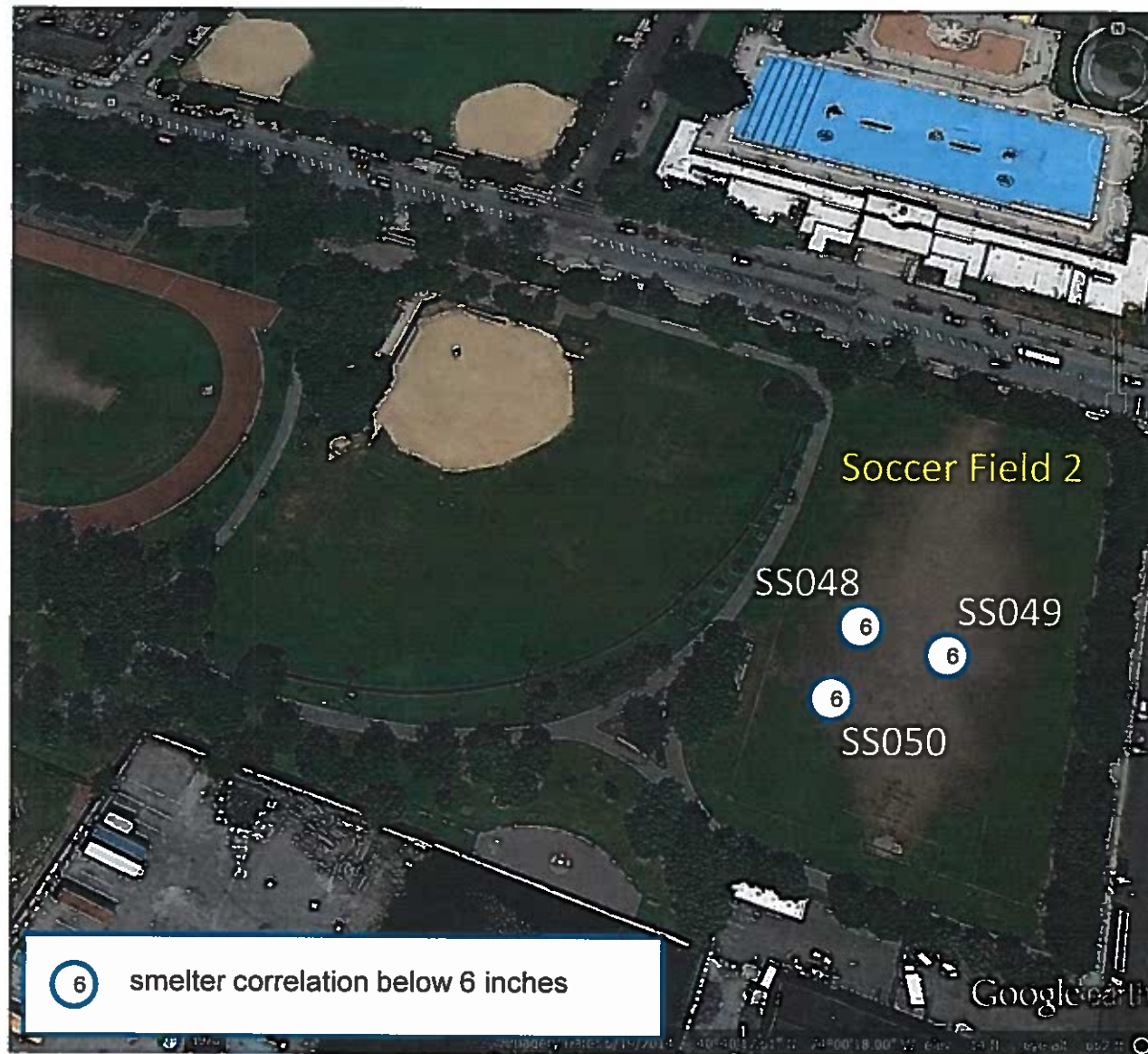
Weather Conditions: Rain (0.87 inches); 58 degrees F (JFK Airport weather station)

1. Arrived at the site (Soccer Field 2) at 7:45 am, at corner of Clinton St. and Halleck St.
2. Heavy rain. Three sampling crews and one prep station in the soccer / football field across from the Parks' Recreational Center on Bay St.
3. Went to the Red Hook ballfields (Lorraine/Hicks/Bay/Henry Streets); grass appears to be thicker, fewer bare spots than a month ago during the March round of sampling.
4. Spoke to Bernard "Ben" Nwosu (sampling crew); they are quitting early today because of rain, wind. Left site at 3:00 pm.
5. EPA's Margaret Gregor said sampling will be over the next three weeks, up to early May; nos. SS030 to SS072 (43 quadrants with five grab samples per quad).
6. Beginning April 21, they are going to sample 7:30 am to 4 pm.
7. See attached table for the results for samples collected today: SS048, SS049, and SS050.

Soils in Soccer Field 2 – The soil profile at the 0-6 inch depth interval is characterized by a topsoil layer consisting of moist, dark brown, silty sand with high concentrations of organic material grading to well sorted, dark brown, silty sand with trace organic material. The 12-24 inch depth interval is characterized by a fill layer consisting of moist, dark brown to black, poorly sorted, silty sand with medium to large gravel and ash material grading to moist, dark brown to black, poorly sorted, silty sand with gravel and red bricks. In select locations a suspect native layer consisting of moist brown to light brown, well sorted, silty sand begins at approximately 23 inches. (extracted from page 5 of the Weston Solutions, Inc. Final Phase II Soil Sampling Trip Report, Columbia Smelting & Refining Works, dated June 19, 2015 concerning the April round of sampling)



Location SS050



April 20, 2015 Sampling Event

Test Results for Samples Collected on April 20, 2015 - Red Hook Park

Contaminant	Restricted Residential SCO mg/kg	SS048					SS049					SS050				
		0 - 1"	1-6"	6-12"	12-18"	18-24"	0 - 1"	1-6"	6-12"	12-18"	18-24"	0 - 1"	1-6"	6-12"	12-18"	18-24"
LEAD	400	240	410	570	1000	1200	240	330	500	1100	7300	320	300	1100	570	780
ANTIMONY	1.7*	4.6	4.5	5.1	12	6	2.4	3.6	4.9	5.1	11	2.9	2.4	9.5	4.4	4.7
TIN	3.2*	27	49	38	98	42	28	27	190	35	160	39	40	420	31	50
ARSENIC	16	15	18	18	14	16	20	23	20	13	30	16	19	17	13	17
CADMIUM	4.3	3.2	3.0	3.8	1.5	1.9	3.5	4.4	23	3.3	6.3	3.2	6.1	2.6	2.2	29

Exceeds SCO < 2X

Exceeds SCO > 2X

Exceeds SCO >10X

* These are the lowest concentrations for these chemicals found during the April round of sampling; no SCO assigned

Note: Appears to be a "lead smelter correlation" among values for lead, antimony, and tin below six inches for SS048, SS049, and SS050.

Date: Tuesday, April 21, 2015

From: Marty Rowland Ph.D., P.E., Senior Project Manager for Environmental Remediation
DPR Capital Projects / Environmental Unit

Red Hook Park / US EPA Superfund Program Sampling – April Round

Weather Conditions: Thunderstorms (0.06 inch), 67 degrees F (JFK Airport weather station)

1. Arrived at the site (Soccer Field 2) at 7:30 am, at corner of Clinton St. and Halleck St.
2. See orange flags the sampling crew set at each sample location yesterday.
3. Margaret and crew show up at 8:00 am. Threatens to rain.
4. Margaret says 7:00 am will be new start time. Left site at 5:00 pm.
5. Took photo at Red Hook Ballfield #7 to send to Eric Mattes (ponding water). See below.
6. Took photos at locations SS049, SS050, SS051, and SS052. See below.
7. At the intersection of locations SS044, SS045, SS046, and SS047, 2 foot depth, soil is a natural light brown color.
8. Light gray, ash material noted at location SS044. See photo.
9. Margaret reported to me that a man is taking photos of the sampling; I told her I saw a guy taking a photo of a Jeep, like an insurance adjustor, but nothing else.
10. See attached table for the results for samples collected today: SS044, SS045, SS046, SS047, SS051, and SS052.

Soils in Soccer Field 2 – The soil profile at the 0-6 inch depth interval is characterized by a topsoil layer consisting of moist, dark brown, silty sand with high concentrations of organic material grading to well sorted, dark brown, silty sand with trace organic material. The 12-24 inch depth interval is characterized by a fill layer consisting of moist, dark brown to black, poorly sorted, silty sand with medium to large gravel and ash material grading to moist, dark brown to black, poorly sorted, silty sand with gravel and red bricks. In select locations a suspect native layer consisting of moist brown to light brown, well sorted, silty sand begins at approximately 23 inches. (extracted from page 5 of the Weston Solutions, Inc. Final Phase II Soil Sampling Trip Report, Columbia Smelting & Refining Works, dated June 19, 2015 concerning the April round of sampling)



Red Hook Ballfield #7



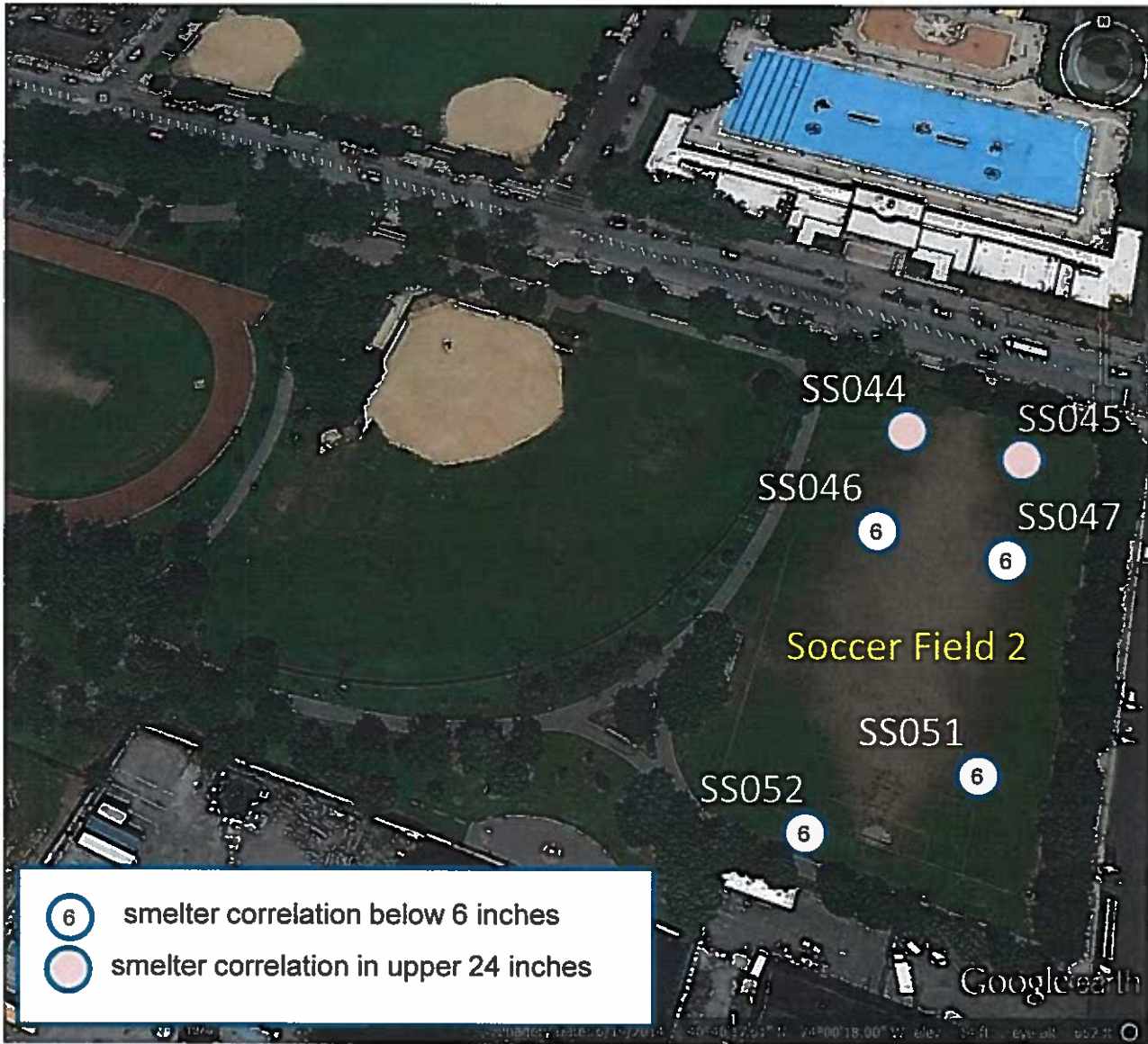
Location SS049, SS050, SS051, and SS052



Soil near intersection of locations SS044, SS045, SS046, and SS047



Soil at location SS044



April 21, 2015 Sampling Event

Test Results for Samples Collected on April 21, 2015 - Red Hook Park

Contaminant	Restricted Residential SCO mg/kg	SS044					SS045					SS046				
		0 - 1"	1-6"	6-12"	12-18"	18-24"	0 - 1"	1-6"	6-12"	12-18"	18-24"	0 - 1"	1-6"	6-12"	12-18"	18-24"
LEAD	400	320	610	680	440	1100	280	420	410	340	720	320	330	620	1000	1100
ANTIMONY	1.7*	3.9	12	6.2	5.3	36	3.7	4.3	3.7	2.0	7.8	4.6	3.1	4.3	8.9	12
TIN	3.2*	36	59	71	36	110	33	66	43	32	25	30	41	84	100	220
ARSENIC	16	18	24	15	10	160	16	21	7.8	6.3	12	19	15	16	17	640
CADMIUM	4.3	3.5	4.2	4.6	1.5	4.2	3.6	3.7	2.6	3.7	2.8	3.9	2.3	21	2.5	4.2

Contaminant	Restricted Residential SCO mg/kg	SS047					SS051					SS052				
		0 - 1"	1-6"	6-12"	12-18"	18-24"	0 - 1"	1-6"	6-12"	12-18"	18-24"	0 - 1"	1-6"	6-12"	12-18"	18-24"
LEAD	400	250	180	540	250	810	250	330	760	740	540	280	230	920	2800	670
ANTIMONY	1.7*	3.1	1.9	3.0	2.4	5.2	3.0	2.8	5.7	5.2	3.2	3.0	2.3	7.0	5.9	5.7
TIN	3.2*	25	28	37	17	37	26	34	89	62	33	32	22	160	60	66
ARSENIC	16	16	17	9.5	6.8	14	14	18	16	13	11	16	14	25	18	16
CADMIUM	4.3	3.3	2.3	2.3	2.2	1.7	3.6	3.7	5.1	3.2	4.7	3.5	2.5	4	3.4	4.2

	Exceeds SCO < 2X
	Exceeds SCO > 2X
	Exceeds SCO >10X

* These are the lowest concentrations for these chemicals found during the April round of sampling; no SCO assigned

Note: Appears to be a "lead smelter correlation" among values for lead, antimony, and tin: for all depths at SS044 and SS045; below 6 inches at SS046, SS047, SS051, and SS052.

Date: Wednesday, April 22, 2015

From: Marty Rowland Ph.D., P.E., Senior Project Manager for Environmental Remediation
DPR Capital Projects / Environmental Unit

Red Hook Park / US EPA Superfund Program Sampling – April Round

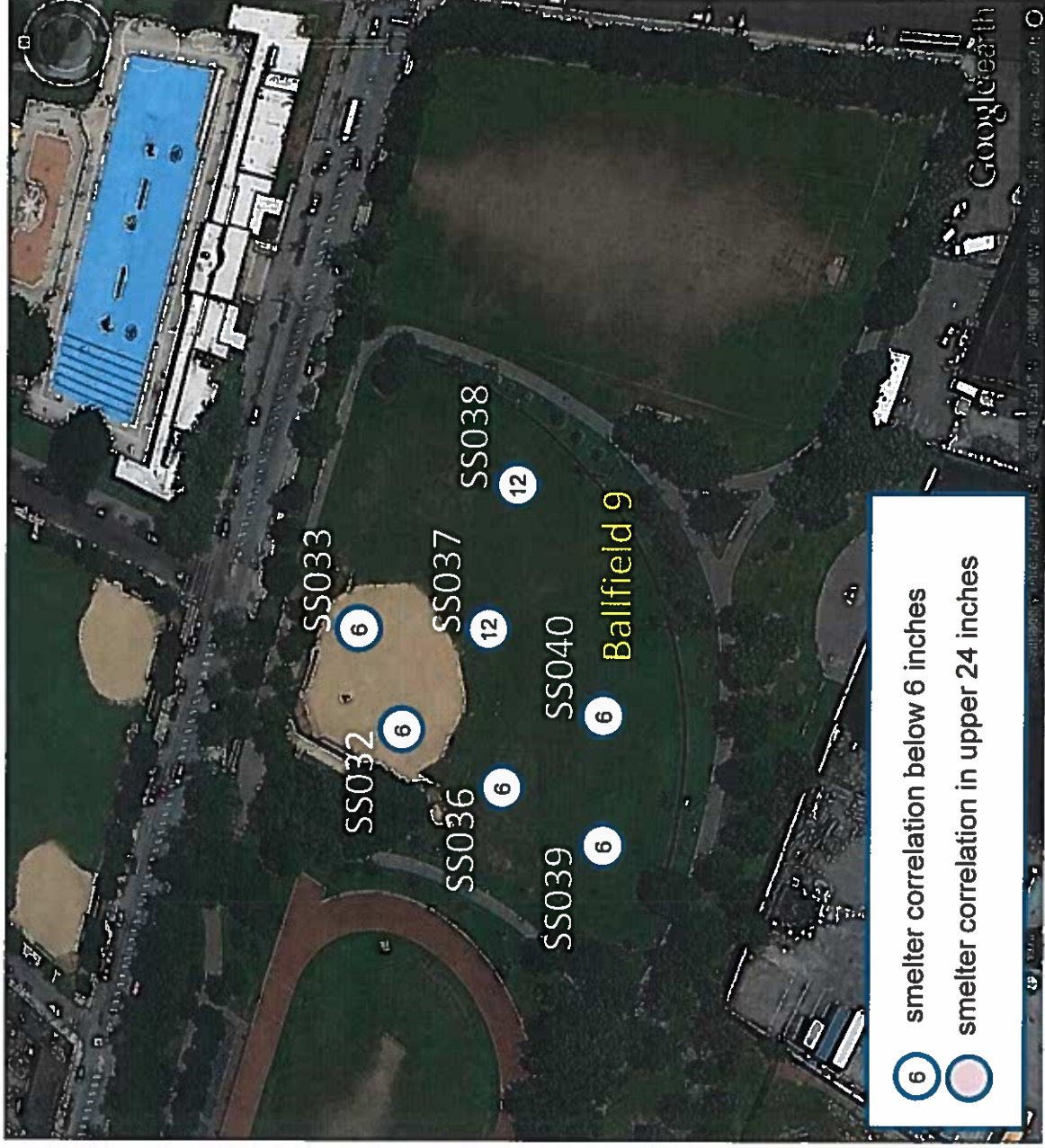
Weather Conditions: Thunderstorms (0.19 inch), 63 degrees F (JFK Airport weather station)

1. Arrived at Ballfield 9 at 7:30 am for sampling locations SS030-SS043.
2. Locations SS032 and SS033 were completed in the morning.
3. Planned to meet Glenn; he had to change plans.
4. Found glass fragment in boring at location SS040; contractor placed it back into the boring upon refilling.
5. Took photos of typical dark brown soil in this area; occasionally there are brick fragments, coal ash, and cinders. See below.
6. Asked Weston's Michael Buethe to limit access to the sampling area as person off street walked up to ask when ballfield could be used (as the Ballfields 5, 6, 7, and 8 were closed).
7. Told Mr. Buethe to leave the field in a condition such that the public could use it after they leave, by removing sample location flags. They marked the locations they did not sample with spray paint, and took GPS coordinates.
8. Left site at 4:30 pm.
9. See attached table for the results for samples collected today: SS032, SS033, SS036, SS037, SS038, SS039, and SS040.

Ballfield 9 – Upper 6 inches moist, dark brown silty sand with organic matter grading to well sorted silty sand with medium to large gravel. Soils between 6 and 12 inches consist of a fill layer of moist, dark brown to gray, poorly sorted, silty sand with large gravel and debris. The soil between 12 and 24 inches is a fill layer with gravel, ash material, and red brick shards.



Typical dark brown soil at Ballfield 9



April 22, 2015 Sampling Event

Test Results for Samples Collected on April 22, 2015 - Red Hook Park

Contaminant	Restricted Residential SCO mg/kg	SS032					SS033					SS036				
		0-1"	1-6"	6-12"	12-18"	18-24"	0-1"	1-6"	6-12"	12-18"	18-24"	0-1"	1-6"	6-12"	12-18"	18-24"
LEAD	400	24	120	680	970	1100	40	320	430	490	450	78	61	420	1200	770
ANTIMONY	1.7*	1.8	1.7	2.9	4.9	12	1.9	12	2.6	3.4	2.9	2.2	1.9	2.6	22	8.0
TIN	3.2*	3.2	14	110	160	200	5	66	49	59	58	7.5	3.2	36	150	180
ARSENIC	16	4.1	5.7	12	15	15	3.7	6.8	11	16	13	10	8.9	13	21	17
CADMIUM	4.3	0.27	0.3	1.6	2.1	2.2	0.28	0.64	1.1	1.3	1.5	0.7	0.58	2.2	3.6	4.1

Contaminant	Restricted Residential SCO mg/kg	SS037					SS038					SS039				
		0-1"	1-6"	6-12"	12-18"	18-24"	0-1"	1-6"	6-12"	12-18"	18-24"	0-1"	1-6"	6-12"	12-18"	18-24"
LEAD	400	120	110	210	830	610	150	140	140	470	390	150	150	1300	1400	1300
ANTIMONY	1.7*	2.1	1.9	2.8	3.8	4.1	2.1	1.8	1.8	2.8	2.9	2.0	1.9	8.4	8.6	18
TIN	3.2*	9.3	5.5	36	130	110	10	6.3	16	60	44	20	15	140	200	360
ARSENIC	16	11	11	14	20	21	9.3	7.4	9.1	15	11	13	12	25	27	22
CADMIUM	4.3	1.6	1.5	3	2.5	1.9	1.2	1.2	2	3.5	2.4	1.1	1	3.6	4.1	6.9

Restricted Residential SCD mg/kg		SS040				
		0-1"	1-6"	6-12"	12-18"	18-24"
Contaminant						
LEAD	400	200	150	810	1400	2300
ANTIMONY	1.7*	2.1	1.9	6.0	10	26
TIN	3.2*	29	14	120	190	340
ARSENIC	16	12	12	17	44	31
CADMIUM	4.3	1.7	1.9	5.5	3.7	9.3

Exceeds SCO < 2X
Exceeds SCO > 2X
Exceeds SCO >10X

* These are the lowest concentrations for these chemicals found during the April round of sampling; no SCO assigned
Note: Appears to be a "lead smelter correlation" among values for lead, antimony, and tin; below six inches for SS032, SS033, SS036, SS039, and SS040; and below one foot for SS037 and SS038.

Date: Thursday, April 23, 2015

From: Marty Rowland Ph.D., P.E., Senior Project Manager for Environmental Remediation
DPR Capital Projects / Environmental Unit

Red Hook Park / US EPA Superfund Program Sampling – April Round

Weather Conditions: Partly cloudy (trace of rain), 54 degrees F (JFK Airport weather station)

1. Arrived at the site (Soccer Field 1) at 7:30 am, at the corner of Court St. and Bay St.
2. Borough Commissioner Jeffrey met with US EPA officials to walk the Ballfields 5, 6, 7, and 8 to assess what areas need additional mulch over bare soils.
3. Gave US EPA permission to drive their vehicles upon the walking paths for the soccer field within the block of Court St., Bay St., and Clinton St. so as to improve the sample collection process.
4. Soil appears to be a natural, with a dark brown color. Infrequently there are brick fragments and ash.
5. Sampling technician said in this area it is typical to have dark brown soil in the upper foot, then ash and brick fragments in the lower foot.
6. Left site at 4:30 pm.
7. See attached table for the results for samples collected today: SS053, SS054, SS055, SS056, SS057, SS058, and SS059.

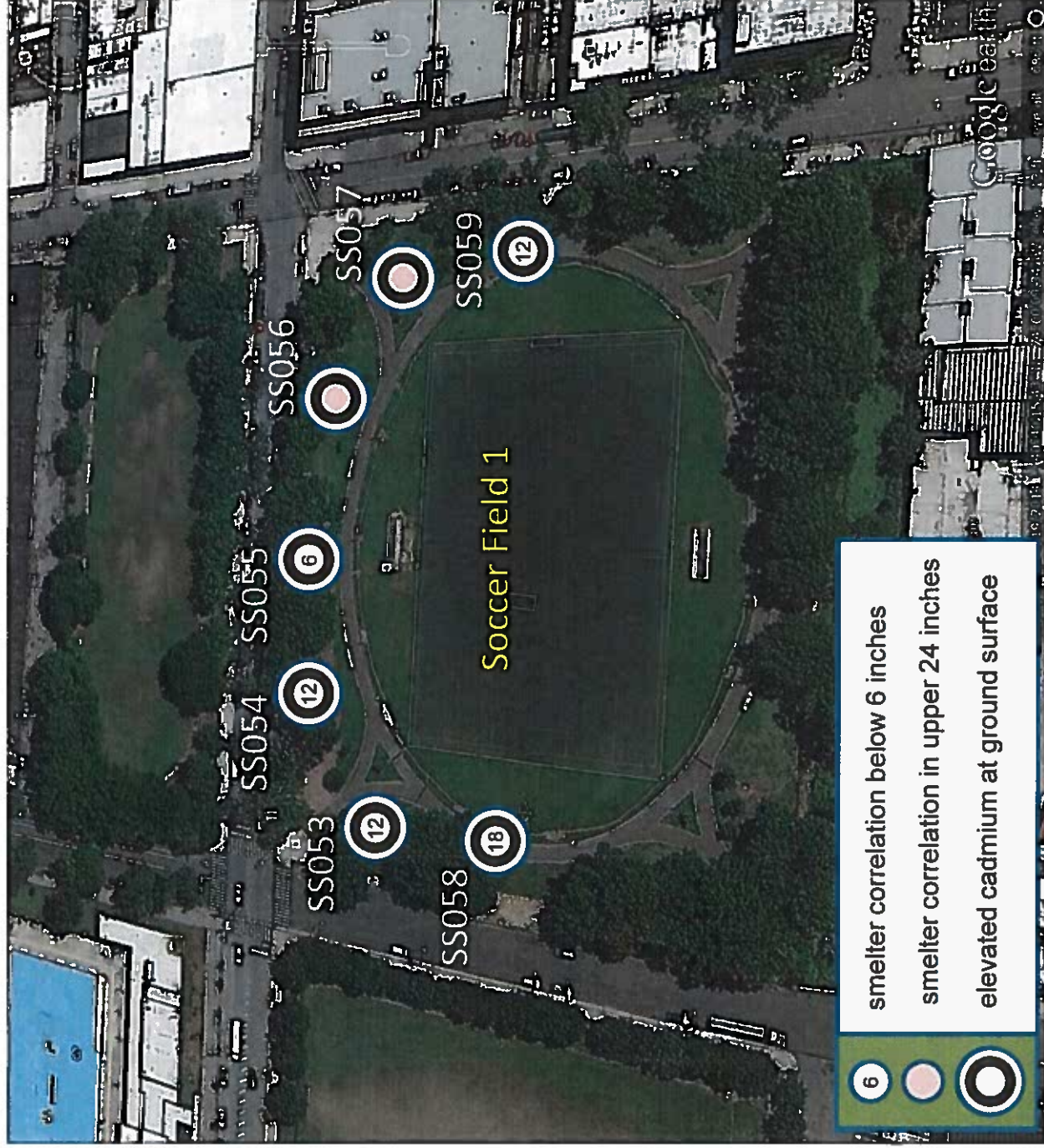
Soccer Field 1 – Upper 6 inches moist, dark brown silty sand with organic matter grading to well sorted silty sand with medium to large gravel. Soils between 6 and 12 inches consist of a fill layer of moist, dark brown to gray, poorly sorted, silty sand with medium to large gravel and debris. The soil between 12 and 24 inches is a fill layer with dark brown to gray, poorly sorted, silty sand with medium to large gravel and suspect slag material.



Location SS055



Margaret Gregor and Natalie Loney of EPA; Charles Gili and Kevin Jeffrey of DPR



April 23, 2015 Sampling Event

Test Results for Samples Collected on April 23, 2015 - Red Hook Park

Contaminant	Restricted Residential SCO mg/kg	SS053					SS054					SS055				
		0-1"	1-6"	6-12"	12-18"	18-24"	0-1"	1-6"	6-12"	12-18"	18-24"	0-1"	1-6"	6-12"	12-18"	18-24"
LEAD	400	430	260	200	570	540	310	200	120	440	460	450	250	530	150	330
ANTIMONY	1.7*	3.3	2.1	1.9	1.8	1.8	2.9	1.7	1.8	11.0	1.8	3.8	2.3	3.8	1.8	3.9
TIN	3.2*	25	11	7.8	14	18	15	5.2	6.9	25	6.7	27	29	15	7.5	18
ARSENIC	16	12	7.9	6.8	7.9	7.2	11	7.9	4.7	390	5.5	13	9.1	35	3.7	92
CADMIUM	4.3	20	13.0	6.2	3.2	3.4	14	8.7	2.4	2.6	1.2	26	14	8	1.2	4.3

Contaminant	Restricted Residential SCO mg/kg	SS056					SS057					SS058				
		0-1"	1-6"	6-12"	12-18"	18-24"	0-1"	1-6"	6-12"	12-18"	18-24"	0-1"	1-6"	6-12"	12-18"	18-24"
LEAD	400	520	390	320	610	560	550	350	420	410	750	370	320	340	290	4000
ANTIMONY	1.7*	5.5	4	2.4	5.3	10	4.1	3.2	2.7	3.4	2.4	2.6	2.4	2.5	2.2	5.7
TIN	3.2*	34	32	18	38	32	38	29	42	61	20	22	23	21	15	95
ARSENIC	16	15	13	10	14	16	13	13	13	14	8.3	17	17	14	18	31
CADMIUM	4.3	37	21	16	10	14	37	21	16	7.4	7.1	24	31	24	11	7.6

Contaminant	Restricted Residential SCO mg/kg	SS059			
		0-1"	1-6"	6-12"	12-18"
LEAD	400	380	280	290	430
ANTIMONY	1.7*	3.9	2.1	1.8	2.5
TIN	3.2*	31	28	26	23
ARSENIC	16	13	11	9.9	11
CADMIUM	4.3	24	21	6.6	18

Exceeds SCO < 2X
Exceeds SCO > 2X
Exceeds SCO > 10X

* These are the lowest concentrations for these chemicals found during the April round of sampling; no SCO assigned
Note: Appears to be a "lead smelter correlation" among values for lead, antimony, and tin; below 6 inches at SS055; below 12 inches at SS053, SS054, and SS059; and below 18 inches at SS058. Cadmium concentrations are elevated at the ground surface at all seven locations.

Date: Friday, April 24, 2015

From: Marty Rowland Ph.D., P.E., Senior Project Manager for Environmental Remediation
DPR Capital Projects / Environmental Unit

Red Hook Park / US EPA Superfund Program Sampling – April Round

Weather Conditions: Partly cloudy, no precipitation, 52 degrees F (JFK Airport weather station)

1. Arrived at the site (Soccer Field 1) at 7:30 am, at the corner of Court St. and Bay St.
2. Noted that soil in location SS060 contained some brick fragments; otherwise it appears to be a rich, organic, dark brown soil.
3. Crew completed their tasks early, leaving at noon. Left site at 12:30 pm.
4. See attached table for the results for samples collected today: SS060, SS061, SS062, SS063, and SS064.

Soccer Field 1 – Upper 6 inches moist, dark brown silty sand with organic matter grading to well sorted silty sand with medium to large gravel. Soils between 6 and 12 inches consist of a fill layer of moist, dark brown to gray, poorly sorted, silty sand with medium to large gravel and debris. The soil between 12 and 24 inches is a fill layer with dark brown to gray, poorly sorted, silty sand with medium to large gravel and suspect slag material.



Location SS061



Location SS061



April 24, 2015 Sampling Event

Test Results for Samples Collected on April 24, 2015 - Red Hook Park

Contaminant	Restricted Residential SCO mg/kg	SS060					SS061					SS062				
		0 - 1"	1-6"	6-12"	12-18"	18-24"	0 - 1"	1-6"	6-12"	12-18"	18-24"	0 - 1"	1-6"	6-12"	12-18"	18-24"
LEAD	400	530	170	170	100	820	250	300	2600	280	260	270	190	100	240	750
ANTIMONY	1.7*	5.3	2.5	25	5.8	12	2.5	1.9	47	1.7	1.8	3.9	1.9	1.9	1.8	1.9
TIN	3.2*	51	8.4	110	17	40	20	28	1000	40	14	24	10	5.2	16	110
ARSENIC	16	17	24	17	14	13	15	11	14	7.6	6.4	12	9.4	9.7	7.0	13
CADMIUM	4.3	290	59	13	4.9	4.6	74	45	10	5.1	4.8	90	52	27	14	9.2

Contaminant	Restricted Residential SCO mg/kg	SS063					SS064				
		0 - 1"	1-6"	6-12"	12-18"	18-24"	0 - 1"	1-6"	6-12"	12-18"	18-24"
LEAD	400	500	5200	360	410	690	510	280	430	480	630
ANTIMONY	1.7*	3.8	3.4	1.8	1.8	2.2	3.5	2.4	1.9	4.9	3.7
TIN	3.2*	34	110	26	11	140	36	22	17	15	53
ARSENIC	16	15	14	11	11	15	13	10	9.4	15	17
CADMIUM	4.3	71	41	15	5.1	14	36	37	19	10	5.2

Exceeds SCO < 2X
Exceeds SCO > 2X
Exceeds SCO >10X

- These are the lowest concentrations for these chemicals found during the April round of sampling; no SCO assigned
- Note: Appears to be a "lead smelter correlation" among values for lead, antimony, and tin at all depths at SS063 and SS064; below 18 inches at SS060 and SS062; but only between 6 and 12 inches at SS061. Cadmium concentrations very high at SS060, SS061, and SS062, and elevated at SS063 and SS064.

Date: Monday, April 27, 2015

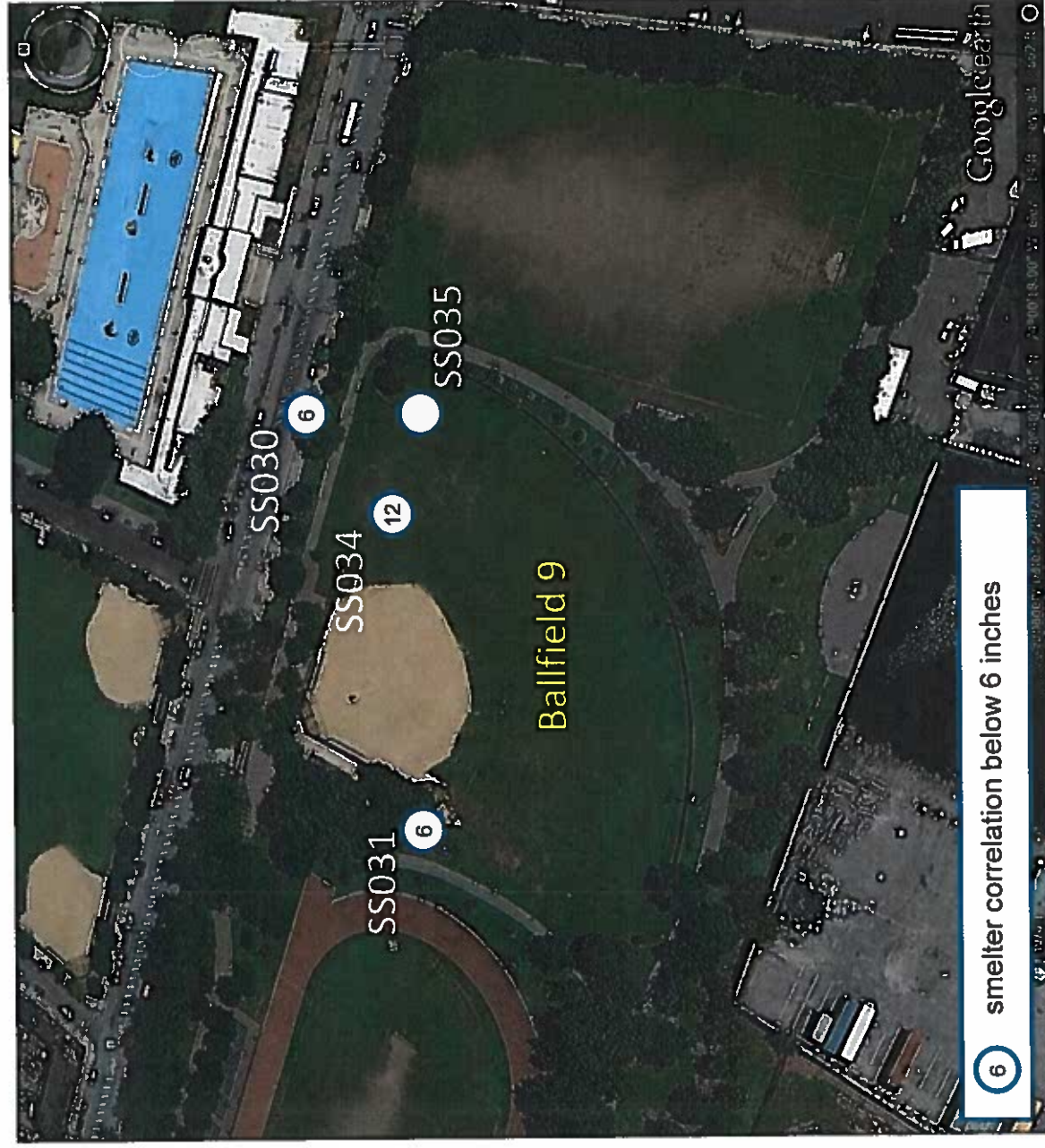
From: Marty Rowland Ph.D., P.E., Senior Project Manager for Environmental Remediation
DPR Capital Projects / Environmental Unit

Red Hook Park / US EPA Superfund Program Sampling – April Round

Weather Conditions: Partly cloudy, no precipitation, 63 degrees F (JFK Airport weather station)

1. Arrived at the site (Ballfield 9) at 7:30 am, at the corner of Henry St. and Bay St.
2. Weston's Michael Beuthe said they are finishing up sampling at Ballfield 9 and a few other scattered locations today and 4/28/15 with a 3-person crew; on 4/29/15, they will be back with a 6-person crew.
3. Left site at 4:30 pm.
4. See attached table for the results for samples collected today: SS030, SS031, SS034, and SS035.

Ballfield 9 – Upper 6 inches moist, dark brown silty sand with organic matter grading to well sorted silty sand with medium to large gravel. Soils between 6 and 12 inches consist of a fill layer of moist, dark brown to gray, poorly sorted, silty sand with large gravel and debris. The soil between 12 and 24 inches is a fill layer with gravel, ash material, and red brick shards.



April 27, 2015 Sampling Event

Test Results for Samples Collected on April 27, 2015 - Red Hook Park

Contaminant	Restricted Residential SCO mg/kg	SS030					SS031					SS034				
		0 - 1"	1-6"	6-12"	12-18"	18-24"	0 - 1"	1-6"	6-12"	12-18"	18-24"	0 - 1"	1-6"	6-12"	12-18"	18-24"
LEAD	400	310	320	540	2100	3500	230	200	1300	1100	2800	170	150	210	460	460
ANTIMONY	1.7*	3.2	2	5.1	9.7	23	2	1.8	12	9.1	13	1.9	1.8	1.8	3.9	2.3
TIN	3.2*	33	27	61	72	770	27	22	340	140	570	8.4	13	18	41	55
ARSENIC	16	13	11	13	22	17	10	8.2	18	21	25	8.5	7.1	9.7	16	12
CADMIUM	4.3	1.8	1	2.1	3.6	3.4	2.4	0.95	3.6	3.2	4.7	1.3	1.2	2.7	3.5	1.7

Contaminant	Restricted Residential SCO mg/kg	SS035				
		0 - 1"	1-6"	6-12"	12-18"	18-24"
LEAD	400	160	140	310	280	300
ANTIMONY	1.7*	1.8	1.8	2.2	2.4	2.8
TIN	3.2*	13	11	20	30	16
ARSENIC	16	10	9.7	10	8.5	9.3
CADMIUM	4.3	1.9	2	2.5	0.9	1.3

Exceeds SCO < 2X
Exceeds SCO > 2X
Exceeds SCO > 10X

* These are the lowest concentrations for these chemicals found during the April round of sampling; no SCO assigned
Note: Appears to be a "lead smelter correlation" among values for lead, antimony, and tin for depths: below 6 inches at SS030 and SS031 and below 12 inches at SS034. SS035 has compliant soil quality.

Date: Tuesday, April 28, 2015

From: Marty Rowland Ph.D., P.E., Senior Project Manager for Environmental Remediation
DPR Capital Projects / Environmental Unit

Red Hook Park / US EPA Superfund Program Sampling – April Round

Weather Conditions: Partly cloudy, no precipitation, 71 degrees F (JFK Airport weather station)

1. I was out of town on this day, so Glenn Aikens represented DPR during the sampling event.
2. Samples were collected at Ballfield 9 and Soccer Field 6
3. See attached table for the results for samples collected today: SS042, SS043, SS068, and SS072.

Ballfield 9 – Upper 6 inches is moist, dark brown silty sand with organic matter grading to well sorted silty sand with medium to large gravel. Soils between 6 and 12 inches consist of a fill layer of moist, dark brown to gray, poorly sorted, silty sand with large gravel and debris. The soil between 12 and 24 inches is a fill layer with gravel, ash material, and red brick shards.

Soccer Field 6 – Upper 12 inches is topsoil consisting of moist, dark brown, fine silty sand, with organic material and gravel. The 12 to 24 inch layer is fill material with moist, dark brown to gray, poorly sorted, silty sand with large gravel and debris. In the 12 to 18 inch depth, the material is 90% gravel. (both descriptions extracted from page 5 of the Weston Solutions, Inc. Final Phase II Soil Sampling Trip Report, Columbia Smelting & Refining Works, dated June 19, 2015 concerning the April round of sampling)



Location SS042



Soil at SS042



Sampling at location SS067



Soil at Location SS071



April 28, 2015 Sampling Event

Test Results for Samples Collected on April 28, 2015 - Red Hook Park

Restricted Residential SCO mg/kg		SS042						SS043						SS068							
		0 - 1"		1-6"		6-12"		12-18"		18-24"		0 - 1"		1-6"		6-12"		12-18"		18-24"	
Contaminant																					
LEAD	400	400	730	820	540	1300	160	89	270	510	580	460	750	550	580	490					
ANTIMONY	1.7*	5.2	7.0	6.2	3.9	7.2	1.9	1.8	1.9	3.2	5.8	4.1	3.3	4.6	4.0	3.8					
TIN	3.2*	68	170	150	98	170	18	6.9	27	48	71	33	95	49	77	65					
ARSENIC	16	12	15	21	21	22	11	9.6	11	14	14	7.8	13	14	16	24					
CADMIUM	4.3	1.5	2.2	3.1	2.9	2.8	0.75	0.4	1.4	2.5	2.4	12	5.6	3.0	2.3	2.2					

Contaminant	Restricted Residential SCO mg/kg	SS072				
		0 - 1"	1-6"	6-12"	12-18"	18-24"
LEAD	400	330	430	1400	450	470
ANTIMONY	1.7*	3.1	3.1	4.2	12	1.9
TIN	3.2*	20	45	93	81	89
ARSENIC	16	7.3	10	13	9.4	12
CADMIUM	4.3	13	5	2.5	1.7	1.1

Exceeds SCO < 2X
Exceeds SCO > 2X
Exceeds SCO > 10X

* These are the lowest concentrations for these chemicals found during the April round of sampling; no SCO assigned
Note: Appears to be a "lead smelter correlation" among values for lead, antimony, and tin for SS042 and SS068 for all depths; for SS072 below six inches; and for SS043 below a foot.

Date: Wednesday, April 29, 2015

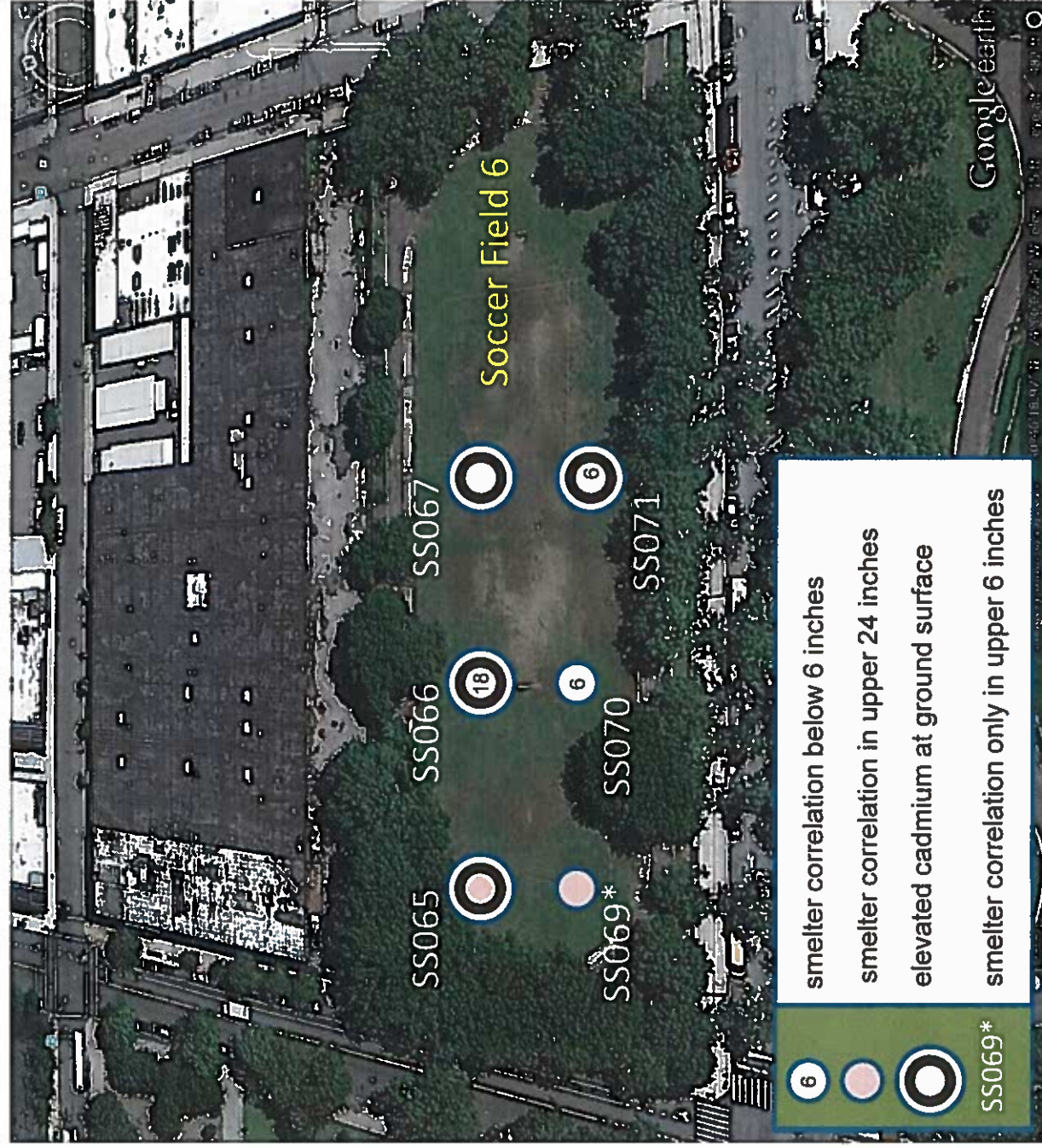
From: Marty Rowland Ph.D., P.E., Senior Project Manager for Environmental Remediation
DPR Capital Projects / Environmental Unit

Red Hook Park / US EPA Superfund Program Sampling – April Round

Weather Conditions: Partly cloudy, no precipitation, 77 degrees F (JFK Airport weather station)

1. I was out of town on this day, so Glenn Aikens represented DPR during the sampling event.
2. Samples were collected at Soccer Field 6
3. See attached table for the results for samples collected today: SS065, SS066, SS067, SS069, SS070, and SS071.

Soccer Field 6 – Upper 12 inches is topsoil consisting of moist, dark brown, fine silty sand, with organic material and gravel. The 12 to 24 inch layer is fill material with moist, dark brown to gray, poorly sorted, silty sand with large gravel and debris. In the 12 to 18 inch depth, the material is 90% gravel.



April 29, 2015 Sampling Event

Test Results for Samples Collected on April 29, 2015 - Red Hook Park

Restricted Residential SCO mg/kg		SS065					SS066					SS067				
		0 - 1"	1-6"	6-12"	12-18"	18-24"	0 - 1"	1-6"	6-12"	12-18"	18-24"	0 - 1"	1-6"	6-12"	12-18"	18-24"
Contaminant																
LEAD	400	330	950	530	520	460	240	300	310	200	790	250	140	230	180	150
ANTIMONY	1.7*	2.4	5.6	2.8	3.4	2.8	2.1	2.4	2.0	1.8	2.1	2.1	1.7	1.7	1.7	1.7
TIN	3.2*	31	150	56	110	72	15	45	35	9.3	43	11	11	12	17	9.9
ARSENIC	16	8.2	7.3	8.1	6.6	7.6	7.8	6.0	2.7	7.6	8.6	7.7	5.4	1.6	4.9	5.1
CADMIUM	4.3	6.6	2.5	1.8	1.4	1.4	4.8	4.4	2.7	4.9	2.5	4.9	4.8	1.5	1.2	1.1

Contaminant	Restricted Residential SCO mg/kg	SS069					SS070					SS071				
		0 - 1"	1-6"	6-12"	12-18"	18-24"	0 - 1"	1-6"	6-12"	12-18"	18-24"	0 - 1"	1-6"	6-12"	12-18"	18-24"
LEAD	400	220	780	280	150	120	170	190	1000	330	1200	180	170	1200	470	260
ANTIMONY	1.7*	2.5	2.3	3.9	1.7	1.7	2.0	1.7	3.7	2.7	32	2.1	1.8	2.4	2.9	1.9
TIN	3.2*	14	22	27	11	8.1	9.3	12	310	30	16	13	11	20	30	16
ARSENIC	16	7.2	6.5	5.7	5.8	4.3	6.9	6.4	10	8.0	5.5	5.8	6.3	9.3	9.8	6.3
CADMIUM	4.3	2.8	1.9	1.7	0.68	0.71	3.9	7.1	3.5	1.8	0.75	4.8	2.3	2.8	2.0	1.4

Exceeds SCO < 2X

Exceeds SCO > 2X

Exceeds SCO > 10X

* These are the lowest concentrations for these chemicals found during the April round of sampling; no SCO assigned

Note: Appears to be a "lead smelter correlation" among values for lead, antimony, and tin for SS065 for all depths; between 1 inch and 6 inches at SS069; below 6 inches at SS070 and SS071; and below 18 inches at SS066.

Cadmium concentrations elevated at the ground surface at SS065, SS066, SS067, and SS071.

Fall 2015 Sampling Plan

In the fall of 2015, the New York City Department of Health and Mental Hygiene (DOHMH) and DPR will be sampling soil at Soccer Field 3 and Ballfields 1, 2, 3, and 4. Appendices 1 and 2 have a map with those locations.

Conclusion

The fourteen days of soil sample collection were completed without incident. The laboratory data confirmed what was expected regarding the presence of lead smelter chemicals at Ballfields 5, 6, 7, and 8 in the entire 24 inches of sampled soils. What was not anticipated was how far away the smelter's impact had reached. DPR now knows the areal extent and depth of the impact of the Columbia Smelting & Refining Works site with respect to Red Hook Parks, except for those areas to be sampled this fall.

Appendix 1

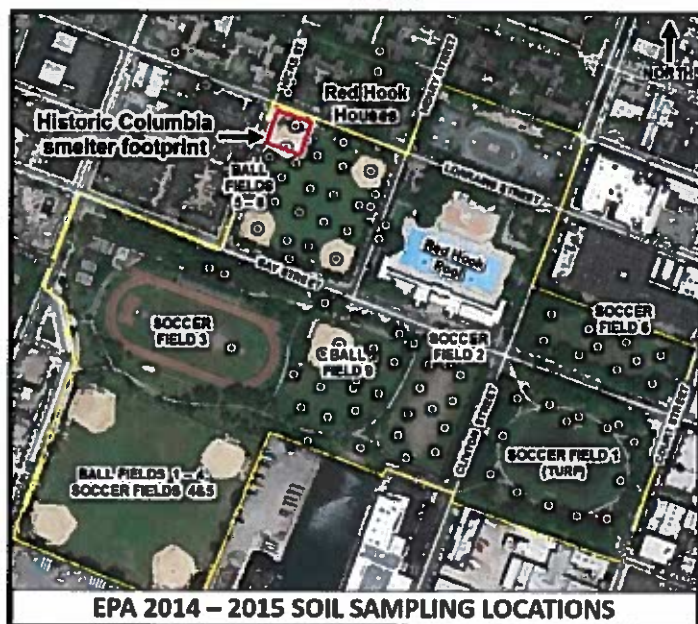
USEPA Community Update No. 4; EPA Investigation of Historic Columbia Lead Facility: Cleanup of Fields Planned



EPA Investigation of Historic Columbia Lead Facility: Cleanup of Fields Planned

Community Update No. 4

July 2015



PUBLIC MEETING:

Wednesday, July 22nd, 6:30 PM – 9:00 PM
Miccio Center Gymnasium
110 West 9th Street, Brooklyn, NY 11231

WHAT IS SECONDARY LEAD SMELTING?

Secondary lead smelting plants refine scrap or used lead materials into metallic lead of a higher purity. Such materials can include the lead plates from batteries, lead pipe or metal sheets that contain lead.

Secondary smelting can be responsible for releasing lead into the surrounding environment through lead fume emissions. Lead dust and smoke can be released during the smelting process, and slag contaminated with lead may be left over after the smelting process.

WHY IS LEAD A PROBLEM?

Lead is a toxic metal that was used for many years in paint and leaded gasoline. Lead poisoning can cause a number of harmful health effects, particularly in children under the age of six.

Exposure to lead in soil can occur when children play in the dirt and put their hands or dusty toys in their mouths. Lead can also get into your body by breathing or swallowing lead dust, or by eating soil containing lead.

WHAT DID THE APRIL 2015 SAMPLING FIND?

In April 2015, as part of a continued investigation of the historic secondary lead smelter known as Columbia Smelting and Refining Works (Columbia), the U.S. Environmental Protection Agency (EPA) collected soil samples from Ball Field 9, Soccer Fields 1, 2 and 6 and surrounding areas within Red Hook Park. The purpose was to determine if any of these fields have been contaminated with lead from the historic Columbia facility, which operated in the 1920s and 1930s.

The results showed that lead levels at these four fields are much lower than those at Ball Fields 5, 6, 7 and 8, which were closed due to lead contamination from the Columbia facility. Lead levels at Ball Field 9 and Soccer Fields 1, 2 and 6 are not an immediate health concern and closure of these fields is not required at this time; however, the New York City Department of Parks and Recreation (NYC Parks) will be closing some areas surrounding Soccer Field 1 as a precaution. Because some of the lead levels several inches below the surface of these four fields are above health-based standards, a cleanup is necessary in the long term. In addition, NYC Parks and the NYC Department of Health and Mental Hygiene will be sampling soil in the remaining areas of the park (Soccer Field 3, and Ball Fields 1, 2, 3 and 4 and the surrounding areas) in Fall 2015.

WHO WILL CONDUCT THE CLEANUP AND WHEN?

NYC Parks will be remediating Ball Fields 5, 6, 7, 8 and 9, where the lead is from the Columbia facility, under EPA oversight. Because this is a large construction project, planning for and engineering the cleanup will take more than a year. To reduce disturbing athletic schedules, Ball Fields 5 through 8 will be remediated first, and once they are open again, Ball Field 9 will be cleaned up. The entire project may take several years to complete.

NYC Parks will also be remediating Soccer Fields 1, 2 and 6 over the next several years, where lead contamination is believed to be from historic fill material, not from the historic Columbia facility. The

If you would like information about the site please contact:

Natalie Loney
U.S. EPA
Community Involvement
Coordinator
(212) 637-3639
Toll Free: (800) 346-5009
loney.natalie@epa.gov

If you would like information on other environmental concerns or the Superfund hazardous waste program contact:

George Zachos
U.S. EPA
Regional Public Liaison
(732) 321-6621
Toll Free: (888) 283-7626
zachos.george@epa.gov

Visit the EPA's website at:
www.epa.gov/region2/superfund/removal/columbia

fill was added in the 1800s to expand the ground surface towards the Gowanus Bay, since this area of Red Hook was originally a tidal marsh.

CLEANUP PLANS

NYC Parks will clean up Ball Fields 5, 6, 7, 8 and 9 under EPA oversight by first removing all park features such as fencing, curbing and other structures, adding a layer of plastic sheeting then covering it with one foot of clean soil over the entire area. The baseball diamonds, grass cover, fencing, walkways, and associated structures will then be reinstalled. Controls will be put in place to make sure the public is not exposed to any contaminants during construction. This cleanup method will permanently eliminate public contact with contaminants by isolating them under the plastic sheeting and one foot of clean soil. This will also serve to prevent any future spread of contaminated soils from these ball fields. The layer of clean soil will then be monitored and inspected over the years.

NYC Parks is in the process of planning the renovation of Soccer Fields 1, 2 and 6, including securing funding, setting a time frame and choosing a method, which may include installation of artificial turf. Any actions for the remaining areas of the park, including Soccer Field 3 and Ball Fields 1 through 4, will be determined once sampling results come back.

HOW WILL I GET UPDATES AND THE RESULTS OF THE INVESTIGATION?

EPA and NYC Parks will provide updates on the status of the additional sampling and cleanup efforts to the community in various ways, including fact sheets, letters to park users, updates to the website, and public information sessions where EPA and NYC Parks will be available to present plans and answer questions. The next public meeting will be held on July 22nd.

EPA also plans to establish an Information Repository at the Red Hook Branch of the Brooklyn Public Library where the public can review and copy records related to EPA's investigation and the cleanup of Ball Fields 5 through 9.

SIMPLE STEPS TO REDUCE YOUR LEAD EXPOSURE

The following steps are recommended to reduce your potential exposure to lead contamination that may be present in urban soils.

- Remove shoes at the door before entering your home to prevent tracking in any dirt that may be on your shoes. Clean the bottom of your shoes with a wet wipe or paper towel.
- Wash your hands and face after visiting these ball fields and always before eating, drinking, or smoking.
- Avoid digging into or disturbing soil below the surface of the ball fields.

Appendix 2

USEPA Presentation at Public Meeting; July 22, 2015



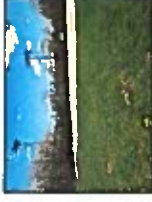
Columbia Smelting & Refining Works Site

Margaret Gregor, US EPA On-Scene Coordinator
July 22, 2015 Public Information Session



KEY MESSAGES

- EPA received the last round of results for the 2014-2015 investigation of lead smelter contamination at the fields; lead levels lower than those on Ball Fields 5-8
- Under EPA oversight, NYC Parks will be conducting a removal action (cleanup) at Red Hook Ball Fields 5, 6, 7, 8 **and** 9 to protect public health from lead smelter contamination in the long term
 - Ball Fields 5-8 will stay closed until removal action is complete
 - Ball Field 9 will stay open until Ball Fields 5-8 reopen
- The entire project will take several years to complete
- EPA and NYC Parks will begin planning the cleanup for Ball Fields 5-9 in the near future, and will keep you updated
- NYC Parks will address remaining fields in the park separately; additional sampling and remedial measures planned, but only limited closures around Soccer Field 1 planned





OVERVIEW

- Site history & background
- Overview of EPA investigation & results
 - Three soil sampling events:
 - October 2014
 - March 2015
 - April 2015
- Cleanup plans
- Cleanup process & next steps
- Q&A



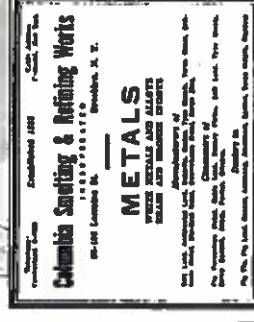
SITE HISTORY

- Late 1920s-late 1930s: secondary smelter
- 1929-1939: Smelting companies, including Columbia Smelting & Refining Works
- 1939-1940: Building demolished, block vacant
- 1940s: Baseball diamonds built

On-site operations

- Smelting = refining of scrap or used lead materials into metallic lead of a higher purity
 - Lead plates from batteries
 - Lead pipes and cables
 - Metal sheets containing lead
- Various metals utilized & manufactured:
 - white metals and alloys, brass and bronze ingots, other metals including several containing high lead concentrations

1938



1931



SECONDARY SMELTING & LEAD EXPOSURE

1920s - late 1930s: Secondary smelting on-site

- Releases lead into surrounding environment
 - Lead dust and fumes released during smelting process; carried by wind
 - Lead contaminated waste may be left over after smelting process



Lead Exposure

- Once lead is in the soil, it stays there
- Exposure occurs from:
 - Touching lead-contaminated soil, then accidentally ingesting it
 - Kids putting dirty toys in their mouths
 - Inhalation of lead dust
- Children are more sensitive to the health effects, which include neurological symptoms



Typical secondary smelter.
(Source: EPA 1984)



RED HOOK PARK with field numbers



Wind Rose:



Predominant
Wind Direction:





2012 ACTIONS: NYC PARKS & HEALTH DEPARTMENTS

- February 2012:
 - NYC Parks and NYC Health tested soil for lead (7 samples)
 - Elevated lead levels detected
- Remedial Actions (Feb./Mar. 2012):
 - 1" of clean clay added to all infields
 - Excavated & paved over Henry Street entrance, where there were high lead levels
 - Wood chips added to bare soil areas
 - Park closed for 4-6 weeks for hydroseeding and grass growth
- Grass cover and clay infill helped to reduce exposure to lead in the soil



HOW DID EPA GET INVOLVED?

- January 2014
 - NYSDEC had been reviewing part of a nationwide portfolio of potential historic smelter sites
 - Referred Columbia Smelting & Refining Works Site to EPA along with 39 other sites throughout New York state
 - *Independent from NYC Parks' 2012 investigation*
- Winter through Summer 2014
 - EPA reviewed site history, all background information, previous sampling results
 - EPA decided to sample this site along with other former smelter locations
- October 2014
 - First round of EPA soil sampling





EPA SOIL SAMPLING PROCESS



5 depth intervals
per location:

- 0-1"
- 1-6"
- 6-12"
- 12-18"
- 18-24"



EPA SOIL SAMPLING PROCESS





OCTOBER 2014 EPA SOIL SAMPLING

LOCATIONS (16)

- Included Red Hook East Houses
- 82 samples (5 depths per location)

RESULTS

- Elevated lead at Ball Fields #5-8 related to Columbia; Parks conducted maintenance
 - Ratios of certain metals (antimony, tin, zinc, iron, copper) are characteristic of smelter emissions
- Lead found at Red Hook East Houses and Bay Street picnic area – unrelated to Columbia facility
 - Not an imminent health concern
 - No further EPA investigation
 - Results provided to property owners
- EPA determined that removal action (cleanup) is required in the long term
- Additional sampling needed to determine extent of release on ball fields & downwind



MARCH 2015 EPA SOIL SAMPLING

LOCATIONS (29)

- To better define extent of impact from Columbia
- 153 samples (5 depths per location)

RESULTS

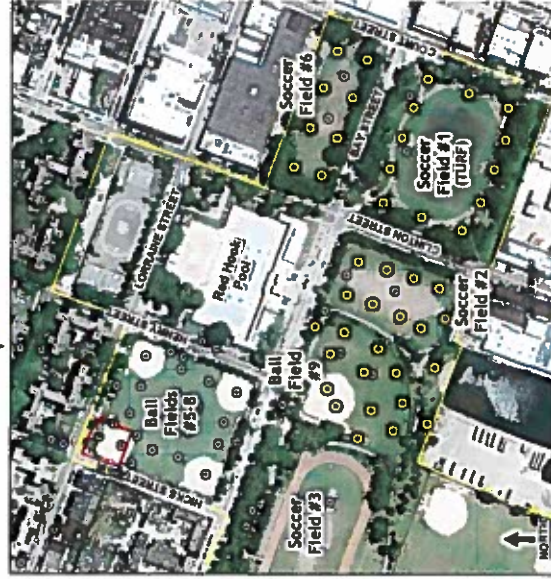
- Lead was found at Ball Fields 5-8 at levels much higher than expected
 - 400 parts per million (ppm) = EPA & NYSDEC standard
 - 1,200 ppm = acute risk
 - Averages on Ball Fields 5-8 = 1,580 ppm in top inch, 2,240 to 3,795 ppm in subsurface
- Closure of Ball Fields #5-8 announced April/May 2015; fencing & signs added



- Lead at Soccer Field 3 in subsurface unrelated to smelter
- More comprehensive sampling was needed in the other downwind fields



APRIL 2015 EPA SOIL SAMPLING



- LOCATIONS (43)** 
- Refined March 2015 data set at downwind fields
 - Ball Field 9
 - Soccer Fields 1, 2 and 6
 - Completed delineation of areas downwind of Columbia facility with potential to be impacted
 - 225 samples (5 depths per location)
 - April 20-29, 2015



APRIL 2015 EPA SOIL SAMPLING RESULTS

- Overall, much lower lead levels than those on Ball Fields #5-8
- Several other metals found at elevated levels, but all besides cadmium are beneath 6"
 - Some elevated cadmium levels at surface surrounding portions of Soccer Field 1
 - NYC Parks added permeable barrier, mulch and fencing to eliminate exposure
 - Lead & other contaminants either covered or not an immediate health threat since they are beneath 6"
- **EPA recommendations:**
Remediation of these four fields in the long term + sampling of remaining fields in short term

DEPTH	BALL FIELDS 5-8		SURROUNDING		BALL		SOCCER		SOCCER		SOCCER		SOCCER	
	FIELD 5	FIELD 8	BALL FIELD 5	BALL FIELD 8	FIELD 9	FIELD 10	FIELD 11	FIELD 12	FIELD 13	FIELD 14	FIELD 15	FIELD 16	FIELD 17	FIELD 18
SURFACE	1-1"	1-1"	264	264	140	140	215	215	474	474	254	254	367	367
1-6"	1-6"	1-6"	354	354	179	179	308	308	387	387	367	367	367	367
6-12"	6-12"	6-12"	756	756	698	698	618	618	496	496	387	387	387	387
12-18"	12-18"	12-18"	1,184	1,184	1,209	1,209	875	875	369	369	387	387	387	387
18-24"	18-24"	18-24"	1,430	1,430	1,222	1,222	1,431	1,431	781	781	487	487	487	487





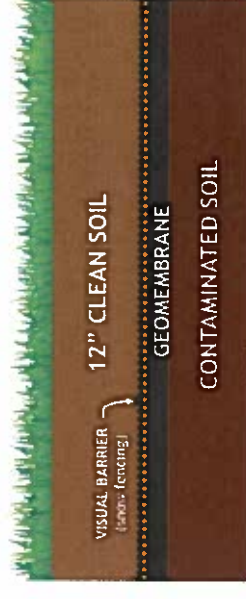
ANALYSIS OF SOIL SAMPLING RESULTS

- Lead and other contaminants found at Soccer Fields 1, 2, 6 unrelated to Columbia; likely due to historic fill
- Not part of EPA removal action*
- EPA recommended sampling of remaining areas of park
- Lead found at Ball Field 9 is related to the historic Columbia facility
 - Eligible for EPA removal action**
- EPA & NYC Parks are planning for NYC Parks to conduct cleanup of Ball Fields 5, 6, 7, 8 and 9 under EPA oversight



CLEANUP PLANS: BALL FIELDS 5-9

- 12" barrier of clean soil required by EPA and NYSDEC over areas impacted by smelter**
 - Imported soil will be tested; all aspects of cleanup will meet EPA, NYC Parks, NYC Health, NYSDEC, and NYSDOH regulations
- NYC Parks may propose turf or "capping" to achieve 12" barrier over all five ball fields**
 - Cap would include demarcation layer: thick plastic (geotextile membrane) and visual barrier
 - Prevents storm water runoff from entering contaminated soil, and prevents contaminated soil from moving
 - Isolates contaminants permanently
- All park features will need to be removed & reinstalled**
 - Ball field features (curbs, fencing, fountains, benches, etc.)
 - Utilities, possibly sidewalks & trees
- Requires significant engineering effort**





CLEANUP PROCESS: BALL FIELDS 5-9

STAGGERING OF CLEANUP TO MINIMIZE DISRUPTION

- Ball Fields 5-8 will be cleaned up first
- Ball Field 9 will stay open from now until Ball Fields 5-8 reopen, and then will be closed for cleanup

OVERALL CLEANUP PROCESS

- EPA and NYC Parks to agree on work to be conducted (by Fall 2015)
- NYC Parks to complete design/engineering documents and construction drawings
- EPA to review and approve design
- NYC Parks to procure construction contractor; EPA to approve
- Construction of Ball Fields 5-8 to be completed
- Sod knitting & maintenance following construction
 - Must be done in Springtime
- Construction of Ball Field 9 to be completed
- Sod knitting & maintenance of Ball Field 9 (Springtime)
- Final inspections and submittal of easement to NYSDEC



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COMMUNITY INVOLVEMENT

COMMUNITY INVOLVEMENT PLAN

- Public document for the community that discusses:
 - Site history and background
 - Community issues and concerns
 - Community involvement action plan - methods for communicating with EPA
- Incorporates community concerns captured during EPA's interviews with community members
- Comments on Community Involvement Plan welcome:
 - Natalie Loney, EPA Community Involvement Coordinator: Loney.Natalie@epa.gov, 212-367-3639
 - Margaret Gregor, EPA On-Scene Coordinator: Gregor.Margaret@epa.gov, 732-321-4424



COMMUNITY UPDATES

- Public meetings, periodic fact sheets, Mailing List
- Website updates: <http://www.epa.gov/region2/superfund/removal/columbia/>

INFORMATION REPOSITORY

- Red Hook Library, 7 Wolcott Street (at Dwight Street), Red Hook (718-935-0203)
- Will contain technical record supporting cleanup decision (Administrative Record) and other documents (i.e., Community Involvement Plan)

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KEY POINTS

- NYC Parks will conduct the removal action at Ball Fields 5, 6, 7, 8 and 9 under EPA oversight
 - Ball Fields 5-8 will remain closed until cleanup is completed
 - Ball Field 9 will stay open until Ball Fields 5-8 reopen
- NYC Parks will address Soccer Fields 1, 2 and 6, and will be sampling Soccer Fields 3, 4 and 5 and Ball Fields 1, 2, 3 and 4
- EPA and NYC Parks are working together to protect public health
- Updates will be provided as the investigation and planning for the cleanup progresses



QUESTIONS?



1430 Broadway
10th Floor
New York, NY 10018

212.221.7822 PHONE
212.221.7840 FAX

www.TRCSolutions.com

March 6, 2017

Ms. Kay Zias
Director of Environmental Remediation
Capital Projects Division
City of New York, Parks & Recreation
Olmsted Center, Annex
Flushing Meadows-Corona Park
Flushing, New York 11368

**Re: Limited Geotechnical, Soil, and Groundwater Sampling Report
Red Hook Ball Field 9
DPR Project Registration No.: 20167201456-00002, Project Contract No.: B126-117M
EPIN No.: 84614P0001002, TRC Project No.: 246184.1000**

Dear Ms. Zias:

This letter report presents the results of the limited geotechnical testing and associated soil and groundwater sampling and laboratory analysis performed on December 19 through December 22, 2016 and December 27, 2016 as part of the Environmental Engineering Services for the Remediation and Reconstruction of Ball Field 9, bounded by Bay Street, Soccer Field 2, Halleck Street, and the track surrounding Soccer Field 3 in the Red Hook Recreation Area, Borough of Brooklyn, New York (the "Site"). The limited geotechnical, soil and groundwater testing was performed to provide data in support of the design of green infrastructure for the management of stormwater runoff that will be included as part of the reconstruction of the Site.

The investigation was performed in general accordance with the Geotechnical and Subsurface Investigation Work Plan dated December 6, 2016 and Quality Assurance Project Plan (QAPP) dated December 2016. Additionally, the work was performed in general accordance with the *New York City Department of Environmental Protection Office of Green Infrastructure Limited Geotechnical Investigation Procedures for On-Site Green Infrastructure Practices* (NYCDEP Procedure) dated November 2016.

Site Description and Background

The Site is located south of Bay Street, west of Soccer Field 2, north of Halleck Street, and east of the track surrounding Soccer Field 3 in Brooklyn, New York and consists of Ball Field 9 and the Ball Field 9 planting strips and sidewalk adjacent to the planting strips, collectively herein referred to as Ball Field 9 and which are part of the Red Hook Recreation Area. Figure 1 presents a Site Location Map. The Site consists of a 3.4-acre portion of the 58-acre Red Hook Recreation Area Park. The Site is designated as portions of Block 614, Lot 300 and Block 602, Lot 1.

The Site is adjacent to the block which included the former Columbia Smelting & Refining Works (Columbia) facility, a secondary lead smelter which was historically located within Ball Field 7 (north of the Site) of Red Hook Recreation Area. Historic references indicate that the facility manufactured soft lead, antimonial lead, Babbitts, solder, type metals, terse metal, Britannia metal, die-cast metal, unbreakable metal, and rerun zinc;

consumed pig percentage metal, cable lead, battery plates, soft lead, type metals, Babbitt, joists, pewter and dresses; and dealt in pig tin, pig lead, copper, antimony, aluminum, spelter, scrap metals and residues.

The EPA Removal Action Branch conducted a Removal Site Evaluation for the Columbia Site when it was referred to EPA by NYSDEC. In 2015, soil sampling was conducted at the Site and its surroundings by EPA and its contractor, Weston Solutions, Inc. The sampling areas included Ball Field 9 and the Ball Field 9 Planting Strips. The sampling was conducted in March 2015 and April 2015. Lead, antimony, arsenic, and iron were detected at levels above New York State Department of Environmental Conservation (NYSDEC) Restricted Residential Use Soil Cleanup Objectives (RRUSCOs) and above EPA Removal Management Levels (RMLs) in soil samples collected at depths greater than 6 inches below ground surface within Ball Field 9 and/or Ball Field 9 planting strips. Based on the correlations between concentrations of antimony, lead, and tin, EPA determined that the contaminants present within Ball Fields 5, 6, 7, 8, and 9 are the result of a release from the historic Columbia facility. EPA determined that a removal action is required in these areas.

As a result of these investigations, the City of New York Department of Parks and Recreation (DPR) entered into an Administrative Settlement Agreement and Order on Consent for a Removal Action (United States Environmental Protection Agency [EPA] Index No. CERCLA 02-2016-2010), referred to henceforth as the “Settlement Agreement,” with the EPA.

The Settlement Agreement requires a removal action at Ball Field 9 and the surrounding Planting Strips (as well as Ball Fields 5 through 8, which are being addressed through a separate phase of the removal action). The purpose of the removal action is to mitigate the threats posed by Site-related contaminants to public health or welfare. As indicated within Article VIII, Paragraph 23 of the Settlement Agreement, the removal action will include placement of a demarcation layer and at least 12 inches of material or alternate clean cover approved by EPA over existing contaminated soils. This limited geotechnical, soil, and groundwater sampling investigation was performed primarily to assess the conditions of the Site in advance of construction of a site-wide cover and support the design of the cover system, synthetic turf, and drainage infrastructure options.

Investigation Activities

The limited geotechnical testing and soil and groundwater sampling field activities were performed from December 19 through December 22, 2016 and December 27, 2016 by TRC and its subcontractors. Ms. Rachel Adams, TRC Environmental Scientist, performed the work and oversaw the field activities. The scope of TRC’s field activities are described below. Land, Air, Water, Environmental, Services, Inc. (LAWES), under subcontract to TRC, performed drilling services. Additionally, Oweis Engineering, Inc. (Oweis), under subcontract to TRC, performed a geotechnical investigation of the Site concurrent to TRC performing soil and groundwater sampling and infiltration testing. The results of the Oweis geotechnical investigation were presented separately in Oweis’ Geotechnical Report for Red Hook Ballfield 9 and Soccer Field 2 dated February 10, 2017.

As part of the investigation activities, two soil borings were completed at four locations designated as RHBF9-01, RHBF9-02, RHBF9-03, and RHBF9-04, for a total of eight (8) borings. Of the boring pairs, from the first boring, relative density testing, soil and groundwater sampling, and geotechnical investigation activities were performed. Permeability testing was performed at the second boring, which was a minimum of 25 feet from the corresponding coupled borehole at each of the four locations. Figure 2 shows the



approximate boring locations. The borings were advanced using direct-push drilling methods, via a track-mounted Geoprobe® drill rig.

Soil and Groundwater Sampling

Soil samples were collected continuously from the ground surface to a depth between 22 to 32 feet bgs as directed by Oweis for their geotechnical investigation (see *Limited Geotechnical Testing* below). Following the collection of soil samples, one boring at each location (four borings total) was converted to a temporary well point for collection of a groundwater sample. The temporary well points consisted of 1-inch diameter polyvinyl chloride (PVC) well screens and casings.

Each soil sample was screened by TRC for organic vapors with a portable photoionization detector (PID) and physical and geologic descriptions of the soils and field observations (e.g., staining, odors, etc.) along with PID screening results were logged by Oweis' geotechnical engineer. The soil boring logs completed by Oweis are presented in Appendix A. No evidence of contamination (i.e., PID readings, odor, staining, etc.) was identified in any of the borings. A total of 13 soil samples, including one blind duplicate, were collected in accordance with the project QAPP and submitted for laboratory chemical analysis. The samples submitted for laboratory chemical analysis were collected at the locations and intervals identified in the table below for the following parameters: Title 6 of the New York Codes, Rules and Regulations (6 NYCRR) Part 375-6 semivolatile organic compounds (SVOCs), 6 NYCRR Part 375-6 pesticides, 6 NYCRR Part 375-6 silvex (a herbicide), Target Compound List (TCL) polychlorinated biphenyls (PCBs), and Target Analyte List (TAL) metals plus mercury, hexavalent chromium, tin and total cyanide. No PID readings were measured above background during screening of the soil samples. Accordingly, soil samples were not analyzed for volatile organic compounds (VOCs).

Groundwater sampling was conducted in accordance with United States Environmental Protection Agency (USEPA) low-flow sampling procedures and project QAPP. The completed groundwater purge and sampling logs are presented in Appendix B. A total of five groundwater samples, including one blind duplicate, were collected and submitted for laboratory analysis for the following parameters: 6 NYCRR Part 375-6 SVOCs, 6 NYCRR Part 375-6 pesticides, 6 NYCRR Part 375-6 herbicides, TCL PCBs, TAL metals (total and dissolved) plus mercury, hexavalent chromium, tin, and total cyanide. PID readings throughout the depth of each boring and the groundwater and soil samples collected are summarized in table below.

Soil and Groundwater Sample Collection Summary						
Soil Sample ID No.	Depth Sample Collected (ft. bgs)	Groundwater Sample ID No.	Approximate Ground Surface Elevation (EL) (NAVD 88) ¹	Depth of Observed Groundwater (feet bgs)/ EL (NAVD 88)	PID Reading (ppm)	Sample Collection Date
RHBF9-01(2-4')	2 - 4	RHBF9-01	EL 12.87 ft.	11.70 ft. bgs/ EL – 1.17 ft.	ND	12/22/16
RHBF9-01(5-7')	5 - 7				ND	
RHBF9-01(8-10')	8 - 10				ND	
RHBF9-02(2-4')	2 - 4	RHBF9-02	EL 12.20 ft.	9.70 ft. bgs/ EL – 2.50 ft.	ND	12/27/16
RHBF9-02(5-7')	5 - 7				ND	
RHBF9-02(8-10')	8 - 10				ND	
RHBF9-03(2-4')	2 - 4	RHBF9-03	EL 13.50 ft.	12.12 ft. bgs/ EL – 1.38 ft.	ND	12/27/16
RHBF9-03(5-7')	5 - 7				ND	
RHBF9-03(8-10')	8 - 10				ND	



Soil and Groundwater Sample Collection Summary						
Soil Sample ID No.	Depth Sample Collected (ft. bgs)	Groundwater Sample ID No.	Approximate Ground Surface Elevation (EL) (NAVD 88) ¹	Depth of Observed Groundwater (feet bgs)/ EL (NAVD 88)	PID Reading (ppm)	Sample Collection Date
RHBF9-04(2-4')	2 - 4	RHBF9-04	EL 11.10 ft.	10.91 ft. bgs/ EL – 0.19 ft.	ND	12/27/16
RHBF9-04(5-7')	5 - 7				ND	
RHBF9-04(8-10')	8 - 10				ND	

Notes:

Ft. – feet, bgs – below ground surface, ppm – parts per million, ND – not detected

¹ – Elevation in North American Vertical Datum of 1988 (NAVD 88). Ground surface elevation based on Site survey conducted by Munoz Engineering, P.C. on December 23, 2016.

The soil and groundwater samples were collected and containerized in accordance with the project QAPP and NYSDEC/USEPA protocols. Each container was properly labeled, preserved, and placed in a cooler for transport via courier to SGS Accutest of Dayton, New Jersey. Standard chain-of-custody procedures were followed. SGS Accutest is a New York State Department of Health Environmental Laboratory Approval Program (ELAP)-certified analytical laboratory for the specified soil and groundwater sample analyses.

Limited Geotechnical Testing

Limited geotechnical tests were performed in accordance with the *New York City Department of Environmental Protection Office of Green Infrastructure Limited Geotechnical Investigation Procedures for On-Site Green Infrastructure Practices* (NYCDEP Procedure) dated November 2016. The ability of soil to allow groundwater to infiltrate can be estimated from three measurable parameters (i.e., relative density, permeability, and grain size) and correlated to standardized conclusions.

Relative density of a soil is the ratio of the difference between the void ratios of a soil in its loosest state and existing natural state to the difference between its void ratio in the loosest and densest states. In general, soil with a higher relative density allows groundwater to infiltrate more slowly than soil with a lower relative density. Relative density is determined by using the Standard Penetration Resistance (N-value), which is calculated by performing a Standard Penetration Test (SPT) by adding the blow counts required to advance the direct push hammer the second and third 6-inch interval within the 2-foot split-spoon sample. Blow counts were recorded by Oweis as part of their geotechnical investigation. The N-value is correlated to relative density by utilizing the table included in GG Meyerhof's Penetration Tests and Bearing Capacity of Cohesionless Soils published in the Journal of the Soil Mechanics and Foundations Division in 1956.

Permeability was determined at each boring by performing a falling head in-situ permeability test (PT). The test included advancing a 4-inch inner-diameter steel casing with a direct-push, track-mounted drill rig to the required test depth and removing the soils from within the casing. An approximately 6-inch thick layer of coarse sand was placed at the bottom of the casing and then saturated with clean water for a minimum of 30 minutes. The casing was then filled to the top with clean water and the temperature of the water was measured and recorded. TRC recorded the distance the water level fell in the casing at 1, 2, 3, 4, 5, 10, and 15 minutes after the beginning of each test. At the conclusion of the initial test, TRC's on-site engineer filled the casing to the top with clean water for 5 minutes and performed an additional falling head test prior to either advancing the casing and performing the test at the next depth or abandoning the boring. Refer to Appendix C for completed permeability test logs.



The mean permeability coefficient for each PT location was calculated based on temperature of the water and the results of the falling head in-situ PT. The permeability coefficient was then correlated to a saturated hydraulic conductivity class (e.g., low, moderately low, etc.) using the United States Department of Agriculture (USDA) and Natural Resources Conservation Service (NRCS) table within Part 618.58 of the National Soil Survey Handbook.

Grain size analysis is integral in the classification of soils utilizing the Unified Soil Classification System (USCS). In general, soils with higher percentages of fines (i.e., material passing the No. 200 sieve [0.075 millimeter opening]) allow groundwater to infiltrate slower than soils with lower percentages of fines. Grain size sampling and analysis were performed by Oweis as part of the geotechnical investigation. Five additional grain size analysis samples were submitted to the laboratory for analysis by TRC. The table below presents the infiltration testing sample depths and general description of soils observed.

Infiltration Testing Sample Collection Summary			
Infiltration Test Boring ID No.	Depth of Infiltration Test(s) (ft. bgs)	Depth of Observed Groundwater (ft. bgs)/ Elevation (NAVD 88)	Description of Soil ¹
RHBF9-01	3 6 10	11.70 ft. bgs/ EL -1.17 ft.	Brown medium to fine SAND, some medium to fine Gravel, trace to little Silt. Fill consisting of brick, concrete, glass, asphalt observed to 19 feet bgs.
RHBF9-02	3 6 10	9.70 ft. bgs/ EL - 2.50 ft.	Light brown to brown fine to coarse SAND, some fine to coarse Gravel, trace Silt. Fill consisting of ash, cinders, coal, brick fragments, and concrete observed to 25 feet bgs.
RHBF9-03	3 6 10	12.12 ft. bgs/ EL - 1.38 ft.	Gray, brown, and black fine to coarse SAND, some fine to coarse Gravel, trace Silt. Fill consisting of coal, brick, ash, cinders, and wood observed to 28.5 feet bgs.
RHBF9-04	3 6 10	10.91 ft. bgs/ EL - 0.19 ft.	Brown, dark brown, dark gray, and black fine to coarse SAND, trace Silt, trace fine Gravel. Fill consisting of brick fragments, coal, cinders, concrete, ash, plastic and brick observed to 18.5 feet bgs.

Notes:

¹ – Soil description from Oweis Boring Logs (Appendix A)

Discussion of Results

Soil Sampling Results

The results of the analysis of soil samples were compared to the NYSDEC RRUSCOs and the USEPA Removal Management Levels for Residential Soil (HQ=1), May 2016 (RMLs). The results of the laboratory analysis are presented in Tables 1 through 4. The laboratory analytical reports and data validation reports are presented in Appendices D and E, respectively. The following table provides a summary of SVOCs detected in soil at concentrations above the RRUSCOs and/or RMLs.

SVOCs Detected in Soil at Concentrations Above RRUSCOs and RMLs								
SAMPLE ID			RHBF9-01 (2-4')	RHBF9-01 (5-7')	RHBF9-01 (8-10')	RHBF9-02 (2-4')	RHBF9-DUP-01	RHBF9-02 (8-10')
COLLECTION DATE			12/22/16	12/22/16	12/22/16	12/27/16	12/27/16	12/27/16
SVOCs	RRUSCO (µg/kg)	RML (µg/kg)	Result (µg/kg)	Result (µg/kg)	Result (µg/kg)	Result (µg/kg)	Result (µg/kg)	Result (µg/kg)
Benzo(a)anthracene	1,000	16,000	9,550	3,670	887	3,800	5,340	5,960
Benzo(a)pyrene	1,000	1,600	8,670	3,320	894	3,630	4,560	5,950
Benzo(b)fluoranthene	1,000	16,000	11,000	4,360	1,130	4,140	4,970	7,030
Benzo(k)fluoranthene	3,900	160,000	3,270	1,480	406	1,360	1,860	2,030
Chrysene	3,900	1,600,000	9,320	3,600	910	3,600	4,960	5,690
Dibenzo(a,h)anthracene	330	1,600	1,490	628	162	519 J	1,040 J	743
Indeno(1,2,3-cd)pyrene	500	16,000	5,600	2,500	608	2,220	3,530	3,860

SVOCs Detected in Soil at Concentrations Above RRUSCOs and RMLs								
SAMPLE ID			RHBF9-03 (2-4')	RHBF9-03 (5-7')	RHBF9-03 (8-10')	RHBF9-04 (2-4')	RHBF9-04 (5-7')	RHBF9-04 (8-10')
COLLECTION DATE			12/27/16	12/27/16	12/27/16	12/27/16	12/27/16	12/27/16
SVOCs	RRUSCO (µg/kg)	RML (µg/kg)	Result (µg/kg)	Result (µg/kg)	Result (µg/kg)	Result (µg/kg)	Result (µg/kg)	Result (µg/kg)
Benzo(a)anthracene	1,000	16,000	29,500	10,200	5,200	5,860	5,680	1,240
Benzo(a)pyrene	1,000	1,600	28,400	8,970	4,370	6,010	5,500	1,210
Benzo(b)fluoranthene	1,000	16,000	36,900	12,600	5,220	6,940	6,620	1,410
Benzo(k)fluoranthene	3,900	160,000	12,200	3,370	1,850	2,460	2,690	469
Chrysene	3,900	1,600,000	30,700	11,900	5,460	5,900	5,700	1,230
Dibenzo(a,h)anthracene	330	1,600	3,680	2,220	691	1,370	993 J+	185
Indeno(1,2,3-cd)pyrene	500	16,000	17,800	6,650	2,840	3,870	3,290	794

Notes:

Results shown are in micrograms per kilogram (µg/kg)

J – Estimated value; J+ – Estimated value, biased high.

Bold text indicates exceedance of 6 NYCRR Part 375-6.8 Restricted Residential Use SCOs.

Gray shading with bold text indicates exceedance of USEPA RMLs for Residential Soil (HQ=1), May 2016.



The following table provides a summary of metals detected in soil at concentrations above the RRUSCOs and/or RMLs.

Metals Detected in Soil at Concentrations Above RRUSCOs and RMLs								
SAMPLE ID			RHBF9-01 (2-4')	RHBF9-01 (5-7')	RHBF9-02 (2-4')	RHBF9- DUP-01	RHBF9-02 (8-10')	RHBF9-03 (2-4')
COLLECTION DATE			12/22/16	12/22/16	12/27/16	12/27/16	12/27/16	12/27/16
Metals	RRUSCO (mg/kg)	RML (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)
Antimony	NC	31	8.6	2.2 U	2.3 U	2.3 U	2.6 U	37.4
Arsenic	16	35	29.0	10.2	10.3	10	17.6	41.8
Barium	400	15,000	655	661	212	213	468	724
Cadmium	4.3	71	3.3	1.5	0.75	1.2	1.4	5.3
Cobalt	NC	23	12.2	5.6 U	7.1	6.4	10.3	12.3
Copper	270	3,100	541	239	130	124	207	1,660
Iron	NC	55,000	29,500	15,700	17,800	18,300	30,600	93,400
Lead	400	400	1,600	998	460	504	830	4,310
Mercury	0.81	11	2.0	0.76	2.1	3.5	2.7	4.0

Metals Detected in Soil at Concentrations Above RRUSCOs and RMLs							
SAMPLE ID			RHBF9-03 (5-7')	RHBF9-03 (8-10')	RHBF9-04 (2-4')	RHBF9-04 (5-7')	RHBF9-04 (8-10')
COLLECTION DATE			12/27/16	12/27/16	12/27/16	12/27/16	12/27/16
Metals	RRUSCO (mg/kg)	RML (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)
Antimony	NC	31	17.6	2.7 U	6.9	20.6	2.2 U
Arsenic	16	35	39.3	23.0	11.6	54.8	10.2
Barium	400	15,000	1,030	290	122	1,930	133
Cadmium	4.3	71	9.3	1.6	1.1	2.8 U	0.56 U
Cobalt	NC	23	10.5	7.7	5.9	25.4	5.6 U
Copper	270	3,100	1,360	333	356	1,280	48.2
Iron	NC	55,000	60,800	16,200	17,000	116,000	10,200
Lead	400	400	3,590	1,130	375	4,230	245
Mercury	0.81	11	1.5	3.4	1.5	6.1	2.7

Notes:

Results shown are in milligrams per kilogram (mg/kg)

NC – No criterion; U – Non-detect.

Bold text indicates exceedance of 6 NYCRR Part 375-6.8 Restricted Residential Use SCOs.

Gray shading with bold text indicates exceedance of USEPA RMLs for Residential Soil (HQ=1), May 2016.

Exceedances of manganese were not included in the above table.

Soil sample results of pesticides, silvex, PCBs, hexavalent chromium, tin, and total cyanide were not detected above their corresponding RRUSCOs and RMLs.



Groundwater Sampling Results

The results of the analyses of groundwater samples were compared to the New York State Class GA groundwater standards and guidance values (Class GA Values), in the NYSDEC Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1, Ambient Water Quality Standards and Guidance Values. The results of the laboratory analysis are presented in Tables 5 through 8. The laboratory analytical reports and data validation reports are presented in Appendices D and E, respectively. The following table provides a summary of SVOCs detected in groundwater at concentrations above the applicable Class GA Values.

SVOCs in Groundwater at Concentrations Above Class GA Values					
SAMPLE ID		RHBF9-01	RHBF9-02	RHBF9-GW-DUP-01	RHBF9-04
LAB SAMPLE ID		JC34266-4	JC34266-8	JC34266-17	JC34266-20
COLLECTION DATE		12/22/16	12/27/16	12/27/16	12/27/16
Semivolatile Organic Compounds	Class GA Value (µg/L)	Result (µg/L)	Result (µg/L)	Result (µg/L)	Result (µg/L)
Benzo(a)anthracene	0.002	0.53 J	2.2 J	3.1 J	0.93 J
Benzo(a)pyrene	ND*	0.53 J	2.5	3.3	0.83 J
Benzo(b)fluoranthene	0.002	0.54 J	2.5 J	3.7 J	0.82 J
Benzo(k)fluoranthene	0.002	1.0 U	0.86 J	1.2	1.0 U
Chrysene	0.002	1.0 U	2.2	2.9	1.3
Ideno(1,2,3-cd)pyrene	0.002	1.0 U	1.7 J	2.4 J	1.0 U
Naphthalene	10	1.0 U	1.1 U	0.50 J	56.4

Notes:

Results shown are in micrograms per liter (µg/L)

U – Non-detect; J - Estimated Value

ND* - Benzo(a)pyrene exceedance is any concentration above the detection limit.

Gray shading with bold text indicates exceedance of Class GA Values.

The following table provides a summary of field filtered metals detected in groundwater at concentrations above the applicable Class GA Values.

Metals Detected in Filtered Groundwater at Concentrations Above Class GA Values						
SAMPLE ID		RHBF9-01	RHBF9-02	RHBF9-GW-DUP-01	RHBF9-03	RHBF9-04
LAB SAMPLE ID		JC34266-4F	JC34266-8F	JC34266-17F	JC34266-12F	JC34266-20F
COLLECTION DATE		12/22/16	12/27/16	12/27/16	12/27/16	12/27/16
Metals	Class GA Value (µg/L)	Result (µg/L)	Result (µg/L)	Result (µg/L)	Result (µg/L)	Result (µg/L)
Arsenic	25	10.1	12.7	12.4	9.7	174
Iron	300	31,300	16,500	17,000	3,530	14,200
Magnesium	35,000	38,600	47,100	47,900	64,700	49,000
Manganese	300	1,020	328	324	234	1,170
Sodium	20,000	70,100	50,300	50,500	117,000	365,000

Notes:

Results shown are in micrograms per liter.

Gray shading with bold text indicates exceedance of Class GA Values.



Limited Geotechnical Testing Results

The measured and/or calculated geotechnical parameters and correlated conclusions for each test (relative density, permeability, and grain size) are summarized as follows.

Summary of Limited Geotechnical Test Findings							
Test Location	Standard Penetration Test Interval (ft. bgs)	N-Value ¹	Relative Density	Depth of Infiltration Test(s) (ft. bgs)	Time Weighted Average Permeability Coefficient (in/hr.)	USDA-NRCS Hydraulic Conductivity Class	Grain Size Analysis Sample -- USCS Classification and Information ¹
RHBF9-01	0-2	1	Very loose	3	0.01	Very low	RHBF9-01(2-4') – SILTY SAND, fine to coarse; grayish brown. % Finer No. 200: 26.2% RHBF9-01(8-10') – SILTY SAND, fine to coarse; dark grayish brown. % Finer No. 200: 33.3%
	2-4	15	Compact				
	4-6	6	Loose	6	0.03	Moderately Low	
	6-8	12	Compact				
	8-10	4	Very loose/Loose	10	0.08	Moderately Low	
	15-17	2	Very loose				
	20-22	4	Loose				
RHBF9-02	0-2	16	Compact	3	0.02	Moderately Low	RHBF9-02(0-2') – Brown coarse medium to fine SAND, and Silt, some medium to fine Gravel, organic material noted. % Finer No. 200: 36.2%
	2-4	30	Compact/Dense				
	4-6	8	Loose	6	0.02	Moderately Low	
	6-8	28	Compact				
	8-10	8	Loose	10	0.17	Moderately Low	
	15-17	<1	Very loose				
	20-22	<2	Very loose				
	25-27	1	Very loose				
RHBF9-03	0-2	15	Compact	3	0.20	Moderately High	RHBF9-03(0-2') – Dark brown coarse medium to fine SAND, some Silt, some coarse medium to fine Gravel.
	2-4	12	Compact				
	4-6	<1	Very loose	6	2.73	High	
	6-8	12	Compact				
	8-10	12	Compact	10	0.05	Moderately Low	
	15-17	1	Very loose				
	20-22	5	Loose				
	25-27	2	Very loose				

Summary of Limited Geotechnical Test Findings							
Test Location	Standard Penetration Test Interval (ft. bgs)	N-Value ¹	Relative Density	Depth of Infiltration Test(s) (ft. bgs)	Time Weighted Average Permeability Coefficient (in/hr.)	USDA-NRCS Hydraulic Conductivity Class	Grain Size Analysis Sample -- USCS Classification and Information ¹
	30-32	14	Compact				% Finer No. 200: 26.1% RHB9-03(5-7'): SILTY SAND, fine to coarse; dark grayish brown. % Finer No. 200: 27.4% RHB9-03(8-10'): SILTY SAND, fine to coarse; dark gray. % Finer No. 200: 25.0%
RHB9-04	0-2	13	Compact	3	0.23	Moderately High	RHB9-04(2-4') - SAND and SILT, fine to coarse; reddish brown and gray. % Finer No. 200: 40.5% RHB9-04(5-7') - SILTY SAND, fine to coarse; grayish brown and red. % Finer No. 200: 19.4% RHB9-04(8-10') – SILTY SAND, fine to coarse; dark gray and red, organics. % Finer No. 200: 27%
	2-4	6	Loose				
	4-6	16	Compact	6	0.07	Moderately Low	
	6-8	4	Very loose				
	8-10	1	Very loose	10	0.58	Moderately High	
	15-17	2	Very loose				
	20-22	<1	Very loose				
	25-27	2	Very loose				

Notes:

¹ – N- value and soil description from grain size analysis laboratory report (Appendix D) and/or Oweis' Geotechnical Report (provided under separate cover)

Data Usability

The results of the data validation are summarized in the Data Validation Reports provided in Appendix E and include a discussion on each qualified result, the potential bias, and the effects on data usability. The data validation was performed by TRC in accordance with the QAPP and the USEPA Region 2 data validation functional guidelines and NYSDEC requirements, including the requirements for development of Data Usability Summary Reports (DUSRs) listed in Appendix 2B of DER-10 Technical Guidance for Site Investigation. The complete analytical services protocol (ASP) laboratory analytical data reports and data validation reports are included in Appendices D and E, respectively.

The results of the data validation indicate the data is acceptable for its intended use and found to be valid and usable for decision-making purposes with the exception of cyanide in soil sample RHBF9-04(5-7'), and hexavalent chromium soil samples RHBF9-01(5-7'), RHBF9-02(5-7'), RHBF9-03(8-10'), RHBF9-04(2-4'), and RHBF9-04(8-10') which were rejected and flagged with an "R" qualifier due to low matrix spike recoveries and/or post digestion spike recoveries.

Summary of Findings

- No elevated PID readings, visual indicators, or odors were identified in any of the borings. Soils encountered during the investigation consisted of fill material observed from ground surface to 16 to 30 feet bgs consisting of dark brown, gray, sand, silt, and gravel, containing organics, bricks, glass, cinders and other miscellaneous debris. The fill material was underlain by silty sand and clay from 16 to 32 feet bgs. Groundwater was encountered in temporary monitoring wells from 9.7 to 12.12 feet bgs (elevation 0.19 to 2.5 feet [NAVD 88]). Bedrock was not encountered during the investigation.
- The types and concentrations of SVOCs detected in the soil and groundwater samples are consistent with the observed presence of historic fill at the Site. The concentrations of the SVOCs consisting of polycyclic aromatic hydrocarbons (PAHs) detected in soil samples above the RRUSCOs and RMLs may generally be attributed to the characteristics of historic fill material potentially containing one or more of the following: ash, cinders, coal, slag, heavy oil, and/or asphalt. SVOCs, including PAHs, were detected in the groundwater samples. SVOC concentrations exceeding Class GA Values detected in groundwater are attributed to the characteristics of fill material in Site soil.
- Metals (arsenic, barium, cadmium, copper, and mercury) were detected in soil above the RRUSCOs. Antimony, arsenic, cobalt, iron, and lead were detected in one or more soil samples above the RMLs. The type and concentrations of metals detected in soil samples above the RRUSCOs and RMLs may generally be attributed to the characteristics of historic fill material potentially containing one or more of the following: metal plating or smelting waste, ash, cinders, coal, slag, paint, and/or herbicides.
- No pesticides, herbicides, or PCBs were detected in the soil samples at a concentration exceeding the RRUSCOs or RMLs.
- Oil was not detected during gauging with an oil/water interface probe at the temporary monitoring well points.
- There were no visual or olfactory indications of contamination observed in the groundwater samples collected. Arsenic was detected in one dissolved groundwater sample above Class GA Values. Iron, magnesium, manganese, and sodium were detected in dissolved groundwater above Class GA Values; however, they are naturally occurring metals and their elevated presence in the Site groundwater may be a result of salt water intrusion from the nearby basin and harbor. A contributing source of



manganese, iron, and arsenic in groundwater could be associated with anaerobic conditions generated by decomposition of organic deposits commonly found along low lying marshland in addition to historic fill. Notably, elevated levels of lead were not detected in the filtered groundwater samples.

- There were no pesticides, herbicides, or PCBs detected at a concentration exceeding the Class GA Values in the groundwater samples collected from the four temporary monitoring wells.
- In accordance with the Guidelines for the Design and Construction of Stormwater Management Systems (July 2012), Appendix H developed by the NYCDEP, a minimum infiltration rate of 0.5 inches per hour is required to consider volume reduction credit for an infiltration practice. As presented in the Permeability Test Logs (Appendix C), this minimum infiltration rate was achieved at each of the four boring locations at test depths 6 feet bgs and 10 feet bgs. In addition, at borings RHBF9-03 and RHBF9-04, the minimum infiltration rate was achieved at 3 feet bgs.

The calculated permeability coefficient, soil description, and relative density at each location is described below:

- The calculated permeability coefficient was lowest for the infiltration test completed at location RHBF9-01 at the depth of 3 feet bgs. The hydraulic conductivity class defined by USDA-NRCS ranged from very low to moderately low. The material at the depths of infiltration testing at this location were classified as silty sand. The relative density of this boring is very loose to compact to boring termination (22 feet bgs).
- The permeability coefficients calculated from the results of the infiltration tests performed at location RHBF9-02 correlate to a hydraulic conductivity class defined by USDA-NRCS as moderately low. Based on the grain size analysis of the sample collected by Oweis from 0 to 2 feet bgs, the material was identified as silty sand. The boring logs indicate that the material to 25 feet bgs consisted of well-graded sand with silt.
- The calculated permeability coefficient was highest for the infiltration test completed at location RHBF9-03 at the depth of 6 feet bgs, which correlates to a hydraulic conductivity class defined by USDA-NRCS of high. The material at the depths of infiltration testing at this location were identified as silty sand. The relative density of this boring is very loose to compact.
- The permeability coefficients calculated from the results of the infiltration tests performed at location RHBF9-04 correlate to a hydraulic conductivity class defined by USDA-NRCS as moderately low to moderately high. The material at the depths of infiltration testing at this location were identified as silty sand. The relative density of this boring is very loose from 6 feet bgs to boring termination (22 feet bgs).
- The hydraulic conductivity classification of the calculated permeability coefficients above are consistent with the USDA-NRCS Custom Soil Resource Report for Kings County, New York (September 2016) which indicates Ball Field 9 is in the Laguardia-Urban land complex, which has a “well drained” natural drainage class and its capacity of the most limiting layer to transmit water is moderately low to moderately high.

Stormwater infiltration infrastructures will be designed for the reconstruction of the Site utilizing the data from the geotechnical report prepared by Oweis, the land survey conducted in December 2016 by Munoz Engineering and Land Surveying, PC, and this letter report.

Please contact me at (212) 221-7822 ext. 103 or wlindeumuth@trcsolutions.com with any questions or comments.

Sincerely,
TRC Engineers, Inc.



Wes D. Lindemuth, CHMM, CSP
Senior Project Manager

cc: K. Zias, I. Bernstein, NYC Parks
J. Miranda, J. Peronto, K. Myers, TRC

Attachments:

Figures

Figure 1 – Site Location Map
Figure 2 – Sample Location Plan

Tables

Table 1 – Summary of Results of Analysis of Soil for Semivolatile Organic Compounds
Table 2 – Summary of Results of Analysis of Soil for Metals and Cyanide
Table 3 – Summary of Results of Analysis of Soil for Pesticides and Herbicides
Table 4 – Summary of Results of Analysis of Soil for Polychlorinated Biphenyls
Table 5 – Summary of Results of Analysis of Groundwater for Semivolatile Organic Compounds
Table 6 – Summary of Results of Analysis of Groundwater for Metals and Cyanide
Table 7 – Summary of Results of Analysis of Groundwater for Pesticides and Herbicides
Table 8 – Summary of Results of Analysis of Groundwater for Polychlorinated Biphenyls

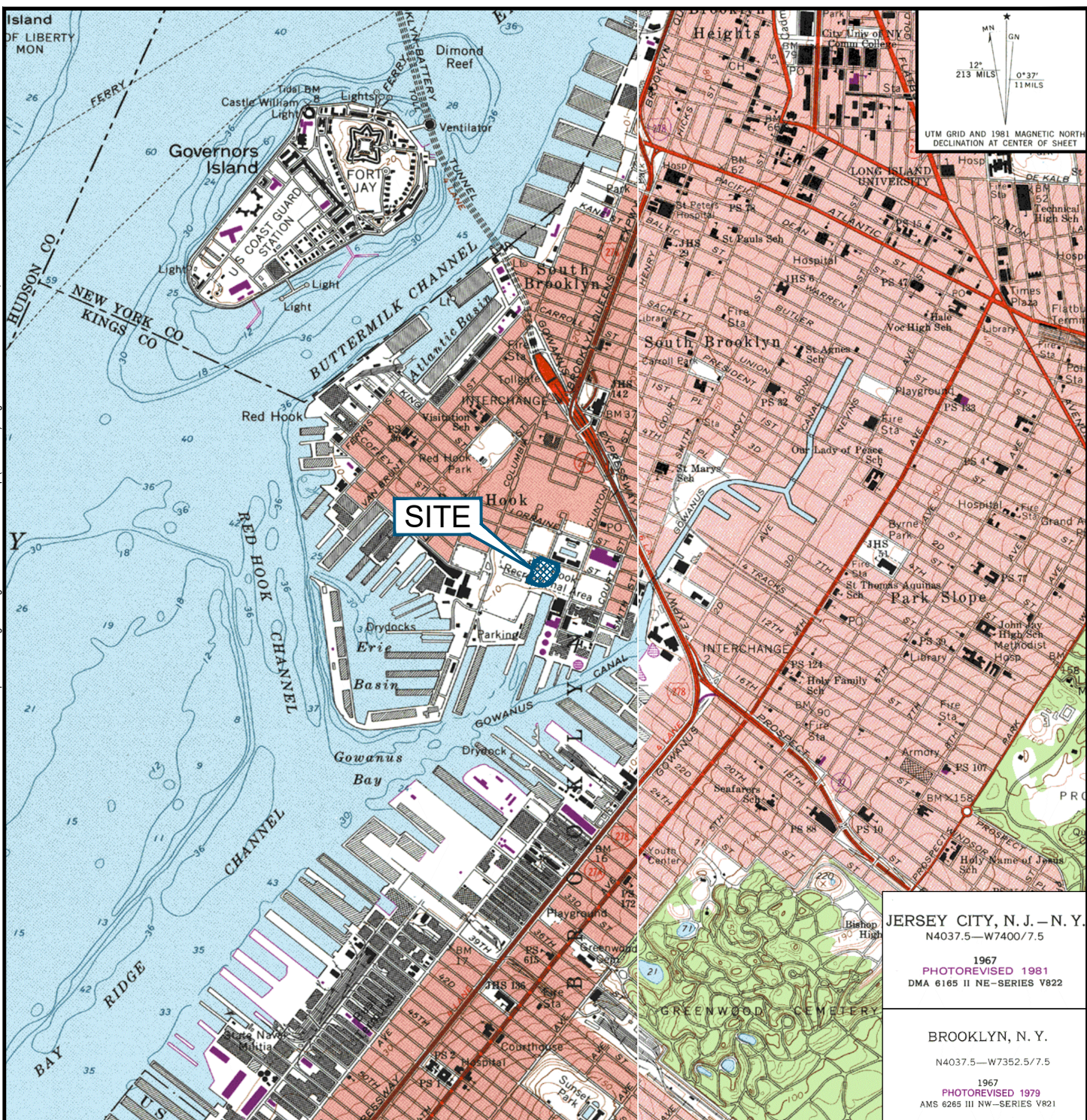
Appendices

Appendix A – Soil Boring Logs
Appendix B – Groundwater Purge Forms
Appendix C – Permeability Test Logs
Appendix D – Laboratory Analytical Data Report
Appendix E – Data Validation Reports



FIGURES

55411 - ATTACHED XREFS - ATTACHED IMAGES: BROOKLYN, JERSEY CITY: CONTRACT 20166200181246184.1000 - Red Hook BF 9 and 2 Rem and Recon Deliverables Water Infiltration Report - BF9 Figures Figure 1 - Site Location Map (Ballfield 9).dwg --- PLOT DATE: March 02, 2017 - 1:59PM --- LAYOUT: 8.5x11P
DRAWING NAME: INT\PA\NYO\Shared\Projects\NYC Parks



TRC
1430 Broadway
10th Floor
New York, NY 10018
Phone: 212.221.7822

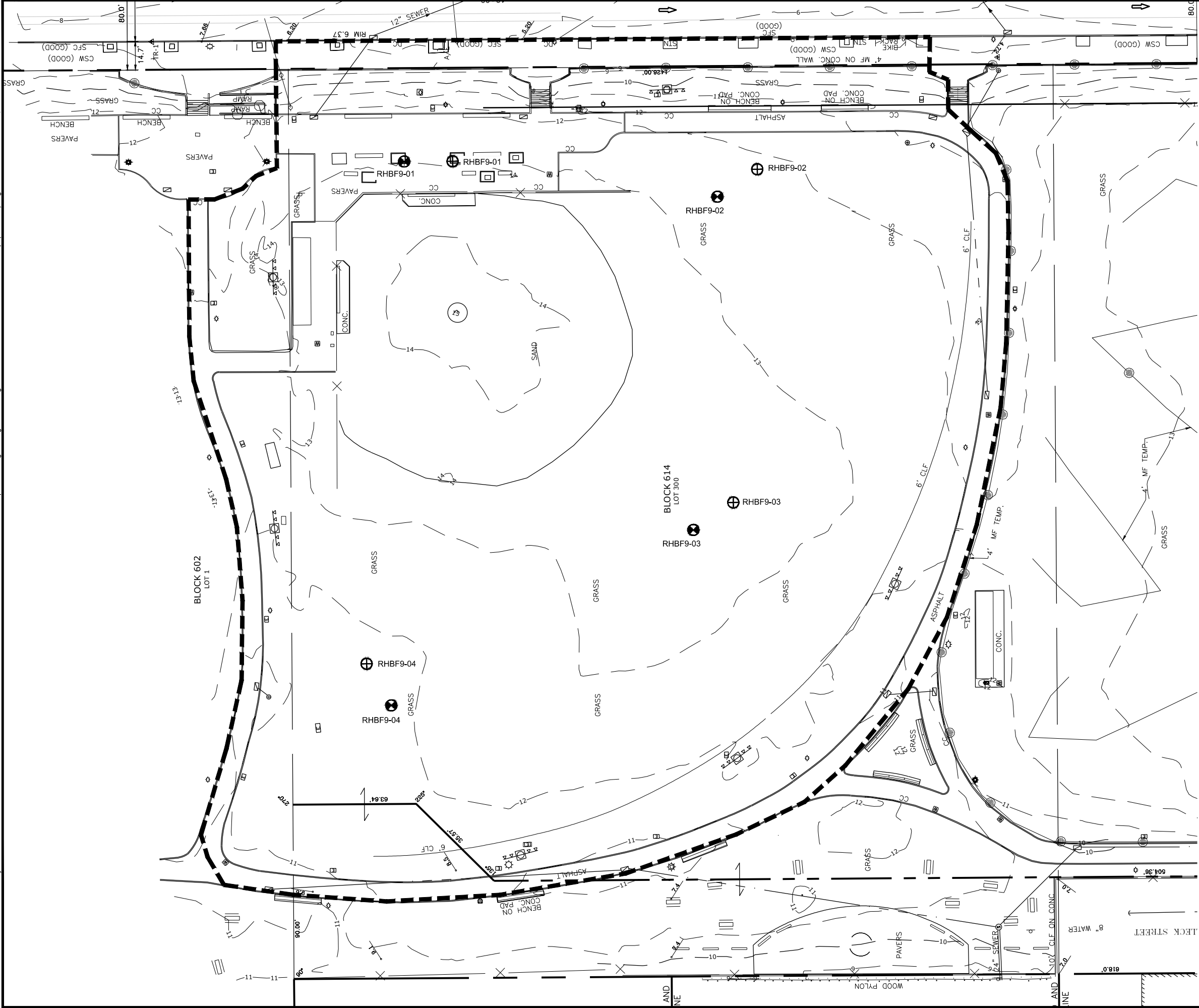
PROJECT:
CITY OF NEW YORK PARKS AND RECREATION - CAPITAL PROJECTS DIVISION
RED HOOK RECREATION AREA BALL FIELD 9
BOROUGH OF BROOKLYN, NEW YORK

TITLE:
SITE LOCATION MAP

DRAWN BY: **H. DELGADO**
CHECKED BY: **E. EBERT**
APPROVED BY: **W. LINDEMUTH**
DATE: **MARCH 2017**
PROJ. NO.: **246184.1000.0000**
FILE: **Figure 1 - Site Location Map (Ballfield 9).dwg**

FIGURE 1

11x17 -- ATTACHED REFS: 1180.02 Red Hook 01.06.17 -- ATTACHED IMAGES: GEP (image 00001)
DRAWING NAME: \\NTAPA-NYC\Shared\Projects\NYC Parks Contract 20166200181246184.1000 - Red Hook BF 9 and 2 Rem and Recon\Deliverables\Water Infiltration Report - BF9\Figures Figure 2 - Boring Location Plan - Infiltration Test, Soil & GW Samp, (Ballfield 9).dwg --- PLOT DATE: March 02, 2017 - 3:05PM --- LAYOUT: 11x17L

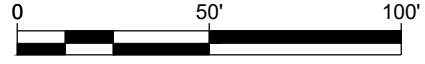


LEGEND (SYMBOLS NOT TO SCALE):

- PROJECT SCOPE
- APPROXIMATE GEOTECHNICAL, SOIL AND GROUNDWATER SAMPLING BORING LOCATION AND IDENTIFICATION NUMBER
- APPROXIMATE PERMEABILITY TEST LOCATION AND IDENTIFICATION NUMBER

NOTES:

- BORINGS INSTALLED DECEMBER 2016.
- BASE MAP SOURCE: TOPOGRAPHIC SURVEY PREPARED BY MUNOZ ENGINEERING AND LAND SURVEYING, P.C. DATED JANUARY 2017.
- ELEVATIONS SHOWN HEREON REFER TO THE NORTH AMERICAN VERTICAL DATUM (NAVD88)
- SUBSURFACE UTILITY INFORMATION TAKEN FROM VARIOUS CITY MAPS AND PRIVATE UTILITY COMPANIES.
- THE LOCATION OF UNDERGROUND UTILITIES AS SHOWN HEREON ARE BASED ON ABOVE GROUND STRUCTURES, PARKS RECORD DRAWINGS, AND CITY RECORD MAPS. LOCATION OF UNDERGROUND UTILITY / STRUCTURES MAY VARY FROM LOCATIONS SHOWN HEREON. ADDITIONAL BURIED UTILITIES / STRUCTURES MAY BE ENCOUNTERED. NO EXCAVATION WAS MADE DURING THE PROGRESS OF THIS SURVEY TO LOCATE BURIED UTILITIES. BEFORE COMMENCING EXCAVATION, CONTRACTORS SHOULD CALL 1-800-272-4480 CODE RULE 53.



SCALE: 1"= 50'
SHEET SIZE: 11" X 17"

PROJECT: CITY OF NEW YORK PARKS AND RECREATION - CAPITAL PROJECTS DIVISION RED HOOK RECREATION AREA BALL FIELD 9 BOROUGH OF BROOKLYN, NEW YORK	
TITLE: BORING LOCATION PLAN INFILTRATION TESTING AND SOIL AND GROUNDWATER SAMPLING SUMMARY REPORT	
DRAWN BY: H. DELGADO	PROJ NO.: 246184.1000.0000
CHECKED BY: E. EBERT	FIGURE 2
APPROVED BY: W. LINDEMUTH	
DATE: MARCH 2017	
1430 Broadway 10th Floor New York, NY 10018 Phone: 212.221.7822	
FILE NO.: Figure 2 - Boring Location Plan - Infiltration Test, Soil & GW Samp, (Ballfield 9).dwg	

TABLES

Table 1
The City of New York Department of Parks and Recreation
Red Hook Ball Field 9
Brooklyn, New York
Summary of Results of Analysis of Soil for Semivolatile Organic Compounds

SAMPLE LOCATION:			RHBf9-01		RHBf9-01		RHBf9-01		RHBf9-02		RHBf9-02		RHBf9-02		RHBf9-02		RHBf9-03		RHBf9-03		RHBf9-03		RHBf9-04		RHBf9-04		RHBf9-04	
SAMPLE ID			RHBf9-01 (2-4)		RHBf9-01 (5-7)		RHBf9-01 (8-10)		RHBf9-02 (2-4)		RHBf9-DUP-01		RHBf9-02 (5-7)		RHBf9-02 (8-10)		RHBf9-03 (2-4)		RHBf9-03 (5-7)		RHBf9-03 (8-10)		RHBf9-04 (2-4)		RHBf9-04 (5-7)		RHBf9-04 (8-10)	
LAB SAMPLE ID			JC34266-1		JC34266-2		JC34266-3		JC34266-5		JC34266-16		JC34266-6		JC34266-7		JC34266-9		JC34266-10		JC34266-11		JC34266-13		JC34266-14		JC34266-15	
SAMPLE DEPTH (FT.):			2-4		5-7		8-10		2-4		2-4		5-7		8-10		2-4		5-7		8-10		2-4		5-7		8-10	
COLLECTION DATE			12/22/2016		12/22/2016		12/22/2016		12/27/2016		12/27/2016		12/27/2016		12/27/2016		12/27/2016		12/27/2016		12/27/2016		12/27/2016		12/27/2016		12/27/2016	
SAMPLE MATRIX			Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil	
Semivolatile Organic Compounds	Restricted Residential Use SCO (µg/kg)	EPA Removal Management Levels for Residential Soil (µg/kg) ²	Result (µg/kg)		Result (µg/kg)		Result (µg/kg)		Result (µg/kg)		Result (µg/kg)		Result (µg/kg)		Result (µg/kg)		Result (µg/kg)		Result (µg/kg)		Result (µg/kg)		Result (µg/kg)		Result (µg/kg)		Result (µg/kg)	
2-Methylpheno	100000	3200000	75	U	71	U	69	U	73	U	77	U	74	U	84	U	63.0	J	87	U	85	U	76	U	65.5	J	74	U
3&4-Methylphenol	100000 ⁽¹⁾	3200000	121		56.1	J	69	U	73	U	77	U	74	U	561		233		146		175		79.2		233		76.9	
Acenaphthene	100000	3600000	1430		709		83.7		808		633		80.9		813		3050		1410		1470		283		1010		147	
Acenaphthylene	100000	NC	797		251		93.2		146		225		56.8		490		3600		1460		789		943		1970	J	112	
Anthracene	100000	18000000	3440		1610		263		1900		1950		202		2080		9650		3450		3520		1500		3470	J+	470	
Benzo(a)anthracene	1000	16000	9550		3670		887		3800		5340		730		5960		29500		10200		5200		5860		5680		1240	
Benzo(a)pyrene	1000	1600	8670		3320		894		3630		4560		689		5950		28400		8970		4370		6010		5500		1210	
Benzo(b)fluoranthene	1000	16000	11000		4360		1130		4140		4970		676		7030		36900		12600		5220		6940		6620		1410	
Benzo(g,h,i)perylene	100000	NC	4980		2260		552		2150		3330		365		3800		15600		5730		2520		3300		3680	J+	715	
Benzo(k)fluoranthene	3900	160000	3270		1480		406		1360		1860		297		2030		12200		3370		1850		2460		2690		469	
Chrysene	3900	1600000	9320		3600		910		3600		4960		753		5690		30700		11900		5460		5900		5700		1230	
Dibenzo(a,h)anthracene	330	1600	1490		628		162		519	J	1040	J	84.8		743		3680		2220		691		1370		993	J+	185	
Dibenzofuran	59000	73000	1050		493		75.5		469		456		55.2	J	670		3060		1280		1480		263		1360	J	145	
Fluoranthene	100000	2400000	19600		7220		1420		8200		9980		1220		14300		74600		25800		14100		10700		12900		2680	
Fluorene	100000	2400000	1340		660		91.6		698		634		79.9		944		4600		1700		2280		461		1950	J	135	
Hexachlorobenzene	1200	21000	75	U	71	U	69	U	73	U	77	U	74	U	84	U	80	U	87	U	85	U	76	U	78	U	74	U
Indeno(1,2,3-cd)pyrene	500	16000	5600		2500		608		2220		3530		365		3860		17800		6650		2840		3870		3290		794	
Naphthalene	100000	130000	955		656		117		279	J	488	J	68.0		832		3700		1790		2790		331		1700	J	172	
Pentachloropheno	6700	100000	150	U	140	U	140	U	150	U	150	U	150	U	170	U	160	U	170	U	170	U	150	U	160	U	150	U
Phenanthrene	100000	NC	16800		6670		1200		7090		8520		997		11500		57700		23200		15400		5370		12100		2100	
Phenol	100000	19000000	74.4	J	39.8	J	69	U	73	U	77	U	74	U	84	U	167		99.3		85	U	76	U	146		74	U
Pyrene	100000	1800000	20700		7810		1900		7260		9610		1680		12900		64300		23000		11200		9710		13200		2650	

Notes:

Bold and yellow shading indicates exceedance of Restricted Residential Use SCOs.

Bold and gray shading indicates exceedance of USEPA Removal Management Levels for Residential Soil (HQ=1), May 2016.

⁽¹⁾ - There is no SCO for 3&4-methylphenol. The SCO for 3-methylphenol and 4-methylphenol individually is 100,000 µg/kg.

⁽²⁾ - EPA Removal Management Levels for Residential Soil (HQ=1), May 2016.

J - Estimated value

J+ - Estimated value; biased high.

SCO - Soil Cleanup Objective

U - Non-detect

The Restricted Residential SCO Values are from the New York State Department of Environmental Conservation (NYSDEC) 6 NYCRR Part 375 Table 375-6.8(b): Restricted Use Soil Cleanup Objectives.

NC - No criterion

ug/kg - micrograms per kilogram (dry weight).

Table 2
The City of New York Department of Parks and Recreation
Red Hook Ball Field 9
Brooklyn, New York
Summary of Results of Analysis of Soil for Metals and Cyanide

SAMPLE LOCATION:			RHBFB9-01		RHBFB9-01		RHBFB9-01		RHBFB9-02		RHBFB9-02		RHBFB9-02		RHBFB9-02		RHBFB9-03		RHBFB9-03		RHBFB9-03		RHBFB9-04		RHBFB9-04		RHBFB9-04	
SAMPLE ID			RHBFB9-01 (2-4)		RHBFB9-01 (5-7)		RHBFB9-01 (8-10)		RHBFB9-02 (2-4)		RHBFB9-DUP-01		RHBFB9-02 (5-7)		RHBFB9-02 (8-10)		RHBFB9-03 (2-4)		RHBFB9-03 (5-7)		RHBFB9-03 (8-10)		RHBFB9-04 (2-4)		RHBFB9-04 (5-7)		RHBFB9-04 (8-10)	
LAB SAMPLE ID			JC34266-1		JC34266-2		JC34266-3		JC34266-5		JC34266-16		JC34266-6		JC34266-7		JC34266-9		JC34266-10		JC34266-11		JC34266-13		JC34266-14		JC34266-15	
SAMPLE DEPTH (FT.):			2-4		5-7		8-10		2-4		2-4		5-7		8-10		2-4		5-7		8-10		2-4		5-7		8-10	
COLLECTION DATE			12/22/2016		12/22/2016		12/22/2016		12/27/2016		12/27/2016		12/27/2016		12/27/2016		12/27/2016		12/27/2016		12/27/2016		12/27/2016		12/27/2016		12/27/2016	
SAMPLE MATRIX			Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil	
			Restricted Residential Use SCO (mg/kg)		EPA Removal Management Levels for Residential Soil (mg/kg) ²		Result (mg/kg)		Result (mg/kg)		Result (mg/kg)		Result (mg/kg)		Result (mg/kg)		Result (mg/kg)		Result (mg/kg)		Result (mg/kg)		Result (mg/kg)		Result (mg/kg)		Result (mg/kg)	
Metals and Cyanide							Result (mg/kg)		Result (mg/kg)		Result (mg/kg)		Result (mg/kg)		Result (mg/kg)		Result (mg/kg)		Result (mg/kg)		Result (mg/kg)		Result (mg/kg)		Result (mg/kg)		Result (mg/kg)	
Aluminum	NC	77000	7920	J+	5100	J+	6120	J+	6310	J+	6590	J+	6430	J+	5190	J+	5560	J+	4150	J+	5800	J+	9880	J+	3400	J+	3840	J+
Antimony	NC	31	8.6		2.2	U	2.1	U	2.3	U	2.3	U	2.2	U	2.6	U	37.4		17.6		2.7	U	6.9		20.6		2.2	U
Arsenic	16	35	29.0		10.2		9.5		10.3		10		3.8		17.6		41.8		39.3		23.0		11.6		54.8		10.2	
Barium	400	15000	655		661		137		212		213		51.9		468		724		1030		290		122		1930		133	
Beryllium	72	160	0.59		0.36		0.45		0.43		0.43		0.30		0.41		0.39		0.44		0.52		0.47		0.46		0.24	
Cadmium	4.3	71	3.3		1.5		0.53	U	0.75		1.2		0.54	U	1.4		5.3		9.3		1.6		1.1		2.8	U	0.56	U
Calcium	NC	NC	4250	J-	8960	J-	5790	J-	14800	J-	10900	J-	6170	J-	6330	J-	5040	J-	7760	J-	4830		2930	J-	10300	J-	17300	J-
Chromium	NC	NC	41.9		21.3		19.1		22.1		20.7		18.1		24.8		32.7		29.4		18.1		15.9		44.4		14.1	
Chromium, Hexavalent	110	30	2.7	J-		R	1.1	J-	1.0	J-	0.97	J-		R	0.68	J-	0.85	J-	2.4	J-		R		R	0.89	J-		R
Chromium, Trivalent ⁽¹⁾	180	120000	39.2			X	18.0		21.1		19.7			X	24.1		31.9		27.0			X		X	43.5			X
Cobalt	NC	23	12.2		5.6	U	5.3	U	7.1		6.4		5.5		10.3		12.3		10.5		7.7		5.9		25.4		5.6	U
Copper	270	3100	541		239		62.8		130		124		73.7		207		1660		1360		333		356		1280		48.2	
Iron	NC	55000	29500		15700		10400		17800		18300		12700		30600		93400		60800		16200		17000		116000		10200	
Lead	400	400	1600		998		315		460		504		96.8		830		4310		3590		1130		375		4230		245	
Magnesium	NC	NC	2820	J+	1990	J+	1790	J+	3480	J+	3080	J+	3800	J+	1670	J+	1920	J+	1330	J+	940	J+	1970	J+	1380	J+	2370	J+
Manganese	2000	NC	363		216		205		262		294		227		239		641		405		221		172		4020		93.9	
Mercury	0.81	11	2.0		0.76		0.77		2.1		3.5		0.28		2.7		4.0		1.5		3.4		1.5		6.1		2.7	
Nickel	310	1500	37.5		24.2		13.5		33.1		30.2		31.5		28.7		40.7		45.6		23.5		24.2		75.5		23.4	
Potassium	NC	NC	1100	U	1100	U	1340		1100	U	1100	U	1130		1300	U	1200	U	1300	U	1300	U	1100	U	1100	U	1100	U
Selenium	180	390	2.3	U	2.2	U	2.1	U	2.3	U	2.3	U	2.2	U	2.6	U	12	U	5.4	U	2.7	U	2.2	U	11	U	2.2	U
Silver	180	390	0.81	U	0.56	U	0.53	U	0.56	U	0.61	J+	0.54	U	0.64	U	4.3	J+	1.7	J+	1.1	J+	0.58	J+	2.8	U	0.56	U
Sodium	NC	NC	1100	U	1100	U	1100	U	1100	U	1100	U	1100	U	1300	U	1200	U	1300	U	1300	U	1100	U	1100	U	1100	U
Thallium	NC	0.78	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U	1.3	U	5.9	U	2.7	U	1.3	U	1.1	U	5.7	U	1.1	U
Tin	NC	47000	274		69.2		23.2		21.8		25.0		11.3		104		1250		906		94.5		72.8		172		7.5	
Vanadium	NC	390	39.4		28.0		16.8		33.8		33.5		23.7		22.9		24.2		36.8		22.7		19.8		35.0		17.6	
Zinc	10000	23000	1070		712		208		420		572		81.4		510		3140		2370		753		696		1100		359	
Cyanide	27	23	0.79		0.30		0.26		0.22	U	0.22	U	0.27	U	0.28	U	0.24	U	0.43		0.27	U	0.25	U		R	0.31	J-

Notes:

Bold and yellow shading indicates exceedance of Restricted Residential Use SCOs.
Bold and gray shading indicates exceedance of USEPA Removal Management Levels for Residential Soil (HQ=1), May 2016.

⁽¹⁾ - Trivalent chromium is calculated by subtracting the concentration of hexavalent chromium from the concentration of total chromium.

⁽²⁾ - EPA Removal Management Levels for Residential Soil (HQ=1), May 2016.

NC - No criterion

SCO - Soil Cleanup Objective

J - Estimated value.

J+ - Estimated value; biased high.

J- - Estimated value; biased low.

R - Rejected data point; see validation report.

U - Non-detect

X - Result not calculable due to rejected hexavalent chromium result.

The Restricted Residential SCO is from New York State Department of Environmental Conservation (NYSDEC) 6NYCRR Part 375 Table 375-6.8(b): Restricted Use Soil Cleanup Objectives.

mg/kg - milligrams per kilogram (dry weight).

Table 3
The City of New York Department of Parks and Recreation
Red Hook Ball Field 9
Brooklyn, New York
Summary of Results of Analysis of Soil for Pesticides and Herbicides

SAMPLE LOCATION:			RHBFB9-01		RHBFB9-01		RHBFB9-01		RHBFB9-02		RHBFB9-02		RHBFB9-02		RHBFB9-02		RHBFB9-03		RHBFB9-03		RHBFB9-03		RHBFB9-04		RHBFB9-04		RHBFB9-04				
SAMPLE ID			RHBFB9-01 (2-4)		RHBFB9-01 (5-7)		RHBFB9-01 (8-10)		RHBFB9-02 (2-4)		RHBFB9-DUP-01		RHBFB9-02 (5-7)		RHBFB9-02 (8-10)		RHBFB9-03 (2-4)		RHBFB9-03 (5-7)		RHBFB9-03 (8-10)		RHBFB9-04 (2-4)		RHBFB9-04 (5-7)		RHBFB9-04 (8-10)				
LAB SAMPLE ID			JC34266-1		JC34266-2		JC34266-3		JC34266-5		JC34266-16		JC34266-6		JC34266-7		JC34266-9		JC34266-10		JC34266-11		JC34266-13		JC34266-14		JC34266-15				
SAMPLE DEPTH (FT.):			2-4		5-7		8-10		2-4		2-4		5-7		8-10		2-4		5-7		8-10		2-4		5-7		8-10				
COLLECTION DATE			12/22/2016		12/22/2016		12/22/2016		12/27/2016		12/27/2016		12/27/2016		12/27/2016		12/27/2016		12/27/2016		12/27/2016		12/27/2016		12/27/2016		12/27/2016				
SAMPLE MATRIX			Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil				
Pesticides and Herbicides	Restricted Residential Use SCO (µg/kg)	EPA Removal Management Levels for Residential Soil (µg/kg) ²	Result (µg/kg)		Result (µg/kg)		Result (µg/kg)		Result (µg/kg)		Result (µg/kg)		Result (µg/kg)		Result (µg/kg)		Result (µg/kg)		Result (µg/kg)		Result (µg/kg)		Result (µg/kg)		Result (µg/kg)		Result (µg/kg)				
			4,4'-DDD	13000	230000	4.8		0.71	U	1.6		0.74	U	0.75	U	0.71	U	0.82	U	8.2	J	0.88	U	0.81	U	0.75	U	0.76	U	0.70	U
			4,4'-DDE	8900	200000	24.6		1.9		11.3		2.1	J	0.75	UJ	0.71	U	0.82	U	50.9	J	0.88	U	0.81	U	0.75	U	0.76	U	0.70	U
			4,4'-DDT	7900	37000	56.7		8.8		6.8		7.8		5.7	J	2.3	J	6.0	J	66.1	J	10.9	NJ	9.0	J	2.8		12.5	NJ	2.3	
			Aldrin	97	2300	0.74	U	0.71	U	0.73	U	0.74	U	0.75	U	0.71	U	0.82	U	0.80	U	0.88	U	0.81	U	0.75	U	0.76	U	0.70	U
			alpha-BHC	480	8600	0.74	U	0.71	U	0.73	U	0.74	U	0.75	U	0.71	U	0.82	U	0.80	U	0.88	U	0.81	U	0.75	U	0.76	U	0.70	U
			alpha-Chlordane	4200	NC	0.74	U	0.71	U	0.73	U	0.74	U	0.75	U	0.71	U	0.82	U	0.80	U	0.88	U	0.81	U	0.75	U	0.76	U	0.70	U
			beta-BHC	360	30000	0.74	U	0.71	U	0.73	U	0.74	U	0.75	U	0.71	U	0.82	U	0.80	U	0.88	U	0.81	U	0.75	U	0.76	U	0.70	U
			delta-BHC	100000	NC	2.4		1.4		0.73	U	0.74	U	0.75	U	0.71	U	0.82	U	0.80	U	0.88	U	0.81	U	0.75	U	0.76	U	0.70	U
			Dieldrin	200	3200	71.3		0.71	U	2.4		0.74	U	0.75	U	0.71	U	0.82	U	0.80	U	0.88	U	0.81	U	0.75	U	0.76	U	0.70	U
			Endosulfan sulfate	24000 ⁽¹⁾	NC	0.74	U	0.71	U	0.73	U	0.74	U	0.75	U	0.71	U	0.82	U	0.80	U	0.88	U	0.81	U	0.75	U	0.76	U	0.70	U
			Endosulfan-I	24000 ⁽¹⁾	NC	0.74	U	0.71	U	0.73	U	0.74	U	0.75	U	0.71	U	0.82	U	0.80	U	0.88	U	0.81	U	0.75	U	0.76	U	0.70	U
			Endosulfan-II	24000 ⁽¹⁾	NC	0.74	U	0.71	U	0.73	U	0.74	U	0.75	U	0.71	U	0.82	U	0.80	U	0.88	U	0.81	U	0.75	U	0.76	U	0.70	U
			Endrin	11000	19000	0.74	U	0.71	U	0.73	U	0.74	U	0.75	U	0.71	U	0.82	U	0.80	U	0.88	U	0.81	U	0.75	U	0.76	U	0.70	U
			gamma-BHC (Lindane)	1300	21000	0.74	U	0.71	U	0.73	U	0.74	U	0.75	U	0.71	U	0.82	U	0.80	U	0.88	U	0.81	U	0.75	U	0.76	U	0.70	U
Heptachlor	2100	13000	0.74	U	0.71	U	0.73	U	0.74	U	0.75	U	0.71	U	0.82	U	0.80	U	0.88	U	0.81	U	0.75	U	0.76	U	0.70	U			
2,4,5-TP (Silvex)	100000	510000	7.6	U	7.6	U	6.9	U	7.3	U	7.6	U	7.5	U	8.5	U	7.6	U	8.7	U	8.5	U	7.5	U	7.8	U	7.3	U			

Notes:

⁽¹⁾ - There is no SCO for endosulfan sulfate, endosulfan I, or endosulfan II individually. The SCO for the sum of endosulfan sulfate, endosulfan I, and endosulfan II is 24,000 ug/kg.

⁽²⁾ - EPA Removal Management Levels for Residential Soil (HQ=1), May
SCO - Soil Cleanup Objective

J- Estimated value; biased low.

NJ - Tentatively identified.

U - Non-detect

UJ - Estimated non-detect.

The Restricted Residential SCO is from New York State

Department of Environmental Conservation (NYSDEC)

6NYCRR Part 375 Table 375-6.8(b): Restricted Use Soil

Cleanup Objectives.

NC - No criterion

ug/kg - micrograms per kilogram (dry weight).

Table 4
The City of New York Department of Parks and Recreation
Red Hook Ball Field 9
Brooklyn, New York
Summary of Results of Analysis of Soil for Polychlorinated Biphenyls

SAMPLE LOCATION: SAMPLE ID LAB SAMPLE ID SAMPLE DEPTH (FT.): COLLECTION DATE SAMPLE MATRIX			RHBf9-01		RHBf9-01		RHBf9-01		RHBf9-02		RHBf9-02		RHBf9-02		RHBf9-02		RHBf9-03		RHBf9-03		RHBf9-03		RHBf9-04		RHBf9-04		RHBf9-04	
			RHBf9-01 (2-4)		RHBf9-01 (5-7)		RHBf9-01 (8-10)		RHBf9-02 (2-4)		RHBf9-DUP-01		RHBf9-02 (5-7)		RHBf9-02 (8-10)		RHBf9-03 (2-4)		RHBf9-03 (5-7)		RHBf9-03 (8-10)		RHBf9-04 (2-4)		RHBf9-04 (5-7)		RHBf9-04 (8-10)	
			JC34266-1		JC34266-2		JC34266-3		JC34266-5		JC34266-16		JC34266-6		JC34266-7		JC34266-9		JC34266-10		JC34266-11		JC34266-13		JC34266-14		JC34266-15	
			2-4		5-7		8-10		2-4		2-4		5-7		8-10		2-4		5-7		8-10		2-4		5-7		8-10	
			12/22/2016		12/22/2016		12/22/2016		12/27/2016		12/27/2016		12/27/2016		12/27/2016		12/27/2016		12/27/2016		12/27/2016		12/27/2016		12/27/2016		12/27/2016	
Soil			Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil	
Polychlorinated Biphenyls	Restricted Residential Use SCO (µg/kg)	EPA Removal Management Levels for Residential Soil (µg/kg) ¹	Result (µg/kg)		Result (µg/kg)		Result (µg/kg)		Result (µg/kg)		Result (µg/kg)		Result (µg/kg)		Result (µg/kg)		Result (µg/kg)		Result (µg/kg)		Result (µg/kg)		Result (µg/kg)		Result (µg/kg)		Result (µg/kg)	
	NC	4100	37	U	35	U	36	U	37	U	38	U	36	U	41	U	40	U	42	U	41	U	38	U	38	U	35	U
	NC	20000	37	U	35	U	36	U	37	U	38	U	36	U	41	U	40	U	42	U	41	U	38	U	38	U	35	U
	NC	17000	37	U	35	U	36	U	37	U	38	U	36	U	41	U	40	U	42	U	41	U	38	U	38	U	35	U
	NC	23000	37	U	35	U	36	U	37	U	38	U	36	U	41	U	40	U	42	U	41	U	38	U	38	U	35	U
	NC	23000	37	U	35	U	36	U	37	U	38	U	36	U	41	U	40	U	42	U	41	U	38	U	38	U	35	U
	NC	1200	37	U	35	U	36	U	37	U	38	U	36	U	41	U	40	U	42	U	41	U	38	U	38	U	35	U
	NC	24000	37	U	35	U	36	U	37	U	38	U	36	U	41	U	40	U	42	U	41	U	38	U	38	U	35	U
	1000	23000	37	U	35	U	36	U	37	U	38	U	36	U	41	U	40	U	42	U	41	U	38	U	38	U	35	U
	Total PCBs																											

Notes:
NC - No criterion
SCO - Soil Cleanup Objective
U - Non-detect
The Restricted Residential SCO is from New York State Department of Environmental Conservation (NYSDEC) 6NYCRR Part 375 Table 375-6.8(b): Restricted Use Soil Cleanup Objectives.
⁽¹⁾ - EPA Removal Management Levels for Residential Soil (HQ=1), May 2016.
ug/kg - micrograms per kilogram (dry weight).

Table 5
The City of New York Department of Parks and Recreation
Red Hook Ball Field 9
Brooklyn, New York
Summary of Results of Analysis of Groundwater for Semivolatile Organic Compounds

SAMPLE ID LAB SAMPLE ID COLLECTION DATE SAMPLE MATRIX		RHBf9-01 JC34266-4 12/22/2016 Groundwater		RHBf9-02 JC34266-8 12/27/2016 Groundwater		RHBf9-GW-DUP-01 JC34266-17 12/27/2016 Groundwater		RHBf9-03 JC34266-12 12/27/2016 Groundwater		RHBf9-04 JC34266-20 12/27/2016 Groundwater	
Semivolatile Organic Compounds	Class GA Value	Result (µg/L)		Result (µg/L)		Result (µg/L)		Result (µg/L)		Result (µg/L)	
2-Methylphenol	1*	2.0	U	2.2	U	2.0	U	2.0	U	2.1	U
3&4-Methylphenol	1*	2.0	U	2.2	U	2.0	U	2.0	U	2.1	U
Acenaphthene	20	1.0	U	0.44	J	0.55	J	1.0	U	7.9	
Acenaphthylene	NC	1.0	U	1.1	U	0.44	J	1.0	U	1.0	U
Anthracene	50	1.0	U	0.91	J	1.2		1.0	U	2.5	
Benzo(a)anthracene	0.002	0.53	J	2.2	J	3.1	J	1.0	U	0.93	J
Benzo(a)pyrene	ND	0.53	J	2.5		3.3		1.0	U	0.83	J
Benzo(b)fluoranthene	0.002	0.54	J	2.5	J	3.7	J	1.0	U	0.82	J
Benzo(g,h,i)perylene	NC	1.0	U	1.5	J	2.2	J	1.0	U	0.43	J
Benzo(k)fluoranthene	0.002	1.0	U	0.86	J	1.2		1.0	U	1.0	U
Chrysene	0.002	1.0	U	2.2		2.9		1.0	U	1.3	
Dibenzo(a,h)anthracene	NC	1.0	U	1.1	U	0.59	J	1.0	U	1.0	U
Dibenzofuran	NC	5.1	U	5.4	U	5.1	U	5.1	U	2.8	J
Fluoranthene	50	0.52	J	4.6	J	6.4	J	0.63	J	2.9	
Fluorene	50	1.0	U	0.47	J	0.57	J	1.0	U	5.2	
Hexachlorobenzene	0.04	1.0	U	1.1	U	1.0	U	1.0	U	1.0	U
Indeno(1,2,3-cd)pyrene	0.002	1.0	U	1.7	J	2.4	J	1.0	U	1.0	U
Naphthalene	10	1.0	U	1.1	U	0.50	J	1.0	U	56.4	
Pentachlorophenol	1*	4.1	U	4.3	UJ	4.0	UJ	4.0	UJ	4.1	UJ
Phenanthrene	50	1.0	U	3.4	J	4.7	J	0.82	J	11.3	
Phenol	1*	2.0	U	2.2	U	2.0	U	2.0	U	2.1	U
Pyrene	50	0.75	J	4.0	J	5.6	J	0.56	J	3.1	

Notes:

* - Applies to sum of phenolic compounds

µg/L - micrograms per liter

NC - No criterion

ND - Not detected.

J - Estimated value

U - Non-detect

UJ - Estimated non-detect.

Bold and shading indicates exceedance of Class GA Values.

The Class GA Values are from Technical and Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values.

Table 6
The City of New York Department of Parks and Recreation
Red Hook Ball Field 9
Brooklyn, New York
Summary of Results of Analysis of Groundwater for Metals and Cyanide

SAMPLE ID LAB SAMPLE ID COLLECTION DATE SAMPLE MATRIX		RHBF9-01 JC34266-4 12/22/2016 Groundwater Total	RHBF9-01 JC34266-4F 12/22/2016 Groundwater Dissolved ⁽²⁾	RHBF9-02 JC34266-8 12/27/2016 Groundwater Total	RHBF9-02 JC34266-8F 12/27/2016 Groundwater Dissolved ⁽²⁾	RHBF9-03 JC34266-12 12/27/2016 Groundwater Total	RHBF9-03 JC34266-12F 12/27/2016 Groundwater Dissolved ⁽²⁾	RHBF9-04 JC34266-20 12/27/2016 Groundwater Total	RHBF9-04 JC34266-20F 12/27/2016 Groundwater Dissolved ⁽²⁾
Metals and Cyanide	Class GA Value	Result (µg/L)	Result (µg/L)	Result (µg/L)	Result (µg/L)	Result (µg/L)	Result (µg/L)	Result (µg/L)	Result (µg/L)
Aluminum	NC	369	U	200	U	200	U	2040	U
Antimony	3	6.0	U	6.0	U	6.0	U	6.0	U
Arsenic	25	11.5		10.1		12.7		198	174
Barium	1000	528		494		245		569	556
Beryllium	3	1.0	U	1.0	U	1.0	U	1.0	U
Cadmium	5	3.0	U	3.0	U	3.0	U	3.0	U
Calcium	NC	186000		183000		76200		496000	232000
Chromium	50	10	U	10	U	10	U	12.7	10
Chromium, Hexavalent	50	10	UJ	10	UJ	14	J-	10	UJ
Chromium, Trivalent	50 ⁽¹⁾	20	UJ	20	UJ	20	UJ	60	UJ
Cobalt	NC	50	U	50	U	50	U	50	U
Copper	200	20.8		10	U	10	U	38.7	10
Iron	300	32800		31300		16500		3530	19200
Lead	25	50.0		3.0	UJ	1170		15	UJ
Magnesium	35000	39100		38600		47100		64700	44100
Manganese	300	1060		1020		404		234	1110
Mercury	0.7	0.22		0.20	U	0.20	U	0.20	U
Nickel	100	10	U	10	U	10	U	10	U
Potassium	NC	28000		27500		26300		40300	23600
Selenium	10	10	U	10	U	10	U	10	U
Silver	50	10	U	10	U	10	U	10	U
Sodium	20000	71300		70100		50300		117000	324000
Thallium	0.5	2.0	U	2.0	U	2.0	U	2.0	U
Tin	NC	10	U	10	U	10	U	10	U
Vanadium	NC	50	U	50	U	50	U	50	U
Zinc	2000	98.5		21.3		668		20	U
Cyanide	200	10	UJ	NA		10	UJ	NA	UJ

Notes:

⁽¹⁾ - There is no Class GA Value for trivalent chromium.

The Class GA Value for total chromium is 50 µg/L.

⁽²⁾ - Sample volume field filtered.

µg/L - micrograms per liter

J - Estimated value.

J- - Estimated value; biased low.

NA - Not analyzed for listed analyte.

NC - No criterion

U - Non-detect

UJ - Estimated nondetect.

Bold and shading indicates exceedance of Class GA Values.

The Class GA Values are from Technical and Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values.

Table 7
The City of New York Department of Parks and Recreation
Red Hook Ball Field 9
Brooklyn, New York
Summary of Results of Analysis of Groundwater for Pesticides and Herbicides

SAMPLE ID LAB SAMPLE ID COLLECTION DATE SAMPLE MATRIX		RHBFB9-01 JC34266-4 12/22/2016 Groundwater		RHBFB9-02 JC34266-8 12/27/2016 Groundwater		RHBFB9-GW-DUP-01 JC34266-17 12/27/2016 Groundwater		RHBFB9-03 JC34266-12 12/27/2016 Groundwater		RHBFB9-04 JC34266-20 12/27/2016 Groundwater	
Pesticides and Herbicides	Class GA Value	Result (µg/L)		Result (µg/L)		Result (µg/L)		Result (µg/L)		Result (µg/L)	
4,4'-DDD	0.3	0.0067	U	0.0067	U	0.0067	U	0.0067	U	0.0067	U
4,4'-DDE	0.2	0.0067	U	0.0067	U	0.0067	U	0.0067	U	0.0067	U
4,4'-DDT	0.2	0.0067	U	0.0067	U	0.0067	U	0.0067	U	0.0067	U
Aldrin	ND	0.0067	U	0.0067	U	0.0067	U	0.0067	U	0.0067	U
alpha-BHC	0.01	0.0067	U	0.0067	U	0.0067	U	0.0067	U	0.0067	U
alpha-Chlordane	0.05*	0.0067	U	0.0067	U	0.0067	U	0.0067	U	0.0067	U
beta-BHC	0.04	0.0067	U	0.0067	U	0.0067	U	0.0067	U	0.0067	U
delta-BHC	0.04	0.0067	U	0.0067	U	0.0067	U	0.0067	U	0.0067	U
Dieldrin	0.004	0.0067	U	0.0067	U	0.0067	U	0.0067	U	0.0067	U
Endosulfan sulfate	NC	0.0067	U	0.0067	U	0.0067	U	0.0067	U	0.0067	U
Endosulfan-I	NC	0.0067	U	0.0067	U	0.0067	U	0.0067	U	0.0067	U
Endosulfan-II	NC	0.0067	U	0.0067	U	0.0067	U	0.0067	U	0.0067	U
Endrin	ND	0.0067	U	0.0067	U	0.0067	U	0.0067	U	0.0067	U
gamma-BHC (Lindane)	0.05	0.0067	U	0.0067	U	0.0067	U	0.0067	U	0.0067	U
Heptachlor	0.04	0.0067	UJ	0.0067	U	0.0067	U	0.0067	U	0.0067	U
2,4,5-TP (Silvex)	0.26	0.083	U	0.083	U	0.083	U	0.083	U	0.083	U

Notes:

µg/L - micrograms per liter

J - Estimated value

NC - No criterion

U - Non-detect

UJ - Estimated non-detect.

* Used GA value for Chlordane

Bold and shading indicates exceedance of Class GA Values.

The Class GA Values are from Technical and Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values.

Table 8
The City of New York Department of Parks and Recreation
Red Hook Ball Field 9
Brooklyn, New York
Summary of Results of Analysis of Groundwater for Polychlorinated Biphenyls

SAMPLE ID LAB SAMPLE ID COLLECTION DATE SAMPLE MATRIX		RHHF9-01 JC34266-4 12/22/2016 Groundwater		RHHF9-02 JC34266-8 12/27/2016 Groundwater		RHHF9-GW-DUP-01 JC34266-17 12/27/2016 Groundwater		RHHF9-03 JC34266-12 12/27/2016 Groundwater		RHHF9-04 JC34266-20 12/27/2016 Groundwater	
Polychlorinated Biphenyls	Class GA Value	Result (µg/L)		Result (µg/L)		Result (µg/L)		Result (µg/L)		Result (µg/L)	
Aroclor 1016	NC	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Aroclor 1221	NC	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Aroclor 1232	NC	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Aroclor 1242	NC	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Aroclor 1248	NC	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Aroclor 1254	NC	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Aroclor 1260	NC	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Total PCBs	0.09	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U

Notes:

µg/L - micrograms per liter

NC - No criterion

U - Non-detect

The Class GA Values are from Technical and Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values.

APPENDIX A
SOIL BORING LOGS (BY OTHERS)

BORING LOG

DOCUMENT 30008
REV 1 3/2015

PROJECT Red Hook Ballfield 9-soccer 2
PROJECT NO. 16-NY110-03
LOCATION Bounded by Bay, Clinton, and Halleck Streets

BORING NO. RHBF9-01

SHEET 2 OF 2

GROUND ELEVATION 12.87ft

OEI OBSERVER K. Thomas

DAILY PROGRESS	SYMBOL	SAMPLE				SAMPLE DESCRIPTION	STRATA	DEPTH (ft)	MOISTURE CONDITION	FIELD TESTS	REMARKS (TYPE)			
		NO.	DEPTH (ft)	BLOWS/6"	REC (in)									
12/22/16		S-1	1	1-1/12"	10.0	Brown mf. SAND, trace Silt, trace f. Gravel (FILL)[CLASS 7]	F I L L	1	M		①			
Tues				1										
51F		2			2									
Sunny		S-2	3	5-6	20.0	3		M						
1:07pm				9-6		4								
KT		4			4									
		S-3	5	5-3	12.0	5		M						
				3-4		6								
		S-4	7	8-6	19.0	7		M						
				6-4		8								
		S-5	9	4-2	12.0	9		M						
				2-1		10								
			11			11								
			12			12								
			13			13								
			14			14								
			15			15								
			16			16								
		S-6	16	1-1	6.0	16		W						
			17	1-1		17								
			18			18								
			19			19								
12/22/16			20					CL/ML	20					②
Tues		S-7	21	2-2	24.0	21								
51F				2-2										
Clear			22			Gray SILT&CLAY, little Sand[CLASS 6] 20'3"	SM	22			③			
1:48pm														
KT						Gray to brown mf SAND, little(+) Silt (shells, organics)					④			
						End of boring at 22' +/- bgs. [CLASS 6]								

BORING LOG

DOCUMENT 30008
REV 13/2015

PROJECT Red Hook Ballfield 9-soccer 2
PROJECT NO. 16-NY110-03
LOCATION Bounded by Bay, Clinton, and Halleck Streets

BORING NO. RHBF9-02

SHEET 2 OF 3

GROUND ELEVATION 12.20ft

OEI OBSERVER K. Thomas

DAILY PROGRESS	SYMBOL	SAMPLE				SAMPLE DESCRIPTION	STRATA	DEPTH (ft)	MOISTURE CONDITION	FIELD TESTS	REMARKS (TYPE)
		NO.	DEPTH (ft)	BLOWS/6"	REC (in)						
12/27/16	Tues 55F Cloudy 8:45am KT	S-1	1	1-2	19.0	Topsoil (roots to 4")	FILL	1	M		①
				14-11		Brown mf. SAND, little(+) Silt, little(-) Gravel (concrete frags 2", brick f. frags)(FILL)[CLASS 7]		2			
		S-2	3	9-12	24.0	Light brown to brown cmf. SAND, some cmf. Gravel, trace Silt (brick frags, concrete)(FILL)[CLASS 7]		3	M		
			4	18-13				4			
		S-3	5	4-3	17.0	Brown cmf SAND, trace(-) Silt, some(+) cmf. Gravel (brick frags, concrete)(FILL)[CLASS 7]		5	M to W		
			6	5-4				6			
		S-4	7	1-12	18.0	Black, gray and brown cmf SAND, some mf. Gravel, trace Silt (wood, brick, coal, cinders)(FILL)[CLASS 7]		7	VM-W		③
			8	16-13				8			
		S-5	9	6-4	9.0	Black and gray mf SAND, trace Silt, little Gravel (ash, cinders, coal content)(FILL)[CLASS 7]		9	W		
			10	4-3				10			②
			11					11			
			12					12			
			13					13			
			14					14			
			15					15			
		S-6	16	1/12"	5.0	Dark gray and black mf SAND, trace Silt (ash, coal, cinder content) (FILL)[CLASS 7]	FILL	16	W		
			17	1/12"				17			④
			18					18			
			19					19			
			20					20			
		S-7	21	1-1	11.0	Same[CLASS 7]		21			
			22	1/12"				22			⑤

BORING LOG

DOCUMENT 30008
REV 1 3/2015

PROJECT Red Hook Ballfield 9-soccer 2
PROJECT NO. 16-NY110-03
LOCATION Bounded by Bay, Clinton, and Halleck Streets

BORING NO. RHB9-02

SHEET 3 OF 3

GROUND ELEVATION 12.20ft

OEI OBSERVER K. Thomas

DAILY PROGRESS	SYMB	SAMPLE				SAMPLE DESCRIPTION	STRATA	DEPTH (ft)	MOISTURE CONDITION	FIELD TESTS	REMARKS (TYPE)
		NO.	DEPTH (ft)	BLOWS/6"	REC (in)						
12/27/16 Tues 56F Cloudy 10:00am KT	CL		23				F I L L	23			⑥
			24					24			
			25					25			
		S-8	26	WOH-1/12" 3	Dark gray/ black CLAY (wood) (2") [CLASS 7]	SM/SC	26				
			27		Gray mf. SAND, little Silty Clay (Silty clay seams)(shells) [CLASS 6]		27				
			End of boring at 27' +/- bgs.								
			28					28			
			29					29			
			30					30			
			31					31			
			32					32			
			33					33			
			34					34			
			35					35			
			36					36			
			37					37			
			38					38			
			39					39			
			40					40			
			41					41			
			42					42			

BORING LOG

DOCUMENT 30008
REV 1 3/2015

PROJECT Red Hook Ballfield 9-soccer 2
 PROJECT NO. 16-NY110-03
 LOCATION Bounded by Bay, Clinton, and Halleck Streets

BORING NO. RHB9-03

SHEET 2 OF 3

GROUND ELEVATION 13.50ft

OEI OBSERVER K. Thomas

DAILY PROGRESS	SYMBOL	SAMPLE				SAMPLE DESCRIPTION	STRATA	DEPTH (ft)	MOISTURE CONDITION	FIELD TESTS	REMARKS (TYPE)
		NO.	DEPTH (ft)	BLOWS/6"	REC (in)						
12/27/16		S-1	1	1-4	24.0	Roots to 8"	FILL	1	M		①
Tues				11-15		Brown and dark brown mf. SAND, some Silt		2			
57F			2			trace(+) mf. Gravel(brick frags)(FILL)[CLASS 7]		3	M		
Cloudy								4			
10:55am		S-2	3	7-7	15.0	Brown mf. SAND, little fm. Gravel, trace Silt (brick frags,		5	M		
KT			4	5-4		coal)(FILL)[CLASS 7]		6			
		S-3	5	1/18"	9.0	Brown and black mf. SAND, trace(+) f. Gravel, trace(-)		7	M		
			6	4		Silt (ash, glass, cinders, coal)(FILL)[CLASS 7]		8			
		S-4	7	6-6	17.0	Gray, brown and black cmf SAND, some cmf Gravel, trace		9	VM		
			8	6-7		Silt(coal, brick, ash, cinders, wood content)(FILL)[CLASS 7]		10			
		S-5	9	6-6	16.0	Same[CLASS 7]		11			
			10	6-5				12			
			11					13			
			12					14			
			13					15			
			14					16			
			15					17			
		S-6	16	6-1/12"	5.0	Gray and red cm GRAVEL, little mf SAND, trace Silt (brick	FILL	18	W		③
			17	2		cinders)(FILL)[CLASS 7]		19			
			18					20			
			19					21			
			20					22			
		S-7	21	7-2	8.0	Gray cmf SAND, some mf. Gravel, trace Silt (brick, cinders			W		④
			22	3-2		coal, ash)(FILL)[CLASS 7]					

BORING LOG

DOCUMENT 30008
REV 1 3/2015

PROJECT Red Hook Ballfield 9-soccer 2
PROJECT NO. 16-NY110-03
LOCATION Bounded by Bay, Clinton, and Halleck Streets

BORING NO. RHBF9-03
SHEET 3 OF 3
GROUND ELEVATION 13.50ft
OEI OBSERVER K. Thomas

DAILY PROGRESS	SYMB	SAMPLE				SAMPLE DESCRIPTION	STRATA	DEPTH (ft)	MOISTURE CONDITION	FIELD TESTS	REMARKS (TYPE)
		NO.	DEPTH (ft)	BLOWS/6"	REC (in)						
12/27/16 Tues 57F Cloudy 12:24pm KT			23			Dark gray and light brown mf. SAND, trace Silt, little cmf Gravel (coal, ash, wood, cinders)(FILL)[CLASS 7]	F I L L	23			⑤
			24					24			
			25					25			
	S-8		26	2-1	12.0			26			
			27	1-5				27			
			28					28			
			29					29			
			30					30			
			31					31			
	S-9		32	3-5	23.0	Dark gray CLAY&SILT[CLASS 6]	CL/ML	32			
			33	9-11		Brownish gay m(+) f. SAND, trace Silt[CLASS 3b]		33			
			34				SP-SM	34			
			35			End of boring at 32' +/- bgs.		35			
			36					36			
			37					37			
			38					38			
			39					39			
			40					40			
			41					41			
			42					42			

DAILY PROGRESS	SYMBOL	SAMPLE				SAMPLE DESCRIPTION	STRATA	DEPTH (ft)	MOISTURE CONDITION	FIELD TESTS	REMARKS (TYPE)			
		NO.	DEPTH (ft)	BLOWS/6"	REC (In)									
12/27/16		S-1	1	1-4	23.0	Topsoil (roots to 4") Brown and gray cmf. SAND, trace Silt, little Gravel (brick frags, coal, metal)(FILL)[CLASS 7]	FILL	1	M		①			
Wed								2						
59F		S-2	3	4-3	6.0	Brown mf(+) SAND, trace Silt, trace f. Gravel (brick frags, glass)(FILL)[CLASS 7]		3	M					
mostly				3-4				4						
sunny		S-3	5	9-10	18.0	Brown, dark brown, dark gray, and black cmf. SAND, some cmf. Gravel, trace Silt (coal, cinders, concrete, ash, plastic brick)(FILL)[CLASS 7]		5	M					
12:50pm				6-5				6						
KT		S-4	7	3-2	8.0	Brown and dark gray cmf SAND, trace Silt, trace f. Gravel (coal, cinder, metal)(FILL)[CLASS 7]		7	M					
				2-1				8						
		S-5	9	1/18"	0.0	No recovery		9						
				1				10						
				11				11						
				12				12						
				13				13						
				14				14						
				15				15						
			S-6	16	1-1	4.0		Dark gray, black, brown cmf. SAND (coal, cinders)(FILL) [CLASS 7]	16			M		②
					1-1				17					
				18				18						
				19				19						
				20				20						
			S-7	21	WOH/24"	24.0		Gray CLAY, little f. Sand (shells)[CLASS 6] (UD-1 Obtained 20-22 ft in adjacent boring)	21			VM		④
				22			22							

BORING LOG

DOCUMENT 30008
REV 1 3/2015

PROJECT Red Hook Ballfield 9-soccer 2
PROJECT NO. 16-NY110-03
LOCATION Bounded by Bay, Clinton, and Halleck Streets

BORING NO. RHBF9-04
SHEET 3 OF 3
GROUND ELEVATION 11.10ft
OEI OBSERVER K. Thomas

DAILY PROGRESS	SYM	SAMPLE				SAMPLE DESCRIPTION	STRATA	DEPTH (ft)	MOISTURE CONDITION	FIELD TESTS	REMARKS (TYPE)
		NO.	DEPTH (ft)	BLOWS/6"	REC (in)						
12/27/16 Tues 61F Cloudy 1:48pm KT	C		23			Gray to brown mf SAND, little(+) Clayey Silt[CLASS 6]	SP/SM	23	W		
			24					24			
			25					25			
		S-8	26	1-1	21.0			26			
				1-1							
			27					27			
			28			End of boring at 27' +/- bgs.		28			
			29					29			
			30					30			
			31					31			
			32					32			
			33					33			
			34					34			
			35					35			
			36					36			
			37					37			
			38					38			
			39					39			
			40					40			
			41					41			
			42					42			

APPENDIX B

GROUNDWATER PURGE FORMS

		Project: Red Hook Ballfield 9		Project No.: 246184.1000.0000		Date/Time: 12/22/2016		Sheet 1 of 1	
		TRC Personnel: R. Adams							

Well Identification: RHB9-01									
-------------------------------------	--	--	--	--	--	--	--	--	--

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	☐	☐
Concrete Collar Intact	☐	☐
PVC Stick-up Intact	☐	☐
Well Cap Present	☐	☐
Security Lock Present	☐	☐

Well integrity not applicable because groundwater sample was collected from a temporary monitoring well

PID SCREENING (ppmV)

Background	NA
Well Mouth	NA (if required)

Protective Casing Stick-up _____ ft. (from Ground)

WELL DIAMETER

	2 inch
	☐
	4 inch
	☐
	6 inch
	☐
	1 inch
	☒

WELL MATERIAL

☒	☐	☐
PVC	SS	

Reference Point:

	historical
	☐
	measured:
	☐
	notch
	☐
	north side
	☐
	high pt
	☒
	pen mark
	☐

Well Depth (ft.): 22

Depth to Water (ft.): 11.7

Depth of pump intake (ft.): ~19

Height of water column (ft.): 10.3

Volume of Water in Well (gal): 0.4223

Total Gallons Purged: 4.75

[Vol. = r²h(0.163)]

☐ .16 gal/ft (2 in.)
☐ .65 gal/ft (4 in.)
☐ 1.5 gal/ft (6 in.)
☒ 0.041 gal/ft (1 in.)

Depth to NAPL (ft.): ND

Thickness of NAPL (ft.): ND

FIELD WATER QUALITY MEASUREMENTS									
Time	1410	1415	1420	1425	1430	1435	1440		
Temp. (C.) - (±10%)	13.92	14.78	15.21	15.28	15.34	15.38	15.40		
pH (Std.Units) - (± 0.1)	6.56	6.48	6.49	6.49	6.49	6.49	6.50		
ORP (millivolts) - (± 10)	-35	-71	-91	-95	-96	-97	-98		
Conduct.(mS/cm) - (±3%)	1.34	1.45	1.51	1.50	1.50	1.51	1.52		
Turb. (NTU) - (± 10%)	1,000+	251	101	71.2	45.8	43.8	42.2		
DO (mg/L) - (± 10%)	1.26	0.45	0.37	0.36	0.35	0.34	0.34		
Depth to water (ft)	11.70	11.70	11.70	11.70	11.70	11.70	11.70		
Flow (ml/min)	200	200	200	200	200	200	200		
Cum Purge Vol (Gal or L)	INITIAL	3 L	7 L	11 L	13 L	16 L	18L		
Comments									
Time									
Temp. (C.) - (±10%)									
pH (Std.Units) - (± 0.1)									
ORP (millivolts) - (± 10)									
Conduct.(mS/cm) - (±3%)									
Turb. (NTU) - (± 10%)									
DO (mg/L) - (± 10%)									
Depth to water (ft)									
Flow (ml/min)									
Salinity									
Comments									

Pump Type

Peristaltic Pump ☒

Submersible Pump ☐

Bladder Pump ☐

Bailer ☐

Purge ☒

Sample ☒

Description of Sampling Equipment

Peristaltic-pump

Horiba U52-2 - Water Quality Meter

IP-100' Solinst - Oil Water Interface Probe

Analytical Parameters	Filtered (Y/N)	Preservation	Volume/Containers	Time Collected	Sample ID
Part 375 SVOCs: EPA Method 8270D	N	Iced	(2) 1 L amber glass	1440	RHB9-01
Part 375 Pesticides: EPA Method 8081B & TCL PCBs: EPA Method 8082B	N	Iced	(2) 300 mL amber glass	1440	RHB9-01
Past 375 Herbicide - Silvex: EPA Method 8151A	N	Iced	(2) 300 mL amber glass	1440	RHB9-01
TAL Metals: EPA Method 6010C (and 7470A/7471B for mercury and 7196A for hexavalent chromium	Y/N	Iced/HNO3	(2) 500 mL plastic	1440	RHB9-01
Total Cyanide: EPA Method 9012B	N	NaOH	(1) 60 mL glass	1440	RHB9-01

Remarks:

Turbidity = Moderate

Disposal Method = Drum

ND = Not Detected NA = Not Available



**Groundwater Sampling
Data Record Form**

Project: Red Hook Ballfield 9

Project No.:
246184.1000.0000

Date/Time:
12/27/2016

Sheet 1 of 1

TRC Personnel: R. Adams

Well Identification: RHBF9-02

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	☐	☐
Concrete Collar Intact	☐	☐
PVC Stick-up Intact	☐	☐
Well Cap Present	☐	☐
Security Lock Present	☐	☐

Well integrity not applicable because groundwater sample was collected from a temporary monitoring well

PID SCREENING (ppmV)

Background	NA
Well Mouth	NA (if required)

Protective Casing Stick-up _____ ft.
(from Ground)

WELL DIAMETER	☐ 2 inch
	☐ 4 inch
	☐ 6 inch
	☒ 1 inch

WELL MATERIAL

☒ PVC	☐ SS	☐
---	-----------------------------	--------------------------

Reference Point:

Well Depth (ft.):	27
Depth to Water (ft.):	9.7

☐ top of riser
☒ top of casing

historical
measured:
notch
north side
high pt
pen mark

Depth of pump intake (ft.): ~24

Height of water column (ft.): 17.3

☐ .16 gal/ft (2 in.)
☐ .65 gal/ft (4 in.)
☐ 1.5 gal/ft (6 in.)
☒ 0.041 gal/ft (1 in.)

Volume of Water in Well (gal): 0.71

Total Gallons Purged: 3.96

Depth to NAPL (ft.): ND

Thickness of NAPL (ft.): ND

[Vol. = r²h(0.163)]

FIELD WATER QUALITY MEASUREMENTS

Time	1015	1020	1025	1030	1035	1040	1045		
Temp. (C.) - (±10%)	14.34	14.83	15.07	15.28	15.27	15.26	15.25		
pH (Std.Units) - (± 0.1)	7.28	7.10	7.05	7.07	7.01	7.02	7.02		
ORP (millivolts) - (± 10)	-49	-98	-105	-109	-111	-111	-112		
Conduct.(mS/cm) - (±3%)	0.771	0.991	1.04	1.11	1.12	1.14	1.15		
Turb. (NTU) - (± 10%)	1000+	543	347	94.3	85.7	90.1	90.6		
DO (mg/L) - (± 10%)	6.66	1.92	1.96	1.87	1.16	1.08	1.01		
Depth to water (ft)	9.72	9.72	9.72	9.73	9.73	9.73	9.73		
Flow (ml/min)	200	200	200	200	200	200	200		
Cum Purge Vol (Gal or L)	INITIAL	3 L	5 L	8 L	10 L	13 L	15 L		

Comments

Time									
Temp. (C.) - (±10%)									
pH (Std.Units) - (± 0.1)									
ORP (millivolts) - (± 10)									
Conduct.(mS/cm) - (±3%)									
Turb. (NTU) - (± 10%)									
DO (mg/L) - (± 10%)									
Depth to water (ft)									
Flow (ml/min)									
Salinity									
Comments									

Pump Type

Peristaltic Pump

Submersible Pump

Bladder Pump

Bailer

Purge

☒

Sample

☒

Description of Sampling Equipment

Peristaltic-pump

Horiba U52-2 - Water Quality Meter

IP-100' Solinst - Oil Water Interface Probe

Analytical Parameters	Filtered (Y/N)	Preservation	Volume/Containers	Time Collected	Sample ID
Part 375 SVOCs: EPA Method 8270D	N	Iced	(2) 1 L amber glass	1045	RHBF9-02
Part 375 Pesticides: EPA Method 8081B & TCL PCBs: EPA Method 8082B	N	Iced	(2) 300 mL amber glass	1045	RHBF9-02
Past 375 Herbicide - Silvex: EPA Method 8151A	N	Iced	(2) 300 mL amber glass	1045	RHBF9-02
TAL Metals: EPA Method 6010C (and 7470A/7471B for mercury and 7196A for hexavalent chromium	Y/N	Iced/HNO3	(2) 500 mL plastic	1045	RHBF9-02
Total Cyanide: EPA Method 9012B	N	NaOH	(1) 60 mL glass	1045	RHBF9-02

Remarks:

Turbidity = Moderate to Very

Disposal Method = Drum

ND = Not Detected NA = Not Available

 Groundwater Sampling Data Record Form	Project: Red Hook Ballfield 9	Project No.: 246184.1000.0000	Date/Time: 12/27/2016	Sheet 1 of 1
	TRC Personnel: R. Adams			

Well Identification: RHBF9-03																												
WELL INTEGRITY <table style="width:100%;"> <tr> <td style="width:50%;"></td> <td style="width:10%; text-align: center;">YES</td> <td style="width:10%; text-align: center;">NO</td> <td style="width:30%;"></td> </tr> <tr> <td>Protect. Casing Secure</td> <td style="text-align: center;">☐</td> <td style="text-align: center;">☐</td> <td></td> </tr> <tr> <td>Concrete Collar Intact</td> <td style="text-align: center;">☐</td> <td style="text-align: center;">☐</td> <td></td> </tr> <tr> <td>PVC Stick-up Intact</td> <td style="text-align: center;">☐</td> <td style="text-align: center;">☐</td> <td></td> </tr> <tr> <td>Well Cap Present</td> <td style="text-align: center;">☐</td> <td style="text-align: center;">☐</td> <td></td> </tr> <tr> <td>Security Lock Present</td> <td style="text-align: center;">☐</td> <td style="text-align: center;">☐</td> <td></td> </tr> </table> Well integrity not applicable because groundwater sample was collected from a temporary monitoring well		YES	NO		Protect. Casing Secure	☐	☐		Concrete Collar Intact	☐	☐		PVC Stick-up Intact	☐	☐		Well Cap Present	☐	☐		Security Lock Present	☐	☐		Protective Casing Stick-up _____ ft. (from Ground) WELL DIAMETER ☐ 2 inch ☐ 4 inch ☐ 6 inch ☒ 1 inch	Well Depth (ft.): 25 Depth to Water (ft.): 12.11 Depth of pump intake (ft.): 22 Height of water column (ft.): 12.89	Reference Point: ☐ historical ☐ measured: ☐ notch ☐ north side ☒ high pt ☐ pen mark ☐ .16 gal/ft (2 in.) ☐ .65 gal/ft (4 in.) ☐ 1.5 gal/ft (6 in.) ☒ 0.041 gal/ft (1 in.)	WELL MATERIAL ☒ ☐ ☐ PVC SS
	YES	NO																										
Protect. Casing Secure	☐	☐																										
Concrete Collar Intact	☐	☐																										
PVC Stick-up Intact	☐	☐																										
Well Cap Present	☐	☐																										
Security Lock Present	☐	☐																										
PID SCREENING (ppmV) <table style="width:100%;"> <tr> <td style="width:50%;">Background</td> <td style="width:50%;">NA</td> </tr> <tr> <td>Well Mouth</td> <td>NA (if required)</td> </tr> </table>		Background	NA	Well Mouth	NA (if required)	<table style="width:100%;"> <tr> <td style="width:50%;">Volume of Water in Well (gal):</td> <td style="width:50%;">0.53</td> </tr> <tr> <td>Total Gallons Purged:</td> <td>3.96</td> </tr> <tr> <td colspan="2">[Vol. = r²h(0.163)]</td> </tr> </table>			Volume of Water in Well (gal):	0.53	Total Gallons Purged:	3.96	[Vol. = r ² h(0.163)]															
Background	NA																											
Well Mouth	NA (if required)																											
Volume of Water in Well (gal):	0.53																											
Total Gallons Purged:	3.96																											
[Vol. = r ² h(0.163)]																												

FIELD WATER QUALITY MEASUREMENTS									
Time	1235	1240	1245	1250	1255	1300	1305		
Temp. (C.) - (±10%)	15.80	15.28	15.13	15.09	15.13	15.14	15.16		
pH (Std.Units) - (± 0.1)	7.40	7.67	7.65	7.67	7.61	7.60	7.59		
ORP (millivolts) - (± 10)	-136	-197	-209	-237	-255	-260	-263		
Conduct. (mS/cm) - (±3%)	2.88	2.93	3.02	3.05	3.06	3.07	3.08		
Turb. (NTU) - (± 10%)	476	197	205	154	148	142	141		
DO (mg/L) - (± 10%)	3.49	1.60	1.63	1.59	0.53	0.49	0.46		
Depth to water (ft)	12.12	12.12	12.12	12.12	12.12	12.12	12.12		
Flow (ml/min)	200	200	200	200	200	200	200		
Cum Purge Vol (Gal or L)	INITIAL	3 L	5 L	8 L	10 L	13 L	15 L		
Comments									
Time									
Temp. (C.) - (±10%)									
pH (Std.Units) - (± 0.1)									
ORP (millivolts) - (± 10)									
Conduct. (mS/cm) - (±3%)									
Turb. (NTU) - (± 10%)									
DO (mg/L) - (± 10%)									
Depth to water (ft)									
Flow (ml/min)									
Salinity									
Comments									

Pump Type	Purge	Sample	Description of Sampling Equipment
Peristaltic Pump	☒	☒	Peristaltic-pump
Submersible Pump	☐	☐	Horiba U52-2 - Water Quality Meter
Bladder Pump	☐	☐	IP-100' Solinst - Oil Water Interface Probe
Bailer	☐	☐	

Analytical Parameters	Filtered (Y/N)	Preservation	Volume/Containers	Time Collected	Sample ID
Part 375 SVOCs: EPA Method 8270D	N	Iced	(2) 1 L amber glass	1305	RHBF9-03
Part 375 Pesticides: EPA Method 8081B & TCL PCBs: EPA Method 8082B	N	Iced	(2) 300 mL amber glass	1305	RHBF9-03
Past 375 Herbicide - Silvex: EPA Method 8151A	N	Iced	(2) 300 mL amber glass	1305	RHBF9-03
TAL Metals: EPA Method 6010C (and 7470A/7471B for mercury and 7196A for hexavalent chromium)	Y/N	Iced/HNO3	(2) 500 mL plastic	1305	RHBF9-03
Total Cyanide: EPA Method 9012B	N	NaOH	(1) 60 mL glass	1305	RHBF9-03

Remarks:	Turbidity = Moderate to Very Disposal Method = Drum ND = Not Detected NA = Not Available

		Project: Red Hook Ball Field 9		Project No.: 246184.1000.0000		Date/Time: 12/27/2016		Sheet 1 of 1	
Groundwater Sampling Data Record Form		TRC Personnel: R. Adams							
Well Identification: RHBF9-04									
WELL INTEGRITY			Protective Casing Stick-up _____ ft. (from Ground)		Well Depth (ft.): 25		Reference Point: _____		
Protect. Casing Secure			☐		Depth to Water (ft.): 10.91		☐ top of riser		
Concrete Collar Intact			☐				☒ top of casing		
PVC Stick-up Intact			☐				☐ _____		
Well Cap Present			☐				☒ high pt		
Security Lock Present			☐				☐ pen mark		
Well integrity not applicable because groundwater sample was collected from a temporary monitoring well			WELL DIAMETER		2 inch				
					4 inch				
					6 inch				
			☒		1 inch				
			WELL MATERIAL		Height of water column (ft.): 14.09				
			☒				☐ .16 gal/ft (2 in.)		
			☐				☐ .65 gal/ft (4 in.)		
			☐				☒ 1.5 gal/ft (6 in.)		
			PVC				☒ 0.041 gal/ft (1 in.)		
			SS						
PID SCREENING (ppmV)			Volume of Water in Well (gal): 0.58		Total Gallons Purged: 4.76		Depth to NAPL (ft.): ND		
Background			NA				Thickness of NAPL (ft.): ND		
Well Mouth			NA (if required)		[Vol. = r ² h(0.163)]				
FIELD WATER QUALITY MEASUREMENTS									
Time	1400	1405	1410	1415	1420	1425	1430	1435	
Temp. (C.) - (±10%)	15.38	14.77	14.54	14.56	14.57	14.56	14.58	14.59	
pH (Std.Units) - (± 0.1)	7.37	7.08	7.07	7.07	7.07	7.07	7.07	7.07	
ORP (millivolts) - (± 10)	-122	-113	-121	-121	-122	-123	-124	-124	
Conduct.(mS/cm) - (±3%)	1.52	2.51	3.25	3.26	3.28	3.31	3.35	3.35	
Turb. (NTU) - (± 10%)	605	123	43.6	41.8	40.9	39.6	38.6	38.3	
DO (mg/L) - (± 10%)	5.25	1.94	1.16	1.15	1.19	1.24	1.18	1.01	
Depth to water (ft)	10.92	10.92	10.92	10.92	10.92	10.92	10.92	10.92	
Flow (ml/min)	200	200	200	200	200	200	200	200	
Cum Purge Vol (Gal or L)	INITIAL	3 L	5 L	8 L	10 L	13 L	15 L	18 L	
Comments									
Time									
Temp. (C.) - (±10%)									
pH (Std.Units) - (± 0.1)									
ORP (millivolts) - (± 10)									
Conduct.(mS/cm) - (±3%)									
Turb. (NTU) - (± 10%)									
DO (mg/L) - (± 10%)									
Depth to water (ft)									
Flow (ml/min)									
Salinity									
Comments									
Pump Type	Purge	Sample	Description of Sampling Equipment						
Peristaltic Pump	☒	☒	Peristaltic-pump						
Submersible Pump	☐	☐	Horiba U52-2 - Water Quality Meter						
Bladder Pump	☐	☐	IP-100' Solinst - Oil Water Interface Probe						
Bailer	☐	☐							
Analytical Parameters	Filtered (Y/N)	Preservation	Volume/Containers	Time Collected	Sample ID				
Part 375 SVOCs: EPA Method 8270D	N	Iced	(2) 1 L amber glass	1435	RHBF9-04				
Part 375 Pesticides: EPA Method 8081B & TCL PCBs: EPA Method 8082B	N	Iced	(2) 300 mL amber glass	1435	RHBF9-04				
Past 375 Herbicide - Silvex: EPA Method 8151A	N	Iced	(2) 300 mL amber glass	1435	RHBF9-04				
TAL Metals: EPA Method 6010C (and 7470A/7471B for mercury and 7196A for hexavalent chromium	Y/N	Iced/HNO3	(2) 500 mL plastic	1435	RHBF9-04				
Total Cyanide: EPA Method 9012B	N	NaOH	(1) 60 mL glass	1435	RHBF9-04				
Remarks:	Turbidity = Moderate								
	Disposal Method = Drum								
	ND = Not Detected NA = Not Available								
	Note: MS/MSD collected from RHBF9-04								

APPENDIX C
PERMEABILITY TEST LOGS



PERMEABILITY TEST LOG

PT ID No.

RHBF9-01(3')

SHEET 1 OF 1

JOB NAME/ CLIENT:

City of New York, Parks & Recreation - Red Hook Recreation Area

ADDRESS:

Red Hook Ball Field 9

PROJECT NO.:

246184.1000.0000

START DATE:

12/29/16-12/30/2016

DRILLING CONTRACTOR:

Land, Air, Water Environmental Services, Inc.

DRILLER:

Ernesto

INSPECTOR:

R. Adams

DEPTH OF PT (FT):

3

WEATHER:

Partly cloudy. 40° F

DRILLING RIG:

Geoprobe 7822DT

DRILL BIT TYPE:

Direct push

CASING DIAMETER (IN):

4

CASING LENGTH (FT):

5

HAMMER WEIGHT (LB):

140

WATER LEVEL:

11.7 feet bgs

ASTM D-6391-11

General Formula:

Formula for 4" internal diameter casing (in/hr):

PERMEABILITY COEFFICIENT (K_m) FORMULA:

$$K_m = \pi R_t \times \frac{[D \{ \ln(\frac{h_1}{h_2}) \}]}{11 \times (t_2 - t_1)}$$

$$K_m = 1.142 R_t \times \frac{[\ln(\frac{h_1}{h_2})]}{(t_2 - t_1)}$$

where:

$$R_t = 2.2902(0.9842^T) / T^{0.1702}$$

RHBF9-01 @ 3 FEET**TEST 1**

Water Temperature (°C), T: 10.86

 $R_t = 1.28$ **Field Data****Calculated Data**

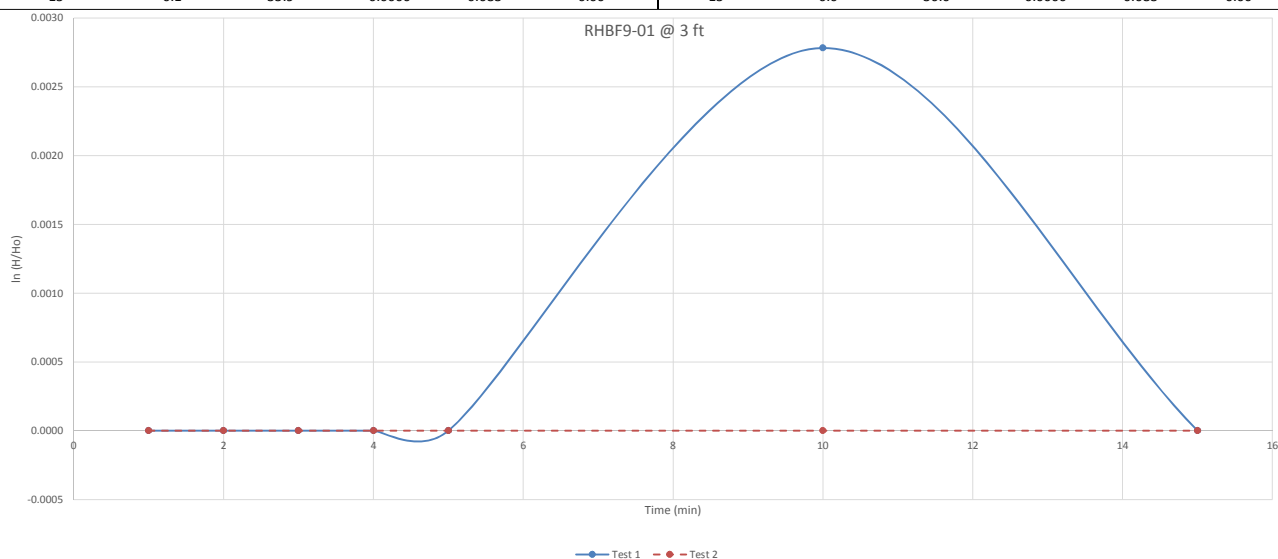
Time (min)	Depth (in)	Height (in)	Ln (H/Ho)	($t_2 - t_1$)	*Kv (in/hr)
1	0.0	36.0	0.0000	0.017	0.00
2	0.0	36.0	0.0000	0.017	0.00
3	0.0	36.0	0.0000	0.017	0.00
4	0.0	36.0	0.0000	0.017	0.00
5	0.0	36.0	0.0000	0.017	0.00
10	0.1	35.9	0.0028	0.083	0.05
15	0.1	35.9	0.0000	0.083	0.00

TEST 2

Water Temperature (°C), T: 10.87

 $R_t = 1.28$ **Field Data****Calculated Data**

Time (min)	Depth (in)	Height (in)	Ln (H/Ho)	($t_2 - t_1$)	*Kv (in/hr)
1	0.0	36.0	0.0000	0.017	0.00
2	0.0	36.0	0.0000	0.017	0.00
3	0.0	36.0	0.0000	0.017	0.00
4	0.0	36.0	0.0000	0.017	0.00
5	0.0	36.0	0.0000	0.017	0.00
10	0.0	36.0	0.0000	0.083	0.00
15	0.0	36.0	0.0000	0.083	0.00

**TEST 1 FINAL RESULTS**Time Weighted Average
Permeability Coefficient $K_m = 0.02$ in/hr**TEST 2 FINAL RESULTS**Time Weighted Average
Permeability Coefficient $K_m = 0.00$ in/hr**AVERAGE RHBF9-01 @ 3 ft**Time Weighted Average
Permeability Coefficient $K_m = 0.01$ in/hr

Inspector Remarks:

DEFINITION OF VARIABLES* K_m = Mean permeability

T = Temperature of permeant (water), in °C

Ln = Natural Logarithmic

 t_1 = Time at the start of the test in the same units selected for K_m t_2 = Time at the end of the test in the same units selected for K_m h_1 = Height of the water above the bottom of the casing at the start of the test in the same units selected for K_m h_2 = Height of the water above the bottom of the casing at the end of the test in the same units selected for K_m



PERMEABILITY TEST LOG

PT ID No.

RHBF9-01(6')

SHEET 1 OF 1

JOB NAME/ CLIENT:

City of New York, Parks & Recreation - Red Hook
Recreation Area

ADDRESS:

Red Hook Ball Field 9

PROJECT NO.:

246184.1000.0000

START DATE:

12/29/16-12/30/2016

DRILLING CONTRACTOR:

Land, Air, Water Environmental Services, Inc.

DRILLER:

Ernesto

INSPECTOR:

R. Adams

DEPTH OF PT (FT):

6

WEATHER:

Partly cloudy. 40° F

DRILLING RIG:

Geoprobe 7822DT

DRILL BIT TYPE:

Direct push

CASING DIAMETER (IN):

4

CASING LENGTH (FT):

5

HAMMER WEIGHT (LB):

140

WATER LEVEL:

11.7 feet bgs

ASTM D-6391-11

General Formula:

Formula for 4" internal diameter casing (in/hr):

PERMEABILITY COEFFICIENT (K_m) FORMULA:

$$K_m = \pi R_t \times \frac{[D \{ \ln(\frac{h_1}{h_2}) \}]}{11 \times (t_2 - t_1)}$$

$$K_m = 1.142 R_t \times \frac{[\ln(\frac{h_1}{h_2})]}{(t_2 - t_1)}$$

where:

$$R_t = 2.2902(0.9842^T) / T^{0.1702}$$

RHBF9-01 @ 6 FEET

TEST 1

Water Temperature (°C), T: 10.91

 $R_t = 1.28$

Field Data

Calculated Data

Time (min)	Depth (in)	Height (in)	Ln (H/Ho)	($t_2 - t_1$)	*Kv (in/hr)
1	0.0	72.0	0.0000	0.017	0.00
2	0.0	72.0	0.0000	0.017	0.00
3	0.0	72.0	0.0000	0.017	0.00
4	0.1	71.9	0.0014	0.017	0.12
5	0.1	71.9	0.0000	0.017	0.00
10	0.2	71.8	0.0014	0.083	0.02
15	0.3	71.7	0.0014	0.083	0.02

TEST 2

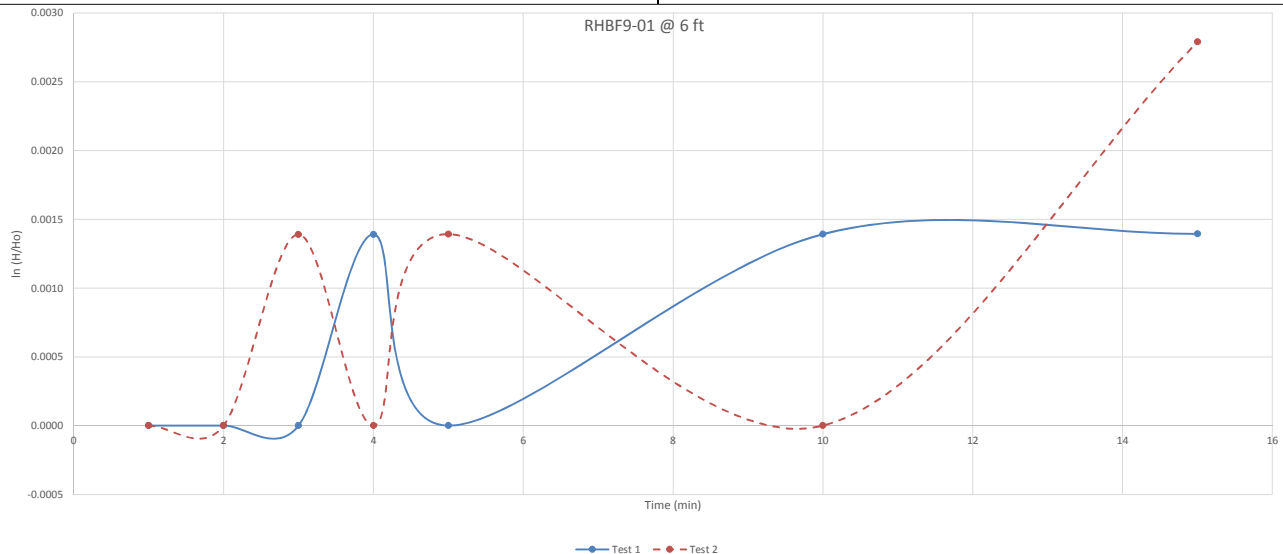
Water Temperature (°C), T: 10.96

 $R_t = 1.28$

Field Data

Calculated Data

Time (min)	Depth (in)	Height (in)	Ln (H/Ho)	($t_2 - t_1$)	*Kv (in/hr)
1	0.0	72.0	0.0000	0.017	0.00
2	0.0	72.0	0.0000	0.017	0.00
3	0.1	71.9	0.0014	0.017	0.12
4	0.1	71.9	0.0000	0.017	0.00
5	0.2	71.8	0.0014	0.017	0.12
10	0.2	71.8	0.0000	0.083	0.00
15	0.4	71.6	0.0028	0.083	0.05



TEST 1 FINAL RESULTS

Time Weighted Average
Permeability Coefficient $K_m =$

0.02 in/hr

TEST 2 FINAL RESULTS

Time Weighted Average
Permeability Coefficient $K_m =$

0.03 in/hr

AVERAGE RHBF9-01 @ 6 ft

Time Weighted Average
Permeability Coefficient $K_m =$

0.03 in/hr

Inspector Remarks:

DEFINITION OF VARIABLES

* K_m = Mean permeability

T = Temperature of permeant (water), in °C

Ln = Natural Logarithmic

 t_1 = Time at the start of the test in the same units selected for K_m t_2 = Time at the start of the test in the same units selected for K_m h_1 = Height of the water above the bottom of the casing at the start of the test in the same units selected for K_m h_2 = Height of the water above the bottom of the casing at the end of the test in the same units selected for K_m



PERMEABILITY TEST LOG

PT ID No.

RHBF9-01(10')

SHEET 1 OF 1

JOB NAME/ CLIENT:

City of New York, Parks & Recreation - Red Hook Recreation Area

ADDRESS:

Red Hook Ball Field 9

PROJECT NO.:

246184.1000.0000

START DATE:

12/29/16-12/30/2016

DRILLING CONTRACTOR:

Land, Air, Water Environmental Services, Inc.

DRILLER:

Ernesto

INSPECTOR:

R. Adams

DEPTH OF PT (FT):

10

WEATHER:

Partly cloudy. 40° F

DRILLING RIG:

Geoprobe 7822DT

DRILL BIT TYPE:

Direct push

CASING DIAMETER (IN):

4

CASING LENGTH (FT):

5

HAMMER WEIGHT (LB):

140

WATER LEVEL:

11.7 feet bgs

ASTM D-6391-11

General Formula:

Formula for 4" internal diameter casing (in/hr):

PERMEABILITY COEFFICIENT (K_m) FORMULA:

$$K_m = \pi R_t \times \frac{[D \{ \ln(\frac{h_1}{h_2}) \}]}{11 \times (t_2 - t_1)}$$

$$K_m = 1.142 R_t \times \frac{[\ln(\frac{h_1}{h_2})]}{(t_2 - t_1)}$$

where:

$$R_t = 2.2902(0.9842^T) / T^{0.1702}$$

RHBF9-01 @ 10 FEET

TEST 1

Water Temperature (°C), T:

11.01

 $R_t = 1.28$

Field Data

Calculated Data

Time (min)	Depth (in)	Height (in)	Ln (H/Ho)	($t_2 - t_1$)	*Kv (in/hr)
1	0.2	119.8	0.0017	0.017	0.15
2	0.4	119.6	0.0017	0.017	0.15
3	0.5	119.5	0.0008	0.017	0.07
4	0.7	119.3	0.0017	0.017	0.15
5	0.8	119.2	0.0008	0.017	0.07
10	1.4	118.6	0.0050	0.083	0.09
15	1.7	118.3	0.0025	0.083	0.04

TEST 2

Water Temperature (°C), T:

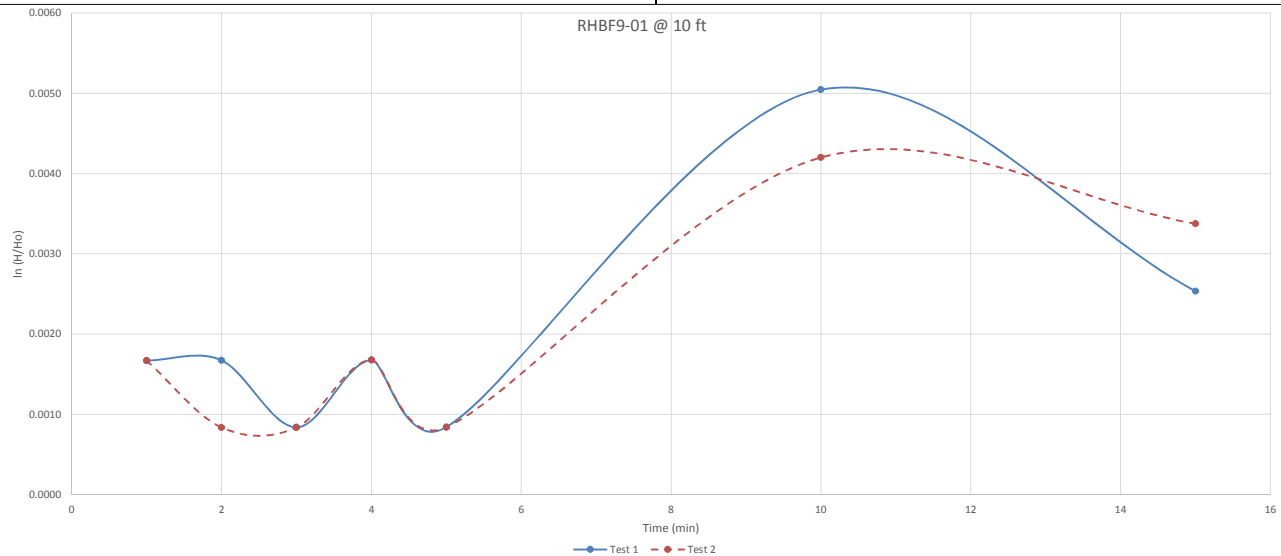
11.12

 $R_t = 1.27$

Field Data

Calculated Data

Time (min)	Depth (in)	Height (in)	Ln (H/Ho)	($t_2 - t_1$)	*Kv (in/hr)
1	0.2	119.8	0.0017	0.017	0.15
2	0.3	119.7	0.0008	0.017	0.07
3	0.4	119.6	0.0008	0.017	0.07
4	0.6	119.4	0.0017	0.017	0.15
5	0.7	119.3	0.0008	0.017	0.07
10	1.2	118.8	0.0042	0.083	0.07
15	1.6	118.4	0.0034	0.083	0.06



TEST 1 FINAL RESULTS

Time Weighted Average
Permeability Coefficient $K_m =$

0.08 in/hr

TEST 2 FINAL RESULTS

Time Weighted Average
Permeability Coefficient $K_m =$

0.08 in/hr

AVERAGE RHBF9-01 @ 10 ft

Time Weighted Average
Permeability Coefficient $K_m =$

0.08 in/hr

Inspector Remarks:

DEFINITION OF VARIABLES

* K_m = Mean permeability

T = Temperature of permeant (water), in °C

Ln = Natural Logarithmic

 t_1 = Time at the start of the test in the same units selected for K_m t_2 = Time at the start of the test in the same units selected for K_m h_1 = Height of the water above the bottom of the casing at the start of the test in the same units selected for K_m h_2 = Height of the water above the bottom of the casing at the end of the test in the same units selected for K_m



PERMEABILITY TEST LOG

PT ID No.

RHBF9-02(3')

SHEET 1 OF 1

JOB NAME/ CLIENT:

City of New York, Parks & Recreation - Red Hook
Recreation Area

ADDRESS:

Red Hook Ball Field 9

PROJECT NO.:

246184.1000.0000

START DATE:

12/29/16-12/30/2016

DRILLING CONTRACTOR:

Land, Air, Water Environmental Services, Inc.

DRILLER:

Ernesto

INSPECTOR:

R. Adams

DEPTH OF PT (FT):

3

WEATHER:

Partly cloudy. 40° F

DRILLING RIG:

Geoprobe 7822DT

DRILL BIT TYPE:

Direct push

CASING DIAMETER (IN):

4

CASING LENGTH (FT):

5

HAMMER WEIGHT (LB):

140

WATER LEVEL:

9.7 feet bgs

ASTM D-6391-11

General Formula:

Formula for 4" internal diameter casing (in/hr):

PERMEABILITY COEFFICIENT (K_m) FORMULA:

$$K_m = \pi R_t \times \frac{[D \{ \ln(\frac{h_1}{h_2}) \}]}{11 \times (t_2 - t_1)}$$

$$K_m = 1.142 R_t \times \frac{[\ln(\frac{h_1}{h_2})]}{(t_2 - t_1)}$$

where:

$$R_t = 2.2902(0.9842^T) / T^{0.1702}$$

RHBF9-02 @ 3 FEET

TEST 1

Water Temperature (°C), T:

11.14

 $R_t = 1.27$

Field Data

Calculated Data

Time (min)	Depth (in)	Height (in)	Ln (H/Ho)	($t_2 - t_1$)	*Kv (in/hr)
1	0.0	36.0	0.0000	0.017	0.00
2	0.0	36.0	0.0000	0.017	0.00
3	0.0	36.0	0.0000	0.017	0.00
4	0.0	36.0	0.0000	0.017	0.00
5	0.0	36.0	0.0000	0.017	0.00
10	0.1	35.9	0.0028	0.083	0.05
15	0.2	35.8	0.0028	0.083	0.05

TEST 2

Water Temperature (°C), T:

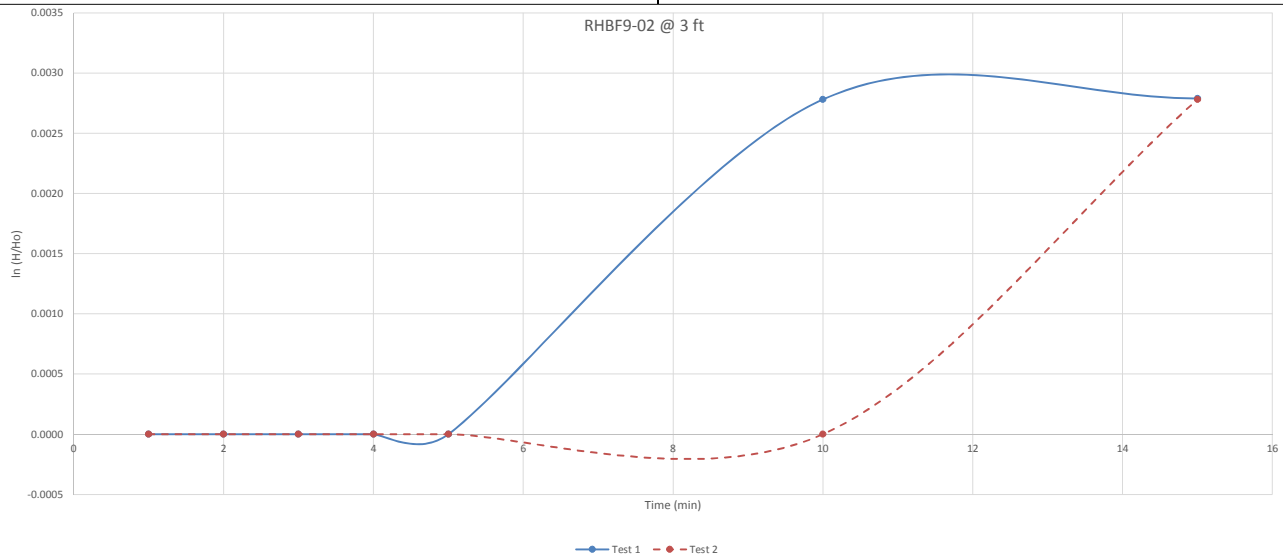
11.20

 $R_t = 1.27$

Field Data

Calculated Data

Time (min)	Depth (in)	Height (in)	Ln (H/Ho)	($t_2 - t_1$)	*Kv (in/hr)
1	0.0	36.0	0.0000	0.017	0.00
2	0.0	36.0	0.0000	0.017	0.00
3	0.0	36.0	0.0000	0.017	0.00
4	0.0	36.0	0.0000	0.017	0.00
5	0.0	36.0	0.0000	0.017	0.00
10	0.0	36.0	0.0000	0.083	0.00
15	0.1	35.9	0.0028	0.083	0.05



TEST 1 FINAL RESULTS

Time Weighted Average
Permeability Coefficient $K_m =$

0.03 in/hr

TEST 2 FINAL RESULTS

Time Weighted Average
Permeability Coefficient $K_m =$

0.02 in/hr

AVERAGE RHBF9-02 @ 3 ft

Time Weighted Average
Permeability Coefficient $K_m =$

0.02 in/hr

Inspector Remarks:

DEFINITION OF VARIABLES

* K_m = Mean permeability

T = Temperature of permeant (water), in °C

Ln = Natural Logarithmic

 t_1 = Time at the start of the test in the same units selected for K_m t_2 = Time at the end of the test in the same units selected for K_m h_1 = Height of the water above the bottom of the casing at the start of the test in the same units selected for K_m h_2 = Height of the water above the bottom of the casing at the end of the test in the same units selected for K_m



PERMEABILITY TEST LOG

PT ID No.

RHBF9-02(6')

SHEET 1 OF 1

JOB NAME/ CLIENT:

City of New York, Parks & Recreation - Red Hook
Recreation Area

ADDRESS:

Red Hook Ball Field 9

PROJECT NO.:

246184.1000.0000

START DATE:

12/29/16-12/30/2016

DRILLING CONTRACTOR:

Land, Air, Water Environmental Services, Inc.

DRILLER:

Ernesto

INSPECTOR:

R. Adams

DEPTH OF PT (FT):

6

WEATHER:

Partly cloudy. 40° F

DRILLING RIG:

Geoprobe 7822DT

DRILL BIT TYPE:

Direct push

CASING DIAMETER (IN):

4

CASING LENGTH (FT):

5

HAMMER WEIGHT (LB):

140

WATER LEVEL:

9.7 feet bgs

ASTM D-6391-11

General Formula:

Formula for 4" internal diameter casing (in/hr):

PERMEABILITY COEFFICIENT (K_m) FORMULA:

$$K_m = \pi R_t \times \frac{[D \{ \ln(\frac{h_1}{h_2}) \}]}{11 \times (t_2 - t_1)}$$

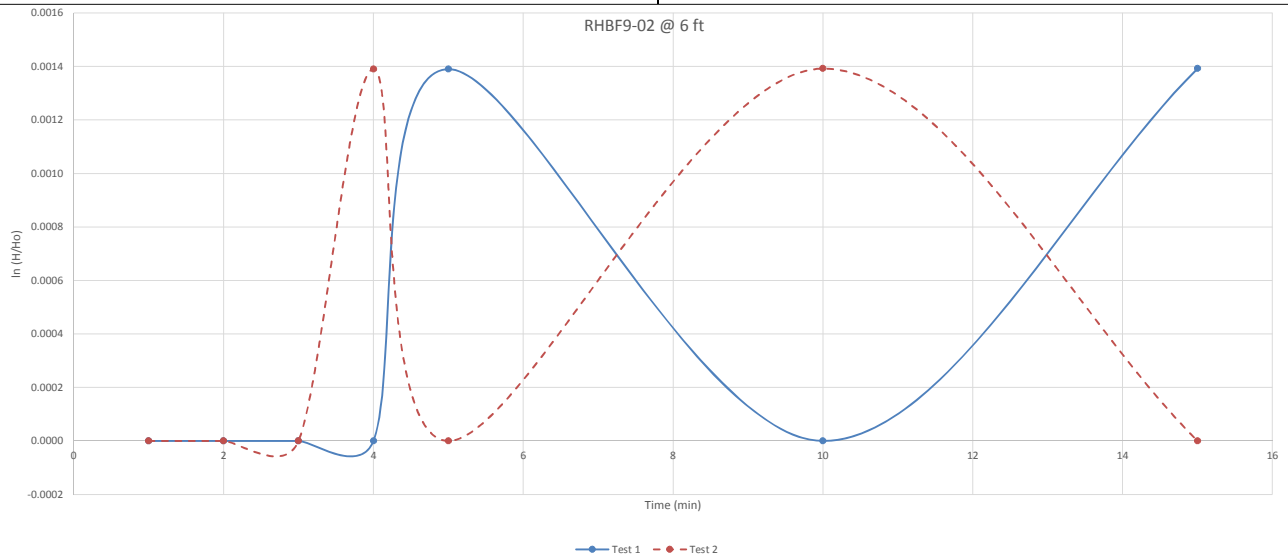
$$K_m = 1.142 R_t \times \frac{[\ln(\frac{h_1}{h_2})]}{(t_2 - t_1)}$$

where:

$$R_t = 2.2902(0.9842^T) / T^{0.1702}$$

RHBF9-02 @ 6 FEET

TEST 1						TEST 2					
Water Temperature (°C), T:			R _t =			Water Temperature (°C), T:			R _t =		
11.86			1.24			11.84			1.25		
Field Data			Calculated Data			Field Data			Calculated Data		
Time (min)	Depth (in)	Height (in)	Ln (H/Ho)	(t ₂ -t ₁)	*Kv (in/hr)	Time (min)	Depth (in)	Height (in)	Ln (H/Ho)	(t ₂ -t ₁)	*Kv (in/hr)
1	0.0	72.0	0.0000	0.017	0.00	1	0.0	72.0	0.0000	0.017	0.00
2	0.0	72.0	0.0000	0.017	0.00	2	0.0	72.0	0.0000	0.017	0.00
3	0.0	72.0	0.0000	0.017	0.00	3	0.0	72.0	0.0000	0.017	0.00
4	0.0	72.0	0.0000	0.017	0.00	4	0.1	71.9	0.0014	0.017	0.12
5	0.1	71.9	0.0014	0.017	0.12	5	0.1	71.9	0.0000	0.017	0.00
10	0.1	71.9	0.0000	0.083	0.00	10	0.2	71.8	0.0014	0.083	0.02
15	0.2	71.8	0.0014	0.083	0.02	15	0.2	71.8	0.0000	0.083	0.00



TEST 1 FINAL RESULTS			TEST 2 FINAL RESULTS		
Time Weighted Average Permeability Coefficient	K_m =	0.02 in/hr	Time Weighted Average Permeability Coefficient	K_m =	0.02 in/hr
AVERAGE RHBF9-02 @ 6 ft					
Time Weighted Average Permeability Coefficient	K_m =	0.02 in/hr			

Inspector Remarks:

DEFINITION OF VARIABLES

* K_m = Mean permeability

T = Temperature of permeant (water), in °C

Ln = Natural Logarithmic

t₁ = Time at the start of the test in the same units selected for K_m t₂ = Time at the end of the test in the same units selected for K_m h₁ = Height of the water above the bottom of the casing at the start of the test in the same units selected for K_m h₂ = Height of the water above the bottom of the casing at the end of the test in the same units selected for K_m



PERMEABILITY TEST LOG

PT ID No.

RHBF9-02(10')

SHEET 1 OF 1

JOB NAME/ CLIENT:

City of New York, Parks & Recreation - Red Hook
Recreation Area

ADDRESS:

Red Hook Ball Field 9

PROJECT NO.:

246184.1000.0000

START DATE:

12/29/16-12/30/2016

DRILLING CONTRACTOR:

Land, Air, Water Environmental Services, Inc.

DRILLER:

Ernesto

INSPECTOR:

R. Adams

DEPTH OF PT (FT):

10

WEATHER:

Partly cloudy. 40° F

DRILLING RIG:

Geoprobe 7822DT

DRILL BIT TYPE:

Direct push

CASING DIAMETER (IN):

4

CASING LENGTH (FT):

5

HAMMER WEIGHT (LB):

140

WATER LEVEL:

9.7 feet bgs

ASTM D-6391-11

General Formula:

Formula for 4" internal diameter casing (in/hr):

PERMEABILITY COEFFICIENT (K_m) FORMULA:

$$K_m = \pi R_t \times \frac{[D \{ \ln(\frac{h_1}{h_2}) \}]}{11 \times (t_2 - t_1)}$$

$$K_m = 1.142 R_t \times \frac{[\ln(\frac{h_1}{h_2})]}{(t_2 - t_1)}$$

where:

$$R_t = 2.2902(0.9842^T) / T^{0.1702}$$

RHBF9-02 @ 10 FEET

TEST 1

Water Temperature (°C), T:

11.83

 $R_t = 1.25$

Field Data

Calculated Data

Time (min)	Depth (in)	Height (in)	Ln (H/Ho)	($t_2 - t_1$)	*Kv (in/hr)
1	0.3	119.7	0.0025	0.017	0.21
2	0.6	119.4	0.0025	0.017	0.21
3	0.8	119.2	0.0017	0.017	0.14
4	1.02	119.0	0.0018	0.017	0.16
5	1.04	119.0	0.0002	0.017	0.01
10	2.2	117.8	0.0098	0.083	0.17
15	3.6	116.4	0.0120	0.083	0.20

TEST 2

Water Temperature (°C), T:

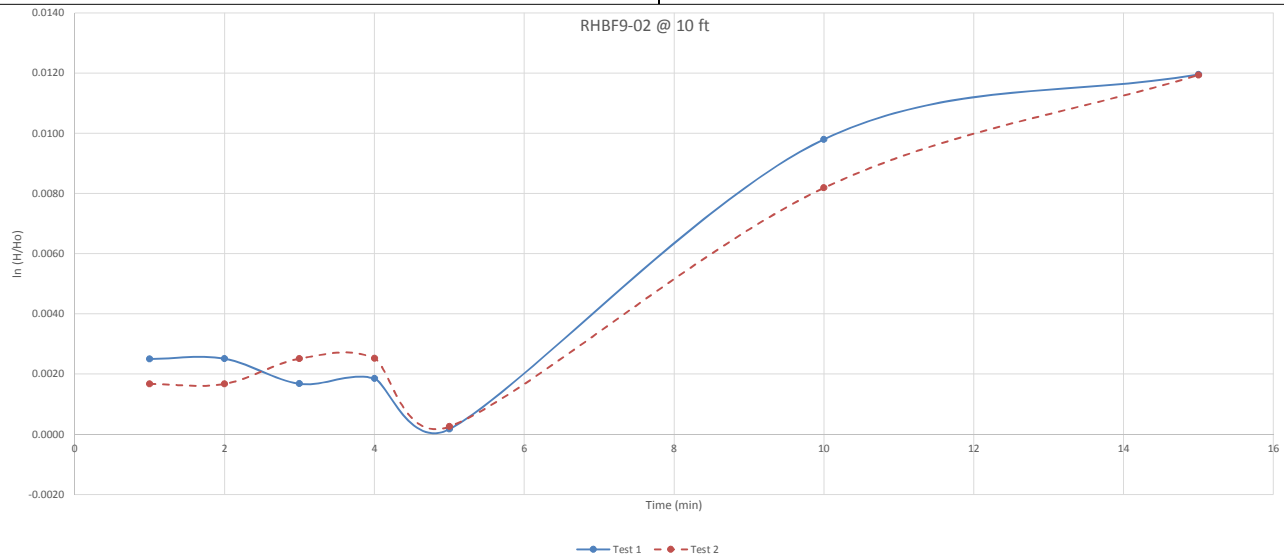
11.87

 $R_t = 1.24$

Field Data

Calculated Data

Time (min)	Depth (in)	Height (in)	Ln (H/Ho)	($t_2 - t_1$)	*Kv (in/hr)
1	0.2	119.8	0.0017	0.017	0.14
2	0.4	119.6	0.0017	0.017	0.14
3	0.7	119.3	0.0025	0.017	0.21
4	1.0	119.0	0.0025	0.017	0.21
5	1.03	119.0	0.0003	0.017	0.02
10	2.0	118.0	0.0082	0.083	0.14
15	3.4	116.6	0.0119	0.083	0.20



TEST 1 FINAL RESULTS

Time Weighted Average
Permeability Coefficient $K_m =$

0.17 in/hr

TEST 2 FINAL RESULTS

Time Weighted Average
Permeability Coefficient $K_m =$

0.16 in/hr

AVERAGE RHBF9-02 @ 10 ft

Time Weighted Average
Permeability Coefficient $K_m =$

0.17 in/hr

Inspector Remarks:

DEFINITION OF VARIABLES

* K_m = Mean permeability

T = Temperature of permeant (water), in °C

Ln = Natural Logarithmic

 t_1 = Time at the start of the test in the same units selected for K_m t_2 = Time at the end of the test in the same units selected for K_m h_1 = Height of the water above the bottom of the casing at the start of the test in the same units selected for K_m h_2 = Height of the water above the bottom of the casing at the end of the test in the same units selected for K_m



PERMEABILITY TEST LOG

PT ID No.

RHBF9-03(3')

SHEET 1 OF 1

JOB NAME/ CLIENT:

City of New York, Parks & Recreation - Red Hook
Recreation Area

ADDRESS:

Red Hook Ball Field 9

PROJECT NO.:

246184.1000.0000

START DATE:

12/30/2016

DRILLING CONTRACTOR:

Land, Air, Water Environmental Services, Inc.

DRILLER:

Ernesto

INSPECTOR:

R. Adams

DEPTH OF PT (FT):

3

WEATHER:

Partly cloudy. 40° F

DRILLING RIG:

Geoprobe 7822DT

DRILL BIT TYPE:

Direct push

CASING DIAMETER (IN):

4

CASING LENGTH (FT):

5

HAMMER WEIGHT (LB):

140

WATER LEVEL:

12.11 feet bgs

ASTM D-6391-11

General Formula:

Formula for 4" internal diameter casing (in/hr):

PERMEABILITY COEFFICIENT (K_m) FORMULA:

$$K_m = \pi R_t \times \frac{[D \{ \ln(\frac{h_1}{h_2}) \}]}{11 \times (t_2 - t_1)}$$

$$K_m = 1.142 R_t \times \frac{[\ln(\frac{h_1}{h_2})]}{(t_2 - t_1)}$$

where:

$$R_t = 2.2902(0.9842^T) / T^{0.1702}$$

RHBF9-01 @ 3 FEET

TEST 1

Water Temperature (°C), T:

12.62

 $R_t = 1.22$

Field Data

Calculated Data

Time (min)	Depth (in)	Height (in)	Ln (H/Ho)	($t_2 - t_1$)	*Kv (in/hr)
1	0.0	36.0	0.0000	0.017	0.00
2	0.05	36.0	0.0014	0.017	0.12
3	0.1	35.9	0.0014	0.017	0.12
4	0.3	35.7	0.0056	0.017	0.47
5	0.8	35.2	0.0141	0.017	1.18
10	1.01	35.0	0.0060	0.083	0.10
15	1.35	34.7	0.0098	0.083	0.16

TEST 2

Water Temperature (°C), T:

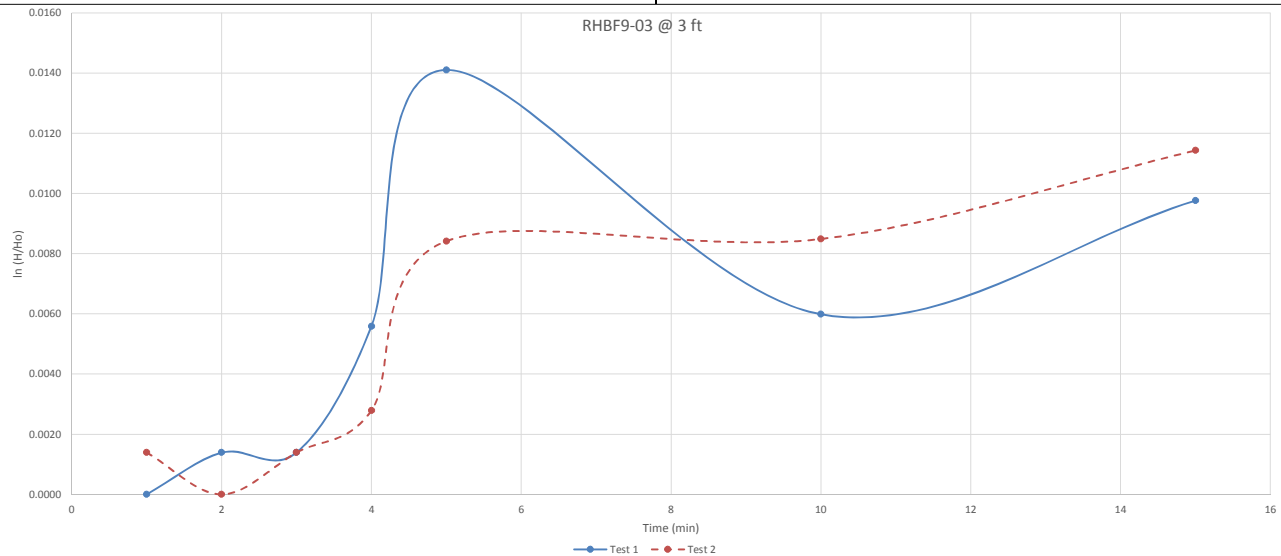
12.59

 $R_t = 1.22$

Field Data

Calculated Data

Time (min)	Depth (in)	Height (in)	Ln (H/Ho)	($t_2 - t_1$)	*Kv (in/hr)
1	0.05	36.0	0.0014	0.017	0.12
2	0.05	36.0	0.0000	0.017	0.00
3	0.1	35.9	0.0014	0.017	0.12
4	0.2	35.8	0.0028	0.017	0.23
5	0.5	35.5	0.0084	0.017	0.70
10	0.8	35.2	0.0085	0.083	0.14
15	1.2	34.8	0.0114	0.083	0.19



TEST 1 FINAL RESULTS

Time Weighted Average
Permeability Coefficient $K_m =$

0.21 in/hr

TEST 2 FINAL RESULTS

Time Weighted Average
Permeability Coefficient $K_m =$

0.19 in/hr

AVERAGE RHBF9-03 @ 3 ft

Time Weighted Average
Permeability Coefficient $K_m =$

0.20 in/hr

Inspector Remarks:

DEFINITION OF VARIABLES

* K_m = Mean permeability

T = Temperature of permeant (water), in °C

Ln = Natural Logarithmic

 t_1 = Time at the start of the test in the same units selected for K_m t_2 = Time at the end of the test in the same units selected for K_m h_1 = Height of the water above the bottom of the casing at the start of the test in the same units selected for K_m h_2 = Height of the water above the bottom of the casing at the end of the test in the same units selected for K_m



PERMEABILITY TEST LOG

PT ID No.

RHBf9-03(6')

SHEET 1 OF 1

JOB NAME/ CLIENT:

City of New York, Parks & Recreation - Red Hook
Recreation Area

ADDRESS:

Red Hook Ball Field 9

PROJECT NO.:

246184.1000.0000

START DATE:

12/30/2016

DRILLING CONTRACTOR:

Land, Air, Water Environmental Services, Inc.

DRILLER:

Ernesto

INSPECTOR:

R. Adams

DEPTH OF PT (FT):

6

WEATHER:

Partly cloudy. 40° F

DRILLING RIG:

Geoprobe 7822DT

DRILL BIT TYPE:

Direct push

CASING DIAMETER (IN):

4

CASING LENGTH (FT):

5

HAMMER WEIGHT (LB):

140

WATER LEVEL:

12.11 feet bgs

ASTM D-6391-11

General Formula:

Formula for 4" internal diameter casing (in/hr):

PERMEABILITY COEFFICIENT (K_m) FORMULA:

$$K_m = \pi R_t \times \frac{[D \{ \ln(\frac{h_1}{h_2}) \}]}{11 \times (t_2 - t_1)}$$

$$K_m = 1.142 R_t \times \frac{[\ln(\frac{h_1}{h_2})]}{(t_2 - t_1)}$$

where:

$$R_t = 2.2902(0.9842^T) / T^{0.1702}$$

RHBf9-01 @ 6 FEET

TEST 1

Water Temperature (°C), T:

12.58

 $R_t = 1.22$

Field Data

Calculated Data

Time (min)	Depth (in)	Height (in)	Ln (H/Ho)	($t_2 - t_1$)	*Kv (in/hr)
1	3.5	68.5	0.0498	0.017	4.16
2	6.1	65.9	0.0387	0.017	3.23
3	8.4	63.6	0.0355	0.017	2.97
4	10.9	61.1	0.0401	0.017	3.35
5	13.2	58.8	0.0384	0.017	3.20
10	22.75	49.3	0.1772	0.083	2.96
15	29.5	42.5	0.1474	0.083	2.46

TEST 2

Water Temperature (°C), T:

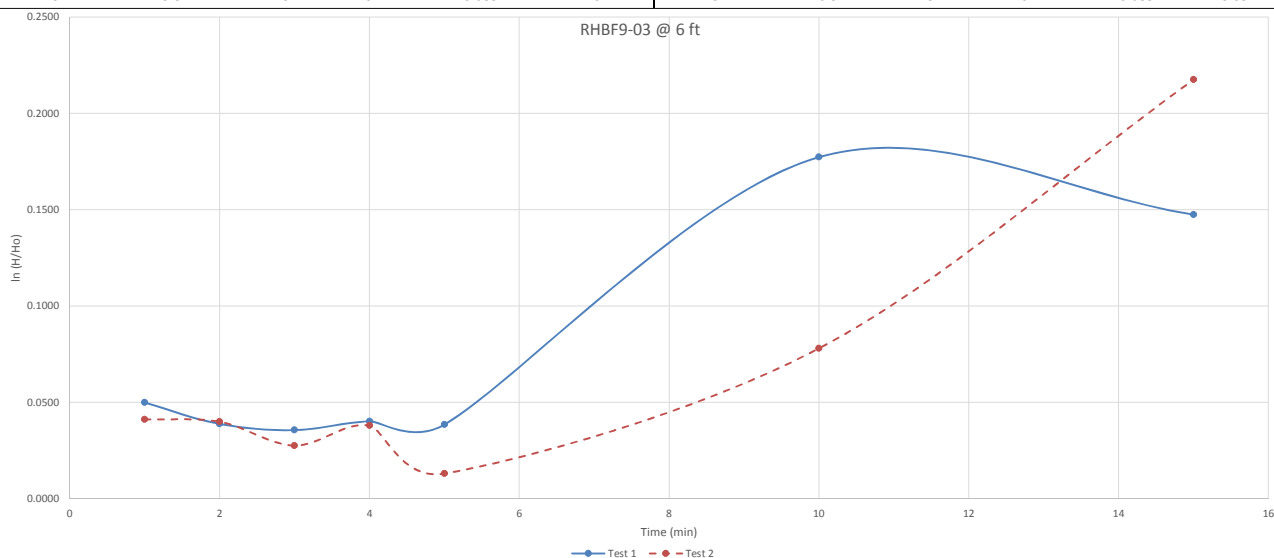
12.59

 $R_t = 1.22$

Field Data

Calculated Data

Time (min)	Depth (in)	Height (in)	Ln (H/Ho)	($t_2 - t_1$)	*Kv (in/hr)
1	2.9	69.1	0.0411	0.017	3.43
2	5.6	66.4	0.0399	0.017	3.33
3	7.4	64.6	0.0275	0.017	2.29
4	9.8	62.2	0.0379	0.017	3.16
5	10.6	61.4	0.0129	0.017	1.08
10	15.2	56.8	0.0779	0.083	1.30
15	26.3	45.7	0.2174	0.083	3.63



TEST 1 FINAL RESULTS

Time Weighted Average
Permeability Coefficient $K_m =$

2.93 in/hr

TEST 2 FINAL RESULTS

Time Weighted Average
Permeability Coefficient $K_m =$

2.53 in/hr

AVERAGE RHBf9-03 @ 6 ft

Time Weighted Average
Permeability Coefficient $K_m =$

2.73 in/hr

Inspector Remarks:

DEFINITION OF VARIABLES

* K_m = Mean permeability

T = Temperature of permeant (water), in °C

Ln = Natural Logarithmic

 t_1 = Time at the start of the test in the same units selected for K_m t_2 = Time at the end of the test in the same units selected for K_m h_1 = Height of the water above the bottom of the casing at the start of the test in the same units selected for K_m h_2 = Height of the water above the bottom of the casing at the end of the test in the same units selected for K_m



PERMEABILITY TEST LOG

PT ID No.

RHBf9-03(10')

SHEET 1 OF 1

JOB NAME/ CLIENT:

City of New York, Parks & Recreation - Red Hook
Recreation Area

ADDRESS:

Red Hook Ball Field 9

PROJECT NO.:

246184.1000.0000

START DATE:

12/30/2016

DRILLING CONTRACTOR:

Land, Air, Water Environmental Services, Inc.

DRILLER:

Ernesto

INSPECTOR:

R. Adams

DEPTH OF PT (FT):

10

WEATHER:

Partly cloudy. 40° F

DRILLING RIG:

Geoprobe 7822DT

DRILL BIT TYPE:

Direct push

CASING DIAMETER (IN):

4

CASING LENGTH (FT):

5

HAMMER WEIGHT (LB):

140

WATER LEVEL:

12.11 feet bgs

ASTM D-6391-11

General Formula:

Formula for 4" internal diameter casing (in/hr):

PERMEABILITY COEFFICIENT (K_m) FORMULA:

$$K_m = \pi R_t \times \frac{[D \{ \ln(\frac{h_1}{h_2}) \}]}{11 \times (t_2 - t_1)}$$

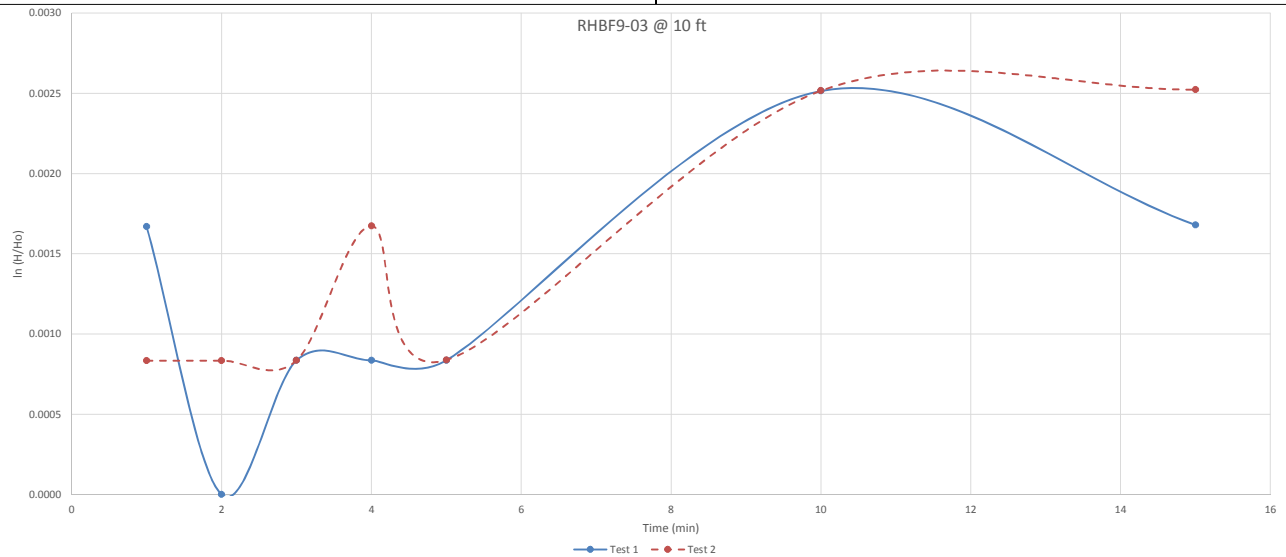
$$K_m = 1.142 R_t \times \frac{[\ln(\frac{h_1}{h_2})]}{(t_2 - t_1)}$$

where:

$$R_t = 2.2902(0.9842^T) / T^{0.1702}$$

RHBf9-01 @ 10 FEET

TEST 1						TEST 2					
Water Temperature (°C), T:			12.60			12.64			12.64		
			$R_t = 1.22$						$R_t = 1.22$		
Field Data			Calculated Data			Field Data			Calculated Data		
Time (min)	Depth (in)	Height (in)	Ln (H/Ho)	($t_2 - t_1$)	*Kv (in/hr)	Time (min)	Depth (in)	Height (in)	Ln (H/Ho)	($t_2 - t_1$)	*Kv (in/hr)
1	0.2	119.8	0.0017	0.017	0.14	1	0.1	119.9	0.0008	0.017	0.07
2	0.2	119.8	0.0000	0.017	0.00	2	0.2	119.8	0.0008	0.017	0.07
3	0.3	119.7	0.0008	0.017	0.07	3	0.3	119.7	0.0008	0.017	0.07
4	0.4	119.6	0.0008	0.017	0.07	4	0.5	119.5	0.0017	0.017	0.14
5	0.5	119.5	0.0008	0.017	0.07	5	0.6	119.4	0.0008	0.017	0.07
10	0.8	119.2	0.0025	0.083	0.04	10	0.9	119.1	0.0025	0.083	0.04
15	1.0	119.0	0.0017	0.083	0.03	15	1.2	118.8	0.0025	0.083	0.04



TEST 1 FINAL RESULTS				TEST 2 FINAL RESULTS			
Time Weighted Average Permeability Coefficient		$K_m =$	0.05 in/hr	Time Weighted Average Permeability Coefficient		$K_m =$	0.06 in/hr
AVERAGE RHBf9-03 @ 10 ft							
Time Weighted Average Permeability Coefficient		$K_m =$	0.05 in/hr				

Inspector Remarks:

DEFINITION OF VARIABLES

* K_m = Mean permeability

T = Temperature of permeant (water), in °C

Ln = Natural Logarithmic

 t_1 = Time at the start of the test in the same units selected for K_m t_2 = Time at the end of the test in the same units selected for K_m h_1 = Height of the water above the bottom of the casing at the start of the test in the same units selected for K_m h_2 = Height of the water above the bottom of the casing at the end of the test in the same units selected for K_m



PERMEABILITY TEST LOG

PT ID No.

RHBF9-04(3')

SHEET 1 OF 1

JOB NAME/ CLIENT:

City of New York, Parks & Recreation - Red Hook
Recreation Area

ADDRESS:

Red Hook Ball Field 9

PROJECT NO.:

246184.1000.0000

START DATE:

12/30/2016

DRILLING CONTRACTOR:

Land, Air, Water Environmental Services, Inc.

DRILLER:

Ernesto

INSPECTOR:

R. Adams

DEPTH OF PT (FT):

3

WEATHER:

Partly cloudy. 40° F

DRILLING RIG:

Geoprobe 7822DT

DRILL BIT TYPE:

Direct push

CASING DIAMETER (IN):

4

CASING LENGTH (FT):

5

HAMMER WEIGHT (LB):

140

WATER LEVEL:

10.91 feet bgs

ASTM D-6391-11

General Formula:

Formula for 4" internal diameter casing (in/hr):

PERMEABILITY COEFFICIENT (K_m) FORMULA:

$$K_m = \pi R_t \times \frac{[D \{ \ln(\frac{h_1}{h_2}) \}]}{11 \times (t_2 - t_1)}$$

$$K_m = 1.142 R_t \times \frac{[\ln(\frac{h_1}{h_2})]}{(t_2 - t_1)}$$

where:

$$R_t = 2.2902(0.9842^T) / T^{0.1702}$$

RHBF9-04 @ 3 FEET

TEST 1

Water Temperature (°C), T:

11.96

 $R_t = 1.24$

Field Data

Calculated Data

Time (min)	Depth (in)	Height (in)	Ln (H/Ho)	($t_2 - t_1$)	*Kv (in/hr)
1	0.1	35.9	0.0028	0.017	0.24
2	0.2	35.8	0.0028	0.017	0.24
3	0.3	35.7	0.0028	0.017	0.24
4	0.4	35.6	0.0028	0.017	0.24
5	0.5	35.5	0.0028	0.017	0.24
10	1.0	35.0	0.0142	0.083	0.24
15	1.4	34.6	0.0115	0.083	0.20

TEST 2

Water Temperature (°C), T:

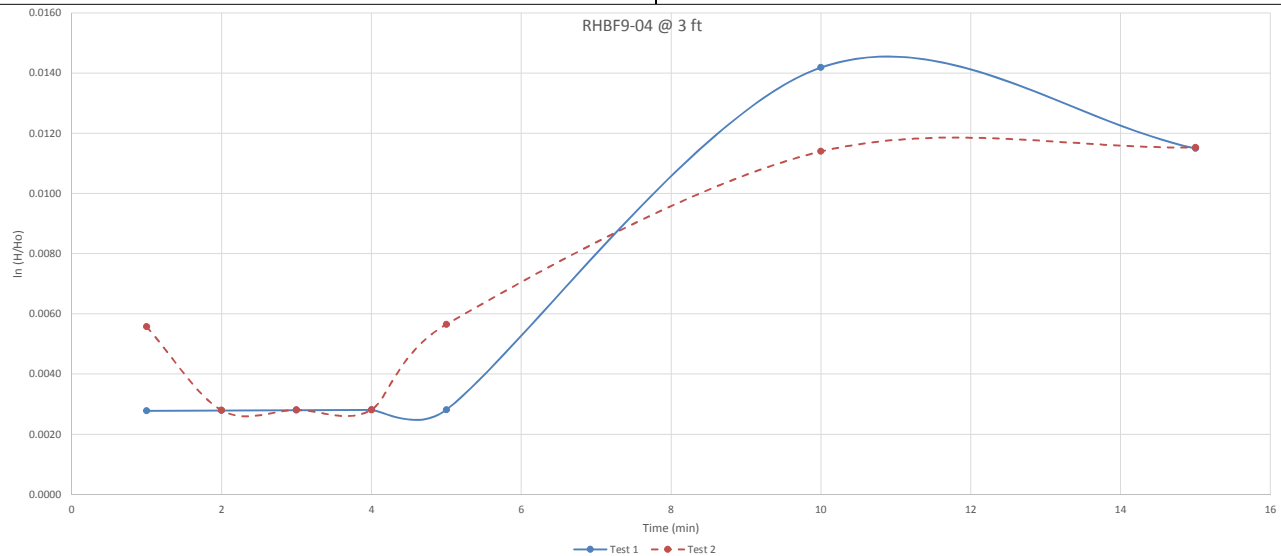
11.98

 $R_t = 1.24$

Field Data

Calculated Data

Time (min)	Depth (in)	Height (in)	Ln (H/Ho)	($t_2 - t_1$)	*Kv (in/hr)
1	0.2	35.8	0.0056	0.017	0.47
2	0.3	35.7	0.0028	0.017	0.24
3	0.4	35.6	0.0028	0.017	0.24
4	0.5	35.5	0.0028	0.017	0.24
5	0.7	35.3	0.0056	0.017	0.48
10	1.1	34.9	0.0114	0.083	0.19
15	1.5	34.5	0.0115	0.083	0.20



TEST 1 FINAL RESULTS

Time Weighted Average
Permeability Coefficient $K_m =$

0.22 in/hr

TEST 2 FINAL RESULTS

Time Weighted Average
Permeability Coefficient $K_m =$

0.24 in/hr

AVERAGE RHBF9-04 @ 3 ft

Time Weighted Average
Permeability Coefficient $K_m =$

0.23 in/hr

Inspector Remarks:

DEFINITION OF VARIABLES

* K_m = Mean permeability

T = Temperature of permeant (water), in °C

Ln = Natural Logarithmic

 t_1 = Time at the start of the test in the same units selected for K_m t_2 = Time at the start of the test in the same units selected for K_m h_1 = Height of the water above the bottom of the casing at the start of the test in the same units selected for K_m h_2 = Height of the water above the bottom of the casing at the end of the test in the same units selected for K_m



PERMEABILITY TEST LOG

PT ID No.

RHBF9-04(6')

SHEET 1 OF 1

JOB NAME/ CLIENT:

City of New York, Parks & Recreation - Red Hook Recreation Area

ADDRESS:

Red Hook Ball Field 9

PROJECT NO.:

246184.1000.0000

START DATE:

12/30/2016

DRILLING CONTRACTOR:

Land, Air, Water Environmental Services, Inc.

DRILLER:

Ernesto

INSPECTOR:

R. Adams

DEPTH OF PT (FT):

6

WEATHER:

Partly cloudy. 40° F

DRILLING RIG:

Geoprobe 7822DT

DRILL BIT TYPE:

Direct push

CASING DIAMETER (IN):

4

CASING LENGTH (FT):

5

HAMMER WEIGHT (LB):

140

WATER LEVEL:

10.91 feet bgs

ASTM D-6391-11

General Formula:

Formula for 4" internal diameter casing (in/hr):

PERMEABILITY COEFFICIENT (K_m) FORMULA:

$$K_m = \pi R_t \times \frac{[D \{ \ln(\frac{h_1}{h_2}) \}]}{11 \times (t_2 - t_1)}$$

$$K_m = 1.142 R_t \times \frac{[\ln(\frac{h_1}{h_2})]}{(t_2 - t_1)}$$

where:

$$R_t = 2.2902(0.9842^T) / T^{0.1702}$$

RHBF9-04 @ 6 FEET

TEST 1

Water Temperature (°C), T:

11.69

 $R_t = 1.25$

Field Data

Calculated Data

Time (min)	Depth (in)	Height (in)	Ln (H/Ho)	($t_2 - t_1$)	*Kv (in/hr)
1	0.1	71.9	0.0014	0.017	0.12
2	0.1	71.9	0.0000	0.017	0.00
3	0.1	71.9	0.0000	0.017	0.00
4	0.2	71.8	0.0014	0.017	0.12
5	0.2	71.8	0.0000	0.017	0.00
10	0.5	71.5	0.0042	0.083	0.07
15	0.8	71.2	0.0042	0.083	0.07

TEST 2

Water Temperature (°C), T:

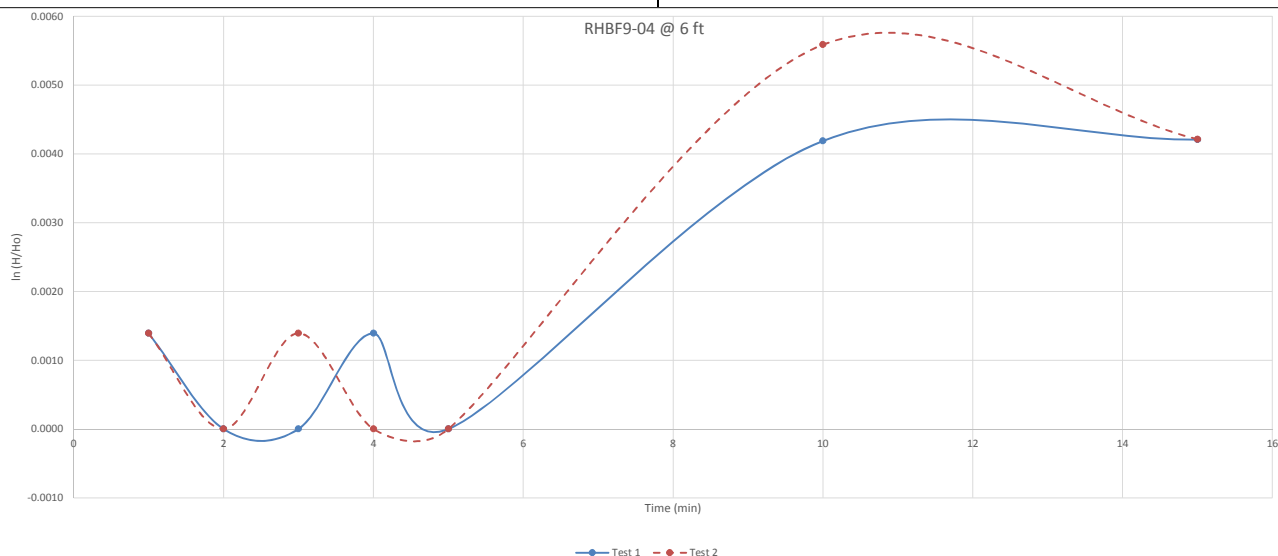
11.71

 $R_t = 1.25$

Field Data

Calculated Data

Time (min)	Depth (in)	Height (in)	Ln (H/Ho)	($t_2 - t_1$)	*Kv (in/hr)
1	0.1	71.9	0.0014	0.017	0.12
2	0.1	71.9	0.0000	0.017	0.00
3	0.2	71.8	0.0014	0.017	0.12
4	0.2	71.8	0.0000	0.017	0.00
5	0.2	71.8	0.0000	0.017	0.00
10	0.6	71.4	0.0056	0.083	0.10
15	0.9	71.1	0.0042	0.083	0.07



TEST 1 FINAL RESULTS

Time Weighted Average

Permeability Coefficient

 $K_m =$

0.06 in/hr

TEST 2 FINAL RESULTS

Time Weighted Average

Permeability Coefficient

 $K_m =$

0.07 in/hr

AVERAGE RHBF9-04 @ 6 ft

Time Weighted Average

Permeability Coefficient

 $K_m =$

0.07 in/hr

Inspector Remarks:

DEFINITION OF VARIABLES

* K_m = Mean permeability

T = Temperature of permeant (water), in °C

Ln = Natural Logarithmic

 t_1 = Time at the start of the test in the same units selected for K_m t_2 = Time at the end of the test in the same units selected for K_m h_1 = Height of the water above the bottom of the casing at the start of the test in the same units selected for K_m h_2 = Height of the water above the bottom of the casing at the end of the test in the same units selected for K_m



PERMEABILITY TEST LOG

PT ID No.

RHBF9-04(10')

SHEET 1 OF 1

JOB NAME/ CLIENT:

City of New York, Parks & Recreation - Red Hook
Recreation Area

ADDRESS:

Red Hook Ball Field 9

PROJECT NO.:

246184.1000.0000

START DATE:

12/30/2016

DRILLING CONTRACTOR:

Land, Air, Water Environmental Services, Inc.

DRILLER:

Ernesto

INSPECTOR:

R. Adams

DEPTH OF PT (FT):

10

WEATHER:

Partly cloudy. 40° F

DRILLING RIG:

Geoprobe 7822DT

DRILL BIT TYPE:

Direct push

CASING DIAMETER (IN):

4

CASING LENGTH (FT):

5

HAMMER WEIGHT (LB):

140

WATER LEVEL:

10.91 feet bgs

ASTM D-6391-11

General Formula:

Formula for 4" internal diameter casing (in/hr):

PERMEABILITY COEFFICIENT (K_m) FORMULA:

$$K_m = \pi R_t \times \frac{[D \{ \ln(\frac{h_1}{h_2}) \}]}{11 \times (t_2 - t_1)}$$

$$K_m = 1.142 R_t \times \frac{[\ln(\frac{h_1}{h_2})]}{(t_2 - t_1)}$$

where:

$$R_t = 2.2902(0.9842^T) / T^{0.1702}$$

RHBF9-04 @ 10 FEET

TEST 1

Water Temperature (°C), T:

11.96

 $R_t = 1.24$

Field Data

Calculated Data

Time (min)	Depth (in)	Height (in)	Ln (H/Ho)	($t_2 - t_1$)	*Kv (in/hr)
1	1.0	119.0	0.0084	0.017	0.71
2	1.9	118.1	0.0076	0.017	0.65
3	2.4	117.6	0.0042	0.017	0.36
4	3.0	117.0	0.0051	0.017	0.43
5	3.4	116.6	0.0034	0.017	0.29
10	7.2	112.8	0.0331	0.083	0.56
15	11.7	108.3	0.0407	0.083	0.69

TEST 2

Water Temperature (°C), T:

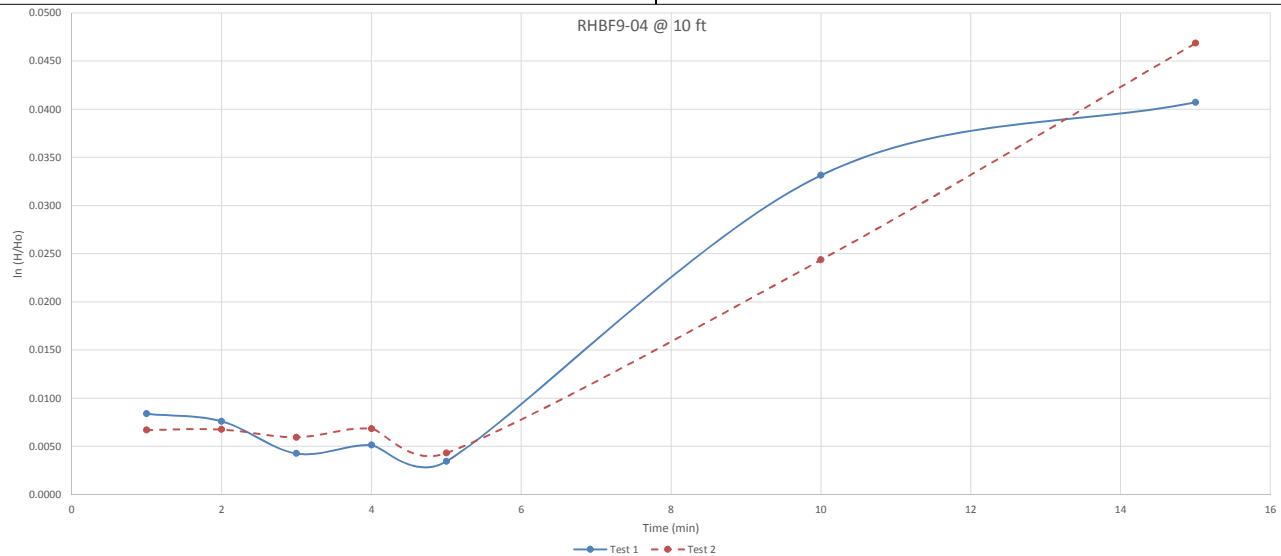
11.6

 $R_t = 1.25$

Field Data

Calculated Data

Time (min)	Depth (in)	Height (in)	Ln (H/Ho)	($t_2 - t_1$)	*Kv (in/hr)
1	0.8	119.2	0.0067	0.017	0.57
2	1.6	118.4	0.0067	0.017	0.58
3	2.3	117.7	0.0059	0.017	0.51
4	3.1	116.9	0.0068	0.017	0.59
5	3.6	116.4	0.0043	0.017	0.37
10	6.4	113.6	0.0243	0.083	0.42
15	11.6	108.4	0.0469	0.083	0.81



TEST 1 FINAL RESULTS

Time Weighted Average
Permeability Coefficient $K_m =$

0.58 in/hr

TEST 2 FINAL RESULTS

Time Weighted Average
Permeability Coefficient $K_m =$

0.58 in/hr

AVERAGE RHBF9-04 @ 10 ft

Time Weighted Average
Permeability Coefficient $K_m =$

0.58 in/hr

Inspector Remarks:

DEFINITION OF VARIABLES

* K_m = Mean permeability

T = Temperature of permeant (water), in °C

Ln = Natural Logarithmic

 t_1 = Time at the start of the test in the same units selected for K_m t_2 = Time at the end of the test in the same units selected for K_m h_1 = Height of the water above the bottom of the casing at the start of the test in the same units selected for K_m h_2 = Height of the water above the bottom of the casing at the end of the test in the same units selected for K_m

APPENDIX D

LABORATORY ANALYTICAL DATA REPORTS

SGS ACCUTEST IS PART OF SGS, THE WORLD'S LEADING INSPECTION,
VERIFICATION, TESTING AND CERTIFICATION COMPANY.



e-Hardcopy 2.0
Automated Report

Technical Report for

TRC

Red Hook Ballfields Soil, Brooklyn, NY

246184.1000.0000 / PO#103737

SGS Accutest Job Number: JC34266

Sampling Dates: 12/22/16 - 12/27/16

Report to:

TRC Environmental Corporation, NY

EEbert@trcsolutions.com

ATTN: Emily Ebert

Total number of pages in report: **193**



Test results contained within this data package meet the requirements
of the National Environmental Laboratory Accreditation Program
and/or state specific certification programs as applicable.

Nancy F. Cole

Nancy Cole
Laboratory Director

Client Service contact: Matt Cordova 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC,
OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (L-A-B L2248)

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Test results relate only to samples analyzed.



ACCUTEST

February 7, 2017

Mr. Wes Lindemuth
TRC
1430 Broadway
10th Floor
New York, NY 10018

Re: SGS Accutest –Dayton, Jobs # JC34266 – Reissues

Dear Mr. Lindemuth,

The final report for SGS Accutest jobs number JC34266 has been edited to reflect corrections to the data package. These edits have been incorporated into the revised report attached.

For the Herbicide analysis questions: 1. Several samples were analyzed at a 2-fold dilution due to the matrix and viscosity of the sample extract. The dilution was performed at the analyst's discretion and was not performed on all samples in JC34266. 2. For the additional questions from the client regarding 2,4,5-TP analysis: The concentration of the CCVs are 40ppb and/or 60ppb on column. The initial calibration concentrations for 2,4,5-TP ranges from 10ppb to 100 ppb. During data analysis, all samples receive a thorough chromatographic review for all compounds to verify that the software has not missed any peaks. The samples from JC34266 displayed significant matrix interference. While there were peaks displayed in the chromatography for JC34266, there was significant retention time shifts and inconsistent values between the 2 columns that did not allow for positive identification of 2,4,5 -TP. The herbicide data has been verified.

For the Pesticide question: JC34266-4 required re-extraction due to Heptachlor recovering low in the BS of the original extraction batch (OP99451). The original extraction was performed within holding time. Re-extraction was performed outside of holding time in OP99565. The analysis from the re-extraction batch was the data that was reported and the outside of holding time footnote was inadvertently omitted from the report. The data has been updated to include the original extraction analysis (within holding time) and the re-extraction analysis (outside of holding time) as a confirmation run. The data is updated in LIMs and the revised report has been re-submitted.

SGS ACCUTEST IS PART OF SGS, THE WORLD'S LEADING INSPECTION, VERIFICATION, TESTING AND CERTIFICATION COMPANY.



ACCUTEST

Please contact client services at (732) 355-4550 if I can be of further assistance in this matter.

Sincerely,

A handwritten signature in black ink that reads 'Matthew A. Cordova'. The signature is written in a cursive style with a long horizontal stroke at the end.

Matthew Cordova

SGS Accutest

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Sample Summary

TRC

Job No: JC34266

Red Hook Ballfields Soil, Brooklyn, NY
 Project No: 246184.1000.0000 / PO#103737

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
JC34266-1	12/22/16	13:20 RA	12/22/16	SO	Soil	RHBF9-01 (2-4)
JC34266-2	12/22/16	13:25 RA	12/22/16	SO	Soil	RHBF9-01 (5-7)
JC34266-3	12/22/16	13:30 RA	12/22/16	SO	Soil	RHBF9-01 (8-10)
JC34266-4	12/22/16	14:40 RA	12/22/16	AQ	Ground Water	RHBF9-01
JC34266-4F	12/22/16	14:40 RA	12/22/16	AQ	Groundwater Filtered	RHBF9-01
JC34266-5	12/27/16	08:50 RA	12/27/16	SO	Soil	RHBF9-02 (2-4)
JC34266-6	12/27/16	08:55 RA	12/27/16	SO	Soil	RHBF9-02 (5-7)
JC34266-7	12/27/16	09:00 RA	12/27/16	SO	Soil	RHBF9-02 (8-10)
JC34266-8	12/27/16	10:45 RA	12/27/16	AQ	Ground Water	RHBF9-02
JC34266-8F	12/27/16	10:45 RA	12/27/16	AQ	Groundwater Filtered	RHBF9-02
JC34266-9	12/27/16	11:45 RA	12/27/16	SO	Soil	RHBF9-03 (2-4)
JC34266-10	12/27/16	11:50 RA	12/27/16	SO	Soil	RHBF9-03 (5-7)
JC34266-11	12/27/16	11:55 RA	12/27/16	SO	Soil	RHBF9-03 (8-10)

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary

(continued)

TRC

Job No: JC34266

Red Hook Ballfields Soil, Brooklyn, NY
 Project No: 246184.1000.0000 / PO#103737

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
JC34266-12	12/27/16	13:05 RA	12/27/16	AQ	Ground Water	RHBF9-03
JC34266-12F	12/27/16	13:05 RA	12/27/16	AQ	Groundwater Filtered	RHBF9-03
JC34266-13	12/27/16	13:10 RA	12/27/16	SO	Soil	RHBF9-04 (2-4)
JC34266-14	12/27/16	13:15 RA	12/27/16	SO	Soil	RHBF9-04 (5-7)
JC34266-14D	12/27/16	13:15 RA	12/27/16	SO	Soil Dup/MSD	RHBF9-04 (5-7)
JC34266-14S	12/27/16	13:15 RA	12/27/16	SO	Soil Matrix Spike	RHBF9-04 (5-7)
JC34266-15	12/27/16	13:20 RA	12/27/16	SO	Soil	RHBF9-04 (8-10)
JC34266-16	12/27/16	14:00 RA	12/27/16	SO	Soil	RHBF9-DUP-01
JC34266-17	12/27/16	14:30 RA	12/27/16	AQ	Ground Water	RHBF9-GW-DUP-01
JC34266-17F	12/27/16	14:30 RA	12/27/16	AQ	Groundwater Filtered	RHBF9-GW-DUP-01
JC34266-18	12/27/16	14:50 RA	12/27/16	AQ	Field Blank Water	RHBF9-FIELD BLANK
JC34266-18F	12/27/16	14:50 RA	12/27/16	AQ	Field Blank Filtered	RHBF9-FIELD BLANK
JC34266-19	12/27/16	15:00 RA	12/27/16	AQ	Equipment Blank	RHBF9-EQUIPMENT BLANK

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



Sample Summary
(continued)

TRC

Job No: JC34266

Red Hook Ballfields Soil, Brooklyn, NY
Project No: 246184.1000.0000 / PO#103737

Sample Number	Collected			Received	Matrix		Client Sample ID
	Date	Time	By		Code	Type	
JC34266-19F	12/27/16	15:00	RA	12/27/16	AQ	Equip Blank Filtered	RHBF9-EQUIPMENT BLANK
JC34266-20	12/27/16	14:35	RA	12/28/16	AQ	Ground Water	RHBF9-04
JC34266-20D	12/27/16	14:35	RA	12/28/16	AQ	Water Dup/MSD	RHBF9-04
JC34266-20F	12/27/16	14:35	RA	12/28/16	AQ	Groundwater Filtered	RHBF9-04
JC34266-20FD	12/27/16	14:35	RA	12/28/16	AQ	Water Dup/MSD	RHBF9-04
JC34266-20FS	12/27/16	14:35	RA	12/28/16	AQ	Water Matrix Spike	RHBF9-04
JC34266-20S	12/27/16	14:35	RA	12/28/16	AQ	Water Matrix Spike	RHBF9-04

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

2

Client: TRC

Job No JC34266

Site: Red Hook Ballfields Soil, Brooklyn, NY

Report Date 2/7/2017 2:51:44 PM

Between 12/22/2016 and 12/28/2016, 20 Sample(s), 0 Trip Blank(s) and 2 Field Blank(s) were received at SGS Accutest at a maximum corrected temperature of 5.5 C. Samples were intact and chemically preserved, unless noted below. A SGS Accutest Job Number of JC34266 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Please refer to certification exceptions summary for additional certification information.

Extractables by GCMS By Method SW846 8270D

Matrix: AQ

Batch ID: OP99540

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34340-16MS, JC34340-16MSD were used as the QC samples indicated.

Matrix: AQ

Batch ID: OP99556

- All samples were extracted within the recommended method holding time.
- Sample(s) JC34355-1MS, JC34355-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Matrix: AQ

Batch ID: OP99558

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34266-20MS, JC34266-20MSD were used as the QC samples indicated.
- Sample(s) JC34266-10 have surrogates outside control limits. Probable cause due to matrix interference.

Matrix: SO

Batch ID: OP99582

- All samples were extracted within the recommended method holding time.
- Sample(s) JC34245-1MS, JC34245-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Matrix: SO

Batch ID: OP99614

- All samples were extracted within the recommended method holding time.
- Sample(s) JC34266-14MS, JC34266-14MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike / Matrix Spike Duplicate Recovery(s) for Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Chrysene, Indeno(1,2,3-cd)pyrene, Fluoranthene, Phenanthrene, Pyrene are outside control limits. Outside control limits due to high level in sample relative to spike amount.
- Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Chrysene, Indeno(1,2,3-cd)pyrene are outside control limits. Outside control limits due to matrix interference.
- RPD(s) for MSD for Acenaphthylene, Dibenzofuran, Fluorene, Naphthalene are outside control limits for sample OP99614-MSD.
- JC34266-10 for 2-Fluorophenol: Outside control limits due to dilution.

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Extractables by GC By Method SW846 8081B

Matrix: AQ

Batch ID: OP99451

- All samples were extracted within the recommended method holding time.
- Sample(s) LA28799-1MS, LA28799-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Blank Spike Recovery(s) for Heptachlor are outside control limits.
- OP99451-MS for Decachlorobiphenyl: Outside the QC limits.
- JC34266-4 for Heptachlor: This compound in the BS was outside of the in house control limits. Re-extraction was performed outside of method holding time.
- OP99451-MSD for Decachlorobiphenyl: Outside the QC limits.
- OP99451-BS1 for Heptachlor: Outside the QC limits.

Matrix: AQ

Batch ID: OP99565

- All samples were extracted within the recommended method holding time.
- Sample(s) JC34266-20MS, JC34266-20MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- RPD(s) for MSD for 4,4'-DDE are outside control limits for sample OP99565-MSD.
- JC34266-4: Re-extracted due to BS outside in house QC limits. Original prep date was within holding time. Confirmation run.

Matrix: SO

Batch ID: OP99586

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34519-1MS, JC34519-1MSD were used as the QC samples indicated.
- OP99586-MB1 for Decachlorobiphenyl: Outside of in house control limits biased high, MB is non-detect.

Matrix: SO

Batch ID: OP99589

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34266-14MS, JC34266-14MSD were used as the QC samples indicated.
- Matrix Spike / Matrix spike Duplicate Recovery(s) for beta-BHC, Endosulfan sulfate are outside control limits.
- JC34266-6 for 4,4'-DDT: More than 40 % RPD for detected concentrations between the two GC columns.
- JC34266-10 for 4,4'-DDT: More than 40 % RPD for detected concentrations between the two GC columns.
- JC34266-11 for 4,4'-DDT: More than 40 % RPD for detected concentrations between the two GC columns.
- JC34266-9 for 4,4'-DDD: More than 40 % RPD for detected concentrations between the two GC columns.
- JC34266-9 for 4,4'-DDE: More than 40 % RPD for detected concentrations between the two GC columns.
- JC34266-9 for 4,4'-DDT: More than 40 % RPD for detected concentrations between the two GC columns.
- JC34266-16 for 4,4'-DDT: More than 40 % RPD for detected concentrations between the two GC columns.
- JC34266-7 for 4,4'-DDT: More than 40 % RPD for detected concentrations between the two GC columns.
- JC34266-14 for 4,4'-DDT: More than 40 % RPD for detected concentrations between the two GC columns.

Extractables by GC By Method SW846 8082A

Matrix: AQ

Batch ID: OP99450

- All samples were extracted within the recommended method holding time.
- Sample(s) JC34193-1MS, JC34193-1MSD, OP99450-MSMSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Matrix: AQ

Batch ID: OP99564

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34266-20MS, JC34266-20MSD, OP99564-MSMSD were used as the QC samples indicated.

Matrix: SO

Batch ID: OP99585

- All samples were extracted within the recommended method holding time.
- Sample(s) JC34230-3MS, JC34230-3MSD, OP99585-MSMSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Matrix: SO

Batch ID: OP99588

- All samples were extracted within the recommended method holding time.
- Sample(s) JC34266-14MS, JC34266-14MSD, OP99588-MSMSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Recovery(s) for Aroclor 1016, Aroclor 1260 are outside control limits. Outside control limits due to matrix interference.
- Matrix Spike Duplicate Recovery(s) for Aroclor 1016 are outside control limits. Outside control limits due to matrix interference.
- JC34266-9 for Tetrachloro-m-xylene: Outside control limits due to matrix interference.
- JC34266-11 for Decachlorobiphenyl: Outside control limits due to matrix interference.
- JC34266-11 for Tetrachloro-m-xylene: Outside control limits due to matrix interference.
- JC34266-16 for Decachlorobiphenyl: Outside control limits due to matrix interference.
- JC34266-10 for Decachlorobiphenyl: Outside control limits due to matrix interference.
- OP99588-MSD for Decachlorobiphenyl: Outside control limits due to matrix interference.
- JC34266-9 for Decachlorobiphenyl: Outside control limits due to matrix interference.
- JC34266-7 for Decachlorobiphenyl: Outside control limits due to matrix interference.
- JC34266-5 for Decachlorobiphenyl: Outside control limits due to matrix interference.
- JC34266-14 for Decachlorobiphenyl: Outside control limits due to matrix interference.
- JC34266-10 for Tetrachloro-m-xylene: Outside control limits due to matrix interference.
- OP99588-MS for Decachlorobiphenyl: Outside control limits due to matrix interference.
- JC34266-14 for Tetrachloro-m-xylene: Outside control limits due to matrix interference.
- JC34266-16 for Tetrachloro-m-xylene: Outside control limits due to matrix interference.

Extractables by GC By Method SW846 8151

Matrix: AQ

Batch ID: OP99541

- All samples were extracted within the recommended method holding time.
- Sample(s) JC33987-25MS, JC33987-25MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Matrix: AQ

Batch ID: OP99567

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34266-20MS, JC34266-20MSD were used as the QC samples indicated.

Matrix: SO

Batch ID: OP99579

- All samples were extracted within the recommended method holding time.
- Sample(s) JC34519-1MS, JC34519-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- RPD(s) for MSD for 2,4,5-TP (Silvex) are outside control limits for sample OP99579-MSD. Outside control limits due to matrix interference.

Matrix: SO

Batch ID: OP99621

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34266-14MS, JC34266-14MSD were used as the QC samples indicated.
- OP99621-BS1 for 2,4,5-TP (Silvex): Reported from 1st signal. %D of end check calibration on 2nd signal exceed method criteria (20%) so using for confirmation only.

Metals By Method SW846 6010C

Matrix: AQ

Batch ID: MP97878

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34266-4MS, JC34266-4MSD, JC34266-4SDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Cadmium, Chromium, Cobalt, Copper, Nickel, Selenium, Silver, Vanadium are outside control limits for sample MP97878-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- JC34266-12F for Lead: Elevated detection limit due to dilution required for high interfering element.
- JC34266-12F for Chromium: Elevated detection limit due to dilution required for high interfering element.
- JC34266-12 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JC34266-12 for Chromium: Elevated detection limit due to dilution required for high interfering element.
- JC34266-12F for Thallium: Elevated detection limit due to dilution required for high interfering element.
- JC34266-12 for Thallium: Elevated detection limit due to dilution required for high interfering element.

Matrix: AQ

Batch ID: MP97900

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34266-20FMS, JC34266-20FMSD, JC34266-20FSDL, JC34266-20MS, JC34266-20MSD, JC34266-20SDL were used as the QC samples for metals.
- Matrix Spike Recovery(s) for Calcium, Sodium are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- RPD(s) for Serial Dilution for Chromium, Vanadium, Zinc, Antimony, Beryllium, Cadmium, Chromium, Cobalt, Copper, Tin are outside control limits for sample MP97900-SD2, MP97900-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Matrix: AQ

Batch ID: MP97990

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34830-6MS, JC34830-6MSD, JC34830-6SDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Thallium are outside control limits for sample MP97990-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Matrix: SO

Batch ID: MP97914

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34266-14MS, JC34266-14MSD, JC34266-14SDL were used as the QC samples for metals.
- Matrix Spike Recovery(s) for Aluminum, Magnesium are outside control limits. Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
- Matrix Spike Duplicate Recovery(s) for Aluminum are outside control limits. Probable cause due to matrix interference.
- Matrix Spike Recovery(s) for Copper, Lead, Barium, Iron, Manganese, Zinc are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- RPD(s) for MSD for Lead, Barium, Manganese, Zinc are outside control limits for sample MP97914-S2. High rpd due to possible sample nonhomogeneity.
- RPD(s) for Serial Dilution for Beryllium, Cadmium, Selenium, Silver are outside control limits for sample MP97914-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- JC34266-10 for Selenium: Elevated detection limit due to dilution required for high interfering element.
- JC34266-10 for Manganese: Elevated detection limit due to dilution required for high interfering element.
- JC34266-10 for Thallium: Elevated detection limit due to dilution required for high interfering element.
- JC34266-10 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC34266-9 for Silver: Elevated detection limit due to dilution required for high interfering element.

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Metals By Method SW846 6010C

Matrix: SO

Batch ID: MP97914

- JC34266-14 for Chromium: Elevated detection limit due to dilution required for high interfering element.
- JC34266-14 for Manganese: Elevated detection limit due to dilution required for high interfering element.
- JC34266-14 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JC34266-14 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC34266-14 for Thallium: Elevated detection limit due to dilution required for high interfering element.
- JC34266-9 for Chromium: Elevated detection limit due to dilution required for high interfering element.
- JC34266-9 for Selenium: Elevated detection limit due to dilution required for high interfering element.
- JC34266-14 for Selenium: Elevated detection limit due to dilution required for high interfering element.
- JC34266-9 for Thallium: Elevated detection limit due to dilution required for high interfering element.
- JC34266-14 for Cadmium: Elevated detection limit due to dilution required for high interfering element.
- JC34266-9 for Manganese: Elevated detection limit due to dilution required for high interfering element.
- JC34266-10 for Cadmium: Elevated detection limit due to dilution required for high interfering element.
- JC34266-10 for Chromium: Elevated detection limit due to dilution required for high interfering element.
- JC34266-9 for Antimony: Elevated detection limit due to dilution required for high interfering element.
- JC34266-9 for Cadmium: Elevated detection limit due to dilution required for high interfering element.

Metals By Method SW846 7470A

Matrix: AQ

Batch ID: MP97892

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34266-20FMS, JC34266-20FMSD, JC34266-20MS, JC34266-20MSD were used as the QC samples for metals.

Metals By Method SW846 7471B

Matrix: SO

Batch ID: MP97905

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34230-1MS, JC34230-1MSD were used as the QC samples for metals.

Matrix: SO

Batch ID: MP97907

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34266-14MSD, JC34266-14MS were used as the QC samples for metals.
- Matrix Spike Recovery(s) for Mercury are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

Wet Chemistry By Method EPA 335.4/LACHAT

Matrix: AQ

Batch ID: GP2451

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34264-1DUP, JC34264-1MS were used as the QC samples for Cyanide.
- Matrix Spike Recovery(s) for Cyanide are outside control limits. Spike recovery indicates possible matrix interference.

Matrix: AQ

Batch ID: GP2473

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34266-20DUP, JC34266-17MS, JC34266-20MS were used as the QC samples for Cyanide.
- Matrix Spike Recovery(s) for Cyanide are outside control limits. Spike recovery indicates possible matrix interference.

Wet Chemistry By Method SM2540 G-97

Matrix: SO

Batch ID: GN57093

- The data for SM2540 G-97 meets quality control requirements.

Matrix: SO

Batch ID: GN57289

- The data for SM2540 G-97 meets quality control requirements.

Wet Chemistry By Method SW846 3060A/7196A

Matrix: SO

Batch ID: GP2430

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34266-14DUP, JC34266-14MS were used as the QC samples for Chromium, Hexavalent.
- Matrix Spike Recovery(s) for Chromium, Hexavalent are outside control limits. Soluble XCR matrix spike recovery indicates possible matrix interference. Low post spike recovery (35_%) on this sample. Low pH adjusted post spike (41%). Good agreement between the sample and 1:5 dilution.
- GP2430-S2 for Chromium, Hexavalent: Good recovery on insoluble XCR matrix spike. See additional comments on soluble matrix spike recovery.

Wet Chemistry By Method SW846 6010/7196A M

Matrix: AQ **Batch ID:** R160408

- The data for SW846 6010/7196A M meets quality control requirements.
- JC34266-4 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix: AQ **Batch ID:** R160409

- The data for SW846 6010/7196A M meets quality control requirements.
- JC34266-8 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix: AQ **Batch ID:** R160410

- The data for SW846 6010/7196A M meets quality control requirements.
- JC34266-17 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix: AQ **Batch ID:** R160411

- The data for SW846 6010/7196A M meets quality control requirements.
- JC34266-18 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix: AQ **Batch ID:** R160412

- The data for SW846 6010/7196A M meets quality control requirements.
- JC34266-19 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix: AQ **Batch ID:** R160413

- The data for SW846 6010/7196A M meets quality control requirements.
- JC34266-4F for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix: AQ **Batch ID:** R160414

- The data for SW846 6010/7196A M meets quality control requirements.
- JC34266-8F for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix: AQ **Batch ID:** R160415

- The data for SW846 6010/7196A M meets quality control requirements.
- JC34266-17F for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix: AQ **Batch ID:** R160416

- The data for SW846 6010/7196A M meets quality control requirements.
- JC34266-18F for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix: AQ **Batch ID:** R160417

- The data for SW846 6010/7196A M meets quality control requirements.
- JC34266-19F for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix: AQ **Batch ID:** R160418

- The data for SW846 6010/7196A M meets quality control requirements.
- JC34266-20 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent). Detection limit raised due to variations in the total and hexavalent chromium.

Matrix: AQ **Batch ID:** R160419

- The data for SW846 6010/7196A M meets quality control requirements.
- JC34266-20F for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix: AQ **Batch ID:** R160554

- The data for SW846 6010/7196A M meets quality control requirements.
- JC34266-12 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix: AQ **Batch ID:** R160555

Wet Chemistry By Method SW846 6010/7196A M

Matrix: AQ

Batch ID: R160555

- The data for SW846 6010/7196A M meets quality control requirements.
- JC34266-12F for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix: SO

Batch ID: R160571

- The data for SW846 6010/7196A M meets quality control requirements.
- JC34266-16 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix: SO

Batch ID: R160572

- The data for SW846 6010/7196A M meets quality control requirements.
- JC34266-14 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix: SO

Batch ID: R160573

- The data for SW846 6010/7196A M meets quality control requirements.
- JC34266-1 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix: SO

Batch ID: R160574

- The data for SW846 6010/7196A M meets quality control requirements.
- JC34266-2 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix: SO

Batch ID: R160575

- The data for SW846 6010/7196A M meets quality control requirements.
- JC34266-3 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix: SO

Batch ID: R160576

- The data for SW846 6010/7196A M meets quality control requirements.
- JC34266-5 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix: SO

Batch ID: R160577

- The data for SW846 6010/7196A M meets quality control requirements.
- JC34266-6 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix: SO

Batch ID: R160578

- The data for SW846 6010/7196A M meets quality control requirements.
- JC34266-7 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix: SO

Batch ID: R160579

- The data for SW846 6010/7196A M meets quality control requirements.
- JC34266-9 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix: SO

Batch ID: R160580

- The data for SW846 6010/7196A M meets quality control requirements.
- JC34266-10 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix: SO

Batch ID: R160581

- The data for SW846 6010/7196A M meets quality control requirements.
- JC34266-11 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix: SO

Batch ID: R160582

- The data for SW846 6010/7196A M meets quality control requirements.
- JC34266-13 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix: SO

Batch ID: R160583

- The data for SW846 6010/7196A M meets quality control requirements.

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Wet Chemistry By Method SW846 6010/7196A M

Matrix: SO

Batch ID: R160583

- JC34266-15 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Wet Chemistry By Method SW846 7196A

Matrix: AQ

Batch ID: GN57058

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34266-4DUP, JC34266-4FDUP, JC34266-4FMS, JC34266-4MS were used as the QC samples for Chromium, Hexavalent.
- GN57058-S4 for Chromium, Hexavalent: Spike recovery indicates possible matrix interference. Good pH adjusted post spike (91%)
- GN57058-S3 for Chromium, Hexavalent: Spike recovery indicates possible matrix interference. Good pH adjusted post spike (95%)

Matrix: AQ

Batch ID: GN57258

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34266-12DUP, JC34266-12FDUP, JC34266-12FMS, JC34266-12MS were used as the QC samples for Chromium, Hexavalent.
- GN57258-S1 for Chromium, Hexavalent: Spike recovery indicates possible matrix interference. Low pH adjusted post spike (62%). Good agreement between the sample and 1:5 dilution.
- GN57258-S2 for Chromium, Hexavalent: Spike recovery indicates possible matrix interference. Low pH adjusted post spike (61%). Good agreement between the sample and 1:5 dilution.

Matrix: AQ

Batch ID: GN57299

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34266-20DUP, JC34266-20FDUP, JC34266-20FMS, JC34266-20MS were used as the QC samples for Chromium, Hexavalent.
- JC34266-20 for Chromium, Hexavalent: Analysis done out of holding time.
- JC34266-20F for Chromium, Hexavalent: Analysis done out of holding time.
- GN57299-S1 for Chromium, Hexavalent: Spike recovery indicates possible matrix interference. Low pH adjusted post spike (94%)
- GN57299-S2 for Chromium, Hexavalent: Spike recovery indicates possible matrix interference. Low pH adjusted post spike (92%)

Wet Chemistry By Method SW846 9012B/LACHAT

Matrix: SO

Batch ID: GP2465

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34228-1DUP, JC34228-1MS were used as the QC samples for Cyanide.

Matrix: SO

Batch ID: GP2474

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34266-14DUP, JC34266-14MS, JC34266-15MS were used as the QC samples for Cyanide.
- Matrix Spike Recovery(s) for Cyanide are outside control limits. Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

Matrix: SO

Batch ID: GP2558

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34266-6DUP, JC34266-6MS, JC34266-6MSD were used as the QC samples for Cyanide.

SGS Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS Accutest is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS Accutest indicated via signature on the report cover

Summary of Hits

Job Number: JC34266
Account: TRC
Project: Red Hook Ballfields Soil, Brooklyn, NY
Collected: 12/22/16 thru 12/27/16



Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC34266-1	RHBF9-01 (2-4)					
3&4-Methylphenol		121	75	31	ug/kg	SW846 8270D
Phenol		74.4 J	75	20	ug/kg	SW846 8270D
Acenaphthene		1430	38	13	ug/kg	SW846 8270D
Acenaphthylene		797	38	19	ug/kg	SW846 8270D
Anthracene		3440	38	23	ug/kg	SW846 8270D
Benzo(a)anthracene		9550	380	110	ug/kg	SW846 8270D
Benzo(a)pyrene		8670	380	170	ug/kg	SW846 8270D
Benzo(b)fluoranthene		11000	380	170	ug/kg	SW846 8270D
Benzo(g,h,i)perylene		4980	380	190	ug/kg	SW846 8270D
Benzo(k)fluoranthene		3270	38	18	ug/kg	SW846 8270D
Chrysene		9320	380	120	ug/kg	SW846 8270D
Dibenzo(a,h)anthracene		1490	38	17	ug/kg	SW846 8270D
Dibenzofuran		1050	75	15	ug/kg	SW846 8270D
Fluoranthene		19600	380	170	ug/kg	SW846 8270D
Fluorene		1340	38	17	ug/kg	SW846 8270D
Indeno(1,2,3-cd)pyrene		5600	380	180	ug/kg	SW846 8270D
Naphthalene		955	38	11	ug/kg	SW846 8270D
Phenanthrene		16800	380	130	ug/kg	SW846 8270D
Pyrene		20700	380	120	ug/kg	SW846 8270D
delta-BHC		2.4	0.74	0.33	ug/kg	SW846 8081B
Dieldrin		71.3	0.74	0.37	ug/kg	SW846 8081B
4,4' -DDD		4.8	0.74	0.47	ug/kg	SW846 8081B
4,4' -DDE		24.6	0.74	0.38	ug/kg	SW846 8081B
4,4' -DDT		56.7	0.74	0.44	ug/kg	SW846 8081B
Aluminum		7920	57		mg/kg	SW846 6010C
Antimony		8.6	2.3		mg/kg	SW846 6010C
Arsenic		29.0	2.3		mg/kg	SW846 6010C
Barium		655	23		mg/kg	SW846 6010C
Beryllium		0.59	0.23		mg/kg	SW846 6010C
Cadmium		3.3	0.57		mg/kg	SW846 6010C
Calcium		4250	570		mg/kg	SW846 6010C
Chromium		41.9	1.1		mg/kg	SW846 6010C
Cobalt		12.2	5.7		mg/kg	SW846 6010C
Copper		541	2.8		mg/kg	SW846 6010C
Iron		29500	57		mg/kg	SW846 6010C
Lead		1600	4.6		mg/kg	SW846 6010C
Magnesium		2820	570		mg/kg	SW846 6010C
Manganese		363	1.7		mg/kg	SW846 6010C
Mercury		2.0	0.19		mg/kg	SW846 7471B
Nickel		37.5	4.6		mg/kg	SW846 6010C
Silver		0.81	0.57		mg/kg	SW846 6010C
Tin		274	5.7		mg/kg	SW846 6010C
Vanadium		39.4	5.7		mg/kg	SW846 6010C

Summary of Hits

Job Number: JC34266
Account: TRC
Project: Red Hook Ballfields Soil, Brooklyn, NY
Collected: 12/22/16 thru 12/27/16



Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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Zinc		1070	11		mg/kg	SW846 6010C
Chromium, Hexavalent		2.7	0.47		mg/kg	SW846 3060A/7196A
Chromium, Trivalent ^a		39.2	1.6		mg/kg	SW846 6010/7196A M
Cyanide		0.79	0.26		mg/kg	SW846 9012B/LACHAT

JC34266-2 RHBF9-01 (5-7)

3&4-Methylphenol	56.1 J	71	29	ug/kg	SW846 8270D
Phenol	39.8 J	71	18	ug/kg	SW846 8270D
Acenaphthene	709	35	12	ug/kg	SW846 8270D
Acenaphthylene	251	35	18	ug/kg	SW846 8270D
Anthracene	1610	35	22	ug/kg	SW846 8270D
Benzo(a)anthracene	3670	180	50	ug/kg	SW846 8270D
Benzo(a)pyrene	3320	180	80	ug/kg	SW846 8270D
Benzo(b)fluoranthene	4360	180	78	ug/kg	SW846 8270D
Benzo(g,h,i)perylene	2260	35	18	ug/kg	SW846 8270D
Benzo(k)fluoranthene	1480	35	16	ug/kg	SW846 8270D
Chrysene	3600	180	56	ug/kg	SW846 8270D
Dibenzo(a,h)anthracene	628	35	16	ug/kg	SW846 8270D
Dibenzofuran	493	71	14	ug/kg	SW846 8270D
Fluoranthene	7220	180	79	ug/kg	SW846 8270D
Fluorene	660	35	16	ug/kg	SW846 8270D
Indeno(1,2,3-cd)pyrene	2500	35	17	ug/kg	SW846 8270D
Naphthalene	656	35	9.9	ug/kg	SW846 8270D
Phenanthrene	6670	180	59	ug/kg	SW846 8270D
Pyrene	7810	180	56	ug/kg	SW846 8270D
delta-BHC	1.4	0.71	0.32	ug/kg	SW846 8081B
4,4' -DDE	1.9	0.71	0.37	ug/kg	SW846 8081B
4,4' -DDT	8.8	0.71	0.42	ug/kg	SW846 8081B
Aluminum	5100	56		mg/kg	SW846 6010C
Arsenic	10.2	2.2		mg/kg	SW846 6010C
Barium	661	22		mg/kg	SW846 6010C
Beryllium	0.36	0.22		mg/kg	SW846 6010C
Cadmium	1.5	0.56		mg/kg	SW846 6010C
Calcium	8960	560		mg/kg	SW846 6010C
Chromium	21.3	1.1		mg/kg	SW846 6010C
Copper	239	2.8		mg/kg	SW846 6010C
Iron	15700	56		mg/kg	SW846 6010C
Lead	998	2.2		mg/kg	SW846 6010C
Magnesium	1990	560		mg/kg	SW846 6010C
Manganese	216	1.7		mg/kg	SW846 6010C
Mercury	0.76	0.038		mg/kg	SW846 7471B
Nickel	24.2	4.5		mg/kg	SW846 6010C
Tin	69.2	5.6		mg/kg	SW846 6010C
Vanadium	28.0	5.6		mg/kg	SW846 6010C

Summary of Hits

Job Number: JC34266
Account: TRC
Project: Red Hook Ballfields Soil, Brooklyn, NY
Collected: 12/22/16 thru 12/27/16



Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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Zinc		712	5.6		mg/kg	SW846 6010C
Chromium, Trivalent ^a		20.9	1.6		mg/kg	SW846 6010/7196A M
Cyanide		0.30	0.25		mg/kg	SW846 9012B/LACHAT

JC34266-3 RHBF9-01 (8-10)

Acenaphthene	83.7	34	12	ug/kg	SW846 8270D
Acenaphthylene	93.2	34	17	ug/kg	SW846 8270D
Anthracene	263	34	21	ug/kg	SW846 8270D
Benzo(a)anthracene	887	34	9.7	ug/kg	SW846 8270D
Benzo(a)pyrene	894	34	16	ug/kg	SW846 8270D
Benzo(b)fluoranthene	1130	34	15	ug/kg	SW846 8270D
Benzo(g,h,i)perylene	552	34	17	ug/kg	SW846 8270D
Benzo(k)fluoranthene	406	34	16	ug/kg	SW846 8270D
Chrysene	910	34	11	ug/kg	SW846 8270D
Dibenzo(a,h)anthracene	162	34	15	ug/kg	SW846 8270D
Dibenzofuran	75.5	69	14	ug/kg	SW846 8270D
Fluoranthene	1420	34	15	ug/kg	SW846 8270D
Fluorene	91.6	34	16	ug/kg	SW846 8270D
Indeno(1,2,3-cd)pyrene	608	34	16	ug/kg	SW846 8270D
Naphthalene	117	34	9.7	ug/kg	SW846 8270D
Phenanthrene	1200	34	12	ug/kg	SW846 8270D
Pyrene	1900	34	11	ug/kg	SW846 8270D
Dieldrin	2.4	0.73	0.36	ug/kg	SW846 8081B
4,4'-DDD	1.6	0.73	0.47	ug/kg	SW846 8081B
4,4'-DDE	11.3	0.73	0.38	ug/kg	SW846 8081B
4,4'-DDT	6.8	0.73	0.43	ug/kg	SW846 8081B
Aluminum	6120	53		mg/kg	SW846 6010C
Arsenic	9.5	2.1		mg/kg	SW846 6010C
Barium	137	21		mg/kg	SW846 6010C
Beryllium	0.45	0.21		mg/kg	SW846 6010C
Calcium	5790	530		mg/kg	SW846 6010C
Chromium	19.1	1.1		mg/kg	SW846 6010C
Copper	62.8	2.7		mg/kg	SW846 6010C
Iron	10400	53		mg/kg	SW846 6010C
Lead	315	2.1		mg/kg	SW846 6010C
Magnesium	1790	530		mg/kg	SW846 6010C
Manganese	205	1.6		mg/kg	SW846 6010C
Mercury	0.77	0.035		mg/kg	SW846 7471B
Nickel	13.5	4.3		mg/kg	SW846 6010C
Potassium	1340	1100		mg/kg	SW846 6010C
Tin	23.2	5.3		mg/kg	SW846 6010C
Vanadium	16.8	5.3		mg/kg	SW846 6010C
Zinc	208	5.3		mg/kg	SW846 6010C
Chromium, Hexavalent	1.1	0.44		mg/kg	SW846 3060A/7196A

Summary of Hits

Job Number: JC34266
Account: TRC
Project: Red Hook Ballfields Soil, Brooklyn, NY
Collected: 12/22/16 thru 12/27/16



Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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Chromium, Trivalent ^a		18.0	1.5		mg/kg	SW846 6010/7196A M
Cyanide		0.26	0.26		mg/kg	SW846 9012B/LACHAT

JC34266-4 RHBF9-01

Benzo(a)anthracene	0.53 J	1.0	0.21	ug/l	SW846 8270D
Benzo(a)pyrene	0.53 J	1.0	0.22	ug/l	SW846 8270D
Benzo(b)fluoranthene	0.54 J	1.0	0.21	ug/l	SW846 8270D
Fluoranthene	0.52 J	1.0	0.17	ug/l	SW846 8270D
Pyrene	0.75 J	1.0	0.22	ug/l	SW846 8270D
Aluminum	369	200		ug/l	SW846 6010C
Arsenic	11.5	3.0		ug/l	SW846 6010C
Barium	528	200		ug/l	SW846 6010C
Calcium	186000	5000		ug/l	SW846 6010C
Copper	20.8	10		ug/l	SW846 6010C
Iron	32800	100		ug/l	SW846 6010C
Lead	50.0	3.0		ug/l	SW846 6010C
Magnesium	39100	5000		ug/l	SW846 6010C
Manganese	1060	15		ug/l	SW846 6010C
Mercury	0.22	0.20		ug/l	SW846 7470A
Potassium	28000	10000		ug/l	SW846 6010C
Sodium	71300	10000		ug/l	SW846 6010C
Zinc	98.5	20		ug/l	SW846 6010C

JC34266-4F RHBF9-01

Arsenic	10.1	3.0		ug/l	SW846 6010C
Barium	494	200		ug/l	SW846 6010C
Calcium	183000	5000		ug/l	SW846 6010C
Iron	31300	100		ug/l	SW846 6010C
Magnesium	38600	5000		ug/l	SW846 6010C
Manganese	1020	15		ug/l	SW846 6010C
Potassium	27500	10000		ug/l	SW846 6010C
Sodium	70100	10000		ug/l	SW846 6010C
Zinc	21.3	20		ug/l	SW846 6010C

JC34266-5 RHBF9-02 (2-4)

Acenaphthene	808	37	13	ug/kg	SW846 8270D
Acenaphthylene	146	37	19	ug/kg	SW846 8270D
Anthracene	1900	37	22	ug/kg	SW846 8270D
Benzo(a)anthracene	3800	370	100	ug/kg	SW846 8270D
Benzo(a)pyrene	3630	37	17	ug/kg	SW846 8270D
Benzo(b)fluoranthene	4140	370	160	ug/kg	SW846 8270D
Benzo(g,h,i)perylene	2150	37	18	ug/kg	SW846 8270D

Summary of Hits

Job Number: JC34266
Account: TRC
Project: Red Hook Ballfields Soil, Brooklyn, NY
Collected: 12/22/16 thru 12/27/16



Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Benzo(k)fluoranthene		1360	37	17	ug/kg	SW846 8270D
Chrysene		3600	370	120	ug/kg	SW846 8270D
Dibenzo(a,h)anthracene		519	37	16	ug/kg	SW846 8270D
Dibenzofuran		469	73	15	ug/kg	SW846 8270D
Fluoranthene		8200	370	160	ug/kg	SW846 8270D
Fluorene		698	37	17	ug/kg	SW846 8270D
Indeno(1,2,3-cd)pyrene		2220	37	17	ug/kg	SW846 8270D
Naphthalene		279	37	10	ug/kg	SW846 8270D
Phenanthrene		7090	370	120	ug/kg	SW846 8270D
Pyrene		7260	370	120	ug/kg	SW846 8270D
4,4' -DDE		2.1	0.74	0.38	ug/kg	SW846 8081B
4,4' -DDT		7.8	0.74	0.44	ug/kg	SW846 8081B
Aluminum		6310	56		mg/kg	SW846 6010C
Arsenic		10.3	2.3		mg/kg	SW846 6010C
Barium		212	23		mg/kg	SW846 6010C
Beryllium		0.43	0.23		mg/kg	SW846 6010C
Cadmium		0.75	0.56		mg/kg	SW846 6010C
Calcium		14800	560		mg/kg	SW846 6010C
Chromium		22.1	1.1		mg/kg	SW846 6010C
Cobalt		7.1	5.6		mg/kg	SW846 6010C
Copper		130	2.8		mg/kg	SW846 6010C
Iron		17800	56		mg/kg	SW846 6010C
Lead		460	2.3		mg/kg	SW846 6010C
Magnesium		3480	560		mg/kg	SW846 6010C
Manganese		262	1.7		mg/kg	SW846 6010C
Mercury		2.1	0.17		mg/kg	SW846 7471B
Nickel		33.1	4.5		mg/kg	SW846 6010C
Tin		21.8	5.6		mg/kg	SW846 6010C
Vanadium		33.8	5.6		mg/kg	SW846 6010C
Zinc		420	5.6		mg/kg	SW846 6010C
Chromium, Hexavalent		1.0	0.45		mg/kg	SW846 3060A/7196A
Chromium, Trivalent ^a		21.1	1.6		mg/kg	SW846 6010/7196A M

JC34266-6 RHBF9-02 (5-7)

Acenaphthene	80.9	37	13	ug/kg	SW846 8270D
Acenaphthylene	56.8	37	19	ug/kg	SW846 8270D
Anthracene	202	37	23	ug/kg	SW846 8270D
Benzo(a)anthracene	730	37	10	ug/kg	SW846 8270D
Benzo(a)pyrene	689	37	17	ug/kg	SW846 8270D
Benzo(b)fluoranthene	676	37	16	ug/kg	SW846 8270D
Benzo(g,h,i)perylene	365	37	19	ug/kg	SW846 8270D
Benzo(k)fluoranthene	297	37	17	ug/kg	SW846 8270D
Chrysene	753	37	12	ug/kg	SW846 8270D
Dibenzo(a,h)anthracene	84.8	37	16	ug/kg	SW846 8270D

Summary of Hits

Job Number: JC34266
Account: TRC
Project: Red Hook Ballfields Soil, Brooklyn, NY
Collected: 12/22/16 thru 12/27/16



Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Dibenzofuran		55.2 J	74	15	ug/kg	SW846 8270D
Fluoranthene		1220	37	17	ug/kg	SW846 8270D
Fluorene		79.9	37	17	ug/kg	SW846 8270D
Indeno(1,2,3-cd)pyrene		365	37	17	ug/kg	SW846 8270D
Naphthalene		68.0	37	10	ug/kg	SW846 8270D
Phenanthrene		997	37	12	ug/kg	SW846 8270D
Pyrene		1680	37	12	ug/kg	SW846 8270D
4,4'-DDT ^b		2.3	0.71	0.42	ug/kg	SW846 8081B
Aluminum		6430	54		mg/kg	SW846 6010C
Arsenic		3.8	2.2		mg/kg	SW846 6010C
Barium		51.9	22		mg/kg	SW846 6010C
Beryllium		0.30	0.22		mg/kg	SW846 6010C
Calcium		6170	540		mg/kg	SW846 6010C
Chromium		18.1	1.1		mg/kg	SW846 6010C
Cobalt		5.5	5.4		mg/kg	SW846 6010C
Copper		73.7	2.7		mg/kg	SW846 6010C
Iron		12700	54		mg/kg	SW846 6010C
Lead		96.8	2.2		mg/kg	SW846 6010C
Magnesium		3800	540		mg/kg	SW846 6010C
Manganese		227	1.6		mg/kg	SW846 6010C
Mercury		0.28	0.035		mg/kg	SW846 7471B
Nickel		31.5	4.3		mg/kg	SW846 6010C
Potassium		1130	1100		mg/kg	SW846 6010C
Tin		11.3	5.4		mg/kg	SW846 6010C
Vanadium		23.7	5.4		mg/kg	SW846 6010C
Zinc		81.4	5.4		mg/kg	SW846 6010C
Chromium, Trivalent ^a		18.1	1.6		mg/kg	SW846 6010/7196A M

JC34266-7 RHBF9-02 (8-10)

3&4-Methylphenol	561	84	35	ug/kg	SW846 8270D
Acenaphthene	813	42	15	ug/kg	SW846 8270D
Acenaphthylene	490	42	21	ug/kg	SW846 8270D
Anthracene	2080	42	26	ug/kg	SW846 8270D
Benzo(a)anthracene	5960	840	240	ug/kg	SW846 8270D
Benzo(a)pyrene	5950	840	380	ug/kg	SW846 8270D
Benzo(b)fluoranthene	7030	840	370	ug/kg	SW846 8270D
Benzo(g,h,i)perylene	3800	42	21	ug/kg	SW846 8270D
Benzo(k)fluoranthene	2030	42	20	ug/kg	SW846 8270D
Chrysene	5690	840	270	ug/kg	SW846 8270D
Dibenzo(a,h)anthracene	743	42	19	ug/kg	SW846 8270D
Dibenzofuran	670	84	17	ug/kg	SW846 8270D
Fluoranthene	14300	840	380	ug/kg	SW846 8270D
Fluorene	944	42	19	ug/kg	SW846 8270D
Indeno(1,2,3-cd)pyrene	3860	42	20	ug/kg	SW846 8270D

Summary of Hits

Job Number: JC34266
Account: TRC
Project: Red Hook Ballfields Soil, Brooklyn, NY
Collected: 12/22/16 thru 12/27/16



Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Naphthalene		832	42	12	ug/kg	SW846 8270D
Phenanthrene		11500	840	280	ug/kg	SW846 8270D
Pyrene		12900	840	270	ug/kg	SW846 8270D
4,4' -DDT ^b		6.0	0.82	0.49	ug/kg	SW846 8081B
Aluminum		5190	64		mg/kg	SW846 6010C
Arsenic		17.6	2.6		mg/kg	SW846 6010C
Barium		468	26		mg/kg	SW846 6010C
Beryllium		0.41	0.26		mg/kg	SW846 6010C
Cadmium		1.4	0.64		mg/kg	SW846 6010C
Calcium		6330	640		mg/kg	SW846 6010C
Chromium		24.8	1.3		mg/kg	SW846 6010C
Cobalt		10.3	6.4		mg/kg	SW846 6010C
Copper		207	3.2		mg/kg	SW846 6010C
Iron		30600	64		mg/kg	SW846 6010C
Lead		830	2.6		mg/kg	SW846 6010C
Magnesium		1670	640		mg/kg	SW846 6010C
Manganese		239	1.9		mg/kg	SW846 6010C
Mercury		2.7	0.17		mg/kg	SW846 7471B
Nickel		28.7	5.1		mg/kg	SW846 6010C
Tin		104	6.4		mg/kg	SW846 6010C
Vanadium		22.9	6.4		mg/kg	SW846 6010C
Zinc		510	6.4		mg/kg	SW846 6010C
Chromium, Hexavalent		0.68	0.51		mg/kg	SW846 3060A/7196A
Chromium, Trivalent ^a		24.1	1.8		mg/kg	SW846 6010/7196A M

JC34266-8 RHBF9-02

Acenaphthene	0.44 J	1.1	0.21	ug/l	SW846 8270D
Anthracene	0.91 J	1.1	0.23	ug/l	SW846 8270D
Benzo(a)anthracene	2.2	1.1	0.22	ug/l	SW846 8270D
Benzo(a)pyrene	2.5	1.1	0.23	ug/l	SW846 8270D
Benzo(b)fluoranthene	2.5	1.1	0.22	ug/l	SW846 8270D
Benzo(g,h,i)perylene	1.5	1.1	0.37	ug/l	SW846 8270D
Benzo(k)fluoranthene	0.86 J	1.1	0.22	ug/l	SW846 8270D
Chrysene	2.2	1.1	0.19	ug/l	SW846 8270D
Fluoranthene	4.6	1.1	0.18	ug/l	SW846 8270D
Fluorene	0.47 J	1.1	0.18	ug/l	SW846 8270D
Indeno(1,2,3-cd)pyrene	1.7	1.1	0.36	ug/l	SW846 8270D
Phenanthrene	3.4	1.1	0.19	ug/l	SW846 8270D
Pyrene	4.0	1.1	0.24	ug/l	SW846 8270D
Aluminum	4400	200		ug/l	SW846 6010C
Antimony	6.2	6.0		ug/l	SW846 6010C
Arsenic	29.6	3.0		ug/l	SW846 6010C
Barium	538	200		ug/l	SW846 6010C
Calcium	80700	5000		ug/l	SW846 6010C

Summary of Hits

Job Number: JC34266
Account: TRC
Project: Red Hook Ballfields Soil, Brooklyn, NY
Collected: 12/22/16 thru 12/27/16



Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Chromium		30.2	10		ug/l	SW846 6010C
Copper		170	10		ug/l	SW846 6010C
Iron		29200	100		ug/l	SW846 6010C
Lead		1160	3.0		ug/l	SW846 6010C
Magnesium		50200	5000		ug/l	SW846 6010C
Manganese		412	15		ug/l	SW846 6010C
Mercury		4.8	0.20		ug/l	SW846 7470A
Nickel		17.8	10		ug/l	SW846 6010C
Potassium		28500	10000		ug/l	SW846 6010C
Sodium		52200	10000		ug/l	SW846 6010C
Tin		107	10		ug/l	SW846 6010C
Zinc		667	20		ug/l	SW846 6010C
Chromium, Trivalent ^a		0.022	0.020		mg/l	SW846 6010/7196A M

JC34266-8F RHBF9-02

Arsenic	12.7	3.0		ug/l	SW846 6010C
Barium	245	200		ug/l	SW846 6010C
Calcium	76200	5000		ug/l	SW846 6010C
Iron	16500	100		ug/l	SW846 6010C
Magnesium	47100	5000		ug/l	SW846 6010C
Manganese	328	15		ug/l	SW846 6010C
Potassium	26800	10000		ug/l	SW846 6010C
Sodium	50300	10000		ug/l	SW846 6010C
Chromium, Hexavalent	0.013	0.010		mg/l	SW846 7196A

JC34266-9 RHBF9-03 (2-4)

2-Methylphenol	63.0 J	80	26	ug/kg	SW846 8270D
3&4-Methylphenol	233	80	33	ug/kg	SW846 8270D
Phenol	167	80	21	ug/kg	SW846 8270D
Acenaphthene	3050	40	14	ug/kg	SW846 8270D
Acenaphthylene	3600	40	20	ug/kg	SW846 8270D
Anthracene	9650	800	490	ug/kg	SW846 8270D
Benzo(a)anthracene	29500	800	230	ug/kg	SW846 8270D
Benzo(a)pyrene	28400	800	360	ug/kg	SW846 8270D
Benzo(b)fluoranthene	36900	800	350	ug/kg	SW846 8270D
Benzo(g,h,i)perylene	15600	800	400	ug/kg	SW846 8270D
Benzo(k)fluoranthene	12200	800	370	ug/kg	SW846 8270D
Chrysene	30700	800	250	ug/kg	SW846 8270D
Dibenzo(a,h)anthracene	3680	800	350	ug/kg	SW846 8270D
Dibenzofuran	3060	80	16	ug/kg	SW846 8270D
Fluoranthene	74600	800	360	ug/kg	SW846 8270D
Fluorene	4600	800	370	ug/kg	SW846 8270D
Indeno(1,2,3-cd)pyrene	17800	800	370	ug/kg	SW846 8270D

Summary of Hits

Job Number: JC34266
Account: TRC
Project: Red Hook Ballfields Soil, Brooklyn, NY
Collected: 12/22/16 thru 12/27/16



Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Naphthalene		3700	800	230	ug/kg	SW846 8270D
Phenanthrene		57700	800	270	ug/kg	SW846 8270D
Pyrene		64300	800	260	ug/kg	SW846 8270D
4,4'-DDD ^b		8.2	0.80	0.51	ug/kg	SW846 8081B
4,4'-DDE ^b		50.9	0.80	0.42	ug/kg	SW846 8081B
4,4'-DDT ^b		66.1	0.80	0.48	ug/kg	SW846 8081B
Aluminum		5560	59		mg/kg	SW846 6010C
Antimony ^c		37.4	4.7		mg/kg	SW846 6010C
Arsenic		41.8	2.4		mg/kg	SW846 6010C
Barium		724	24		mg/kg	SW846 6010C
Beryllium		0.39	0.24		mg/kg	SW846 6010C
Cadmium ^c		5.3	1.2		mg/kg	SW846 6010C
Calcium		5040	590		mg/kg	SW846 6010C
Chromium ^c		32.7	5.9		mg/kg	SW846 6010C
Cobalt		12.3	5.9		mg/kg	SW846 6010C
Copper		1660	15		mg/kg	SW846 6010C
Iron		93400	300		mg/kg	SW846 6010C
Lead		4310	12		mg/kg	SW846 6010C
Magnesium		1920	590		mg/kg	SW846 6010C
Manganese ^c		641	8.9		mg/kg	SW846 6010C
Mercury		4.0	0.40		mg/kg	SW846 7471B
Nickel		40.7	4.7		mg/kg	SW846 6010C
Silver ^c		4.3	3.0		mg/kg	SW846 6010C
Tin		1250	12		mg/kg	SW846 6010C
Vanadium		24.2	5.9		mg/kg	SW846 6010C
Zinc		3140	30		mg/kg	SW846 6010C
Chromium, Hexavalent		0.85	0.48		mg/kg	SW846 3060A/7196A
Chromium, Trivalent ^a		31.9	6.4		mg/kg	SW846 6010/7196A M

JC34266-10 RHBF9-03 (5-7)

3&4-Methylphenol	146	87	36	ug/kg	SW846 8270D
Phenol	99.3	87	23	ug/kg	SW846 8270D
Acenaphthene	1410	43	15	ug/kg	SW846 8270D
Acenaphthylene	1460	43	22	ug/kg	SW846 8270D
Anthracene	3450	43	27	ug/kg	SW846 8270D
Benzo(a)anthracene	10200	870	240	ug/kg	SW846 8270D
Benzo(a)pyrene	8970	870	390	ug/kg	SW846 8270D
Benzo(b)fluoranthene	12600	870	380	ug/kg	SW846 8270D
Benzo(g,h,i)perylene	5730	870	430	ug/kg	SW846 8270D
Benzo(k)fluoranthene	3370	43	20	ug/kg	SW846 8270D
Chrysene	11900	870	270	ug/kg	SW846 8270D
Dibenzo(a,h)anthracene	2220	43	19	ug/kg	SW846 8270D
Dibenzofuran	1280	87	18	ug/kg	SW846 8270D
Fluoranthene	25800	870	390	ug/kg	SW846 8270D

Summary of Hits

Job Number: JC34266
Account: TRC
Project: Red Hook Ballfields Soil, Brooklyn, NY
Collected: 12/22/16 thru 12/27/16



Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Fluorene		1700	43	20	ug/kg	SW846 8270D
Indeno(1,2,3-cd)pyrene		6650	870	410	ug/kg	SW846 8270D
Naphthalene		1790	43	12	ug/kg	SW846 8270D
Phenanthrene		23200	870	290	ug/kg	SW846 8270D
Pyrene		23000	870	280	ug/kg	SW846 8270D
4,4'-DDT ^b		10.9	0.88	0.52	ug/kg	SW846 8081B
Aluminum		4150	67		mg/kg	SW846 6010C
Antimony		17.6	2.7		mg/kg	SW846 6010C
Arsenic		39.3	2.7		mg/kg	SW846 6010C
Barium		1030	27		mg/kg	SW846 6010C
Beryllium		0.44	0.27		mg/kg	SW846 6010C
Cadmium ^c		9.3	1.3		mg/kg	SW846 6010C
Calcium		7760	670		mg/kg	SW846 6010C
Chromium ^c		29.4	2.7		mg/kg	SW846 6010C
Cobalt		10.5	6.7		mg/kg	SW846 6010C
Copper		1360	6.7		mg/kg	SW846 6010C
Iron		60800	130		mg/kg	SW846 6010C
Lead		3590	27		mg/kg	SW846 6010C
Magnesium		1330	670		mg/kg	SW846 6010C
Manganese ^c		405	4.0		mg/kg	SW846 6010C
Mercury		1.5	0.067		mg/kg	SW846 7471B
Nickel		45.6	5.4		mg/kg	SW846 6010C
Silver ^c		1.7	1.3		mg/kg	SW846 6010C
Tin		906	6.7		mg/kg	SW846 6010C
Vanadium		36.8	6.7		mg/kg	SW846 6010C
Zinc		2370	13		mg/kg	SW846 6010C
Chromium, Hexavalent		2.4	0.53		mg/kg	SW846 3060A/7196A
Chromium, Trivalent ^a		27.0	3.2		mg/kg	SW846 6010/7196A M
Cyanide		0.43	0.28		mg/kg	SW846 9012B/LACHAT

JC34266-11 RHBF9-03 (8-10)

3&4-Methylphenol	175	85	35	ug/kg	SW846 8270D
Acenaphthene	1470	43	15	ug/kg	SW846 8270D
Acenaphthylene	789	43	22	ug/kg	SW846 8270D
Anthracene	3520	43	26	ug/kg	SW846 8270D
Benzo(a)anthracene	5200	1100	300	ug/kg	SW846 8270D
Benzo(a)pyrene	4370	1100	490	ug/kg	SW846 8270D
Benzo(b)fluoranthene	5220	1100	470	ug/kg	SW846 8270D
Benzo(g,h,i)perylene	2520	43	21	ug/kg	SW846 8270D
Benzo(k)fluoranthene	1850	43	20	ug/kg	SW846 8270D
Chrysene	5460	1100	340	ug/kg	SW846 8270D
Dibenzo(a,h)anthracene	691	43	19	ug/kg	SW846 8270D
Dibenzofuran	1480	85	17	ug/kg	SW846 8270D
Fluoranthene	14100	1100	480	ug/kg	SW846 8270D

Summary of Hits

Job Number: JC34266
Account: TRC
Project: Red Hook Ballfields Soil, Brooklyn, NY
Collected: 12/22/16 thru 12/27/16



Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Fluorene		2280	43	20	ug/kg	SW846 8270D
Indeno(1,2,3-cd)pyrene		2840	43	20	ug/kg	SW846 8270D
Naphthalene		2790	43	12	ug/kg	SW846 8270D
Phenanthrene		15400	1100	360	ug/kg	SW846 8270D
Pyrene		11200	1100	340	ug/kg	SW846 8270D
4,4'-DDT ^b		9.0	0.81	0.48	ug/kg	SW846 8081B
Aluminum		5800	67		mg/kg	SW846 6010C
Arsenic		23.0	2.7		mg/kg	SW846 6010C
Barium		290	27		mg/kg	SW846 6010C
Beryllium		0.52	0.27		mg/kg	SW846 6010C
Cadmium		1.6	0.67		mg/kg	SW846 6010C
Calcium		4830	670		mg/kg	SW846 6010C
Chromium		18.1	1.3		mg/kg	SW846 6010C
Cobalt		7.7	6.7		mg/kg	SW846 6010C
Copper		333	3.3		mg/kg	SW846 6010C
Iron		16200	67		mg/kg	SW846 6010C
Lead		1130	2.7		mg/kg	SW846 6010C
Magnesium		940	670		mg/kg	SW846 6010C
Manganese		221	2.0		mg/kg	SW846 6010C
Mercury		3.4	0.34		mg/kg	SW846 7471B
Nickel		23.5	5.3		mg/kg	SW846 6010C
Silver		1.1	0.67		mg/kg	SW846 6010C
Tin		94.5	6.7		mg/kg	SW846 6010C
Vanadium		22.7	6.7		mg/kg	SW846 6010C
Zinc		753	6.7		mg/kg	SW846 6010C
Chromium, Trivalent ^a		18.1	1.8		mg/kg	SW846 6010/7196A M

JC34266-12 RHBF9-03

Fluoranthene	0.63 J	1.0	0.17	ug/l	SW846 8270D
Phenanthrene	0.82 J	1.0	0.18	ug/l	SW846 8270D
Pyrene	0.56 J	1.0	0.22	ug/l	SW846 8270D
Aluminum	1600	200		ug/l	SW846 6010C
Arsenic	10.0	3.0		ug/l	SW846 6010C
Barium	277	200		ug/l	SW846 6010C
Calcium	496000	25000		ug/l	SW846 6010C
Copper	31.7	10		ug/l	SW846 6010C
Iron	5330	100		ug/l	SW846 6010C
Lead ^c	148	15		ug/l	SW846 6010C
Magnesium	78100	5000		ug/l	SW846 6010C
Manganese	192	15		ug/l	SW846 6010C
Mercury	0.36	0.20		ug/l	SW846 7470A
Potassium	47400	10000		ug/l	SW846 6010C
Selenium	11.7	10		ug/l	SW846 6010C
Sodium	152000	10000		ug/l	SW846 6010C

Summary of Hits

Job Number: JC34266
Account: TRC
Project: Red Hook Ballfields Soil, Brooklyn, NY
Collected: 12/22/16 thru 12/27/16



Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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Zinc		124	20		ug/l	SW846 6010C
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JC34266-12F RHBF9-03

Arsenic		9.7	3.0		ug/l	SW846 6010C
Barium		289	200		ug/l	SW846 6010C
Calcium		421000	25000		ug/l	SW846 6010C
Iron		3530	100		ug/l	SW846 6010C
Magnesium		64700	5000		ug/l	SW846 6010C
Manganese		234	15		ug/l	SW846 6010C
Potassium		40300	10000		ug/l	SW846 6010C
Sodium		117000	10000		ug/l	SW846 6010C

JC34266-13 RHBF9-04 (2-4)

3&4-Methylphenol		79.2	76	31	ug/kg	SW846 8270D
Acenaphthene		283	38	13	ug/kg	SW846 8270D
Acenaphthylene		943	38	19	ug/kg	SW846 8270D
Anthracene		1500	38	23	ug/kg	SW846 8270D
Benzo(a)anthracene		5860	950	270	ug/kg	SW846 8270D
Benzo(a)pyrene		6010	950	430	ug/kg	SW846 8270D
Benzo(b)fluoranthene		6940	950	420	ug/kg	SW846 8270D
Benzo(g,h,i)perylene		3300	950	470	ug/kg	SW846 8270D
Benzo(k)fluoranthene		2460	38	18	ug/kg	SW846 8270D
Chrysene		5900	950	300	ug/kg	SW846 8270D
Dibenzo(a,h)anthracene		1370	38	17	ug/kg	SW846 8270D
Dibenzofuran		263	76	15	ug/kg	SW846 8270D
Fluoranthene		10700	950	420	ug/kg	SW846 8270D
Fluorene		461	38	17	ug/kg	SW846 8270D
Indeno(1,2,3-cd)pyrene		3870	950	440	ug/kg	SW846 8270D
Naphthalene		331	38	11	ug/kg	SW846 8270D
Phenanthrene		5370	950	320	ug/kg	SW846 8270D
Pyrene		9710	950	300	ug/kg	SW846 8270D
4,4'-DDT		2.8	0.75	0.45	ug/kg	SW846 8081B
Aluminum		9880	55		mg/kg	SW846 6010C
Antimony		6.9	2.2		mg/kg	SW846 6010C
Arsenic		11.6	2.2		mg/kg	SW846 6010C
Barium		122	22		mg/kg	SW846 6010C
Beryllium		0.47	0.22		mg/kg	SW846 6010C
Cadmium		1.1	0.55		mg/kg	SW846 6010C
Calcium		2930	550		mg/kg	SW846 6010C
Chromium		15.9	1.1		mg/kg	SW846 6010C
Cobalt		5.9	5.5		mg/kg	SW846 6010C
Copper		356	2.7		mg/kg	SW846 6010C
Iron		17000	55		mg/kg	SW846 6010C

Summary of Hits

Job Number: JC34266
Account: TRC
Project: Red Hook Ballfields Soil, Brooklyn, NY
Collected: 12/22/16 thru 12/27/16



Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Lead		375	2.2		mg/kg	SW846 6010C
Magnesium		1970	550		mg/kg	SW846 6010C
Manganese		172	1.6		mg/kg	SW846 6010C
Mercury		1.5	0.074		mg/kg	SW846 7471B
Nickel		24.2	4.4		mg/kg	SW846 6010C
Silver		0.58	0.55		mg/kg	SW846 6010C
Tin		72.8	5.5		mg/kg	SW846 6010C
Vanadium		19.8	5.5		mg/kg	SW846 6010C
Zinc		696	5.5		mg/kg	SW846 6010C
Chromium, Trivalent ^a		15.5	1.6		mg/kg	SW846 6010/7196A M

JC34266-14 RHBF9-04 (5-7)

2-Methylphenol	65.5 J	78	25	ug/kg	SW846 8270D
3&4-Methylphenol	233	78	32	ug/kg	SW846 8270D
Phenol	146	78	20	ug/kg	SW846 8270D
Acenaphthene	1010	39	13	ug/kg	SW846 8270D
Acenaphthylene	1970	39	20	ug/kg	SW846 8270D
Anthracene	3470	39	24	ug/kg	SW846 8270D
Benzo(a)anthracene	5680	780	220	ug/kg	SW846 8270D
Benzo(a)pyrene	5500	780	350	ug/kg	SW846 8270D
Benzo(b)fluoranthene	6620	780	340	ug/kg	SW846 8270D
Benzo(g,h,i)perylene	3680	39	19	ug/kg	SW846 8270D
Benzo(k)fluoranthene	2690	780	360	ug/kg	SW846 8270D
Chrysene	5700	780	240	ug/kg	SW846 8270D
Dibenzo(a,h)anthracene	993	39	17	ug/kg	SW846 8270D
Dibenzofuran	1360	78	16	ug/kg	SW846 8270D
Fluoranthene	12900	780	350	ug/kg	SW846 8270D
Fluorene	1950	39	18	ug/kg	SW846 8270D
Indeno(1,2,3-cd)pyrene	3290	780	360	ug/kg	SW846 8270D
Naphthalene	1700	39	11	ug/kg	SW846 8270D
Phenanthrene	12100	780	260	ug/kg	SW846 8270D
Pyrene	13200	780	250	ug/kg	SW846 8270D
4,4' -DDT ^b	12.5	0.76	0.45	ug/kg	SW846 8081B
Aluminum	3400	57		mg/kg	SW846 6010C
Antimony	20.6	2.3		mg/kg	SW846 6010C
Arsenic	54.8	2.3		mg/kg	SW846 6010C
Barium	1930	110		mg/kg	SW846 6010C
Beryllium	0.46	0.23		mg/kg	SW846 6010C
Calcium	10300	570		mg/kg	SW846 6010C
Chromium ^c	44.4	5.7		mg/kg	SW846 6010C
Cobalt	25.4	5.7		mg/kg	SW846 6010C
Copper	1280	14		mg/kg	SW846 6010C
Iron	116000	280		mg/kg	SW846 6010C
Lead ^c	4230	11		mg/kg	SW846 6010C

Summary of Hits

Job Number: JC34266
Account: TRC
Project: Red Hook Ballfields Soil, Brooklyn, NY
Collected: 12/22/16 thru 12/27/16



Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Magnesium		1380	570		mg/kg	SW846 6010C
Manganese ^c		4020	8.5		mg/kg	SW846 6010C
Mercury		6.1	0.35		mg/kg	SW846 7471B
Nickel		75.5	4.6		mg/kg	SW846 6010C
Tin		172	5.7		mg/kg	SW846 6010C
Vanadium		35.0	5.7		mg/kg	SW846 6010C
Zinc		1100	28		mg/kg	SW846 6010C
Chromium, Hexavalent		0.89	0.47		mg/kg	SW846 3060A/7196A
Chromium, Trivalent ^a		43.5	6.2		mg/kg	SW846 6010/7196A M

JC34266-15 RHBF9-04 (8-10)

3&4-Methylphenol	76.9	74	30	ug/kg	SW846 8270D
Acenaphthene	147	37	13	ug/kg	SW846 8270D
Acenaphthylene	112	37	19	ug/kg	SW846 8270D
Anthracene	470	37	23	ug/kg	SW846 8270D
Benzo(a)anthracene	1240	37	10	ug/kg	SW846 8270D
Benzo(a)pyrene	1210	37	17	ug/kg	SW846 8270D
Benzo(b)fluoranthene	1410	37	16	ug/kg	SW846 8270D
Benzo(g,h,i)perylene	715	37	18	ug/kg	SW846 8270D
Benzo(k)fluoranthene	469	37	17	ug/kg	SW846 8270D
Chrysene	1230	37	12	ug/kg	SW846 8270D
Dibenzo(a,h)anthracene	185	37	16	ug/kg	SW846 8270D
Dibenzofuran	145	74	15	ug/kg	SW846 8270D
Fluoranthene	2680	37	16	ug/kg	SW846 8270D
Fluorene	135	37	17	ug/kg	SW846 8270D
Indeno(1,2,3-cd)pyrene	794	37	17	ug/kg	SW846 8270D
Naphthalene	172	37	10	ug/kg	SW846 8270D
Phenanthrene	2100	37	12	ug/kg	SW846 8270D
Pyrene	2650	37	12	ug/kg	SW846 8270D
4,4' -DDT	2.3	0.70	0.41	ug/kg	SW846 8081B
Aluminum	3840	56		mg/kg	SW846 6010C
Arsenic	10.2	2.2		mg/kg	SW846 6010C
Barium	133	22		mg/kg	SW846 6010C
Beryllium	0.24	0.22		mg/kg	SW846 6010C
Calcium	17300	560		mg/kg	SW846 6010C
Chromium	14.1	1.1		mg/kg	SW846 6010C
Copper	48.2	2.8		mg/kg	SW846 6010C
Iron	10200	56		mg/kg	SW846 6010C
Lead	245	2.2		mg/kg	SW846 6010C
Magnesium	2370	560		mg/kg	SW846 6010C
Manganese	93.9	1.7		mg/kg	SW846 6010C
Mercury	2.7	0.18		mg/kg	SW846 7471B
Nickel	23.4	4.4		mg/kg	SW846 6010C
Tin	7.5	5.6		mg/kg	SW846 6010C

Summary of Hits

Job Number: JC34266
Account: TRC
Project: Red Hook Ballfields Soil, Brooklyn, NY
Collected: 12/22/16 thru 12/27/16



Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Vanadium		17.6	5.6		mg/kg	SW846 6010C
Zinc		359	5.6		mg/kg	SW846 6010C
Chromium, Trivalent ^a		13.8	1.5		mg/kg	SW846 6010/7196A M
Cyanide		0.31	0.23		mg/kg	SW846 9012B/LACHAT

JC34266-16 RHBF9-DUP-01

Acenaphthene	633	38	13	ug/kg	SW846 8270D
Acenaphthylene	225	38	20	ug/kg	SW846 8270D
Anthracene	1950	38	24	ug/kg	SW846 8270D
Benzo(a)anthracene	5340	960	270	ug/kg	SW846 8270D
Benzo(a)pyrene	4560	960	440	ug/kg	SW846 8270D
Benzo(b)fluoranthene	4970	960	420	ug/kg	SW846 8270D
Benzo(g,h,i)perylene	3330	38	19	ug/kg	SW846 8270D
Benzo(k)fluoranthene	1860	38	18	ug/kg	SW846 8270D
Chrysene	4960	960	300	ug/kg	SW846 8270D
Dibenzo(a,h)anthracene	1040	38	17	ug/kg	SW846 8270D
Dibenzofuran	456	77	16	ug/kg	SW846 8270D
Fluoranthene	9980	960	430	ug/kg	SW846 8270D
Fluorene	634	38	18	ug/kg	SW846 8270D
Indeno(1,2,3-cd)pyrene	3530	38	18	ug/kg	SW846 8270D
Naphthalene	488	38	11	ug/kg	SW846 8270D
Phenanthrene	8520	960	320	ug/kg	SW846 8270D
Pyrene	9610	960	310	ug/kg	SW846 8270D
4,4'-DDT ^b	5.7	0.75	0.45	ug/kg	SW846 8081B
Aluminum	6590	56		mg/kg	SW846 6010C
Arsenic	10	2.3		mg/kg	SW846 6010C
Barium	213	23		mg/kg	SW846 6010C
Beryllium	0.43	0.23		mg/kg	SW846 6010C
Cadmium	1.2	0.56		mg/kg	SW846 6010C
Calcium	10900	560		mg/kg	SW846 6010C
Chromium	20.7	1.1		mg/kg	SW846 6010C
Cobalt	6.4	5.6		mg/kg	SW846 6010C
Copper	124	2.8		mg/kg	SW846 6010C
Iron	18300	56		mg/kg	SW846 6010C
Lead	504	2.3		mg/kg	SW846 6010C
Magnesium	3080	560		mg/kg	SW846 6010C
Manganese	294	1.7		mg/kg	SW846 6010C
Mercury	3.5	0.18		mg/kg	SW846 7471B
Nickel	30.2	4.5		mg/kg	SW846 6010C
Silver	0.61	0.56		mg/kg	SW846 6010C
Tin	25.0	5.6		mg/kg	SW846 6010C
Vanadium	33.5	5.6		mg/kg	SW846 6010C
Zinc	572	5.6		mg/kg	SW846 6010C
Chromium, Hexavalent	0.97	0.46		mg/kg	SW846 3060A/7196A

Summary of Hits

Job Number: JC34266
Account: TRC
Project: Red Hook Ballfields Soil, Brooklyn, NY
Collected: 12/22/16 thru 12/27/16



Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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Chromium, Trivalent ^a		19.7	1.6		mg/kg	SW846 6010/7196A M
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JC34266-17 RHBF9-GW-DUP-01

Acenaphthene	0.55 J	1.0	0.19	ug/l	SW846 8270D
Acenaphthylene	0.44 J	1.0	0.14	ug/l	SW846 8270D
Anthracene	1.2	1.0	0.21	ug/l	SW846 8270D
Benzo(a)anthracene	3.1	1.0	0.21	ug/l	SW846 8270D
Benzo(a)pyrene	3.3	1.0	0.22	ug/l	SW846 8270D
Benzo(b)fluoranthene	3.7	1.0	0.21	ug/l	SW846 8270D
Benzo(g,h,i)perylene	2.2	1.0	0.34	ug/l	SW846 8270D
Benzo(k)fluoranthene	1.2	1.0	0.21	ug/l	SW846 8270D
Chrysene	2.9	1.0	0.18	ug/l	SW846 8270D
Dibenzo(a,h)anthracene	0.59 J	1.0	0.33	ug/l	SW846 8270D
Fluoranthene	6.4	1.0	0.17	ug/l	SW846 8270D
Fluorene	0.57 J	1.0	0.17	ug/l	SW846 8270D
Indeno(1,2,3-cd)pyrene	2.4	1.0	0.34	ug/l	SW846 8270D
Naphthalene	0.50 J	1.0	0.23	ug/l	SW846 8270D
Phenanthrene	4.7	1.0	0.18	ug/l	SW846 8270D
Pyrene	5.6	1.0	0.22	ug/l	SW846 8270D
Aluminum	4490	200		ug/l	SW846 6010C
Antimony	7.4	6.0		ug/l	SW846 6010C
Arsenic	31.0	3.0		ug/l	SW846 6010C
Barium	523	200		ug/l	SW846 6010C
Calcium	76300	5000		ug/l	SW846 6010C
Chromium	28.6	10		ug/l	SW846 6010C
Copper	164	10		ug/l	SW846 6010C
Iron	27600	100		ug/l	SW846 6010C
Lead	1170	3.0		ug/l	SW846 6010C
Magnesium	46200	5000		ug/l	SW846 6010C
Manganese	404	15		ug/l	SW846 6010C
Mercury	4.0	0.20		ug/l	SW846 7470A
Nickel	17.4	10		ug/l	SW846 6010C
Potassium	26300	10000		ug/l	SW846 6010C
Sodium	48100	10000		ug/l	SW846 6010C
Tin	107	10		ug/l	SW846 6010C
Zinc	668	20		ug/l	SW846 6010C
Chromium, Hexavalent	0.014	0.010		mg/l	SW846 7196A

JC34266-17F RHBF9-GW-DUP-01

Arsenic	12.4	3.0		ug/l	SW846 6010C
Barium	255	200		ug/l	SW846 6010C
Calcium	76500	5000		ug/l	SW846 6010C
Iron	17000	100		ug/l	SW846 6010C

Summary of Hits

Job Number: JC34266
Account: TRC
Project: Red Hook Ballfields Soil, Brooklyn, NY
Collected: 12/22/16 thru 12/27/16



Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Lead		10.1	3.0		ug/l	SW846 6010C
Magnesium		47900	5000		ug/l	SW846 6010C
Manganese		324	15		ug/l	SW846 6010C
Potassium		27200	10000		ug/l	SW846 6010C
Sodium		50500	10000		ug/l	SW846 6010C
Chromium, Hexavalent		0.018	0.010		mg/l	SW846 7196A

JC34266-18 RHBF9-FIELD BLANK

No hits reported in this sample.

JC34266-18F RHBF9-FIELD BLANK

No hits reported in this sample.

JC34266-19 RHBF9-EQUIPMENT BLANK

No hits reported in this sample.

JC34266-19F RHBF9-EQUIPMENT BLANK

No hits reported in this sample.

JC34266-20 RHBF9-04

Acenaphthene	7.9	1.0	0.20	ug/l	SW846 8270D
Anthracene	2.5	1.0	0.22	ug/l	SW846 8270D
Benzo(a)anthracene	0.93 J	1.0	0.21	ug/l	SW846 8270D
Benzo(a)pyrene	0.83 J	1.0	0.22	ug/l	SW846 8270D
Benzo(b)fluoranthene	0.82 J	1.0	0.21	ug/l	SW846 8270D
Benzo(g,h,i)perylene	0.43 J	1.0	0.35	ug/l	SW846 8270D
Chrysene	1.3	1.0	0.18	ug/l	SW846 8270D
Dibenzofuran	2.8 J	5.1	0.23	ug/l	SW846 8270D
Fluoranthene	2.9	1.0	0.17	ug/l	SW846 8270D
Fluorene	5.2	1.0	0.18	ug/l	SW846 8270D
Naphthalene	56.4	1.0	0.24	ug/l	SW846 8270D
Phenanthrene	11.3	1.0	0.18	ug/l	SW846 8270D
Pyrene	3.1	1.0	0.22	ug/l	SW846 8270D
Aluminum	2040	200		ug/l	SW846 6010C
Arsenic	198	3.0		ug/l	SW846 6010C
Barium	569	200		ug/l	SW846 6010C
Calcium	232000	5000		ug/l	SW846 6010C
Chromium	12.7	10		ug/l	SW846 6010C
Copper	38.7	10		ug/l	SW846 6010C
Iron	19200	100		ug/l	SW846 6010C

Summary of Hits

Job Number: JC34266
Account: TRC
Project: Red Hook Ballfields Soil, Brooklyn, NY
Collected: 12/22/16 thru 12/27/16



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Analyte						
Lead		143	3.0		ug/l	SW846 6010C
Magnesium		44100	5000		ug/l	SW846 6010C
Manganese		1110	15		ug/l	SW846 6010C
Mercury		1.9	0.20		ug/l	SW846 7470A
Potassium		23600	10000		ug/l	SW846 6010C
Sodium		324000	20000		ug/l	SW846 6010C
Zinc		163	20		ug/l	SW846 6010C
Chromium, Hexavalent ^d		0.034	0.010		mg/l	SW846 7196A

JC34266-20F RHBF9-04

Arsenic	174	3.0	ug/l	SW846 6010C
Barium	556	200	ug/l	SW846 6010C
Calcium	250000	5000	ug/l	SW846 6010C
Iron	14200	100	ug/l	SW846 6010C
Magnesium	49000	5000	ug/l	SW846 6010C
Manganese	1170	15	ug/l	SW846 6010C
Potassium	26900	10000	ug/l	SW846 6010C
Sodium	365000	20000	ug/l	SW846 6010C

- (a) Calculated as: (Chromium) - (Chromium, Hexavalent)
(b) More than 40 % RPD for detected concentrations between the two GC columns.
(c) Elevated detection limit due to dilution required for high interfering element.
(d) Analysis done out of holding time.

Sample Results

Report of Analysis

Report of Analysis

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Client Sample ID:	RHBF9-01 (2-4)	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-1	Date Received:	12/22/16
Matrix:	SO - Soil	Percent Solids:	86.0
Method:	SW846 8270D SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P34517.D	1	01/05/17	JJ	01/03/17	OP99582	E5P1731
Run #2	5P34539.D	10	01/05/17	AN	01/03/17	OP99582	E5P1732

	Initial Weight	Final Volume
Run #1	31.0 g	1.0 ml
Run #2	31.0 g	1.0 ml

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	75	24	ug/kg	
	3&4-Methylphenol	121	75	31	ug/kg	
87-86-5	Pentachlorophenol	ND	150	35	ug/kg	
108-95-2	Phenol	74.4	75	20	ug/kg	J
83-32-9	Acenaphthene	1430	38	13	ug/kg	
208-96-8	Acenaphthylene	797	38	19	ug/kg	
120-12-7	Anthracene	3440	38	23	ug/kg	
56-55-3	Benzo(a)anthracene	9550 ^a	380	110	ug/kg	
50-32-8	Benzo(a)pyrene	8670 ^a	380	170	ug/kg	
205-99-2	Benzo(b)fluoranthene	11000 ^a	380	170	ug/kg	
191-24-2	Benzo(g,h,i)perylene	4980 ^a	380	190	ug/kg	
207-08-9	Benzo(k)fluoranthene	3270	38	18	ug/kg	
218-01-9	Chrysene	9320 ^a	380	120	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	1490	38	17	ug/kg	
132-64-9	Dibenzofuran	1050	75	15	ug/kg	
206-44-0	Fluoranthene	19600 ^a	380	170	ug/kg	
86-73-7	Fluorene	1340	38	17	ug/kg	
118-74-1	Hexachlorobenzene	ND	75	9.5	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	5600 ^a	380	180	ug/kg	
91-20-3	Naphthalene	955	38	11	ug/kg	
85-01-8	Phenanthrene	16800 ^a	380	130	ug/kg	
129-00-0	Pyrene	20700 ^a	380	120	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	61%	55%	30-106%
4165-62-2	Phenol-d5	68%	61%	30-106%
118-79-6	2,4,6-Tribromophenol	75%	78%	24-140%
4165-60-0	Nitrobenzene-d5	67%	63%	26-122%
321-60-8	2-Fluorobiphenyl	71%	66%	36-112%
1718-51-0	Terphenyl-d14	79%	85%	36-132%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RHBF9-01 (2-4)	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-1	Date Received:	12/22/16
Matrix:	SO - Soil	Percent Solids:	86.0
Method:	SW846 8270D SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
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(a) Result is from Run# 2

ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

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Report of Analysis

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Client Sample ID:	RHBF9-01 (2-4)	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-1	Date Received:	12/22/16
Matrix:	SO - Soil	Percent Solids:	86.0
Method:	SW846 8151 SW846 8151/3550C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OA122530.D	2	01/05/17	VDT	01/02/17	OP99579	GOA4207
Run #2							

	Initial Weight	Final Volume
Run #1	15.3 g	5.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	7.6	2.8	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	35%		10-156%
19719-28-9	2,4-DCAA	38%		10-156%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	RHBF9-01 (2-4)	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-1	Date Received:	12/22/16
Matrix:	SO - Soil	Percent Solids:	86.0
Method:	SW846 8081B SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G76562.D	1	01/04/17	RK	01/03/17	OP99586	G4G1993
Run #2							

	Initial Weight	Final Volume
Run #1	15.8 g	10.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.74	0.35	ug/kg	
319-84-6	alpha-BHC	ND	0.74	0.39	ug/kg	
319-85-7	beta-BHC	ND	0.74	0.46	ug/kg	
319-86-8	delta-BHC	2.4	0.74	0.33	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	0.74	0.33	ug/kg	
5103-71-9	alpha-Chlordane	ND	0.74	0.35	ug/kg	
60-57-1	Dieldrin	71.3	0.74	0.37	ug/kg	
72-54-8	4,4' -DDD	4.8	0.74	0.47	ug/kg	
72-55-9	4,4' -DDE	24.6	0.74	0.38	ug/kg	
50-29-3	4,4' -DDT	56.7	0.74	0.44	ug/kg	
72-20-8	Endrin	ND	0.74	0.35	ug/kg	
1031-07-8	Endosulfan sulfate	ND	0.74	0.30	ug/kg	
959-98-8	Endosulfan-I	ND	0.74	0.38	ug/kg	
33213-65-9	Endosulfan-II	ND	0.74	0.38	ug/kg	
76-44-8	Heptachlor	ND	0.74	0.36	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	73%		24-136%
877-09-8	Tetrachloro-m-xylene	84%		24-136%
2051-24-3	Decachlorobiphenyl	103%		10-153%
2051-24-3	Decachlorobiphenyl	70%		10-153%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	RHBF9-01 (2-4)	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-1	Date Received:	12/22/16
Matrix:	SO - Soil	Percent Solids:	86.0
Method:	SW846 8082A SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX202642.D	1	01/04/17	HB	01/03/17	OP99585	GXX5902
Run #2							

Run #	Initial Weight	Final Volume
Run #1	15.8 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	37	18	ug/kg	
11104-28-2	Aroclor 1221	ND	37	18	ug/kg	
11141-16-5	Aroclor 1232	ND	37	14	ug/kg	
53469-21-9	Aroclor 1242	ND	37	13	ug/kg	
12672-29-6	Aroclor 1248	ND	37	23	ug/kg	
11097-69-1	Aroclor 1254	ND	37	18	ug/kg	
11096-82-5	Aroclor 1260	ND	37	16	ug/kg	
1336-36-3	Total PCBs	ND	37		ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	65%		20-152%
877-09-8	Tetrachloro-m-xylene	80%		20-152%
2051-24-3	Decachlorobiphenyl	88%		12-157%
2051-24-3	Decachlorobiphenyl	83%		12-157%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-01 (2-4)	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-1	Date Received:	12/22/16
Matrix:	SO - Soil	Percent Solids:	86.0
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analized By	Method	Prep Method
Aluminum	7920	57	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Antimony	8.6	2.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Arsenic	29.0	2.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Barium	655	23	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Beryllium	0.59	0.23	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Cadmium	3.3	0.57	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Calcium	4250	570	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Chromium	41.9	1.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Cobalt	12.2	5.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Copper	541	2.8	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Iron	29500	57	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Lead	1600	4.6	mg/kg	2	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁵
Magnesium	2820	570	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Manganese	363	1.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Mercury	2.0	0.19	mg/kg	5	12/30/16	12/30/16 JPM	SW846 7471B ¹	SW846 7471B ⁴
Nickel	37.5	4.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Potassium	< 1100	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Selenium	< 2.3	2.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Silver	0.81	0.57	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Sodium	< 1100	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Thallium	< 1.1	1.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Tin	274	5.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Vanadium	39.4	5.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Zinc	1070	11	mg/kg	2	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁵

(1) Instrument QC Batch: MA41069

(2) Instrument QC Batch: MA41085

(3) Instrument QC Batch: MA41088

(4) Prep QC Batch: MP97905

(5) Prep QC Batch: MP97914

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RHBF9-01 (2-4)	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-1	Date Received:	12/22/16
Matrix:	SO - Soil	Percent Solids:	86.0
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	2.7	0.47	mg/kg	1	01/05/17 12:50	RP	SW846 3060A/7196A
Chromium, Trivalent ^a	39.2	1.6	mg/kg	1	01/05/17 12:50	RP	SW846 6010/7196A M
Cyanide	0.79	0.26	mg/kg	1	01/05/17 13:13	BM	SW846 9012B/LACHAT
Solids, Percent	86		%	1	12/23/16 17:22	YR	SM2540 G-97

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

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Client Sample ID:	RHBF9-01 (5-7)	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-2	Date Received:	12/22/16
Matrix:	SO - Soil	Percent Solids:	88.1
Method:	SW846 8270D SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P34518.D	1	01/05/17	JJ	01/03/17	OP99582	E5P1731
Run #2	5P34540.D	5	01/05/17	AN	01/03/17	OP99582	E5P1732

	Initial Weight	Final Volume
Run #1	32.2 g	1.0 ml
Run #2	32.2 g	1.0 ml

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	71	23	ug/kg	
	3&4-Methylphenol	56.1	71	29	ug/kg	J
87-86-5	Pentachlorophenol	ND	140	33	ug/kg	
108-95-2	Phenol	39.8	71	18	ug/kg	J
83-32-9	Acenaphthene	709	35	12	ug/kg	
208-96-8	Acenaphthylene	251	35	18	ug/kg	
120-12-7	Anthracene	1610	35	22	ug/kg	
56-55-3	Benzo(a)anthracene	3670 ^a	180	50	ug/kg	
50-32-8	Benzo(a)pyrene	3320 ^a	180	80	ug/kg	
205-99-2	Benzo(b)fluoranthene	4360 ^a	180	78	ug/kg	
191-24-2	Benzo(g,h,i)perylene	2260	35	18	ug/kg	
207-08-9	Benzo(k)fluoranthene	1480	35	16	ug/kg	
218-01-9	Chrysene	3600 ^a	180	56	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	628	35	16	ug/kg	
132-64-9	Dibenzofuran	493	71	14	ug/kg	
206-44-0	Fluoranthene	7220 ^a	180	79	ug/kg	
86-73-7	Fluorene	660	35	16	ug/kg	
118-74-1	Hexachlorobenzene	ND	71	8.9	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	2500	35	17	ug/kg	
91-20-3	Naphthalene	656	35	9.9	ug/kg	
85-01-8	Phenanthrene	6670 ^a	180	59	ug/kg	
129-00-0	Pyrene	7810 ^a	180	56	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	70%	61%	30-106%
4165-62-2	Phenol-d5	74%	63%	30-106%
118-79-6	2,4,6-Tribromophenol	79%	79%	24-140%
4165-60-0	Nitrobenzene-d5	74%	63%	26-122%
321-60-8	2-Fluorobiphenyl	74%	66%	36-112%
1718-51-0	Terphenyl-d14	78%	73%	36-132%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RHBF9-01 (5-7)	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-2	Date Received:	12/22/16
Matrix:	SO - Soil	Percent Solids:	88.1
Method:	SW846 8270D SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
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(a) Result is from Run# 2

ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

4.2
4

Report of Analysis

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Client Sample ID:	RHBF9-01 (5-7)	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-2	Date Received:	12/22/16
Matrix:	SO - Soil	Percent Solids:	88.1
Method:	SW846 8151 SW846 8151/3550C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OA122531.D	2	01/05/17	VDT	01/02/17	OP99579	GOA4207
Run #2							

	Initial Weight	Final Volume
Run #1	15.0 g	5.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	7.6	2.8	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	22%		10-156%
19719-28-9	2,4-DCAA	23%		10-156%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-01 (5-7)	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-2	Date Received:	12/22/16
Matrix:	SO - Soil	Percent Solids:	88.1
Method:	SW846 8081B SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G76563.D	1	01/04/17	RK	01/03/17	OP99586	G4G1993
Run #2							

	Initial Weight	Final Volume
Run #1	16.0 g	10.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.71	0.34	ug/kg	
319-84-6	alpha-BHC	ND	0.71	0.38	ug/kg	
319-85-7	beta-BHC	ND	0.71	0.45	ug/kg	
319-86-8	delta-BHC	1.4	0.71	0.32	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	0.71	0.31	ug/kg	
5103-71-9	alpha-Chlordane	ND	0.71	0.34	ug/kg	
60-57-1	Dieldrin	ND	0.71	0.35	ug/kg	
72-54-8	4,4' -DDD	ND	0.71	0.45	ug/kg	
72-55-9	4,4' -DDE	1.9	0.71	0.37	ug/kg	
50-29-3	4,4' -DDT	8.8	0.71	0.42	ug/kg	
72-20-8	Endrin	ND	0.71	0.33	ug/kg	
1031-07-8	Endosulfan sulfate	ND	0.71	0.28	ug/kg	
959-98-8	Endosulfan-I	ND	0.71	0.37	ug/kg	
33213-65-9	Endosulfan-II	ND	0.71	0.37	ug/kg	
76-44-8	Heptachlor	ND	0.71	0.35	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	89%		24-136%
877-09-8	Tetrachloro-m-xylene	79%		24-136%
2051-24-3	Decachlorobiphenyl	147%		10-153%
2051-24-3	Decachlorobiphenyl	72%		10-153%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	RHBF9-01 (5-7)	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-2	Date Received:	12/22/16
Matrix:	SO - Soil	Percent Solids:	88.1
Method:	SW846 8082A SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX202643.D	1	01/04/17	HB	01/03/17	OP99585	GXX5902
Run #2							

	Initial Weight	Final Volume
Run #1	16.0 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	35	18	ug/kg	
11104-28-2	Aroclor 1221	ND	35	17	ug/kg	
11141-16-5	Aroclor 1232	ND	35	14	ug/kg	
53469-21-9	Aroclor 1242	ND	35	13	ug/kg	
12672-29-6	Aroclor 1248	ND	35	22	ug/kg	
11097-69-1	Aroclor 1254	ND	35	18	ug/kg	
11096-82-5	Aroclor 1260	ND	35	15	ug/kg	
1336-36-3	Total PCBs	ND	35		ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	71%		20-152%
877-09-8	Tetrachloro-m-xylene	91%		20-152%
2051-24-3	Decachlorobiphenyl	92%		12-157%
2051-24-3	Decachlorobiphenyl	102%		12-157%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-01 (5-7)	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-2	Date Received:	12/22/16
Matrix:	SO - Soil	Percent Solids:	88.1
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analized By	Method	Prep Method
Aluminum	5100	56	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Antimony	< 2.2	2.2	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Arsenic	10.2	2.2	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Barium	661	22	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Beryllium	0.36	0.22	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cadmium	1.5	0.56	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Calcium	8960	560	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Chromium	21.3	1.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cobalt	< 5.6	5.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Copper	239	2.8	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Iron	15700	56	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Lead	998	2.2	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Magnesium	1990	560	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Manganese	216	1.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Mercury	0.76	0.038	mg/kg	1	12/30/16	12/30/16 JPM	SW846 7471B ¹	SW846 7471B ³
Nickel	24.2	4.5	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Potassium	< 1100	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Selenium	< 2.2	2.2	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Silver	< 0.56	0.56	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Sodium	< 1100	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Thallium	< 1.1	1.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Tin	69.2	5.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Vanadium	28.0	5.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Zinc	712	5.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴

(1) Instrument QC Batch: MA41069

(2) Instrument QC Batch: MA41085

(3) Prep QC Batch: MP97905

(4) Prep QC Batch: MP97914

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RHBF9-01 (5-7)	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-2	Date Received:	12/22/16
Matrix:	SO - Soil	Percent Solids:	88.1
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	< 0.45	0.45	mg/kg	1	01/05/17 12:50	RP	SW846 3060A/7196A
Chromium, Trivalent ^a	20.9	1.6	mg/kg	1	01/05/17 12:50	RP	SW846 6010/7196A M
Cyanide	0.30	0.25	mg/kg	1	01/05/17 13:15	BM	SW846 9012B/LACHAT
Solids, Percent	88.1		%	1	12/23/16 17:22	YR	SM2540 G-97

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

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Client Sample ID:	RHBF9-01 (8-10)	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-3	Date Received:	12/22/16
Matrix:	SO - Soil	Percent Solids:	90.0
Method:	SW846 8270D SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P34519.D	1	01/05/17	JJ	01/03/17	OP99582	E5P1731
Run #2							

	Initial Weight	Final Volume
Run #1	32.3 g	1.0 ml
Run #2		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	69	22	ug/kg	
	3&4-Methylphenol	ND	69	28	ug/kg	
87-86-5	Pentachlorophenol	ND	140	32	ug/kg	
108-95-2	Phenol	ND	69	18	ug/kg	
83-32-9	Acenaphthene	83.7	34	12	ug/kg	
208-96-8	Acenaphthylene	93.2	34	17	ug/kg	
120-12-7	Anthracene	263	34	21	ug/kg	
56-55-3	Benzo(a)anthracene	887	34	9.7	ug/kg	
50-32-8	Benzo(a)pyrene	894	34	16	ug/kg	
205-99-2	Benzo(b)fluoranthene	1130	34	15	ug/kg	
191-24-2	Benzo(g,h,i)perylene	552	34	17	ug/kg	
207-08-9	Benzo(k)fluoranthene	406	34	16	ug/kg	
218-01-9	Chrysene	910	34	11	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	162	34	15	ug/kg	
132-64-9	Dibenzofuran	75.5	69	14	ug/kg	
206-44-0	Fluoranthene	1420	34	15	ug/kg	
86-73-7	Fluorene	91.6	34	16	ug/kg	
118-74-1	Hexachlorobenzene	ND	69	8.7	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	608	34	16	ug/kg	
91-20-3	Naphthalene	117	34	9.7	ug/kg	
85-01-8	Phenanthrene	1200	34	12	ug/kg	
129-00-0	Pyrene	1900	34	11	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	61%		30-106%
4165-62-2	Phenol-d5	67%		30-106%
118-79-6	2,4,6-Tribromophenol	80%		24-140%
4165-60-0	Nitrobenzene-d5	63%		26-122%
321-60-8	2-Fluorobiphenyl	69%		36-112%
1718-51-0	Terphenyl-d14	81%		36-132%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-01 (8-10)	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-3	Date Received:	12/22/16
Matrix:	SO - Soil	Percent Solids:	90.0
Method:	SW846 8151 SW846 8151/3550C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OA122532.D	2	01/05/17	VDT	01/02/17	OP99579	GOA4207
Run #2							

	Initial Weight	Final Volume
Run #1	16.0 g	5.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	6.9	2.5	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	21%		10-156%
19719-28-9	2,4-DCAA	19%		10-156%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-01 (8-10)	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-3	Date Received:	12/22/16
Matrix:	SO - Soil	Percent Solids:	90.0
Method:	SW846 8081B SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G76564.D	1	01/04/17	RK	01/03/17	OP99586	G4G1993
Run #2							

	Initial Weight	Final Volume
Run #1	15.3 g	10.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.73	0.35	ug/kg	
319-84-6	alpha-BHC	ND	0.73	0.39	ug/kg	
319-85-7	beta-BHC	ND	0.73	0.46	ug/kg	
319-86-8	delta-BHC	ND	0.73	0.33	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	0.73	0.32	ug/kg	
5103-71-9	alpha-Chlordane	ND	0.73	0.34	ug/kg	
60-57-1	Dieldrin	2.4	0.73	0.36	ug/kg	
72-54-8	4,4' -DDD	1.6	0.73	0.47	ug/kg	
72-55-9	4,4' -DDE	11.3	0.73	0.38	ug/kg	
50-29-3	4,4' -DDT	6.8	0.73	0.43	ug/kg	
72-20-8	Endrin	ND	0.73	0.34	ug/kg	
1031-07-8	Endosulfan sulfate	ND	0.73	0.29	ug/kg	
959-98-8	Endosulfan-I	ND	0.73	0.38	ug/kg	
33213-65-9	Endosulfan-II	ND	0.73	0.38	ug/kg	
76-44-8	Heptachlor	ND	0.73	0.36	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	96%		24-136%
877-09-8	Tetrachloro-m-xylene	75%		24-136%
2051-24-3	Decachlorobiphenyl	83%		10-153%
2051-24-3	Decachlorobiphenyl	74%		10-153%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-01 (8-10)	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-3	Date Received:	12/22/16
Matrix:	SO - Soil	Percent Solids:	90.0
Method:	SW846 8082A SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX202644.D	1	01/04/17	HB	01/03/17	OP99585	GXX5902
Run #2							

	Initial Weight	Final Volume
Run #1	15.3 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	36	18	ug/kg	
11104-28-2	Aroclor 1221	ND	36	18	ug/kg	
11141-16-5	Aroclor 1232	ND	36	14	ug/kg	
53469-21-9	Aroclor 1242	ND	36	13	ug/kg	
12672-29-6	Aroclor 1248	ND	36	23	ug/kg	
11097-69-1	Aroclor 1254	ND	36	18	ug/kg	
11096-82-5	Aroclor 1260	ND	36	15	ug/kg	
1336-36-3	Total PCBs	ND	36		ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	76%		20-152%
877-09-8	Tetrachloro-m-xylene	81%		20-152%
2051-24-3	Decachlorobiphenyl	68%		12-157%
2051-24-3	Decachlorobiphenyl	105%		12-157%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-01 (8-10)	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-3	Date Received:	12/22/16
Matrix:	SO - Soil	Percent Solids:	90.0
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	6120	53	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Antimony	< 2.1	2.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Arsenic	9.5	2.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Barium	137	21	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Beryllium	0.45	0.21	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 0.53	0.53	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Calcium	5790	530	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Chromium	19.1	1.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cobalt	< 5.3	5.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Copper	62.8	2.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Iron	10400	53	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Lead	315	2.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Magnesium	1790	530	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Manganese	205	1.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Mercury	0.77	0.035	mg/kg	1	12/30/16	12/30/16 JPM	SW846 7471B ¹	SW846 7471B ³
Nickel	13.5	4.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Potassium	1340	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Selenium	< 2.1	2.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Silver	< 0.53	0.53	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Sodium	< 1100	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Thallium	< 1.1	1.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Tin	23.2	5.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Vanadium	16.8	5.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Zinc	208	5.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴

(1) Instrument QC Batch: MA41069

(2) Instrument QC Batch: MA41085

(3) Prep QC Batch: MP97905

(4) Prep QC Batch: MP97914

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RHBF9-01 (8-10)	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-3	Date Received:	12/22/16
Matrix:	SO - Soil	Percent Solids:	90.0
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	1.1	0.44	mg/kg	1	01/05/17 12:50	RP	SW846 3060A/7196A
Chromium, Trivalent ^a	18.0	1.5	mg/kg	1	01/05/17 12:50	RP	SW846 6010/7196A M
Cyanide	0.26	0.26	mg/kg	1	01/05/17 13:16	BM	SW846 9012B/LACHAT
Solids, Percent	90		%	1	12/23/16 17:22	YR	SM2540 G-97

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-01	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-4	Date Received:	12/22/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270D SW846 3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P110145.D	1	12/30/16	JJ	12/29/16	OP99540	EP4891
Run #2							

	Initial Volume	Final Volume
Run #1	980 ml	1.0 ml
Run #2		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	2.0	0.91	ug/l	
	3&4-Methylphenol	ND	2.0	0.90	ug/l	
87-86-5	Pentachlorophenol	ND	4.1	1.4	ug/l	
108-95-2	Phenol	ND	2.0	0.40	ug/l	
83-32-9	Acenaphthene	ND	1.0	0.19	ug/l	
208-96-8	Acenaphthylene	ND	1.0	0.14	ug/l	
120-12-7	Anthracene	ND	1.0	0.22	ug/l	
56-55-3	Benzo(a)anthracene	0.53	1.0	0.21	ug/l	J
50-32-8	Benzo(a)pyrene	0.53	1.0	0.22	ug/l	J
205-99-2	Benzo(b)fluoranthene	0.54	1.0	0.21	ug/l	J
191-24-2	Benzo(g,h,i)perylene	ND	1.0	0.35	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	1.0	0.21	ug/l	
218-01-9	Chrysene	ND	1.0	0.18	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	1.0	0.34	ug/l	
132-64-9	Dibenzofuran	ND	5.1	0.22	ug/l	
206-44-0	Fluoranthene	0.52	1.0	0.17	ug/l	J
86-73-7	Fluorene	ND	1.0	0.17	ug/l	
118-74-1	Hexachlorobenzene	ND	1.0	0.33	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	1.0	0.34	ug/l	
91-20-3	Naphthalene	ND	1.0	0.24	ug/l	
85-01-8	Phenanthrene	ND	1.0	0.18	ug/l	
129-00-0	Pyrene	0.75	1.0	0.22	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	22%		14-88%
4165-62-2	Phenol-d5	16%		10-110%
118-79-6	2,4,6-Tribromophenol	83%		39-149%
4165-60-0	Nitrobenzene-d5	57%		32-128%
321-60-8	2-Fluorobiphenyl	65%		35-119%
1718-51-0	Terphenyl-d14	58%		10-126%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-01	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-4	Date Received:	12/22/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8151 SW846 8151/3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G105272.D	1	01/04/17	VDT	12/29/16	OP99541	G3G3681
Run #2							

	Initial Volume	Final Volume
Run #1	300 ml	2.5 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	0.083	0.039	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	99%		39-159%
19719-28-9	2,4-DCAA	92%		39-159%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-01	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-4	Date Received:	12/22/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8081B SW846 3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6G42689.D	1	12/27/16	CP	12/24/16	OP99451	G6G1213
Run #2 ^a	1G131083.D	1	01/04/17	JR	12/30/16	OP99565	G1G4188

	Initial Volume	Final Volume
Run #1	300 ml	2.0 ml
Run #2	300 ml	2.0 ml

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.0067	0.0040	ug/l	
319-84-6	alpha-BHC	ND	0.0067	0.0040	ug/l	
319-85-7	beta-BHC	ND	0.0067	0.0038	ug/l	
319-86-8	delta-BHC	ND	0.0067	0.0030	ug/l	
58-89-9	gamma-BHC (Lindane)	ND	0.0067	0.0019	ug/l	
5103-71-9	alpha-Chlordane	ND	0.0067	0.0031	ug/l	
60-57-1	Dieldrin	ND	0.0067	0.0024	ug/l	
72-54-8	4,4' -DDD	ND	0.0067	0.0025	ug/l	
72-55-9	4,4' -DDE	ND	0.0067	0.0041	ug/l	
50-29-3	4,4' -DDT	ND	0.0067	0.0033	ug/l	
72-20-8	Endrin	ND	0.0067	0.0034	ug/l	
1031-07-8	Endosulfan sulfate	ND	0.0067	0.0035	ug/l	
959-98-8	Endosulfan-I	ND	0.0067	0.0033	ug/l	
33213-65-9	Endosulfan-II	ND	0.0067	0.0029	ug/l	
76-44-8	Heptachlor ^b	ND	0.0067	0.0025	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	88%	81%	13-153%
877-09-8	Tetrachloro-m-xylene	79%	75%	13-153%
2051-24-3	Decachlorobiphenyl	32%	42%	10-138%
2051-24-3	Decachlorobiphenyl	30%	52%	10-138%

(a) Re-extracted due to BS outside in house QC limits. Original prep date was within holding time. Confirmation run.

(b) This compound in the BS was outside of the in house control limits. Re-extraction was performed outside of method holding time.

ND = Not detected MDL = Method Detection Limit

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J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-01	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-4	Date Received:	12/22/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8082A SW846 3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5G66255.D	1	12/28/16	HB	12/24/16	OP99450	G5G1540
Run #2							

	Initial Volume	Final Volume
Run #1	300 ml	2.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.33	0.10	ug/l	
11104-28-2	Aroclor 1221	ND	0.33	0.20	ug/l	
11141-16-5	Aroclor 1232	ND	0.33	0.13	ug/l	
53469-21-9	Aroclor 1242	ND	0.33	0.19	ug/l	
12672-29-6	Aroclor 1248	ND	0.33	0.28	ug/l	
11097-69-1	Aroclor 1254	ND	0.33	0.16	ug/l	
11096-82-5	Aroclor 1260	ND	0.33	0.27	ug/l	
1336-36-3	Total PCBs	ND	0.33		ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	100%		10-161%
877-09-8	Tetrachloro-m-xylene	93%		10-161%
2051-24-3	Decachlorobiphenyl	28%		10-137%
2051-24-3	Decachlorobiphenyl	27%		10-137%

ND = Not detected MDL = Method Detection Limit

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E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-01	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-4	Date Received:	12/22/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	369	200	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Antimony	< 6.0	6.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Arsenic	11.5	3.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Barium	528	200	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Beryllium	< 1.0	1.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Cadmium	< 3.0	3.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Calcium	186000	5000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Chromium	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Cobalt	< 50	50	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Copper	20.8	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Iron	32800	100	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Lead	50.0	3.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Magnesium	39100	5000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Manganese	1060	15	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Mercury	0.22	0.20	ug/l	1	12/29/16	12/29/16	JA	SW846 7470A ¹ SW846 7470A ⁴
Nickel	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Potassium	28000	10000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Selenium	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Silver	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Sodium	71300	10000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Thallium	< 2.0	2.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Tin	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Vanadium	< 50	50	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Zinc	98.5	20	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³

(1) Instrument QC Batch: MA41061

(2) Instrument QC Batch: MA41074

(3) Prep QC Batch: MP97878

(4) Prep QC Batch: MP97892

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RHBF9-01	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-4	Date Received:	12/22/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	< 0.010	0.010	mg/l	1	12/22/16 22:00	JOO	SW846 7196A
Chromium, Trivalent ^a	< 0.020	0.020	mg/l	1	12/30/16 13:26	DE	SW846 6010/7196A M
Cyanide	< 0.010	0.010	mg/l	1	01/04/17 16:35	BM	EPA 335.4/LACHAT

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-01	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-4F	Date Received:	12/22/16
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	< 200	200	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Antimony	< 6.0	6.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Arsenic	10.1	3.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Barium	494	200	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Beryllium	< 1.0	1.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Cadmium	< 3.0	3.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Calcium	183000	5000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Chromium	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Cobalt	< 50	50	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Copper	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Iron	31300	100	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Lead	< 3.0	3.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Magnesium	38600	5000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Manganese	1020	15	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Mercury	< 0.20	0.20	ug/l	1	12/29/16	12/29/16	JA	SW846 7470A ¹ SW846 7470A ⁴
Nickel	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Potassium	27500	10000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Selenium	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Silver	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Sodium	70100	10000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Thallium	< 2.0	2.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Tin	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Vanadium	< 50	50	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Zinc	21.3	20	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³

(1) Instrument QC Batch: MA41061

(2) Instrument QC Batch: MA41074

(3) Prep QC Batch: MP97878

(4) Prep QC Batch: MP97892

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RHBF9-01	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-4F	Date Received:	12/22/16
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	< 0.010	0.010	mg/l	1	12/22/16 22:00	JOO	SW846 7196A
Chromium, Trivalent ^a	< 0.020	0.020	mg/l	1	12/30/16 14:35	DE	SW846 6010/7196A M

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

4.5
4

Report of Analysis

Page 1 of 2

Client Sample ID:	RHBF9-02 (2-4)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-5	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	89.4
Method:	SW846 8270D SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M130678.D	1	01/07/17	KM	01/03/17	OP99614	EM5581
Run #2	M130719.D	10	01/09/17	JJ	01/03/17	OP99614	EM5583

	Initial Weight	Final Volume
Run #1	30.6 g	1.0 ml
Run #2	30.6 g	1.0 ml

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	73	23	ug/kg	
	3&4-Methylphenol	ND	73	30	ug/kg	
87-86-5	Pentachlorophenol	ND	150	34	ug/kg	
108-95-2	Phenol	ND	73	19	ug/kg	
83-32-9	Acenaphthene	808	37	13	ug/kg	
208-96-8	Acenaphthylene	146	37	19	ug/kg	
120-12-7	Anthracene	1900	37	22	ug/kg	
56-55-3	Benzo(a)anthracene	3800 ^a	370	100	ug/kg	
50-32-8	Benzo(a)pyrene	3630	37	17	ug/kg	
205-99-2	Benzo(b)fluoranthene	4140 ^a	370	160	ug/kg	
191-24-2	Benzo(g,h,i)perylene	2150	37	18	ug/kg	
207-08-9	Benzo(k)fluoranthene	1360	37	17	ug/kg	
218-01-9	Chrysene	3600 ^a	370	120	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	519	37	16	ug/kg	
132-64-9	Dibenzofuran	469	73	15	ug/kg	
206-44-0	Fluoranthene	8200 ^a	370	160	ug/kg	
86-73-7	Fluorene	698	37	17	ug/kg	
118-74-1	Hexachlorobenzene	ND	73	9.2	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	2220	37	17	ug/kg	
91-20-3	Naphthalene	279	37	10	ug/kg	
85-01-8	Phenanthrene	7090 ^a	370	120	ug/kg	
129-00-0	Pyrene	7260 ^a	370	120	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	60%	51%	30-106%
4165-62-2	Phenol-d5	64%	57%	30-106%
118-79-6	2,4,6-Tribromophenol	91%	83%	24-140%
4165-60-0	Nitrobenzene-d5	67%	66%	26-122%
321-60-8	2-Fluorobiphenyl	80%	79%	36-112%
1718-51-0	Terphenyl-d14	91%	85%	36-132%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RHBF9-02 (2-4)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-5	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	89.4
Method:	SW846 8270D SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
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(a) Result is from Run# 2

ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

4.6
4

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-02 (2-4)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-5	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	89.4
Method:	SW846 8151 SW846 8151/3550C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OA122608.D	2	01/06/17	VDT	01/04/17	OP99621	GOA4209
Run #2							

	Initial Weight	Final Volume
Run #1	15.3 g	5.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	7.3	2.7	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	19%		10-156%
19719-28-9	2,4-DCAA	15%		10-156%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	RHBF9-02 (2-4)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-5	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	89.4
Method:	SW846 8081B SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G76591.D	1	01/04/17	RK	01/03/17	OP99589	G4G1993
Run #2							

	Initial Weight	Final Volume
Run #1	15.2 g	10.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.74	0.35	ug/kg	
319-84-6	alpha-BHC	ND	0.74	0.39	ug/kg	
319-85-7	beta-BHC	ND	0.74	0.46	ug/kg	
319-86-8	delta-BHC	ND	0.74	0.33	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	0.74	0.33	ug/kg	
5103-71-9	alpha-Chlordane	ND	0.74	0.35	ug/kg	
60-57-1	Dieldrin	ND	0.74	0.37	ug/kg	
72-54-8	4,4' -DDD	ND	0.74	0.47	ug/kg	
72-55-9	4,4' -DDE	2.1	0.74	0.38	ug/kg	
50-29-3	4,4' -DDT	7.8	0.74	0.44	ug/kg	
72-20-8	Endrin	ND	0.74	0.35	ug/kg	
1031-07-8	Endosulfan sulfate	ND	0.74	0.30	ug/kg	
959-98-8	Endosulfan-I	ND	0.74	0.38	ug/kg	
33213-65-9	Endosulfan-II	ND	0.74	0.38	ug/kg	
76-44-8	Heptachlor	ND	0.74	0.36	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	95%		24-136%
877-09-8	Tetrachloro-m-xylene	83%		24-136%
2051-24-3	Decachlorobiphenyl	85%		10-153%
2051-24-3	Decachlorobiphenyl	90%		10-153%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	RHBF9-02 (2-4)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-5	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	89.4
Method:	SW846 8082A SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF165195.D	1	01/04/17	HB	01/03/17	OP99588	GEF5850
Run #2							

	Initial Weight	Final Volume
Run #1	15.2 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	37	18	ug/kg	
11104-28-2	Aroclor 1221	ND	37	18	ug/kg	
11141-16-5	Aroclor 1232	ND	37	14	ug/kg	
53469-21-9	Aroclor 1242	ND	37	13	ug/kg	
12672-29-6	Aroclor 1248	ND	37	23	ug/kg	
11097-69-1	Aroclor 1254	ND	37	18	ug/kg	
11096-82-5	Aroclor 1260	ND	37	16	ug/kg	
1336-36-3	Total PCBs	ND	37		ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	107%		20-152%
877-09-8	Tetrachloro-m-xylene	128%		20-152%
2051-24-3	Decachlorobiphenyl	95%		12-157%
2051-24-3	Decachlorobiphenyl	161% ^a		12-157%

(a) Outside control limits due to matrix interference.

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	RHBF9-02 (2-4)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-5	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	89.4
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	6310	56	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Antimony	< 2.3	2.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Arsenic	10.3	2.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Barium	212	23	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Beryllium	0.43	0.23	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cadmium	0.75	0.56	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Calcium	14800	560	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Chromium	22.1	1.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cobalt	7.1	5.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Copper	130	2.8	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Iron	17800	56	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Lead	460	2.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Magnesium	3480	560	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Manganese	262	1.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Mercury	2.1	0.17	mg/kg	5	12/30/16	12/30/16 JPM	SW846 7471B ¹	SW846 7471B ³
Nickel	33.1	4.5	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Potassium	< 1100	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Selenium	< 2.3	2.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Silver	< 0.56	0.56	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Sodium	< 1100	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Thallium	< 1.1	1.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Tin	21.8	5.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Vanadium	33.8	5.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Zinc	420	5.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴

(1) Instrument QC Batch: MA41069

(2) Instrument QC Batch: MA41085

(3) Prep QC Batch: MP97907

(4) Prep QC Batch: MP97914

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RHBF9-02 (2-4)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-5	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	89.4
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	1.0	0.45	mg/kg	1	01/05/17 12:50	RP	SW846 3060A/7196A
Chromium, Trivalent ^a	21.1	1.6	mg/kg	1	01/05/17 12:50	RP	SW846 6010/7196A M
Cyanide	< 0.22	0.22	mg/kg	1	01/05/17 12:23	BM	SW846 9012B/LACHAT
Solids, Percent	89.4		%	1	12/28/16 16:40	SP	SM2540 G-97

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-02 (5-7)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-6	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	88.5
Method:	SW846 8270D SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M130679.D	1	01/07/17	KM	01/03/17	OP99614	EM5581
Run #2							

	Initial Weight	Final Volume
Run #1	30.5 g	1.0 ml
Run #2		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	74	24	ug/kg	
	3&4-Methylphenol	ND	74	30	ug/kg	
87-86-5	Pentachlorophenol	ND	150	35	ug/kg	
108-95-2	Phenol	ND	74	19	ug/kg	
83-32-9	Acenaphthene	80.9	37	13	ug/kg	
208-96-8	Acenaphthylene	56.8	37	19	ug/kg	
120-12-7	Anthracene	202	37	23	ug/kg	
56-55-3	Benzo(a)anthracene	730	37	10	ug/kg	
50-32-8	Benzo(a)pyrene	689	37	17	ug/kg	
205-99-2	Benzo(b)fluoranthene	676	37	16	ug/kg	
191-24-2	Benzo(g,h,i)perylene	365	37	19	ug/kg	
207-08-9	Benzo(k)fluoranthene	297	37	17	ug/kg	
218-01-9	Chrysene	753	37	12	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	84.8	37	16	ug/kg	
132-64-9	Dibenzofuran	55.2	74	15	ug/kg	J
206-44-0	Fluoranthene	1220	37	17	ug/kg	
86-73-7	Fluorene	79.9	37	17	ug/kg	
118-74-1	Hexachlorobenzene	ND	74	9.4	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	365	37	17	ug/kg	
91-20-3	Naphthalene	68.0	37	10	ug/kg	
85-01-8	Phenanthrene	997	37	12	ug/kg	
129-00-0	Pyrene	1680	37	12	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	63%		30-106%
4165-62-2	Phenol-d5	63%		30-106%
118-79-6	2,4,6-Tribromophenol	83%		24-140%
4165-60-0	Nitrobenzene-d5	66%		26-122%
321-60-8	2-Fluorobiphenyl	76%		36-112%
1718-51-0	Terphenyl-d14	93%		36-132%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-02 (5-7)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-6	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	88.5
Method:	SW846 8151 SW846 8151/3550C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OA122609.D	2	01/06/17	VDT	01/04/17	OP99621	GOA4209
Run #2							

	Initial Weight	Final Volume
Run #1	15.0 g	5.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	7.5	2.7	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	19%		10-156%
19719-28-9	2,4-DCAA	11%		10-156%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-02 (5-7)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-6	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	88.5
Method:	SW846 8081B SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G76592.D	1	01/04/17	RK	01/03/17	OP99589	G4G1993
Run #2							

	Initial Weight	Final Volume
Run #1	15.9 g	10.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.71	0.34	ug/kg	
319-84-6	alpha-BHC	ND	0.71	0.38	ug/kg	
319-85-7	beta-BHC	ND	0.71	0.45	ug/kg	
319-86-8	delta-BHC	ND	0.71	0.32	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	0.71	0.31	ug/kg	
5103-71-9	alpha-Chlordane	ND	0.71	0.34	ug/kg	
60-57-1	Dieldrin	ND	0.71	0.36	ug/kg	
72-54-8	4,4' -DDD	ND	0.71	0.46	ug/kg	
72-55-9	4,4' -DDE	ND	0.71	0.37	ug/kg	
50-29-3	4,4' -DDT ^a	2.3	0.71	0.42	ug/kg	
72-20-8	Endrin	ND	0.71	0.33	ug/kg	
1031-07-8	Endosulfan sulfate	ND	0.71	0.28	ug/kg	
959-98-8	Endosulfan-I	ND	0.71	0.37	ug/kg	
33213-65-9	Endosulfan-II	ND	0.71	0.37	ug/kg	
76-44-8	Heptachlor	ND	0.71	0.35	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	96%		24-136%
877-09-8	Tetrachloro-m-xylene	81%		24-136%
2051-24-3	Decachlorobiphenyl	81%		10-153%
2051-24-3	Decachlorobiphenyl	93%		10-153%

(a) More than 40 % RPD for detected concentrations between the two GC columns.

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	RHBF9-02 (5-7)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-6	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	88.5
Method:	SW846 8082A SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF165196.D	1	01/04/17	HB	01/03/17	OP99588	GEF5850
Run #2							

	Initial Weight	Final Volume
Run #1	15.9 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	36	18	ug/kg	
11104-28-2	Aroclor 1221	ND	36	17	ug/kg	
11141-16-5	Aroclor 1232	ND	36	14	ug/kg	
53469-21-9	Aroclor 1242	ND	36	13	ug/kg	
12672-29-6	Aroclor 1248	ND	36	22	ug/kg	
11097-69-1	Aroclor 1254	ND	36	18	ug/kg	
11096-82-5	Aroclor 1260	ND	36	15	ug/kg	
1336-36-3	Total PCBs	ND	36		ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	89%		20-152%
877-09-8	Tetrachloro-m-xylene	108%		20-152%
2051-24-3	Decachlorobiphenyl	97%		12-157%
2051-24-3	Decachlorobiphenyl	109%		12-157%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	RHBF9-02 (5-7)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-6	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	88.5
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analized By	Method	Prep Method
Aluminum	6430	54	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Antimony	< 2.2	2.2	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Arsenic	3.8	2.2	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Barium	51.9	22	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Beryllium	0.30	0.22	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 0.54	0.54	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Calcium	6170	540	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Chromium	18.1	1.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cobalt	5.5	5.4	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Copper	73.7	2.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Iron	12700	54	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Lead	96.8	2.2	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Magnesium	3800	540	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Manganese	227	1.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Mercury	0.28	0.035	mg/kg	1	12/30/16	12/30/16 JPM	SW846 7471B ¹	SW846 7471B ³
Nickel	31.5	4.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Potassium	1130	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Selenium	< 2.2	2.2	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Silver	< 0.54	0.54	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Sodium	< 1100	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Thallium	< 1.1	1.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Tin	11.3	5.4	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Vanadium	23.7	5.4	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Zinc	81.4	5.4	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴

(1) Instrument QC Batch: MA41069

(2) Instrument QC Batch: MA41085

(3) Prep QC Batch: MP97907

(4) Prep QC Batch: MP97914

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RHBF9-02 (5-7)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-6	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	88.5
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	< 0.45	0.45	mg/kg	1	01/05/17 12:50	RP	SW846 3060A/7196A
Chromium, Trivalent ^a	18.1	1.6	mg/kg	1	01/05/17 12:50	RP	SW846 6010/7196A M
Cyanide	< 0.27	0.27	mg/kg	1	01/10/17 10:29	BM	SW846 9012B/LACHAT
Solids, Percent	88.5		%	1	12/28/16 16:40	SP	SM2540 G-97

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

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Client Sample ID:	RHBF9-02 (8-10)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-7	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	77.8
Method:	SW846 8270D SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M130680.D	1	01/07/17	KM	01/03/17	OP99614	EM5581
Run #2	M130720.D	20	01/09/17	JJ	01/03/17	OP99614	EM5583

	Initial Weight	Final Volume
Run #1	30.5 g	1.0 ml
Run #2	30.5 g	1.0 ml

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	84	27	ug/kg	
	3&4-Methylphenol	561	84	35	ug/kg	
87-86-5	Pentachlorophenol	ND	170	40	ug/kg	
108-95-2	Phenol	ND	84	22	ug/kg	
83-32-9	Acenaphthene	813	42	15	ug/kg	
208-96-8	Acenaphthylene	490	42	21	ug/kg	
120-12-7	Anthracene	2080	42	26	ug/kg	
56-55-3	Benzo(a)anthracene	5960 ^a	840	240	ug/kg	
50-32-8	Benzo(a)pyrene	5950 ^a	840	380	ug/kg	
205-99-2	Benzo(b)fluoranthene	7030 ^a	840	370	ug/kg	
191-24-2	Benzo(g,h,i)perylene	3800	42	21	ug/kg	
207-08-9	Benzo(k)fluoranthene	2030	42	20	ug/kg	
218-01-9	Chrysene	5690 ^a	840	270	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	743	42	19	ug/kg	
132-64-9	Dibenzofuran	670	84	17	ug/kg	
206-44-0	Fluoranthene	14300 ^a	840	380	ug/kg	
86-73-7	Fluorene	944	42	19	ug/kg	
118-74-1	Hexachlorobenzene	ND	84	11	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	3860	42	20	ug/kg	
91-20-3	Naphthalene	832	42	12	ug/kg	
85-01-8	Phenanthrene	11500 ^a	840	280	ug/kg	
129-00-0	Pyrene	12900 ^a	840	270	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	64%	57%	30-106%
4165-62-2	Phenol-d5	66%	57%	30-106%
118-79-6	2,4,6-Tribromophenol	84%	87%	24-140%
4165-60-0	Nitrobenzene-d5	47%	51%	26-122%
321-60-8	2-Fluorobiphenyl	75%	76%	36-112%
1718-51-0	Terphenyl-d14	69%	80%	36-132%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RHBF9-02 (8-10)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-7	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	77.8
Method:	SW846 8270D SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
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(a) Result is from Run# 2

ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-02 (8-10)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-7	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	77.8
Method:	SW846 8151 SW846 8151/3550C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OA122610.D	2	01/07/17	VDT	01/04/17	OP99621	GOA4209
Run #2							

	Initial Weight	Final Volume
Run #1	15.2 g	5.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	8.5	3.1	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	24%		10-156%
19719-28-9	2,4-DCAA	24%		10-156%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	RHBF9-02 (8-10)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-7	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	77.8
Method:	SW846 8081B SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G76711.D	1	01/07/17	KD	01/03/17	OP99589	G4G1995
Run #2							

	Initial Weight	Final Volume
Run #1	15.6 g	10.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.82	0.39	ug/kg	
319-84-6	alpha-BHC	ND	0.82	0.44	ug/kg	
319-85-7	beta-BHC	ND	0.82	0.52	ug/kg	
319-86-8	delta-BHC	ND	0.82	0.37	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	0.82	0.36	ug/kg	
5103-71-9	alpha-Chlordane	ND	0.82	0.39	ug/kg	
60-57-1	Dieldrin	ND	0.82	0.41	ug/kg	
72-54-8	4,4' -DDD	ND	0.82	0.53	ug/kg	
72-55-9	4,4' -DDE	ND	0.82	0.43	ug/kg	
50-29-3	4,4' -DDT ^a	6.0	0.82	0.49	ug/kg	
72-20-8	Endrin	ND	0.82	0.39	ug/kg	
1031-07-8	Endosulfan sulfate	ND	0.82	0.33	ug/kg	
959-98-8	Endosulfan-I	ND	0.82	0.43	ug/kg	
33213-65-9	Endosulfan-II	ND	0.82	0.43	ug/kg	
76-44-8	Heptachlor	ND	0.82	0.40	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	90%		24-136%
877-09-8	Tetrachloro-m-xylene	74%		24-136%
2051-24-3	Decachlorobiphenyl	84%		10-153%
2051-24-3	Decachlorobiphenyl	92%		10-153%

(a) More than 40 % RPD for detected concentrations between the two GC columns.

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-02 (8-10)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-7	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	77.8
Method:	SW846 8082A SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF165197.D	1	01/04/17	HB	01/03/17	OP99588	GEF5850
Run #2							

	Initial Weight	Final Volume
Run #1	15.6 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	41	20	ug/kg	
11104-28-2	Aroclor 1221	ND	41	20	ug/kg	
11141-16-5	Aroclor 1232	ND	41	16	ug/kg	
53469-21-9	Aroclor 1242	ND	41	15	ug/kg	
12672-29-6	Aroclor 1248	ND	41	26	ug/kg	
11097-69-1	Aroclor 1254	ND	41	21	ug/kg	
11096-82-5	Aroclor 1260	ND	41	17	ug/kg	
1336-36-3	Total PCBs	ND	41		ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	104%		20-152%
877-09-8	Tetrachloro-m-xylene	136%		20-152%
2051-24-3	Decachlorobiphenyl	87%		12-157%
2051-24-3	Decachlorobiphenyl	218% ^a		12-157%

(a) Outside control limits due to matrix interference.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-02 (8-10)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-7	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	77.8
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analized By	Method	Prep Method
Aluminum	5190	64	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Antimony	< 2.6	2.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Arsenic	17.6	2.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Barium	468	26	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Beryllium	0.41	0.26	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cadmium	1.4	0.64	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Calcium	6330	640	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Chromium	24.8	1.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cobalt	10.3	6.4	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Copper	207	3.2	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Iron	30600	64	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Lead	830	2.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Magnesium	1670	640	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Manganese	239	1.9	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Mercury	2.7	0.17	mg/kg	5	12/30/16	12/30/16 JPM	SW846 7471B ¹	SW846 7471B ³
Nickel	28.7	5.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Potassium	< 1300	1300	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Selenium	< 2.6	2.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Silver	< 0.64	0.64	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Sodium	< 1300	1300	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Thallium	< 1.3	1.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Tin	104	6.4	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Vanadium	22.9	6.4	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Zinc	510	6.4	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴

(1) Instrument QC Batch: MA41069

(2) Instrument QC Batch: MA41085

(3) Prep QC Batch: MP97907

(4) Prep QC Batch: MP97914

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RHBF9-02 (8-10)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-7	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	77.8
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.68	0.51	mg/kg	1	01/05/17 12:50	RP	SW846 3060A/7196A
Chromium, Trivalent ^a	24.1	1.8	mg/kg	1	01/05/17 12:50	RP	SW846 6010/7196A M
Cyanide	< 0.28	0.28	mg/kg	1	01/05/17 12:24	BM	SW846 9012B/LACHAT
Solids, Percent	77.8		%	1	12/28/16 16:40	SP	SM2540 G-97

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

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Client Sample ID:	RHBF9-02	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-8	Date Received:	12/27/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270D SW846 3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z117763.D	1	01/04/17	AC	12/29/16	OP99556	EZ5851
Run #2							

	Initial Volume	Final Volume
Run #1	930 ml	1.0 ml
Run #2		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	2.2	0.95	ug/l	
	3&4-Methylphenol	ND	2.2	0.95	ug/l	
87-86-5	Pentachlorophenol	ND	4.3	1.5	ug/l	
108-95-2	Phenol	ND	2.2	0.42	ug/l	
83-32-9	Acenaphthene	0.44	1.1	0.21	ug/l	J
208-96-8	Acenaphthylene	ND	1.1	0.15	ug/l	
120-12-7	Anthracene	0.91	1.1	0.23	ug/l	J
56-55-3	Benzo(a)anthracene	2.2	1.1	0.22	ug/l	
50-32-8	Benzo(a)pyrene	2.5	1.1	0.23	ug/l	
205-99-2	Benzo(b)fluoranthene	2.5	1.1	0.22	ug/l	
191-24-2	Benzo(g,h,i)perylene	1.5	1.1	0.37	ug/l	
207-08-9	Benzo(k)fluoranthene	0.86	1.1	0.22	ug/l	J
218-01-9	Chrysene	2.2	1.1	0.19	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	1.1	0.36	ug/l	
132-64-9	Dibenzofuran	ND	5.4	0.24	ug/l	
206-44-0	Fluoranthene	4.6	1.1	0.18	ug/l	
86-73-7	Fluorene	0.47	1.1	0.18	ug/l	J
118-74-1	Hexachlorobenzene	ND	1.1	0.35	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	1.7	1.1	0.36	ug/l	
91-20-3	Naphthalene	ND	1.1	0.25	ug/l	
85-01-8	Phenanthrene	3.4	1.1	0.19	ug/l	
129-00-0	Pyrene	4.0	1.1	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	51%		14-88%
4165-62-2	Phenol-d5	36%		10-110%
118-79-6	2,4,6-Tribromophenol	113%		39-149%
4165-60-0	Nitrobenzene-d5	73%		32-128%
321-60-8	2-Fluorobiphenyl	70%		35-119%
1718-51-0	Terphenyl-d14	62%		10-126%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	RHBF9-02	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-8	Date Received:	12/27/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8151 SW846 8151/3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G105300.D	1	01/05/17	VDT	12/29/16	OP99567	G3G3682
Run #2							

	Initial Volume	Final Volume
Run #1	300 ml	2.5 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	0.083	0.039	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	139%		39-159%
19719-28-9	2,4-DCAA	109%		39-159%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	RHBF9-02	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-8	Date Received:	12/27/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8081B SW846 3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1G131084.D	1	01/04/17	JR	12/30/16	OP99565	G1G4188
Run #2							

	Initial Volume	Final Volume
Run #1	300 ml	2.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.0067	0.0040	ug/l	
319-84-6	alpha-BHC	ND	0.0067	0.0040	ug/l	
319-85-7	beta-BHC	ND	0.0067	0.0038	ug/l	
319-86-8	delta-BHC	ND	0.0067	0.0030	ug/l	
58-89-9	gamma-BHC (Lindane)	ND	0.0067	0.0019	ug/l	
5103-71-9	alpha-Chlordane	ND	0.0067	0.0031	ug/l	
60-57-1	Dieldrin	ND	0.0067	0.0024	ug/l	
72-54-8	4,4' -DDD	ND	0.0067	0.0025	ug/l	
72-55-9	4,4' -DDE	ND	0.0067	0.0041	ug/l	
50-29-3	4,4' -DDT	ND	0.0067	0.0033	ug/l	
72-20-8	Endrin	ND	0.0067	0.0034	ug/l	
1031-07-8	Endosulfan sulfate	ND	0.0067	0.0035	ug/l	
959-98-8	Endosulfan-I	ND	0.0067	0.0033	ug/l	
33213-65-9	Endosulfan-II	ND	0.0067	0.0029	ug/l	
76-44-8	Heptachlor	ND	0.0067	0.0025	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	70%		26-132%
877-09-8	Tetrachloro-m-xylene	82%		26-132%
2051-24-3	Decachlorobiphenyl	25%		10-118%
2051-24-3	Decachlorobiphenyl	50%		10-118%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

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N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-02	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-8	Date Received:	12/27/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8082A SW846 3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G140893.D	1	01/02/17	HB	12/30/16	OP99564	G2G3906
Run #2							

	Initial Volume	Final Volume
Run #1	300 ml	2.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.33	0.10	ug/l	
11104-28-2	Aroclor 1221	ND	0.33	0.20	ug/l	
11141-16-5	Aroclor 1232	ND	0.33	0.13	ug/l	
53469-21-9	Aroclor 1242	ND	0.33	0.19	ug/l	
12672-29-6	Aroclor 1248	ND	0.33	0.28	ug/l	
11097-69-1	Aroclor 1254	ND	0.33	0.16	ug/l	
11096-82-5	Aroclor 1260	ND	0.33	0.27	ug/l	
1336-36-3	Total PCBs	ND	0.33		ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	77%		10-161%
877-09-8	Tetrachloro-m-xylene	75%		10-161%
2051-24-3	Decachlorobiphenyl	39%		10-137%
2051-24-3	Decachlorobiphenyl	32%		10-137%

ND = Not detected MDL = Method Detection Limit

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Report of Analysis

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Client Sample ID:	RHBF9-02	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-8	Date Received:	12/27/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	4400	200	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Antimony	6.2	6.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Arsenic	29.6	3.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Barium	538	200	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Beryllium	< 1.0	1.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Cadmium	< 3.0	3.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Calcium	80700	5000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Chromium	30.2	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Cobalt	< 50	50	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Copper	170	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Iron	29200	100	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Lead	1160	3.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Magnesium	50200	5000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Manganese	412	15	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Mercury	4.8	0.20	ug/l	1	12/29/16	12/29/16	JA	SW846 7470A ¹ SW846 7470A ⁴
Nickel	17.8	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Potassium	28500	10000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Selenium	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Silver	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Sodium	52200	10000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Thallium	< 2.0	2.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Tin	107	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Vanadium	< 50	50	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Zinc	667	20	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³

(1) Instrument QC Batch: MA41061

(2) Instrument QC Batch: MA41074

(3) Prep QC Batch: MP97878

(4) Prep QC Batch: MP97892

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RHBF9-02	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-8	Date Received:	12/27/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	< 0.010	0.010	mg/l	1	12/27/16 21:45	AT	SW846 7196A
Chromium, Trivalent ^a	0.022	0.020	mg/l	1	12/30/16 14:13	DE	SW846 6010/7196A M
Cyanide	< 0.010	0.010	mg/l	1	01/05/17 14:04	BM	EPA 335.4/LACHAT

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-02	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-8F	Date Received:	12/27/16
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	< 200	200	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Antimony	< 6.0	6.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Arsenic	12.7	3.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Barium	245	200	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Beryllium	< 1.0	1.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Cadmium	< 3.0	3.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Calcium	76200	5000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Chromium	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Cobalt	< 50	50	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Copper	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Iron	16500	100	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Lead	< 3.0	3.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Magnesium	47100	5000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Manganese	328	15	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Mercury	< 0.20	0.20	ug/l	1	12/29/16	12/29/16	JA	SW846 7470A ¹ SW846 7470A ⁴
Nickel	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Potassium	26800	10000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Selenium	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Silver	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Sodium	50300	10000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Thallium	< 2.0	2.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Tin	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Vanadium	< 50	50	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Zinc	< 20	20	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³

(1) Instrument QC Batch: MA41061

(2) Instrument QC Batch: MA41074

(3) Prep QC Batch: MP97878

(4) Prep QC Batch: MP97892

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RHBF9-02	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-8F	Date Received:	12/27/16
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.013	0.010	mg/l	1	12/27/16 21:55	AT	SW846 7196A
Chromium, Trivalent ^a	< 0.020	0.020	mg/l	1	12/30/16 14:39	DE	SW846 6010/7196A M

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Page 1 of 2

Client Sample ID:	RHBF9-03 (2-4)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-9	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	83.5
Method:	SW846 8270D SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M130681.D	1	01/07/17	KM	01/03/17	OP99614	EM5581
Run #2	M130721.D	20	01/09/17	JJ	01/03/17	OP99614	EM5583

	Initial Weight	Final Volume
Run #1	30.0 g	1.0 ml
Run #2	30.0 g	1.0 ml

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	63.0	80	26	ug/kg	J
	3&4-Methylphenol	233	80	33	ug/kg	
87-86-5	Pentachlorophenol	ND	160	37	ug/kg	
108-95-2	Phenol	167	80	21	ug/kg	
83-32-9	Acenaphthene	3050	40	14	ug/kg	
208-96-8	Acenaphthylene	3600	40	20	ug/kg	
120-12-7	Anthracene	9650 ^a	800	490	ug/kg	
56-55-3	Benzo(a)anthracene	29500 ^a	800	230	ug/kg	
50-32-8	Benzo(a)pyrene	28400 ^a	800	360	ug/kg	
205-99-2	Benzo(b)fluoranthene	36900 ^a	800	350	ug/kg	
191-24-2	Benzo(g,h,i)perylene	15600 ^a	800	400	ug/kg	
207-08-9	Benzo(k)fluoranthene	12200 ^a	800	370	ug/kg	
218-01-9	Chrysene	30700 ^a	800	250	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	3680 ^a	800	350	ug/kg	
132-64-9	Dibenzofuran	3060	80	16	ug/kg	
206-44-0	Fluoranthene	74600 ^a	800	360	ug/kg	
86-73-7	Fluorene	4600 ^a	800	370	ug/kg	
118-74-1	Hexachlorobenzene	ND	80	10	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	17800 ^a	800	370	ug/kg	
91-20-3	Naphthalene	3700 ^a	800	230	ug/kg	
85-01-8	Phenanthrene	57700 ^a	800	270	ug/kg	
129-00-0	Pyrene	64300 ^a	800	260	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	70%	58%	30-106%
4165-62-2	Phenol-d5	68%	64%	30-106%
118-79-6	2,4,6-Tribromophenol	121%	76%	24-140%
4165-60-0	Nitrobenzene-d5	67%	66%	26-122%
321-60-8	2-Fluorobiphenyl	82%	75%	36-112%
1718-51-0	Terphenyl-d14	54%	75%	36-132%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RHBF9-03 (2-4)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-9	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	83.5
Method:	SW846 8270D SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
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(a) Result is from Run# 2

ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

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Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-03 (2-4)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-9	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	83.5
Method:	SW846 8151 SW846 8151/3550C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OA122566.D	2	01/06/17	VDT	01/04/17	OP99621	GOA4208
Run #2							

	Initial Weight	Final Volume
Run #1	15.8 g	5.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	7.6	2.8	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	12%		10-156%
19719-28-9	2,4-DCAA	10%		10-156%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-03 (2-4)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-9	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	83.5
Method:	SW846 8081B SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G76594.D	1	01/04/17	RK	01/03/17	OP99589	G4G1993
Run #2							

	Initial Weight	Final Volume
Run #1	15.0 g	10.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.80	0.38	ug/kg	
319-84-6	alpha-BHC	ND	0.80	0.43	ug/kg	
319-85-7	beta-BHC	ND	0.80	0.50	ug/kg	
319-86-8	delta-BHC	ND	0.80	0.36	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	0.80	0.35	ug/kg	
5103-71-9	alpha-Chlordane	ND	0.80	0.38	ug/kg	
60-57-1	Dieldrin	ND	0.80	0.40	ug/kg	
72-54-8	4,4' -DDD ^a	8.2	0.80	0.51	ug/kg	
72-55-9	4,4' -DDE ^a	50.9	0.80	0.42	ug/kg	
50-29-3	4,4' -DDT ^a	66.1	0.80	0.48	ug/kg	
72-20-8	Endrin	ND	0.80	0.37	ug/kg	
1031-07-8	Endosulfan sulfate	ND	0.80	0.32	ug/kg	
959-98-8	Endosulfan-I	ND	0.80	0.42	ug/kg	
33213-65-9	Endosulfan-II	ND	0.80	0.42	ug/kg	
76-44-8	Heptachlor	ND	0.80	0.39	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	126%		24-136%
877-09-8	Tetrachloro-m-xylene	96%		24-136%
2051-24-3	Decachlorobiphenyl	71%		10-153%
2051-24-3	Decachlorobiphenyl	118%		10-153%

(a) More than 40 % RPD for detected concentrations between the two GC columns.

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-03 (2-4)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-9	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	83.5
Method:	SW846 8082A SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF165198.D	1	01/04/17	HB	01/03/17	OP99588	GEF5850
Run #2							

	Initial Weight	Final Volume
Run #1	15.0 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	40	20	ug/kg	
11104-28-2	Aroclor 1221	ND	40	20	ug/kg	
11141-16-5	Aroclor 1232	ND	40	16	ug/kg	
53469-21-9	Aroclor 1242	ND	40	14	ug/kg	
12672-29-6	Aroclor 1248	ND	40	25	ug/kg	
11097-69-1	Aroclor 1254	ND	40	20	ug/kg	
11096-82-5	Aroclor 1260	ND	40	17	ug/kg	
1336-36-3	Total PCBs	ND	40		ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	204% ^a		20-152%
877-09-8	Tetrachloro-m-xylene	207% ^a		20-152%
2051-24-3	Decachlorobiphenyl	637% ^a		12-157%
2051-24-3	Decachlorobiphenyl	860% ^a		12-157%

(a) Outside control limits due to matrix interference.

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-03 (2-4)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-9	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	83.5
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	5560	59	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Antimony ^a	37.4	4.7	mg/kg	2	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Arsenic	41.8	2.4	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Barium	724	24	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Beryllium	0.39	0.24	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Cadmium ^a	5.3	1.2	mg/kg	2	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Calcium	5040	590	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Chromium ^a	32.7	5.9	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Cobalt	12.3	5.9	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Copper	1660	15	mg/kg	5	12/31/16	01/04/17 DE	SW846 6010C ⁴	SW846 3050B ⁶
Iron	93400	300	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Lead	4310	12	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Magnesium	1920	590	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Manganese ^a	641	8.9	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Mercury	4.0	0.40	mg/kg	10	12/30/16	12/30/16 JPM	SW846 7471B ¹	SW846 7471B ⁵
Nickel	40.7	4.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Potassium	< 1200	1200	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Selenium ^a	< 12	12	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Silver ^a	4.3	3.0	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Sodium	< 1200	1200	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Thallium ^a	< 5.9	5.9	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Tin	1250	12	mg/kg	2	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Vanadium	24.2	5.9	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Zinc	3140	30	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶

(1) Instrument QC Batch: MA41069

(2) Instrument QC Batch: MA41085

(3) Instrument QC Batch: MA41088

(4) Instrument QC Batch: MA41097

(5) Prep QC Batch: MP97907

(6) Prep QC Batch: MP97914

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RHBF9-03 (2-4)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-9	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	83.5
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.85	0.48	mg/kg	1	01/05/17 12:50	RP	SW846 3060A/7196A
Chromium, Trivalent ^a	31.9	6.4	mg/kg	1	01/05/17 12:50	RP	SW846 6010/7196A M
Cyanide	< 0.24	0.24	mg/kg	1	01/05/17 12:26	BM	SW846 9012B/LACHAT
Solids, Percent	83.5		%	1	12/28/16 16:40	SP	SM2540 G-97

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

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Client Sample ID:	RHBF9-03 (5-7)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-10	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	75.5
Method:	SW846 8270D SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M130682.D	1	01/07/17	KM	01/03/17	OP99614	EM5581
Run #2	M130723.D	20	01/10/17	JJ	01/03/17	OP99614	EM5583

	Initial Weight	Final Volume
Run #1	30.6 g	1.0 ml
Run #2	30.6 g	1.0 ml

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	87	28	ug/kg	
	3&4-Methylphenol	146	87	36	ug/kg	
87-86-5	Pentachlorophenol	ND	170	41	ug/kg	
108-95-2	Phenol	99.3	87	23	ug/kg	
83-32-9	Acenaphthene	1410	43	15	ug/kg	
208-96-8	Acenaphthylene	1460	43	22	ug/kg	
120-12-7	Anthracene	3450	43	27	ug/kg	
56-55-3	Benzo(a)anthracene	10200 ^a	870	240	ug/kg	
50-32-8	Benzo(a)pyrene	8970 ^a	870	390	ug/kg	
205-99-2	Benzo(b)fluoranthene	12600 ^a	870	380	ug/kg	
191-24-2	Benzo(g,h,i)perylene	5730 ^a	870	430	ug/kg	
207-08-9	Benzo(k)fluoranthene	3370	43	20	ug/kg	
218-01-9	Chrysene	11900 ^a	870	270	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	2220	43	19	ug/kg	
132-64-9	Dibenzofuran	1280	87	18	ug/kg	
206-44-0	Fluoranthene	25800 ^a	870	390	ug/kg	
86-73-7	Fluorene	1700	43	20	ug/kg	
118-74-1	Hexachlorobenzene	ND	87	11	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	6650 ^a	870	410	ug/kg	
91-20-3	Naphthalene	1790	43	12	ug/kg	
85-01-8	Phenanthrene	23200 ^a	870	290	ug/kg	
129-00-0	Pyrene	23000 ^a	870	280	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	32%	25% ^b	30-106%
4165-62-2	Phenol-d5	36%	38%	30-106%
118-79-6	2,4,6-Tribromophenol	43%	41%	24-140%
4165-60-0	Nitrobenzene-d5	60%	62%	26-122%
321-60-8	2-Fluorobiphenyl	74%	68%	36-112%
1718-51-0	Terphenyl-d14	66%	74%	36-132%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RHBF9-03 (5-7)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-10	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	75.5
Method:	SW846 8270D SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
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- (a) Result is from Run# 2
(b) Outside control limits due to dilution.

ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

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Report of Analysis

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Client Sample ID:	RHBF9-03 (5-7)		
Lab Sample ID:	JC34266-10	Date Sampled:	12/27/16
Matrix:	SO - Soil	Date Received:	12/27/16
Method:	SW846 8151 SW846 8151/3550C	Percent Solids:	75.5
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OA122567.D	2	01/06/17	VDT	01/04/17	OP99621	GOA4208
Run #2							

	Initial Weight	Final Volume
Run #1	15.2 g	5.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	8.7	3.2	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	22%		10-156%
19719-28-9	2,4-DCAA	23%		10-156%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-03 (5-7)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-10	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	75.5
Method:	SW846 8081B SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G76712.D	1	01/07/17	KD	01/03/17	OP99589	G4G1995
Run #2							

	Initial Weight	Final Volume
Run #1	15.1 g	10.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.88	0.42	ug/kg	
319-84-6	alpha-BHC	ND	0.88	0.47	ug/kg	
319-85-7	beta-BHC	ND	0.88	0.55	ug/kg	
319-86-8	delta-BHC	ND	0.88	0.40	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	0.88	0.39	ug/kg	
5103-71-9	alpha-Chlordane	ND	0.88	0.42	ug/kg	
60-57-1	Dieldrin	ND	0.88	0.44	ug/kg	
72-54-8	4,4' -DDD	ND	0.88	0.56	ug/kg	
72-55-9	4,4' -DDE	ND	0.88	0.46	ug/kg	
50-29-3	4,4' -DDT ^a	10.9	0.88	0.52	ug/kg	
72-20-8	Endrin	ND	0.88	0.41	ug/kg	
1031-07-8	Endosulfan sulfate	ND	0.88	0.35	ug/kg	
959-98-8	Endosulfan-I	ND	0.88	0.46	ug/kg	
33213-65-9	Endosulfan-II	ND	0.88	0.46	ug/kg	
76-44-8	Heptachlor	ND	0.88	0.43	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	100%		24-136%
877-09-8	Tetrachloro-m-xylene	77%		24-136%
2051-24-3	Decachlorobiphenyl	90%		10-153%
2051-24-3	Decachlorobiphenyl	80%		10-153%

(a) More than 40 % RPD for detected concentrations between the two GC columns.

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-03 (5-7)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-10	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	75.5
Method:	SW846 8082A SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF165199.D	1	01/04/17	HB	01/03/17	OP99588	GEF5850
Run #2							

	Initial Weight	Final Volume
Run #1	15.7 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	42	21	ug/kg	
11104-28-2	Aroclor 1221	ND	42	21	ug/kg	
11141-16-5	Aroclor 1232	ND	42	17	ug/kg	
53469-21-9	Aroclor 1242	ND	42	15	ug/kg	
12672-29-6	Aroclor 1248	ND	42	27	ug/kg	
11097-69-1	Aroclor 1254	ND	42	21	ug/kg	
11096-82-5	Aroclor 1260	ND	42	18	ug/kg	
1336-36-3	Total PCBs	ND	42		ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	137%		20-152%
877-09-8	Tetrachloro-m-xylene	185% ^a		20-152%
2051-24-3	Decachlorobiphenyl	99%		12-157%
2051-24-3	Decachlorobiphenyl	278% ^a		12-157%

(a) Outside control limits due to matrix interference.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-03 (5-7)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-10	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	75.5
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	4150	67	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Antimony	17.6	2.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Arsenic	39.3	2.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Barium	1030	27	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Beryllium	0.44	0.27	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Cadmium ^a	9.3	1.3	mg/kg	2	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Calcium	7760	670	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Chromium ^a	29.4	2.7	mg/kg	2	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Cobalt	10.5	6.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Copper	1360	6.7	mg/kg	2	12/31/16	01/04/17 DE	SW846 6010C ⁴	SW846 3050B ⁶
Iron	60800	130	mg/kg	2	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Lead	3590	27	mg/kg	10	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Magnesium	1330	670	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Manganese ^a	405	4.0	mg/kg	2	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Mercury	1.5	0.067	mg/kg	2	12/30/16	12/30/16 JPM	SW846 7471B ¹	SW846 7471B ⁵
Nickel	45.6	5.4	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Potassium	< 1300	1300	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Selenium ^a	< 5.4	5.4	mg/kg	2	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Silver ^a	1.7	1.3	mg/kg	2	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Sodium	< 1300	1300	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Thallium ^a	< 2.7	2.7	mg/kg	2	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Tin	906	6.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Vanadium	36.8	6.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Zinc	2370	13	mg/kg	2	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶

(1) Instrument QC Batch: MA41069

(2) Instrument QC Batch: MA41085

(3) Instrument QC Batch: MA41088

(4) Instrument QC Batch: MA41097

(5) Prep QC Batch: MP97907

(6) Prep QC Batch: MP97914

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RHBF9-03 (5-7)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-10	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	75.5
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	2.4	0.53	mg/kg	1	01/05/17 12:50	RP	SW846 3060A/7196A
Chromium, Trivalent ^a	27.0	3.2	mg/kg	1	01/05/17 12:50	RP	SW846 6010/7196A M
Cyanide	0.43	0.28	mg/kg	1	01/05/17 12:27	BM	SW846 9012B/LACHAT
Solids, Percent	75.5		%	1	12/28/16 16:40	SP	SM2540 G-97

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Page 1 of 2

Client Sample ID:	RHBF9-03 (8-10)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-11	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	78.0
Method:	SW846 8270D SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M130683.D	1	01/07/17	KM	01/03/17	OP99614	EM5581
Run #2	M130724.D	25	01/10/17	JJ	01/03/17	OP99614	EM5583

	Initial Weight	Final Volume
Run #1	30.0 g	1.0 ml
Run #2	30.0 g	1.0 ml

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	85	27	ug/kg	
	3&4-Methylphenol	175	85	35	ug/kg	
87-86-5	Pentachlorophenol	ND	170	40	ug/kg	
108-95-2	Phenol	ND	85	22	ug/kg	
83-32-9	Acenaphthene	1470	43	15	ug/kg	
208-96-8	Acenaphthylene	789	43	22	ug/kg	
120-12-7	Anthracene	3520	43	26	ug/kg	
56-55-3	Benzo(a)anthracene	5200 ^a	1100	300	ug/kg	
50-32-8	Benzo(a)pyrene	4370 ^a	1100	490	ug/kg	
205-99-2	Benzo(b)fluoranthene	5220 ^a	1100	470	ug/kg	
191-24-2	Benzo(g,h,i)perylene	2520	43	21	ug/kg	
207-08-9	Benzo(k)fluoranthene	1850	43	20	ug/kg	
218-01-9	Chrysene	5460 ^a	1100	340	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	691	43	19	ug/kg	
132-64-9	Dibenzofuran	1480	85	17	ug/kg	
206-44-0	Fluoranthene	14100 ^a	1100	480	ug/kg	
86-73-7	Fluorene	2280	43	20	ug/kg	
118-74-1	Hexachlorobenzene	ND	85	11	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	2840	43	20	ug/kg	
91-20-3	Naphthalene	2790	43	12	ug/kg	
85-01-8	Phenanthrene	15400 ^a	1100	360	ug/kg	
129-00-0	Pyrene	11200 ^a	1100	340	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	57%	43%	30-106%
4165-62-2	Phenol-d5	57%	51%	30-106%
118-79-6	2,4,6-Tribromophenol	77%	92%	24-140%
4165-60-0	Nitrobenzene-d5	61%	64%	26-122%
321-60-8	2-Fluorobiphenyl	71%	58%	36-112%
1718-51-0	Terphenyl-d14	72%	65%	36-132%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RHBF9-03 (8-10)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-11	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	78.0
Method:	SW846 8270D SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
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(a) Result is from Run# 2

ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

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Report of Analysis

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Client Sample ID:	RHBF9-03 (8-10)		
Lab Sample ID:	JC34266-11	Date Sampled:	12/27/16
Matrix:	SO - Soil	Date Received:	12/27/16
Method:	SW846 8151 SW846 8151/3550C	Percent Solids:	78.0
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OA122568.D	2	01/06/17	VDT	01/04/17	OP99621	GOA4208
Run #2							

	Initial Weight	Final Volume
Run #1	15.0 g	5.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	8.5	3.1	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	18%		10-156%
19719-28-9	2,4-DCAA	15%		10-156%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-03 (8-10)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-11	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	78.0
Method:	SW846 8081B SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G76713.D	1	01/07/17	KD	01/03/17	OP99589	G4G1995
Run #2							

	Initial Weight	Final Volume
Run #1	15.8 g	10.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.81	0.39	ug/kg	
319-84-6	alpha-BHC	ND	0.81	0.43	ug/kg	
319-85-7	beta-BHC	ND	0.81	0.51	ug/kg	
319-86-8	delta-BHC	ND	0.81	0.37	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	0.81	0.36	ug/kg	
5103-71-9	alpha-Chlordane	ND	0.81	0.39	ug/kg	
60-57-1	Dieldrin	ND	0.81	0.41	ug/kg	
72-54-8	4,4' -DDD	ND	0.81	0.52	ug/kg	
72-55-9	4,4' -DDE	ND	0.81	0.42	ug/kg	
50-29-3	4,4' -DDT ^a	9.0	0.81	0.48	ug/kg	
72-20-8	Endrin	ND	0.81	0.38	ug/kg	
1031-07-8	Endosulfan sulfate	ND	0.81	0.33	ug/kg	
959-98-8	Endosulfan-I	ND	0.81	0.42	ug/kg	
33213-65-9	Endosulfan-II	ND	0.81	0.42	ug/kg	
76-44-8	Heptachlor	ND	0.81	0.40	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	111%		24-136%
877-09-8	Tetrachloro-m-xylene	93%		24-136%
2051-24-3	Decachlorobiphenyl	94%		10-153%
2051-24-3	Decachlorobiphenyl	104%		10-153%

(a) More than 40 % RPD for detected concentrations between the two GC columns.

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-03 (8-10)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-11	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	78.0
Method:	SW846 8082A SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF165250.D	1	01/05/17	HB	01/03/17	OP99588	GEF5851
Run #2							

	Initial Weight	Final Volume
Run #1	15.8 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	41	20	ug/kg	
11104-28-2	Aroclor 1221	ND	41	20	ug/kg	
11141-16-5	Aroclor 1232	ND	41	16	ug/kg	
53469-21-9	Aroclor 1242	ND	41	14	ug/kg	
12672-29-6	Aroclor 1248	ND	41	26	ug/kg	
11097-69-1	Aroclor 1254	ND	41	20	ug/kg	
11096-82-5	Aroclor 1260	ND	41	17	ug/kg	
1336-36-3	Total PCBs	ND	41		ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	171% ^a		20-152%
877-09-8	Tetrachloro-m-xylene	178% ^a		20-152%
2051-24-3	Decachlorobiphenyl	91%		12-157%
2051-24-3	Decachlorobiphenyl	268% ^a		12-157%

(a) Outside control limits due to matrix interference.

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-03 (8-10)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-11	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	78.0
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analized By	Method	Prep Method
Aluminum	5800	67	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Antimony	< 2.7	2.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Arsenic	23.0	2.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Barium	290	27	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Beryllium	0.52	0.27	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cadmium	1.6	0.67	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Calcium	4830	670	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Chromium	18.1	1.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cobalt	7.7	6.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Copper	333	3.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Iron	16200	67	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Lead	1130	2.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Magnesium	940	670	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Manganese	221	2.0	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Mercury	3.4	0.34	mg/kg	10	12/30/16	12/30/16 JPM	SW846 7471B ¹	SW846 7471B ³
Nickel	23.5	5.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Potassium	< 1300	1300	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Selenium	< 2.7	2.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Silver	1.1	0.67	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Sodium	< 1300	1300	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Thallium	< 1.3	1.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Tin	94.5	6.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Vanadium	22.7	6.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Zinc	753	6.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴

(1) Instrument QC Batch: MA41069

(2) Instrument QC Batch: MA41085

(3) Prep QC Batch: MP97907

(4) Prep QC Batch: MP97914

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RHBF9-03 (8-10)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-11	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	78.0
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	< 0.51	0.51	mg/kg	1	01/05/17 12:50	RP	SW846 3060A/7196A
Chromium, Trivalent ^a	18.1	1.8	mg/kg	1	01/05/17 12:50	RP	SW846 6010/7196A M
Cyanide	< 0.27	0.27	mg/kg	1	01/05/17 12:28	BM	SW846 9012B/LACHAT
Solids, Percent	78		%	1	12/28/16 16:40	SP	SM2540 G-97

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

4.13
4

Report of Analysis

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Client Sample ID:	RHBF9-03	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-12	Date Received:	12/27/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270D SW846 3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z117764.D	1	01/04/17	AC	12/29/16	OP99556	EZ5851
Run #2							

	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	2.0	0.90	ug/l	
	3&4-Methylphenol	ND	2.0	0.89	ug/l	
87-86-5	Pentachlorophenol	ND	4.0	1.4	ug/l	
108-95-2	Phenol	ND	2.0	0.40	ug/l	
83-32-9	Acenaphthene	ND	1.0	0.19	ug/l	
208-96-8	Acenaphthylene	ND	1.0	0.14	ug/l	
120-12-7	Anthracene	ND	1.0	0.21	ug/l	
56-55-3	Benzo(a)anthracene	ND	1.0	0.21	ug/l	
50-32-8	Benzo(a)pyrene	ND	1.0	0.22	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	1.0	0.21	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	1.0	0.34	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	1.0	0.21	ug/l	
218-01-9	Chrysene	ND	1.0	0.18	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	1.0	0.33	ug/l	
132-64-9	Dibenzofuran	ND	5.1	0.22	ug/l	
206-44-0	Fluoranthene	0.63	1.0	0.17	ug/l	J
86-73-7	Fluorene	ND	1.0	0.17	ug/l	
118-74-1	Hexachlorobenzene	ND	1.0	0.33	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	1.0	0.34	ug/l	
91-20-3	Naphthalene	ND	1.0	0.23	ug/l	
85-01-8	Phenanthrene	0.82	1.0	0.18	ug/l	J
129-00-0	Pyrene	0.56	1.0	0.22	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	47%		14-88%
4165-62-2	Phenol-d5	34%		10-110%
118-79-6	2,4,6-Tribromophenol	124%		39-149%
4165-60-0	Nitrobenzene-d5	75%		32-128%
321-60-8	2-Fluorobiphenyl	79%		35-119%
1718-51-0	Terphenyl-d14	74%		10-126%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-03	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-12	Date Received:	12/27/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8151 SW846 8151/3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G105301.D	1	01/05/17	VDT	12/29/16	OP99567	G3G3682
Run #2							

	Initial Volume	Final Volume
Run #1	300 ml	2.5 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	0.083	0.039	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	119%		39-159%
19719-28-9	2,4-DCAA	103%		39-159%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	RHBF9-03	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-12	Date Received:	12/27/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8081B SW846 3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1G131125.D	1	01/04/17	RK	12/30/16	OP99565	G1G4189
Run #2							

	Initial Volume	Final Volume
Run #1	300 ml	2.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.0067	0.0040	ug/l	
319-84-6	alpha-BHC	ND	0.0067	0.0040	ug/l	
319-85-7	beta-BHC	ND	0.0067	0.0038	ug/l	
319-86-8	delta-BHC	ND	0.0067	0.0030	ug/l	
58-89-9	gamma-BHC (Lindane)	ND	0.0067	0.0019	ug/l	
5103-71-9	alpha-Chlordane	ND	0.0067	0.0031	ug/l	
60-57-1	Dieldrin	ND	0.0067	0.0024	ug/l	
72-54-8	4,4' -DDD	ND	0.0067	0.0025	ug/l	
72-55-9	4,4' -DDE	ND	0.0067	0.0041	ug/l	
50-29-3	4,4' -DDT	ND	0.0067	0.0033	ug/l	
72-20-8	Endrin	ND	0.0067	0.0034	ug/l	
1031-07-8	Endosulfan sulfate	ND	0.0067	0.0035	ug/l	
959-98-8	Endosulfan-I	ND	0.0067	0.0033	ug/l	
33213-65-9	Endosulfan-II	ND	0.0067	0.0029	ug/l	
76-44-8	Heptachlor	ND	0.0067	0.0025	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	93%		26-132%
877-09-8	Tetrachloro-m-xylene	83%		26-132%
2051-24-3	Decachlorobiphenyl	88%		10-118%
2051-24-3	Decachlorobiphenyl	110%		10-118%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

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B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-03	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-12	Date Received:	12/27/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8082A SW846 3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G140894.D	1	01/02/17	HB	12/30/16	OP99564	G2G3906
Run #2							

	Initial Volume	Final Volume
Run #1	300 ml	2.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.33	0.10	ug/l	
11104-28-2	Aroclor 1221	ND	0.33	0.20	ug/l	
11141-16-5	Aroclor 1232	ND	0.33	0.13	ug/l	
53469-21-9	Aroclor 1242	ND	0.33	0.19	ug/l	
12672-29-6	Aroclor 1248	ND	0.33	0.28	ug/l	
11097-69-1	Aroclor 1254	ND	0.33	0.16	ug/l	
11096-82-5	Aroclor 1260	ND	0.33	0.27	ug/l	
1336-36-3	Total PCBs	ND	0.33		ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	82%		10-161%
877-09-8	Tetrachloro-m-xylene	82%		10-161%
2051-24-3	Decachlorobiphenyl	79%		10-137%
2051-24-3	Decachlorobiphenyl	76%		10-137%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID: RHBF9-03	Date Sampled: 12/27/16
Lab Sample ID: JC34266-12	Date Received: 12/27/16
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Red Hook Ballfields Soil, Brooklyn, NY	

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	1600	200	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ⁵
Antimony	< 6.0	6.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ⁵
Arsenic	10.0	3.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ⁵
Barium	277	200	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ⁵
Beryllium	< 1.0	1.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ⁵
Cadmium	< 3.0	3.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ⁵
Calcium	496000	25000	ug/l	5	12/28/16	01/03/17	KS	SW846 6010C ³ SW846 3010A ⁵
Chromium ^a	< 50	50	ug/l	5	12/28/16	01/03/17	KS	SW846 6010C ³ SW846 3010A ⁵
Cobalt	< 50	50	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ⁵
Copper	31.7	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ⁵
Iron	5330	100	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ⁵
Lead ^a	148	15	ug/l	5	12/28/16	01/03/17	KS	SW846 6010C ³ SW846 3010A ⁵
Magnesium	78100	5000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ⁵
Manganese	192	15	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ⁵
Mercury	0.36	0.20	ug/l	1	12/29/16	12/29/16	JA	SW846 7470A ¹ SW846 7470A ⁶
Nickel	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ⁵
Potassium	47400	10000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ⁵
Selenium	11.7	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ⁵
Silver	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ⁵
Sodium	152000	10000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ⁵
Thallium ^a	< 20	20	ug/l	10	12/28/16	01/04/17	KS	SW846 6010C ⁴ SW846 3010A ⁵
Tin	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ⁵
Vanadium	< 50	50	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ⁵
Zinc	124	20	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ⁵

(1) Instrument QC Batch: MA41061

(2) Instrument QC Batch: MA41074

(3) Instrument QC Batch: MA41091

(4) Instrument QC Batch: MA41099

(5) Prep QC Batch: MP97878

(6) Prep QC Batch: MP97892

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RHBF9-03	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-12	Date Received:	12/27/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	< 0.010	0.010	mg/l	1	12/27/16 21:45	AT	SW846 7196A
Chromium, Trivalent ^a	< 0.060	0.060	mg/l	1	01/03/17 14:35	KS	SW846 6010/7196A M
Cyanide	< 0.010	0.010	mg/l	1	01/05/17 14:05	BM	EPA 335.4/LACHAT

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-03	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-12F	Date Received:	12/27/16
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method	
Aluminum	< 200	200	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Antimony	< 6.0	6.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Arsenic	9.7	3.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Barium	289	200	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Beryllium	< 1.0	1.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Cadmium	< 3.0	3.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Calcium	421000	25000	ug/l	5	12/28/16	01/03/17	KS	SW846 6010C ³	SW846 3010A ⁵
Chromium ^a	< 50	50	ug/l	5	12/28/16	01/03/17	KS	SW846 6010C ³	SW846 3010A ⁵
Cobalt	< 50	50	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Copper	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Iron	3530	100	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Lead ^a	< 15	15	ug/l	5	12/28/16	01/03/17	KS	SW846 6010C ³	SW846 3010A ⁵
Magnesium	64700	5000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Manganese	234	15	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Mercury	< 0.20	0.20	ug/l	1	12/29/16	12/29/16	JA	SW846 7470A ¹	SW846 7470A ⁶
Nickel	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Potassium	40300	10000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Selenium	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Silver	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Sodium	117000	10000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Thallium ^a	< 10	10	ug/l	5	12/28/16	01/04/17	KS	SW846 6010C ⁴	SW846 3010A ⁵
Tin	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Vanadium	< 50	50	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Zinc	< 20	20	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵

(1) Instrument QC Batch: MA41061

(2) Instrument QC Batch: MA41074

(3) Instrument QC Batch: MA41091

(4) Instrument QC Batch: MA41099

(5) Prep QC Batch: MP97878

(6) Prep QC Batch: MP97892

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RHBF9-03	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-12F	Date Received:	12/27/16
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	< 0.010	0.010	mg/l	1	12/27/16 21:55	AT	SW846 7196A
Chromium, Trivalent ^a	< 0.060	0.060	mg/l	1	01/03/17 14:38	KS	SW846 6010/7196A M

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Page 1 of 2

Client Sample ID:	RHBF9-04 (2-4)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-13	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	87.6
Method:	SW846 8270D SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M130684.D	1	01/07/17	KM	01/03/17	OP99614	EM5581
Run #2	M130725.D	25	01/10/17	JJ	01/03/17	OP99614	EM5583

	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2	30.1 g	1.0 ml

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	76	24	ug/kg	
	3&4-Methylphenol	79.2	76	31	ug/kg	
87-86-5	Pentachlorophenol	ND	150	36	ug/kg	
108-95-2	Phenol	ND	76	20	ug/kg	
83-32-9	Acenaphthene	283	38	13	ug/kg	
208-96-8	Acenaphthylene	943	38	19	ug/kg	
120-12-7	Anthracene	1500	38	23	ug/kg	
56-55-3	Benzo(a)anthracene	5860 ^a	950	270	ug/kg	
50-32-8	Benzo(a)pyrene	6010 ^a	950	430	ug/kg	
205-99-2	Benzo(b)fluoranthene	6940 ^a	950	420	ug/kg	
191-24-2	Benzo(g,h,i)perylene	3300 ^a	950	470	ug/kg	
207-08-9	Benzo(k)fluoranthene	2460	38	18	ug/kg	
218-01-9	Chrysene	5900 ^a	950	300	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	1370	38	17	ug/kg	
132-64-9	Dibenzofuran	263	76	15	ug/kg	
206-44-0	Fluoranthene	10700 ^a	950	420	ug/kg	
86-73-7	Fluorene	461	38	17	ug/kg	
118-74-1	Hexachlorobenzene	ND	76	9.6	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	3870 ^a	950	440	ug/kg	
91-20-3	Naphthalene	331	38	11	ug/kg	
85-01-8	Phenanthrene	5370 ^a	950	320	ug/kg	
129-00-0	Pyrene	9710 ^a	950	300	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	62%	46%	30-106%
4165-62-2	Phenol-d5	63%	45%	30-106%
118-79-6	2,4,6-Tribromophenol	93%	97%	24-140%
4165-60-0	Nitrobenzene-d5	69%	53%	26-122%
321-60-8	2-Fluorobiphenyl	83%	73%	36-112%
1718-51-0	Terphenyl-d14	79%	87%	36-132%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RHBF9-04 (2-4)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-13	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	87.6
Method:	SW846 8270D SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
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(a) Result is from Run# 2

ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

4.16
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Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-04 (2-4)		
Lab Sample ID:	JC34266-13	Date Sampled:	12/27/16
Matrix:	SO - Soil	Date Received:	12/27/16
Method:	SW846 8151 SW846 8151/3550C	Percent Solids:	87.6
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OA122569.D	2	01/06/17	VDT	01/04/17	OP99621	GOA4208
Run #2							

	Initial Weight	Final Volume
Run #1	15.2 g	5.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	7.5	2.7	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	16%		10-156%
19719-28-9	2,4-DCAA	14%		10-156%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-04 (2-4)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-13	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	87.6
Method:	SW846 8081B SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G76714.D	1	01/07/17	KD	01/03/17	OP99589	G4G1995
Run #2							

	Initial Weight	Final Volume
Run #1	15.2 g	10.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.75	0.36	ug/kg	
319-84-6	alpha-BHC	ND	0.75	0.40	ug/kg	
319-85-7	beta-BHC	ND	0.75	0.47	ug/kg	
319-86-8	delta-BHC	ND	0.75	0.34	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	0.75	0.33	ug/kg	
5103-71-9	alpha-Chlordane	ND	0.75	0.36	ug/kg	
60-57-1	Dieldrin	ND	0.75	0.38	ug/kg	
72-54-8	4,4' -DDD	ND	0.75	0.48	ug/kg	
72-55-9	4,4' -DDE	ND	0.75	0.39	ug/kg	
50-29-3	4,4' -DDT	2.8	0.75	0.45	ug/kg	
72-20-8	Endrin	ND	0.75	0.35	ug/kg	
1031-07-8	Endosulfan sulfate	ND	0.75	0.30	ug/kg	
959-98-8	Endosulfan-I	ND	0.75	0.39	ug/kg	
33213-65-9	Endosulfan-II	ND	0.75	0.39	ug/kg	
76-44-8	Heptachlor	ND	0.75	0.37	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	96%		24-136%
877-09-8	Tetrachloro-m-xylene	76%		24-136%
2051-24-3	Decachlorobiphenyl	101%		10-153%
2051-24-3	Decachlorobiphenyl	89%		10-153%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-04 (2-4)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-13	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	87.6
Method:	SW846 8082A SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF165206.D	1	01/04/17	HB	01/03/17	OP99588	GEF5850
Run #2							

	Initial Weight	Final Volume
Run #1	15.2 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	38	19	ug/kg	
11104-28-2	Aroclor 1221	ND	38	18	ug/kg	
11141-16-5	Aroclor 1232	ND	38	15	ug/kg	
53469-21-9	Aroclor 1242	ND	38	13	ug/kg	
12672-29-6	Aroclor 1248	ND	38	24	ug/kg	
11097-69-1	Aroclor 1254	ND	38	19	ug/kg	
11096-82-5	Aroclor 1260	ND	38	16	ug/kg	
1336-36-3	Total PCBs	ND	38		ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	84%		20-152%
877-09-8	Tetrachloro-m-xylene	122%		20-152%
2051-24-3	Decachlorobiphenyl	88%		12-157%
2051-24-3	Decachlorobiphenyl	113%		12-157%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-04 (2-4)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-13	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	87.6
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analized By	Method	Prep Method
Aluminum	9880	55	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Antimony	6.9	2.2	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Arsenic	11.6	2.2	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Barium	122	22	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Beryllium	0.47	0.22	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cadmium	1.1	0.55	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Calcium	2930	550	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Chromium	15.9	1.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cobalt	5.9	5.5	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Copper	356	2.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Iron	17000	55	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Lead	375	2.2	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Magnesium	1970	550	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Manganese	172	1.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Mercury	1.5	0.074	mg/kg	2	12/30/16	12/30/16 JPM	SW846 7471B ¹	SW846 7471B ³
Nickel	24.2	4.4	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Potassium	< 1100	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Selenium	< 2.2	2.2	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Silver	0.58	0.55	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Sodium	< 1100	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Thallium	< 1.1	1.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Tin	72.8	5.5	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Vanadium	19.8	5.5	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Zinc	696	5.5	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴

(1) Instrument QC Batch: MA41069

(2) Instrument QC Batch: MA41085

(3) Prep QC Batch: MP97907

(4) Prep QC Batch: MP97914

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RHBF9-04 (2-4)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-13	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	87.6
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	< 0.46	0.46	mg/kg	1	01/05/17 12:50	RP	SW846 3060A/7196A
Chromium, Trivalent ^a	15.5	1.6	mg/kg	1	01/05/17 12:50	RP	SW846 6010/7196A M
Cyanide	< 0.25	0.25	mg/kg	1	01/05/17 12:30	BM	SW846 9012B/LACHAT
Solids, Percent	87.6		%	1	12/28/16 16:40	SP	SM2540 G-97

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

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Report of Analysis

Page 1 of 2

Client Sample ID:	RHBF9-04 (5-7)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-14	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	86.0
Method:	SW846 8270D SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M130532.D	1	01/04/17	JJ	01/03/17	OP99614	EM5576
Run #2	M130562.D	20	01/04/17	KM	01/03/17	OP99614	EM5577

	Initial Weight	Final Volume
Run #1	30.0 g	1.0 ml
Run #2	30.0 g	1.0 ml

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	65.5	78	25	ug/kg	J
	3&4-Methylphenol	233	78	32	ug/kg	
87-86-5	Pentachlorophenol	ND	160	36	ug/kg	
108-95-2	Phenol	146	78	20	ug/kg	
83-32-9	Acenaphthene	1010	39	13	ug/kg	
208-96-8	Acenaphthylene	1970	39	20	ug/kg	
120-12-7	Anthracene	3470	39	24	ug/kg	
56-55-3	Benzo(a)anthracene	5680 ^a	780	220	ug/kg	
50-32-8	Benzo(a)pyrene	5500 ^a	780	350	ug/kg	
205-99-2	Benzo(b)fluoranthene	6620 ^a	780	340	ug/kg	
191-24-2	Benzo(g,h,i)perylene	3680	39	19	ug/kg	
207-08-9	Benzo(k)fluoranthene	2690 ^a	780	360	ug/kg	
218-01-9	Chrysene	5700 ^a	780	240	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	993	39	17	ug/kg	
132-64-9	Dibenzofuran	1360	78	16	ug/kg	
206-44-0	Fluoranthene	12900 ^a	780	350	ug/kg	
86-73-7	Fluorene	1950	39	18	ug/kg	
118-74-1	Hexachlorobenzene	ND	78	9.8	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	3290 ^a	780	360	ug/kg	
91-20-3	Naphthalene	1700	39	11	ug/kg	
85-01-8	Phenanthrene	12100 ^a	780	260	ug/kg	
129-00-0	Pyrene	13200 ^a	780	250	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	61%	42%	30-106%
4165-62-2	Phenol-d5	61%	44%	30-106%
118-79-6	2,4,6-Tribromophenol	72%	58%	24-140%
4165-60-0	Nitrobenzene-d5	49%	37%	26-122%
321-60-8	2-Fluorobiphenyl	68%	51%	36-112%
1718-51-0	Terphenyl-d14	69%	68%	36-132%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RHBF9-04 (5-7)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-14	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	86.0
Method:	SW846 8270D SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
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(a) Result is from Run# 2

ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

4.17
4

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-04 (5-7)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-14	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	86.0
Method:	SW846 8151 SW846 8151/3550C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OA122570.D	2	01/06/17	VDT	01/04/17	OP99621	GOA4208
Run #2							

	Initial Weight	Final Volume
Run #1	15.0 g	5.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	7.8	2.8	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	11%		10-156%
19719-28-9	2,4-DCAA	11%		10-156%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-04 (5-7)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-14	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	86.0
Method:	SW846 8081B SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G76715.D	1	01/07/17	KD	01/03/17	OP99589	G4G1995
Run #2							

	Initial Weight	Final Volume
Run #1	15.4 g	10.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.76	0.36	ug/kg	
319-84-6	alpha-BHC	ND	0.76	0.40	ug/kg	
319-85-7	beta-BHC	ND	0.76	0.47	ug/kg	
319-86-8	delta-BHC	ND	0.76	0.34	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	0.76	0.33	ug/kg	
5103-71-9	alpha-Chlordane	ND	0.76	0.36	ug/kg	
60-57-1	Dieldrin	ND	0.76	0.38	ug/kg	
72-54-8	4,4' -DDD	ND	0.76	0.48	ug/kg	
72-55-9	4,4' -DDE	ND	0.76	0.39	ug/kg	
50-29-3	4,4' -DDT ^a	12.5	0.76	0.45	ug/kg	
72-20-8	Endrin	ND	0.76	0.35	ug/kg	
1031-07-8	Endosulfan sulfate	ND	0.76	0.30	ug/kg	
959-98-8	Endosulfan-I	ND	0.76	0.39	ug/kg	
33213-65-9	Endosulfan-II	ND	0.76	0.39	ug/kg	
76-44-8	Heptachlor	ND	0.76	0.37	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	120%		24-136%
877-09-8	Tetrachloro-m-xylene	78%		24-136%
2051-24-3	Decachlorobiphenyl	88%		10-153%
2051-24-3	Decachlorobiphenyl	90%		10-153%

(a) More than 40 % RPD for detected concentrations between the two GC columns.

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-04 (5-7)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-14	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	86.0
Method:	SW846 8082A SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF165189.D	1	01/04/17	HB	01/03/17	OP99588	GEF5850
Run #2							

	Initial Weight	Final Volume
Run #1	15.4 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	38	19	ug/kg	
11104-28-2	Aroclor 1221	ND	38	18	ug/kg	
11141-16-5	Aroclor 1232	ND	38	15	ug/kg	
53469-21-9	Aroclor 1242	ND	38	13	ug/kg	
12672-29-6	Aroclor 1248	ND	38	24	ug/kg	
11097-69-1	Aroclor 1254	ND	38	19	ug/kg	
11096-82-5	Aroclor 1260	ND	38	16	ug/kg	
1336-36-3	Total PCBs	ND	38		ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	141%		20-152%
877-09-8	Tetrachloro-m-xylene	175% ^a		20-152%
2051-24-3	Decachlorobiphenyl	97%		12-157%
2051-24-3	Decachlorobiphenyl	439% ^a		12-157%

(a) Outside control limits due to matrix interference.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-04 (5-7)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-14	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	86.0
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	3400	57	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Antimony	20.6	2.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Arsenic	54.8	2.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Barium	1930	110	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Beryllium	0.46	0.23	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Cadmium ^a	< 2.8	2.8	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Calcium	10300	570	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Chromium ^a	44.4	5.7	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Cobalt	25.4	5.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Copper	1280	14	mg/kg	5	12/31/16	01/04/17 DE	SW846 6010C ⁴	SW846 3050B ⁶
Iron	116000	280	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Lead ^a	4230	11	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Magnesium	1380	570	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Manganese ^a	4020	8.5	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Mercury	6.1	0.35	mg/kg	10	12/30/16	12/30/16 JPM	SW846 7471B ¹	SW846 7471B ⁵
Nickel	75.5	4.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Potassium	< 1100	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Selenium ^a	< 11	11	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Silver ^a	< 2.8	2.8	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Sodium	< 1100	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Thallium ^a	< 5.7	5.7	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Tin	172	5.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Vanadium	35.0	5.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Zinc	1100	28	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶

(1) Instrument QC Batch: MA41069

(2) Instrument QC Batch: MA41085

(3) Instrument QC Batch: MA41088

(4) Instrument QC Batch: MA41097

(5) Prep QC Batch: MP97907

(6) Prep QC Batch: MP97914

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RHBF9-04 (5-7)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-14	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	86.0
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.89	0.47	mg/kg	1	01/05/17 12:00	RP	SW846 3060A/7196A
Chromium, Trivalent ^a	43.5	6.2	mg/kg	1	01/05/17 12:00	RP	SW846 6010/7196A M
Cyanide	< 0.25	0.25	mg/kg	1	01/05/17 12:34	BM	SW846 9012B/LACHAT
Solids, Percent	86		%	1	12/28/16 16:40	SP	SM2540 G-97

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-04 (8-10)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-15	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	89.9
Method:	SW846 8270D SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M130685.D	1	01/07/17	KM	01/03/17	OP99614	EM5581
Run #2							

	Initial Weight	Final Volume
Run #1	30.2 g	1.0 ml
Run #2		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	74	24	ug/kg	
	3&4-Methylphenol	76.9	74	30	ug/kg	
87-86-5	Pentachlorophenol	ND	150	35	ug/kg	
108-95-2	Phenol	ND	74	19	ug/kg	
83-32-9	Acenaphthene	147	37	13	ug/kg	
208-96-8	Acenaphthylene	112	37	19	ug/kg	
120-12-7	Anthracene	470	37	23	ug/kg	
56-55-3	Benzo(a)anthracene	1240	37	10	ug/kg	
50-32-8	Benzo(a)pyrene	1210	37	17	ug/kg	
205-99-2	Benzo(b)fluoranthene	1410	37	16	ug/kg	
191-24-2	Benzo(g,h,i)perylene	715	37	18	ug/kg	
207-08-9	Benzo(k)fluoranthene	469	37	17	ug/kg	
218-01-9	Chrysene	1230	37	12	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	185	37	16	ug/kg	
132-64-9	Dibenzofuran	145	74	15	ug/kg	
206-44-0	Fluoranthene	2680	37	16	ug/kg	
86-73-7	Fluorene	135	37	17	ug/kg	
118-74-1	Hexachlorobenzene	ND	74	9.3	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	794	37	17	ug/kg	
91-20-3	Naphthalene	172	37	10	ug/kg	
85-01-8	Phenanthrene	2100	37	12	ug/kg	
129-00-0	Pyrene	2650	37	12	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	59%		30-106%
4165-62-2	Phenol-d5	60%		30-106%
118-79-6	2,4,6-Tribromophenol	82%		24-140%
4165-60-0	Nitrobenzene-d5	62%		26-122%
321-60-8	2-Fluorobiphenyl	72%		36-112%
1718-51-0	Terphenyl-d14	73%		36-132%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-04 (8-10)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-15	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	89.9
Method:	SW846 8151 SW846 8151/3550C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OA122611.D	2	01/07/17	VDT	01/04/17	OP99621	GOA4209
Run #2							

	Initial Weight	Final Volume
Run #1	15.2 g	5.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	7.3	2.7	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	13%		10-156%
19719-28-9	2,4-DCAA	14%		10-156%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-04 (8-10)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-15	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	89.9
Method:	SW846 8081B SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G76601.D	1	01/04/17	RK	01/03/17	OP99589	G4G1993
Run #2							

	Initial Weight	Final Volume
Run #1	16.0 g	10.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.70	0.33	ug/kg	
319-84-6	alpha-BHC	ND	0.70	0.37	ug/kg	
319-85-7	beta-BHC	ND	0.70	0.44	ug/kg	
319-86-8	delta-BHC	ND	0.70	0.31	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	0.70	0.31	ug/kg	
5103-71-9	alpha-Chlordane	ND	0.70	0.33	ug/kg	
60-57-1	Dieldrin	ND	0.70	0.35	ug/kg	
72-54-8	4,4' -DDD	ND	0.70	0.45	ug/kg	
72-55-9	4,4' -DDE	ND	0.70	0.36	ug/kg	
50-29-3	4,4' -DDT	2.3	0.70	0.41	ug/kg	
72-20-8	Endrin	ND	0.70	0.33	ug/kg	
1031-07-8	Endosulfan sulfate	ND	0.70	0.28	ug/kg	
959-98-8	Endosulfan-I	ND	0.70	0.36	ug/kg	
33213-65-9	Endosulfan-II	ND	0.70	0.36	ug/kg	
76-44-8	Heptachlor	ND	0.70	0.34	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	101%		24-136%
877-09-8	Tetrachloro-m-xylene	80%		24-136%
2051-24-3	Decachlorobiphenyl	86%		10-153%
2051-24-3	Decachlorobiphenyl	86%		10-153%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-04 (8-10)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-15	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	89.9
Method:	SW846 8082A SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF165207.D	1	01/04/17	HB	01/03/17	OP99588	GEF5850
Run #2							

	Initial Weight	Final Volume
Run #1	16.0 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	35	17	ug/kg	
11104-28-2	Aroclor 1221	ND	35	17	ug/kg	
11141-16-5	Aroclor 1232	ND	35	14	ug/kg	
53469-21-9	Aroclor 1242	ND	35	12	ug/kg	
12672-29-6	Aroclor 1248	ND	35	22	ug/kg	
11097-69-1	Aroclor 1254	ND	35	17	ug/kg	
11096-82-5	Aroclor 1260	ND	35	15	ug/kg	
1336-36-3	Total PCBs	ND	35		ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	87%		20-152%
877-09-8	Tetrachloro-m-xylene	108%		20-152%
2051-24-3	Decachlorobiphenyl	88%		12-157%
2051-24-3	Decachlorobiphenyl	106%		12-157%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-04 (8-10)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-15	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	89.9
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	3840	56	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Antimony	< 2.2	2.2	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Arsenic	10.2	2.2	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Barium	133	22	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Beryllium	0.24	0.22	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 0.56	0.56	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Calcium	17300	560	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Chromium	14.1	1.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cobalt	< 5.6	5.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Copper	48.2	2.8	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Iron	10200	56	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Lead	245	2.2	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Magnesium	2370	560	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Manganese	93.9	1.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Mercury	2.7	0.18	mg/kg	5	12/30/16	12/30/16 JPM	SW846 7471B ¹	SW846 7471B ³
Nickel	23.4	4.4	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Potassium	< 1100	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Selenium	< 2.2	2.2	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Silver	< 0.56	0.56	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Sodium	< 1100	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Thallium	< 1.1	1.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Tin	7.5	5.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Vanadium	17.6	5.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Zinc	359	5.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴

(1) Instrument QC Batch: MA41069

(2) Instrument QC Batch: MA41085

(3) Prep QC Batch: MP97907

(4) Prep QC Batch: MP97914

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RHBF9-04 (8-10)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-15	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	89.9
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	< 0.44	0.44	mg/kg	1	01/05/17 12:54	RP	SW846 3060A/7196A
Chromium, Trivalent ^a	13.8	1.5	mg/kg	1	01/05/17 12:54	RP	SW846 6010/7196A M
Cyanide	0.31	0.23	mg/kg	1	01/05/17 12:35	BM	SW846 9012B/LACHAT
Solids, Percent	89.9		%	1	12/28/16 16:40	SP	SM2540 G-97

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Page 1 of 2

Client Sample ID:	RHBF9-DUP-01	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-16	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	86.1
Method:	SW846 8270D SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M130686.D	1	01/07/17	KM	01/03/17	OP99614	EM5581
Run #2	M130726.D	25	01/10/17	JJ	01/03/17	OP99614	EM5583

	Initial Weight	Final Volume
Run #1	30.2 g	1.0 ml
Run #2	30.2 g	1.0 ml

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	77	25	ug/kg	
	3&4-Methylphenol	ND	77	32	ug/kg	
87-86-5	Pentachlorophenol	ND	150	36	ug/kg	
108-95-2	Phenol	ND	77	20	ug/kg	
83-32-9	Acenaphthene	633	38	13	ug/kg	
208-96-8	Acenaphthylene	225	38	20	ug/kg	
120-12-7	Anthracene	1950	38	24	ug/kg	
56-55-3	Benzo(a)anthracene	5340 ^a	960	270	ug/kg	
50-32-8	Benzo(a)pyrene	4560 ^a	960	440	ug/kg	
205-99-2	Benzo(b)fluoranthene	4970 ^a	960	420	ug/kg	
191-24-2	Benzo(g,h,i)perylene	3330	38	19	ug/kg	
207-08-9	Benzo(k)fluoranthene	1860	38	18	ug/kg	
218-01-9	Chrysene	4960 ^a	960	300	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	1040	38	17	ug/kg	
132-64-9	Dibenzofuran	456	77	16	ug/kg	
206-44-0	Fluoranthene	9980 ^a	960	430	ug/kg	
86-73-7	Fluorene	634	38	18	ug/kg	
118-74-1	Hexachlorobenzene	ND	77	9.7	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	3530	38	18	ug/kg	
91-20-3	Naphthalene	488	38	11	ug/kg	
85-01-8	Phenanthrene	8520 ^a	960	320	ug/kg	
129-00-0	Pyrene	9610 ^a	960	310	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	69%	40%	30-106%
4165-62-2	Phenol-d5	68%	62%	30-106%
118-79-6	2,4,6-Tribromophenol	101%	79%	24-140%
4165-60-0	Nitrobenzene-d5	74%	68%	26-122%
321-60-8	2-Fluorobiphenyl	89%	69%	36-112%
1718-51-0	Terphenyl-d14	94%	85%	36-132%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RHBF9-DUP-01	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-16	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	86.1
Method:	SW846 8270D SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
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(a) Result is from Run# 2

ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

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Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-DUP-01	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-16	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	86.1
Method:	SW846 8151 SW846 8151/3550C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OA122612.D	2	01/07/17	VDT	01/04/17	OP99621	GOA4209
Run #2							

	Initial Weight	Final Volume
Run #1	15.3 g	5.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	7.6	2.8	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	19%		10-156%
19719-28-9	2,4-DCAA	20%		10-156%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-DUP-01	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-16	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	86.1
Method:	SW846 8081B SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G76602.D	1	01/05/17	RK	01/03/17	OP99589	G4G1993
Run #2							

	Initial Weight	Final Volume
Run #1	15.4 g	10.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.75	0.36	ug/kg	
319-84-6	alpha-BHC	ND	0.75	0.40	ug/kg	
319-85-7	beta-BHC	ND	0.75	0.47	ug/kg	
319-86-8	delta-BHC	ND	0.75	0.34	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	0.75	0.33	ug/kg	
5103-71-9	alpha-Chlordane	ND	0.75	0.36	ug/kg	
60-57-1	Dieldrin	ND	0.75	0.38	ug/kg	
72-54-8	4,4' -DDD	ND	0.75	0.48	ug/kg	
72-55-9	4,4' -DDE	ND	0.75	0.39	ug/kg	
50-29-3	4,4' -DDT ^a	5.7	0.75	0.45	ug/kg	
72-20-8	Endrin	ND	0.75	0.35	ug/kg	
1031-07-8	Endosulfan sulfate	ND	0.75	0.30	ug/kg	
959-98-8	Endosulfan-I	ND	0.75	0.39	ug/kg	
33213-65-9	Endosulfan-II	ND	0.75	0.39	ug/kg	
76-44-8	Heptachlor	ND	0.75	0.37	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	103%		24-136%
877-09-8	Tetrachloro-m-xylene	73%		24-136%
2051-24-3	Decachlorobiphenyl	84%		10-153%
2051-24-3	Decachlorobiphenyl	76%		10-153%

(a) More than 40 % RPD for detected concentrations between the two GC columns.

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-DUP-01	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-16	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	86.1
Method:	SW846 8082A SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF165208.D	1	01/04/17	HB	01/03/17	OP99588	GEF5850
Run #2							

	Initial Weight	Final Volume
Run #1	15.4 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	38	19	ug/kg	
11104-28-2	Aroclor 1221	ND	38	18	ug/kg	
11141-16-5	Aroclor 1232	ND	38	15	ug/kg	
53469-21-9	Aroclor 1242	ND	38	13	ug/kg	
12672-29-6	Aroclor 1248	ND	38	24	ug/kg	
11097-69-1	Aroclor 1254	ND	38	19	ug/kg	
11096-82-5	Aroclor 1260	ND	38	16	ug/kg	
1336-36-3	Total PCBs	ND	38		ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	136%		20-152%
877-09-8	Tetrachloro-m-xylene	164% ^a		20-152%
2051-24-3	Decachlorobiphenyl	87%		12-157%
2051-24-3	Decachlorobiphenyl	167% ^a		12-157%

(a) Outside control limits due to matrix interference.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-DUP-01	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-16	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	86.1
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	6590	56	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Antimony	< 2.3	2.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Arsenic	10	2.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Barium	213	23	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Beryllium	0.43	0.23	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cadmium	1.2	0.56	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Calcium	10900	560	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Chromium	20.7	1.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cobalt	6.4	5.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Copper	124	2.8	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Iron	18300	56	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Lead	504	2.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Magnesium	3080	560	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Manganese	294	1.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Mercury	3.5	0.18	mg/kg	5	12/30/16	12/30/16 JPM	SW846 7471B ¹	SW846 7471B ³
Nickel	30.2	4.5	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Potassium	< 1100	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Selenium	< 2.3	2.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Silver	0.61	0.56	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Sodium	< 1100	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Thallium	< 1.1	1.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Tin	25.0	5.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Vanadium	33.5	5.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Zinc	572	5.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴

(1) Instrument QC Batch: MA41069

(2) Instrument QC Batch: MA41085

(3) Prep QC Batch: MP97907

(4) Prep QC Batch: MP97914

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RHBF9-DUP-01	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-16	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	86.1
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.97	0.46	mg/kg	1	01/05/17 12:54	RP	SW846 3060A/7196A
Chromium, Trivalent ^a	19.7	1.6	mg/kg	1	01/05/17 12:54	RP	SW846 6010/7196A M
Cyanide	< 0.22	0.22	mg/kg	1	01/05/17 12:37	BM	SW846 9012B/LACHAT
Solids, Percent	86.1		%	1	12/28/16 16:40	SP	SM2540 G-97

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-GW-DUP-01	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-17	Date Received:	12/27/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270D SW846 3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z117765.D	1	01/04/17	AC	12/29/16	OP99556	EZ5851
Run #2							

	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	2.0	0.90	ug/l	
	3&4-Methylphenol	ND	2.0	0.89	ug/l	
87-86-5	Pentachlorophenol	ND	4.0	1.4	ug/l	
108-95-2	Phenol	ND	2.0	0.40	ug/l	
83-32-9	Acenaphthene	0.55	1.0	0.19	ug/l	J
208-96-8	Acenaphthylene	0.44	1.0	0.14	ug/l	J
120-12-7	Anthracene	1.2	1.0	0.21	ug/l	
56-55-3	Benzo(a)anthracene	3.1	1.0	0.21	ug/l	
50-32-8	Benzo(a)pyrene	3.3	1.0	0.22	ug/l	
205-99-2	Benzo(b)fluoranthene	3.7	1.0	0.21	ug/l	
191-24-2	Benzo(g,h,i)perylene	2.2	1.0	0.34	ug/l	
207-08-9	Benzo(k)fluoranthene	1.2	1.0	0.21	ug/l	
218-01-9	Chrysene	2.9	1.0	0.18	ug/l	
53-70-3	Dibenzo(a,h)anthracene	0.59	1.0	0.33	ug/l	J
132-64-9	Dibenzofuran	ND	5.1	0.22	ug/l	
206-44-0	Fluoranthene	6.4	1.0	0.17	ug/l	
86-73-7	Fluorene	0.57	1.0	0.17	ug/l	J
118-74-1	Hexachlorobenzene	ND	1.0	0.33	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	2.4	1.0	0.34	ug/l	
91-20-3	Naphthalene	0.50	1.0	0.23	ug/l	J
85-01-8	Phenanthrene	4.7	1.0	0.18	ug/l	
129-00-0	Pyrene	5.6	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	44%		14-88%
4165-62-2	Phenol-d5	32%		10-110%
118-79-6	2,4,6-Tribromophenol	103%		39-149%
4165-60-0	Nitrobenzene-d5	75%		32-128%
321-60-8	2-Fluorobiphenyl	68%		35-119%
1718-51-0	Terphenyl-d14	47%		10-126%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-GW-DUP-01	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-17	Date Received:	12/27/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8151 SW846 8151/3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G105302.D	1	01/05/17	VDT	12/29/16	OP99567	G3G3682
Run #2							

	Initial Volume	Final Volume
Run #1	300 ml	2.5 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	0.083	0.039	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	118%		39-159%
19719-28-9	2,4-DCAA	102%		39-159%

ND = Not detected MDL = Method Detection Limit
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J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	RHBF9-GW-DUP-01	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-17	Date Received:	12/27/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8081B SW846 3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1G131126.D	1	01/04/17	RK	12/30/16	OP99565	G1G4189
Run #2							

	Initial Volume	Final Volume
Run #1	300 ml	2.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.0067	0.0040	ug/l	
319-84-6	alpha-BHC	ND	0.0067	0.0040	ug/l	
319-85-7	beta-BHC	ND	0.0067	0.0038	ug/l	
319-86-8	delta-BHC	ND	0.0067	0.0030	ug/l	
58-89-9	gamma-BHC (Lindane)	ND	0.0067	0.0019	ug/l	
5103-71-9	alpha-Chlordane	ND	0.0067	0.0031	ug/l	
60-57-1	Dieldrin	ND	0.0067	0.0024	ug/l	
72-54-8	4,4' -DDD	ND	0.0067	0.0025	ug/l	
72-55-9	4,4' -DDE	ND	0.0067	0.0041	ug/l	
50-29-3	4,4' -DDT	ND	0.0067	0.0033	ug/l	
72-20-8	Endrin	ND	0.0067	0.0034	ug/l	
1031-07-8	Endosulfan sulfate	ND	0.0067	0.0035	ug/l	
959-98-8	Endosulfan-I	ND	0.0067	0.0033	ug/l	
33213-65-9	Endosulfan-II	ND	0.0067	0.0029	ug/l	
76-44-8	Heptachlor	ND	0.0067	0.0025	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	80%		26-132%
877-09-8	Tetrachloro-m-xylene	70%		26-132%
2051-24-3	Decachlorobiphenyl	32%		10-118%
2051-24-3	Decachlorobiphenyl	52%		10-118%

ND = Not detected MDL = Method Detection Limit

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B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	RHBF9-GW-DUP-01	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-17	Date Received:	12/27/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8082A SW846 3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G140895.D	1	01/02/17	HB	12/30/16	OP99564	G2G3906
Run #2							

	Initial Volume	Final Volume
Run #1	300 ml	2.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.33	0.10	ug/l	
11104-28-2	Aroclor 1221	ND	0.33	0.20	ug/l	
11141-16-5	Aroclor 1232	ND	0.33	0.13	ug/l	
53469-21-9	Aroclor 1242	ND	0.33	0.19	ug/l	
12672-29-6	Aroclor 1248	ND	0.33	0.28	ug/l	
11097-69-1	Aroclor 1254	ND	0.33	0.16	ug/l	
11096-82-5	Aroclor 1260	ND	0.33	0.27	ug/l	
1336-36-3	Total PCBs	ND	0.33		ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	75%		10-161%
877-09-8	Tetrachloro-m-xylene	72%		10-161%
2051-24-3	Decachlorobiphenyl	43%		10-137%
2051-24-3	Decachlorobiphenyl	32%		10-137%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

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J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-GW-DUP-01	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-17	Date Received:	12/27/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method	
Aluminum	4490	200	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Antimony	7.4	6.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Arsenic	31.0	3.0	ug/l	1	12/28/16	01/03/17	KS	SW846 6010C ³	SW846 3010A ⁵
Barium	523	200	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Beryllium	< 1.0	1.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Cadmium	< 3.0	3.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Calcium	76300	5000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Chromium	28.6	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Cobalt	< 50	50	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Copper	164	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Iron	27600	100	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Lead	1170	3.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Magnesium	46200	5000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Manganese	404	15	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Mercury	4.0	0.20	ug/l	1	12/29/16	12/29/16	JA	SW846 7470A ¹	SW846 7470A ⁶
Nickel	17.4	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Potassium	26300	10000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Selenium	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Silver	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Sodium	48100	10000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Thallium	< 2.0	2.0	ug/l	1	01/07/17	01/07/17	GT	SW846 6010C ⁴	SW846 3010A ⁷
Tin	107	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Vanadium	< 50	50	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵
Zinc	668	20	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ²	SW846 3010A ⁵

(1) Instrument QC Batch: MA41061

(2) Instrument QC Batch: MA41074

(3) Instrument QC Batch: MA41091

(4) Instrument QC Batch: MA41116

(5) Prep QC Batch: MP97878

(6) Prep QC Batch: MP97892

(7) Prep QC Batch: MP97990

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RHBF9-GW-DUP-01	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-17	Date Received:	12/27/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.014	0.010	mg/l	1	12/27/16 21:45	AT	SW846 7196A
Chromium, Trivalent ^a	< 0.020	0.020	mg/l	1	12/30/16 14:22	DE	SW846 6010/7196A M
Cyanide	< 0.010	0.010	mg/l	1	01/05/17 14:07	BM	EPA 335.4/LACHAT

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

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Client Sample ID:	RHBF9-GW-DUP-01	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-17F	Date Received:	12/27/16
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	< 200	200	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Antimony	< 6.0	6.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Arsenic	12.4	3.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Barium	255	200	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Beryllium	< 1.0	1.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Cadmium	< 3.0	3.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Calcium	76500	5000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Chromium	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Cobalt	< 50	50	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Copper	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Iron	17000	100	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Lead	10.1	3.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Magnesium	47900	5000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Manganese	324	15	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Mercury	< 0.20	0.20	ug/l	1	12/29/16	12/29/16	JA	SW846 7470A ¹ SW846 7470A ⁴
Nickel	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Potassium	27200	10000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Selenium	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Silver	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Sodium	50500	10000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Thallium	< 2.0	2.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Tin	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Vanadium	< 50	50	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Zinc	< 20	20	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³

(1) Instrument QC Batch: MA41061

(2) Instrument QC Batch: MA41074

(3) Prep QC Batch: MP97878

(4) Prep QC Batch: MP97892

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RHBF9-GW-DUP-01	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-17F	Date Received:	12/27/16
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.018	0.010	mg/l	1	12/27/16 21:55	AT	SW846 7196A
Chromium, Trivalent ^a	< 0.020	0.020	mg/l	1	12/30/16 14:48	DE	SW846 6010/7196A M

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-FIELD BLANK	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-18	Date Received:	12/27/16
Matrix:	AQ - Field Blank Water	Percent Solids:	n/a
Method:	SW846 8270D SW846 3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z117766.D	1	01/04/17	AC	12/29/16	OP99556	EZ5851
Run #2							

	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	2.0	0.90	ug/l	
	3&4-Methylphenol	ND	2.0	0.89	ug/l	
87-86-5	Pentachlorophenol	ND	4.0	1.4	ug/l	
108-95-2	Phenol	ND	2.0	0.40	ug/l	
83-32-9	Acenaphthene	ND	1.0	0.19	ug/l	
208-96-8	Acenaphthylene	ND	1.0	0.14	ug/l	
120-12-7	Anthracene	ND	1.0	0.21	ug/l	
56-55-3	Benzo(a)anthracene	ND	1.0	0.21	ug/l	
50-32-8	Benzo(a)pyrene	ND	1.0	0.22	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	1.0	0.21	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	1.0	0.34	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	1.0	0.21	ug/l	
218-01-9	Chrysene	ND	1.0	0.18	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	1.0	0.33	ug/l	
132-64-9	Dibenzofuran	ND	5.1	0.22	ug/l	
206-44-0	Fluoranthene	ND	1.0	0.17	ug/l	
86-73-7	Fluorene	ND	1.0	0.17	ug/l	
118-74-1	Hexachlorobenzene	ND	1.0	0.33	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	1.0	0.34	ug/l	
91-20-3	Naphthalene	ND	1.0	0.23	ug/l	
85-01-8	Phenanthrene	ND	1.0	0.18	ug/l	
129-00-0	Pyrene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	45%		14-88%
4165-62-2	Phenol-d5	30%		10-110%
118-79-6	2,4,6-Tribromophenol	95%		39-149%
4165-60-0	Nitrobenzene-d5	71%		32-128%
321-60-8	2-Fluorobiphenyl	67%		35-119%
1718-51-0	Terphenyl-d14	78%		10-126%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	RHBF9-FIELD BLANK	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-18	Date Received:	12/27/16
Matrix:	AQ - Field Blank Water	Percent Solids:	n/a
Method:	SW846 8151 SW846 8151/3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G105303.D	1	01/05/17	VDT	12/29/16	OP99567	G3G3682
Run #2							

	Initial Volume	Final Volume
Run #1	300 ml	2.5 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	0.083	0.039	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	95%		39-159%
19719-28-9	2,4-DCAA	85%		39-159%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	RHBF9-FIELD BLANK	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-18	Date Received:	12/27/16
Matrix:	AQ - Field Blank Water	Percent Solids:	n/a
Method:	SW846 8081B SW846 3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1G131067.D	1	01/03/17	JR	12/30/16	OP99565	G1G4188
Run #2							

	Initial Volume	Final Volume
Run #1	300 ml	2.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.0067	0.0040	ug/l	
319-84-6	alpha-BHC	ND	0.0067	0.0040	ug/l	
319-85-7	beta-BHC	ND	0.0067	0.0038	ug/l	
319-86-8	delta-BHC	ND	0.0067	0.0030	ug/l	
58-89-9	gamma-BHC (Lindane)	ND	0.0067	0.0019	ug/l	
5103-71-9	alpha-Chlordane	ND	0.0067	0.0031	ug/l	
60-57-1	Dieldrin	ND	0.0067	0.0024	ug/l	
72-54-8	4,4' -DDD	ND	0.0067	0.0025	ug/l	
72-55-9	4,4' -DDE	ND	0.0067	0.0041	ug/l	
50-29-3	4,4' -DDT	ND	0.0067	0.0033	ug/l	
72-20-8	Endrin	ND	0.0067	0.0034	ug/l	
1031-07-8	Endosulfan sulfate	ND	0.0067	0.0035	ug/l	
959-98-8	Endosulfan-I	ND	0.0067	0.0033	ug/l	
33213-65-9	Endosulfan-II	ND	0.0067	0.0029	ug/l	
76-44-8	Heptachlor	ND	0.0067	0.0025	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	94%		26-132%
877-09-8	Tetrachloro-m-xylene	90%		26-132%
2051-24-3	Decachlorobiphenyl	51%		10-118%
2051-24-3	Decachlorobiphenyl	55%		10-118%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	RHBF9-FIELD BLANK	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-18	Date Received:	12/27/16
Matrix:	AQ - Field Blank Water	Percent Solids:	n/a
Method:	SW846 8082A SW846 3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G140857.D	1	12/30/16	SP	12/30/16	OP99564	G2G3905
Run #2							

	Initial Volume	Final Volume
Run #1	300 ml	2.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.33	0.10	ug/l	
11104-28-2	Aroclor 1221	ND	0.33	0.20	ug/l	
11141-16-5	Aroclor 1232	ND	0.33	0.13	ug/l	
53469-21-9	Aroclor 1242	ND	0.33	0.19	ug/l	
12672-29-6	Aroclor 1248	ND	0.33	0.28	ug/l	
11097-69-1	Aroclor 1254	ND	0.33	0.16	ug/l	
11096-82-5	Aroclor 1260	ND	0.33	0.27	ug/l	
1336-36-3	Total PCBs	ND	0.33		ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	86%		10-161%
877-09-8	Tetrachloro-m-xylene	90%		10-161%
2051-24-3	Decachlorobiphenyl	41%		10-137%
2051-24-3	Decachlorobiphenyl	38%		10-137%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID: RHBF9-FIELD BLANK**Lab Sample ID:** JC34266-18**Matrix:** AQ - Field Blank Water**Date Sampled:** 12/27/16**Date Received:** 12/27/16**Percent Solids:** n/a**Project:** Red Hook Ballfields Soil, Brooklyn, NY

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	< 200	200	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Antimony	< 6.0	6.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Arsenic	< 3.0	3.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Barium	< 200	200	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Beryllium	< 1.0	1.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Cadmium	< 3.0	3.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Calcium	< 5000	5000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Chromium	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Cobalt	< 50	50	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Copper	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Iron	< 100	100	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Lead	< 3.0	3.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Magnesium	< 5000	5000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Manganese	< 15	15	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Mercury	< 0.20	0.20	ug/l	1	12/29/16	12/29/16	JA	SW846 7470A ¹ SW846 7470A ⁴
Nickel	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Potassium	< 10000	10000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Selenium	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Silver	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Sodium	< 10000	10000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Thallium	< 2.0	2.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Tin	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Vanadium	< 50	50	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Zinc	< 20	20	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³

(1) Instrument QC Batch: MA41061

(2) Instrument QC Batch: MA41074

(3) Prep QC Batch: MP97878

(4) Prep QC Batch: MP97892

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RHBF9-FIELD BLANK	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-18	Date Received:	12/27/16
Matrix:	AQ - Field Blank Water	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	< 0.010	0.010	mg/l	1	12/27/16 21:45	AT	SW846 7196A
Chromium, Trivalent ^a	< 0.020	0.020	mg/l	1	12/30/16 14:26	DE	SW846 6010/7196A M
Cyanide	< 0.010	0.010	mg/l	1	01/05/17 14:08	BM	EPA 335.4/LACHAT

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

4.22
4

Report of Analysis

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Client Sample ID: RHBF9-FIELD BLANK**Lab Sample ID:** JC34266-18F**Matrix:** AQ - Field Blank Filtered**Date Sampled:** 12/27/16**Date Received:** 12/27/16**Percent Solids:** n/a**Project:** Red Hook Ballfields Soil, Brooklyn, NY

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	< 200	200	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Antimony	< 6.0	6.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Arsenic	< 3.0	3.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Barium	< 200	200	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Beryllium	< 1.0	1.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Cadmium	< 3.0	3.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Calcium	< 5000	5000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Chromium	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Cobalt	< 50	50	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Copper	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Iron	< 100	100	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Lead	< 3.0	3.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Magnesium	< 5000	5000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Manganese	< 15	15	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Mercury	< 0.20	0.20	ug/l	1	12/29/16	12/29/16	JA	SW846 7470A ¹ SW846 7470A ⁴
Nickel	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Potassium	< 10000	10000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Selenium	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Silver	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Sodium	< 10000	10000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Thallium	< 2.0	2.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Tin	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Vanadium	< 50	50	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Zinc	< 20	20	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³

(1) Instrument QC Batch: MA41061

(2) Instrument QC Batch: MA41074

(3) Prep QC Batch: MP97878

(4) Prep QC Batch: MP97892

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RHBF9-FIELD BLANK	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-18F	Date Received:	12/27/16
Matrix:	AQ - Field Blank Filtered	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	< 0.010	0.010	mg/l	1	12/27/16 21:55	AT	SW846 7196A
Chromium, Trivalent ^a	< 0.020	0.020	mg/l	1	12/30/16 15:01	DE	SW846 6010/7196A M

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

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Client Sample ID:	RHBF9-EQUIPMENT BLANK	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-19	Date Received:	12/27/16
Matrix:	AQ - Equipment Blank	Percent Solids:	n/a
Method:	SW846 8270D SW846 3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z117762.D	1	01/04/17	AC	12/29/16	OP99556	EZ5851
Run #2							

	Initial Volume	Final Volume
Run #1	980 ml	1.0 ml
Run #2		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	2.0	0.91	ug/l	
	3&4-Methylphenol	ND	2.0	0.90	ug/l	
87-86-5	Pentachlorophenol	ND	4.1	1.4	ug/l	
108-95-2	Phenol	ND	2.0	0.40	ug/l	
83-32-9	Acenaphthene	ND	1.0	0.19	ug/l	
208-96-8	Acenaphthylene	ND	1.0	0.14	ug/l	
120-12-7	Anthracene	ND	1.0	0.22	ug/l	
56-55-3	Benzo(a)anthracene	ND	1.0	0.21	ug/l	
50-32-8	Benzo(a)pyrene	ND	1.0	0.22	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	1.0	0.21	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	1.0	0.35	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	1.0	0.21	ug/l	
218-01-9	Chrysene	ND	1.0	0.18	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	1.0	0.34	ug/l	
132-64-9	Dibenzofuran	ND	5.1	0.22	ug/l	
206-44-0	Fluoranthene	ND	1.0	0.17	ug/l	
86-73-7	Fluorene	ND	1.0	0.17	ug/l	
118-74-1	Hexachlorobenzene	ND	1.0	0.33	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	1.0	0.34	ug/l	
91-20-3	Naphthalene	ND	1.0	0.24	ug/l	
85-01-8	Phenanthrene	ND	1.0	0.18	ug/l	
129-00-0	Pyrene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	48%		14-88%
4165-62-2	Phenol-d5	32%		10-110%
118-79-6	2,4,6-Tribromophenol	109%		39-149%
4165-60-0	Nitrobenzene-d5	71%		32-128%
321-60-8	2-Fluorobiphenyl	71%		35-119%
1718-51-0	Terphenyl-d14	87%		10-126%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	RHBF9-EQUIPMENT BLANK			Date Sampled:	12/27/16
Lab Sample ID:	JC34266-19			Date Received:	12/27/16
Matrix:	AQ - Equipment Blank			Percent Solids:	n/a
Method:	SW846 8151 SW846 8151/3510C				
Project:	Red Hook Ballfields Soil, Brooklyn, NY				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G105304.D	1	01/05/17	VDT	12/29/16	OP99567	G3G3682
Run #2							

	Initial Volume	Final Volume
Run #1	300 ml	2.5 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	0.083	0.039	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	101%		39-159%
19719-28-9	2,4-DCAA	109%		39-159%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-EQUIPMENT BLANK	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-19	Date Received:	12/27/16
Matrix:	AQ - Equipment Blank	Percent Solids:	n/a
Method:	SW846 8081B SW846 3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1G131068.D	1	01/03/17	JR	12/30/16	OP99565	G1G4188
Run #2							

	Initial Volume	Final Volume
Run #1	300 ml	2.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.0067	0.0040	ug/l	
319-84-6	alpha-BHC	ND	0.0067	0.0040	ug/l	
319-85-7	beta-BHC	ND	0.0067	0.0038	ug/l	
319-86-8	delta-BHC	ND	0.0067	0.0030	ug/l	
58-89-9	gamma-BHC (Lindane)	ND	0.0067	0.0019	ug/l	
5103-71-9	alpha-Chlordane	ND	0.0067	0.0031	ug/l	
60-57-1	Dieldrin	ND	0.0067	0.0024	ug/l	
72-54-8	4,4' -DDD	ND	0.0067	0.0025	ug/l	
72-55-9	4,4' -DDE	ND	0.0067	0.0041	ug/l	
50-29-3	4,4' -DDT	ND	0.0067	0.0033	ug/l	
72-20-8	Endrin	ND	0.0067	0.0034	ug/l	
1031-07-8	Endosulfan sulfate	ND	0.0067	0.0035	ug/l	
959-98-8	Endosulfan-I	ND	0.0067	0.0033	ug/l	
33213-65-9	Endosulfan-II	ND	0.0067	0.0029	ug/l	
76-44-8	Heptachlor	ND	0.0067	0.0025	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	93%		26-132%
877-09-8	Tetrachloro-m-xylene	87%		26-132%
2051-24-3	Decachlorobiphenyl	42%		10-118%
2051-24-3	Decachlorobiphenyl	47%		10-118%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-EQUIPMENT BLANK	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-19	Date Received:	12/27/16
Matrix:	AQ - Equipment Blank	Percent Solids:	n/a
Method:	SW846 8082A SW846 3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G140858.D	1	12/30/16	SP	12/30/16	OP99564	G2G3905
Run #2							

	Initial Volume	Final Volume
Run #1	300 ml	2.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.33	0.10	ug/l	
11104-28-2	Aroclor 1221	ND	0.33	0.20	ug/l	
11141-16-5	Aroclor 1232	ND	0.33	0.13	ug/l	
53469-21-9	Aroclor 1242	ND	0.33	0.19	ug/l	
12672-29-6	Aroclor 1248	ND	0.33	0.28	ug/l	
11097-69-1	Aroclor 1254	ND	0.33	0.16	ug/l	
11096-82-5	Aroclor 1260	ND	0.33	0.27	ug/l	
1336-36-3	Total PCBs	ND	0.33		ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	88%		10-161%
877-09-8	Tetrachloro-m-xylene	93%		10-161%
2051-24-3	Decachlorobiphenyl	36%		10-137%
2051-24-3	Decachlorobiphenyl	34%		10-137%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID: RHBF9-EQUIPMENT BLANK**Lab Sample ID:** JC34266-19**Matrix:** AQ - Equipment Blank**Date Sampled:** 12/27/16**Date Received:** 12/27/16**Percent Solids:** n/a**Project:** Red Hook Ballfields Soil, Brooklyn, NY

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	< 200	200	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Antimony	< 6.0	6.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Arsenic	< 3.0	3.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Barium	< 200	200	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Beryllium	< 1.0	1.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Cadmium	< 3.0	3.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Calcium	< 5000	5000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Chromium	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Cobalt	< 50	50	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Copper	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Iron	< 100	100	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Lead	< 3.0	3.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Magnesium	< 5000	5000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Manganese	< 15	15	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Mercury	< 0.20	0.20	ug/l	1	12/29/16	12/29/16	JA	SW846 7470A ¹ SW846 7470A ⁴
Nickel	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Potassium	< 10000	10000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Selenium	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Silver	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Sodium	< 10000	10000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Thallium	< 2.0	2.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Tin	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Vanadium	< 50	50	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Zinc	< 20	20	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³

(1) Instrument QC Batch: MA41061

(2) Instrument QC Batch: MA41074

(3) Prep QC Batch: MP97878

(4) Prep QC Batch: MP97892

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RHBF9-EQUIPMENT BLANK	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-19	Date Received:	12/27/16
Matrix:	AQ - Equipment Blank	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	< 0.010	0.010	mg/l	1	12/27/16 21:45	AT	SW846 7196A
Chromium, Trivalent ^a	< 0.020	0.020	mg/l	1	12/30/16 14:30	DE	SW846 6010/7196A M
Cyanide	< 0.010	0.010	mg/l	1	01/05/17 14:12	BM	EPA 335.4/LACHAT

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

4.24
4

Report of Analysis

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Client Sample ID: RHBF9-EQUIPMENT BLANK
Lab Sample ID: JC34266-19F
Matrix: AQ - Equip Blank Filtered
Project: Red Hook Ballfields Soil, Brooklyn, NY

Date Sampled: 12/27/16
Date Received: 12/27/16
Percent Solids: n/a

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	< 200	200	ug/l	1	12/28/16	12/30/16	DE SW846 6010C ²	SW846 3010A ³
Antimony	< 6.0	6.0	ug/l	1	12/28/16	12/30/16	DE SW846 6010C ²	SW846 3010A ³
Arsenic	< 3.0	3.0	ug/l	1	12/28/16	12/30/16	DE SW846 6010C ²	SW846 3010A ³
Barium	< 200	200	ug/l	1	12/28/16	12/30/16	DE SW846 6010C ²	SW846 3010A ³
Beryllium	< 1.0	1.0	ug/l	1	12/28/16	12/30/16	DE SW846 6010C ²	SW846 3010A ³
Cadmium	< 3.0	3.0	ug/l	1	12/28/16	12/30/16	DE SW846 6010C ²	SW846 3010A ³
Calcium	< 5000	5000	ug/l	1	12/28/16	12/30/16	DE SW846 6010C ²	SW846 3010A ³
Chromium	< 10	10	ug/l	1	12/28/16	12/30/16	DE SW846 6010C ²	SW846 3010A ³
Cobalt	< 50	50	ug/l	1	12/28/16	12/30/16	DE SW846 6010C ²	SW846 3010A ³
Copper	< 10	10	ug/l	1	12/28/16	12/30/16	DE SW846 6010C ²	SW846 3010A ³
Iron	< 100	100	ug/l	1	12/28/16	12/30/16	DE SW846 6010C ²	SW846 3010A ³
Lead	< 3.0	3.0	ug/l	1	12/28/16	12/30/16	DE SW846 6010C ²	SW846 3010A ³
Magnesium	< 5000	5000	ug/l	1	12/28/16	12/30/16	DE SW846 6010C ²	SW846 3010A ³
Manganese	< 15	15	ug/l	1	12/28/16	12/30/16	DE SW846 6010C ²	SW846 3010A ³
Mercury	< 0.20	0.20	ug/l	1	12/29/16	12/29/16	JA SW846 7470A ¹	SW846 7470A ⁴
Nickel	< 10	10	ug/l	1	12/28/16	12/30/16	DE SW846 6010C ²	SW846 3010A ³
Potassium	< 10000	10000	ug/l	1	12/28/16	12/30/16	DE SW846 6010C ²	SW846 3010A ³
Selenium	< 10	10	ug/l	1	12/28/16	12/30/16	DE SW846 6010C ²	SW846 3010A ³
Silver	< 10	10	ug/l	1	12/28/16	12/30/16	DE SW846 6010C ²	SW846 3010A ³
Sodium	< 10000	10000	ug/l	1	12/28/16	12/30/16	DE SW846 6010C ²	SW846 3010A ³
Thallium	< 2.0	2.0	ug/l	1	12/28/16	12/30/16	DE SW846 6010C ²	SW846 3010A ³
Tin	< 10	10	ug/l	1	12/28/16	12/30/16	DE SW846 6010C ²	SW846 3010A ³
Vanadium	< 50	50	ug/l	1	12/28/16	12/30/16	DE SW846 6010C ²	SW846 3010A ³
Zinc	< 20	20	ug/l	1	12/28/16	12/30/16	DE SW846 6010C ²	SW846 3010A ³

(1) Instrument QC Batch: MA41061

(2) Instrument QC Batch: MA41074

(3) Prep QC Batch: MP97878

(4) Prep QC Batch: MP97892

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RHBF9-EQUIPMENT BLANK	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-19F	Date Received:	12/27/16
Matrix:	AQ - Equip Blank Filtered	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	< 0.010	0.010	mg/l	1	12/27/16 21:55	AT	SW846 7196A
Chromium, Trivalent ^a	< 0.020	0.020	mg/l	1	12/30/16 15:05	DE	SW846 6010/7196A M

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-04	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-20	Date Received:	12/28/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270D SW846 3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2P65895.D	1	12/31/16	CS	12/30/16	OP99558	E2P2886
Run #2							

	Initial Volume	Final Volume
Run #1	975 ml	1.0 ml
Run #2		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	2.1	0.91	ug/l	
	3&4-Methylphenol	ND	2.1	0.90	ug/l	
87-86-5	Pentachlorophenol	ND	4.1	1.4	ug/l	
108-95-2	Phenol	ND	2.1	0.40	ug/l	
83-32-9	Acenaphthene	7.9	1.0	0.20	ug/l	
208-96-8	Acenaphthylene	ND	1.0	0.14	ug/l	
120-12-7	Anthracene	2.5	1.0	0.22	ug/l	
56-55-3	Benzo(a)anthracene	0.93	1.0	0.21	ug/l	J
50-32-8	Benzo(a)pyrene	0.83	1.0	0.22	ug/l	J
205-99-2	Benzo(b)fluoranthene	0.82	1.0	0.21	ug/l	J
191-24-2	Benzo(g,h,i)perylene	0.43	1.0	0.35	ug/l	J
207-08-9	Benzo(k)fluoranthene	ND	1.0	0.21	ug/l	
218-01-9	Chrysene	1.3	1.0	0.18	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	1.0	0.34	ug/l	
132-64-9	Dibenzofuran	2.8	5.1	0.23	ug/l	J
206-44-0	Fluoranthene	2.9	1.0	0.17	ug/l	
86-73-7	Fluorene	5.2	1.0	0.18	ug/l	
118-74-1	Hexachlorobenzene	ND	1.0	0.33	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	1.0	0.34	ug/l	
91-20-3	Naphthalene	56.4	1.0	0.24	ug/l	
85-01-8	Phenanthrene	11.3	1.0	0.18	ug/l	
129-00-0	Pyrene	3.1	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	36%		14-88%
4165-62-2	Phenol-d5	28%		10-110%
118-79-6	2,4,6-Tribromophenol	127%		39-149%
4165-60-0	Nitrobenzene-d5	72%		32-128%
321-60-8	2-Fluorobiphenyl	79%		35-119%
1718-51-0	Terphenyl-d14	85%		10-126%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-04	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-20	Date Received:	12/28/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8151 SW846 8151/3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G105305.D	1	01/05/17	VDT	12/29/16	OP99567	G3G3682
Run #2							

	Initial Volume	Final Volume
Run #1	300 ml	2.5 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	0.083	0.039	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	80%		39-159%
19719-28-9	2,4-DCAA	86%		39-159%

ND = Not detected MDL = Method Detection Limit
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J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	RHBF9-04	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-20	Date Received:	12/28/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8081B SW846 3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1G131122.D	1	01/04/17	RK	12/30/16	OP99565	G1G4189
Run #2							

	Initial Volume	Final Volume
Run #1	300 ml	2.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.0067	0.0040	ug/l	
319-84-6	alpha-BHC	ND	0.0067	0.0040	ug/l	
319-85-7	beta-BHC	ND	0.0067	0.0038	ug/l	
319-86-8	delta-BHC	ND	0.0067	0.0030	ug/l	
58-89-9	gamma-BHC (Lindane)	ND	0.0067	0.0019	ug/l	
5103-71-9	alpha-Chlordane	ND	0.0067	0.0031	ug/l	
60-57-1	Dieldrin	ND	0.0067	0.0024	ug/l	
72-54-8	4,4' -DDD	ND	0.0067	0.0025	ug/l	
72-55-9	4,4' -DDE	ND	0.0067	0.0041	ug/l	
50-29-3	4,4' -DDT	ND	0.0067	0.0033	ug/l	
72-20-8	Endrin	ND	0.0067	0.0034	ug/l	
1031-07-8	Endosulfan sulfate	ND	0.0067	0.0035	ug/l	
959-98-8	Endosulfan-I	ND	0.0067	0.0033	ug/l	
33213-65-9	Endosulfan-II	ND	0.0067	0.0029	ug/l	
76-44-8	Heptachlor	ND	0.0067	0.0025	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	100%		26-132%
877-09-8	Tetrachloro-m-xylene	80%		26-132%
2051-24-3	Decachlorobiphenyl	45%		10-118%
2051-24-3	Decachlorobiphenyl	61%		10-118%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-04	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-20	Date Received:	12/28/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8082A SW846 3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G140890.D	1	01/02/17	HB	12/30/16	OP99564	G2G3906
Run #2							

	Initial Volume	Final Volume
Run #1	300 ml	2.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.33	0.10	ug/l	
11104-28-2	Aroclor 1221	ND	0.33	0.20	ug/l	
11141-16-5	Aroclor 1232	ND	0.33	0.13	ug/l	
53469-21-9	Aroclor 1242	ND	0.33	0.19	ug/l	
12672-29-6	Aroclor 1248	ND	0.33	0.28	ug/l	
11097-69-1	Aroclor 1254	ND	0.33	0.16	ug/l	
11096-82-5	Aroclor 1260	ND	0.33	0.27	ug/l	
1336-36-3	Total PCBs	ND	0.33		ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	83%		10-161%
877-09-8	Tetrachloro-m-xylene	74%		10-161%
2051-24-3	Decachlorobiphenyl	39%		10-137%
2051-24-3	Decachlorobiphenyl	36%		10-137%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-04	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-20	Date Received:	12/28/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	2040	200	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁶
Antimony	< 6.0	6.0	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁶
Arsenic	198	3.0	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁶
Barium	569	200	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁶
Beryllium	< 1.0	1.0	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁶
Cadmium	< 3.0	3.0	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁶
Calcium	232000	5000	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁶
Chromium	12.7	10	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁶
Cobalt	< 50	50	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁶
Copper	38.7	10	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁶
Iron	19200	100	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁶
Lead	143	3.0	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁶
Magnesium	44100	5000	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁶
Manganese	1110	15	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁶
Mercury	1.9	0.20	ug/l	1	12/29/16	12/29/16	JA SW846 7470A ¹	SW846 7470A ⁵
Nickel	< 10	10	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁶
Potassium	23600	10000	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁶
Selenium	< 10	10	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁶
Silver	< 10	10	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁶
Sodium	324000	20000	ug/l	2	12/30/16	01/03/17	RP SW846 6010C ³	SW846 3010A ⁶
Thallium	< 2.0	2.0	ug/l	1	12/30/16	01/04/17	DE SW846 6010C ⁴	SW846 3010A ⁶
Tin	< 10	10	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁶
Vanadium	< 50	50	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁶
Zinc	163	20	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁶

(1) Instrument QC Batch: MA41061

(2) Instrument QC Batch: MA41074

(3) Instrument QC Batch: MA41088

(4) Instrument QC Batch: MA41097

(5) Prep QC Batch: MP97892

(6) Prep QC Batch: MP97900

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RHBF9-04	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-20	Date Received:	12/28/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent ^a	0.034	0.010	mg/l	1	12/28/16 16:05	RP	SW846 7196A
Chromium, Trivalent ^b	< 0.030	0.030	mg/l	1	12/30/16 18:10	DE	SW846 6010/7196A M
Cyanide	< 0.010	0.010	mg/l	1	01/05/17 14:13	BM	EPA 335.4/LACHAT

- (a) Analysis done out of holding time.
- (b) Calculated as: (Chromium) - (Chromium, Hexavalent). Detection limit raised due to variations in the total and hexavalent chromium.

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-04	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-20F	Date Received:	12/28/16
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	< 200	200	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁵
Antimony	< 6.0	6.0	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁵
Arsenic	174	3.0	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁵
Barium	556	200	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁵
Beryllium	< 1.0	1.0	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁵
Cadmium	< 3.0	3.0	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁵
Calcium	250000	5000	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁵
Chromium	< 10	10	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁵
Cobalt	< 50	50	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁵
Copper	< 10	10	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁵
Iron	14200	100	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁵
Lead	< 3.0	3.0	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁵
Magnesium	49000	5000	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁵
Manganese	1170	15	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁵
Mercury	< 0.20	0.20	ug/l	1	12/29/16	12/29/16	JA SW846 7470A ¹	SW846 7470A ⁴
Nickel	< 10	10	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁵
Potassium	26900	10000	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁵
Selenium	< 10	10	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁵
Silver	< 10	10	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁵
Sodium	365000	20000	ug/l	2	12/30/16	01/03/17	RP SW846 6010C ³	SW846 3010A ⁵
Thallium	< 2.0	2.0	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁵
Tin	< 10	10	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁵
Vanadium	< 50	50	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁵
Zinc	< 20	20	ug/l	1	12/30/16	12/30/16	DE SW846 6010C ²	SW846 3010A ⁵

(1) Instrument QC Batch: MA41061

(2) Instrument QC Batch: MA41074

(3) Instrument QC Batch: MA41088

(4) Prep QC Batch: MP97892

(5) Prep QC Batch: MP97900

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RHBF9-04	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-20F	Date Received:	12/28/16
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent ^a	< 0.010	0.010	mg/l	1	12/28/16 16:05	RP	SW846 7196A
Chromium, Trivalent ^b	< 0.020	0.020	mg/l	1	12/30/16 18:27	DE	SW846 6010/7196A M

(a) Analysis done out of holding time.
(b) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Misc. Forms

5

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody

Parameter Certification Exceptions

Job Number: JC34266
Account: TRCNYNB TRC
Project: Red Hook Ballfields Soil, Brooklyn, NY

The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
Chromium, Trivalent		SW846 6010/7196A M	AQ	Accutest is not certified for this parameter. ^a
Chromium, Trivalent		SW846 6010/7196A M	SO	Accutest is not certified for this parameter. ^a

(a) Lab cert for analyte not supported by NJDEP, OQA. Only methods/analytes required for reporting by the State of NJ can be certified in NJ. Use of this analyte for compliance must be verified through the appropriate regulatory office.

Certification exceptions shown are based on the New Jersey DEP certifications. Applicability in other states may vary. Please contact your laboratory representative if additional information is required for a specific regulatory program.



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PAGE 1 OF 1

Client / Reporting Information				Project Information				Requested Analysis (see TEST CODE sheet)				Matrix Codes			
Company Name TRC Engineers Inc.				Project Name Red Hook Ball Field 9				FED-EX Tracking #				Bottle Order Control #			
Street Address 1430 Broadway				Street Bay St.				SGS Accutest Quote #				SGS Accutest Job # JC34266			
City New York				City Brooklyn				SGS Accutest Quote #				SGS Accutest Job #			
State NY				State NY				SGS Accutest Quote #				SGS Accutest Job #			
Zip 10018				Zip 11201				SGS Accutest Quote #				SGS Accutest Job #			
Project Contact Wes Lindemuth				Project # 24684.1000.0000				SGS Accutest Quote #				SGS Accutest Job #			
Phone # 212 221 7822				Client Purchase Order #				SGS Accutest Quote #				SGS Accutest Job #			
Sample(s) Name(s) K Adams				Project Manager Wes Lindemuth				SGS Accutest Quote #				SGS Accutest Job #			
Phone # 631 329 0020				Attention:				SGS Accutest Quote #				SGS Accutest Job #			
SGS Accutest Sample #				Collection				Number of preserved Bottles				LAB USE ONLY			
Field ID / Point of Collection				MEOH/DI Vial #				Date				Time			
1 RHBFG (2-4)				12/22/16				1320				RA			
2 RHBFG (5-7)				1325				1325				SO			
3 RHBFG (8-10)				1330				1330				GW			
4 RHBFG				1440				1440				GW			
INITIAL ASSESSMENT				2Bx				INITIAL ASSESSMENT				2Bx			
LABEL VERIFICATION				OC				LABEL VERIFICATION				OC			
Turnaround Time (Business days)				Data Deliverable Information				Comments / Special Instructions				Sample inventory is verified upon receipt in the Laboratory			
☒ Std. 10 Business Days				Approved by (SGS Accutest PM): / Date:				☐ Commercial "a" (Level 1)				☐ NYASP Category A			
☐ 5 Day RUSH								☐ Commercial "b" (Level 2)				☐ NYASP Category B			
☐ 3 Day RUSH								☐ FULLT1 (Level 3+4)				☐ State Forms			
☐ 2 Day RUSH								☐ NJ Reduced				☐ EDD Format			
☐ 1 Day RUSH								☐ Commercial "C"				☐ Other			
☐ other								☐ NJ Data of Known Quality Protocol Reporting							
Emergency & Rush T/A data available VIA Lablink				Commercial "A" = Results Only, Commercial "B" = Results + QC Summary				Commercial "A" = Results Only, Commercial "B" = Results + QC Summary							
NJ Reduced = Results + QC Summary + Partial Raw data															
Sample Custody must be documented below each time samples change possession, including courier delivery.															
Relinquished by Sampler: 1 [Signature]				Date/Time: 12/22/16 16:50				Received By: 1 [Signature]				Date/Time: 12/22/16 16:50			
Relinquished by Sampler: 3 [Signature]				Date/Time:				Received By: 3 [Signature]				Date/Time:			
Relinquished by Sampler: 5 [Signature]				Date/Time:				Received By: 5 [Signature]				Date/Time:			
Custody Seal #				☐ Intact				Preserved where applicable				☐ On Ice			
☐ Not Intact												Cooler Temp: 2.9°C			

JC34266: Chain of Custody

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E/11/16

Client / Reporting Information		Project Information		Requested Analysis (see TEST CODE sheet)		Matrix Codes	
Company Name TRC Engineers, Inc.		Project Name Red Hook Ball Field 9		FED-EX Tracking #		Bottle Order Control #	
Street Address 1430 Broadway		Street Bay St.		SGS Accutest Quote #		SGS Accutest Job # JC34266	
City New York NY		City Brooklyn NY		Billing Information (if different from Report to)			
Project Contact Wes Lindemuth		Project # 246184.1000.000		Company Name			
Phone # 212-221-7822		Client Purchase Order #		Street Address			
Fax # 212-221-7840		City		State		Zip	
Sample(s) Name(s) R. Adams		Project Manager		Attention:			
SGS Accutest Sample #		Field ID / Point of Collection		MEOH/DI Vial #		LAB USE ONLY	
5		RHBFA-02 (2-4)		12/27/16		0850	
6		RHBFA-02 (5-7)		0855		SC	
7		RHBFA-02 (8-10)		0900		SC	
8F		RHBFA-02		1045		GW	
9		RHBFA-03 (2-4)		1145		SC	
10		RHBFA-03 (5-7)		1150		SC	
11		RHBFA-03 (8-10)		1155		SC	
12F		RHBFA-03		1305		GW	
13		RHBFA-04 (2-4)		1310		SC	
14		RHBFA-04 (5-7)		1315		SC	
15		RHBFA-04 (8-10)		1320		SC	
16		RHBFA-DUP-01		1400		SC	
Turnaround Time (Business days)		Approved by (SGS Accutest PM): / Date:		Data Deliverable Information		Comments / Special Instructions	
☒ Std. 10 Business Days		☐ Commercial "a" (Level 1)		☐ NYASP Category A		Please combine all samples from Ball Field 9 (Prefix RHBFA-) into one report including field blank and eqip blank. All samples for Ball Field 9 have now been collected and submitted. Sample inventory is verified upon receipt in the Laboratory.	
☐ 5 Day RUSH		☐ Commercial "b" (Level 2)		☐ NYASP Category B			
☐ 3 Day RUSH		☐ FULLT1 (Level 3+4)		☐ State Forms			
☐ 2 Day RUSH		☐ NJ Reduced		☐ EDD Format			
☐ 1 Day RUSH		☐ Commercial "C"		☐ Other			
☐ other		☐ NJ Data of Known Quality Protocol Reporting		☐ Commercial "A" = Results Only, Commercial "B" = Results + QC Summary			
Emergency & Rush T/A data available VIA Lablink		NJ Reduced = Results + QC Summary + Partial Raw data					
Relinquished by Sampler:		Sample Custody must be documented below each time samples change possession, including courier delivery.		Relinquished by:		Date Time:	
3		Date Time: 12/27/16 1510		2		12/27/16 1650	
Relinquished by Sampler:		Received By:		Relinquished by:		Received By:	
3		3		4		4	
Relinquished by Sampler:		Received By:		Custody Seal #		On Ice	
5		5		Intact		Cooler Temp.	
				Not Intact			

04.0 03.9 04.1 5.0

JC34266: Chain of Custody

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PAGE 2 OF 2

Client / Reporting Information		Project Information		Requested Analysis (see TEST CODE sheet)		Matrix Codes	
Company Name TRC Engineers, Inc.		Project Name Red Hook Ball Field		FED-EX Tracking #		Bottle Order Control #	
Street Address 1430 Broadway		Street Bay St.		SGS Accutest Quote #		SGS Accutest Job # JC34266	
City New York NY		City Brooklyn NY		SGS Accutest Quote #		SGS Accutest Job #	
State NY		State NY		SGS Accutest Quote #		SGS Accutest Job #	
Zip 10018		Zip 11201		SGS Accutest Quote #		SGS Accutest Job #	
Project Contact W. Lindemuth		Project # 246184.1000.000		SGS Accutest Quote #		SGS Accutest Job #	
Phone # 212-221-7822		Client Purchase Order #		SGS Accutest Quote #		SGS Accutest Job #	
Fax # 212-221-7840		City		SGS Accutest Quote #		SGS Accutest Job #	
Sampler(s) Name(s) R. Adams		Project Manager		SGS Accutest Quote #		SGS Accutest Job #	
Phone # 544		Attention:		SGS Accutest Quote #		SGS Accutest Job #	
SGS Accutest Sample #		Collection		Number of preserved Bottles		LAB USE ONLY	
Field ID / Point of Collection		MEOH/DI Vial #		Date		Time	
17F RHBF9-GW-DUP-01		12/27/16		1430		RA GW	
18F RH - Field Blank		1450		1450		11 12 8	
19F RH - Equipment Blank		1500		1500		11 12 8	
Turnaround Time (Business days)		Approved by (SGS Accutest PM): / Date:		Data Deliverable Information		Comments / Special Instructions	
☒ Std. 10 Business Days		☐ Commercial "a" (Level 1)		☐ NYASP Category A		Please combine all samples from Ball Field 9 (Prefix RHBF9-) into one report including field blank and equip blank. All samples for Ball Field 9 have now been collected and submitted.	
☐ 5 Day RUSH		☐ Commercial "b" (Level 2)		☐ NYASP Category B			
☐ 3 Day RUSH		☐ FULLT1 (Level 3+4)		☐ State Forms			
☐ 2 Day RUSH		☐ NJ Reduced		☐ EDD Format			
☐ 1 Day RUSH		☐ Commercial "C"		☐ Other			
☐ other		☐ NJ Data of Known Quality Protocol Reporting		☐ Commercial "A" = Results Only, Commercial "B" = Results + QC Summary			
Emergency & Rush T/A data available VJA Lablink		NJ Reduced = Results + QC Summary + Partial Raw data					
Relinquished by Sampler: 1		Date Time: 12/27/16 1510		Received By: 1		Date Time: 12/27/16 1632	
Relinquished by Sampler: 3		Date Time:		Received By: 3		Date Time:	
Relinquished by Sampler: 5		Date Time:		Received By: 5		Date Time:	
Custody Seal #		☐ Intact		☐ Not Intact		Preserved where Applicable	
		☐ On Ice		☐ Cooler Temp.			

090, 039, 091, 010

JC34266: Chain of Custody

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Client / Reporting Information	Project Information	Requested Analysis (see TEST CODE sheet)	Matrix Codes
Company Name TRC Engineers Inc. Street Address 1430 Broadway City New York NY State NY Zip 10018 Project Contact Wes Lindemuth Phone # 212-221-7822 E-mail WES@TRCSOLUTIONS.COM Project Manager R. Adams Phone # 212-221-7840	Project Name: Red Hook Ball Field 9 Street: Bay St. City: Brooklyn NY State: NY Zip: 11201 Client Purchase Order # 246184-1000.0000 Attention: SAME	Part 315-SVOCs (EPA 8270.D) Part 315-Pesticides (EPA 8081.B) Part 315-Silox (EPA 8151) TCL PCBs (EPA 8082A) Volatile (EPA 9012B) The Metals (EPA 9012B) NIOSMDS PCP 300 d. And HCB	Matrix Codes DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OL - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank
SGS Account Sample # -20 Field ID / Point of Collection RHBF9-04	MEOH/DI Vial # Date 12/27/16 Time 14:35 Sampled by RA Matrix GW # of bottles 33	Number of preserved bottles HCl 36 NaOH 24 HNO3 H2SO4 NONE IN Water MEGH ENCORE	LAB USE ONLY E42
Turnaround Time (Business days) ☒ Std. 10 Business Days ☐ 5 Day RUSH ☐ 3 Day RUSH ☐ 2 Day RUSH ☐ 1 Day RUSH ☐ other			
Approved by (SGS Accutest PM) / Date: 		Data Deliverable Information ☐ Commercial "a" (Level 1) ☐ Commercial "b" (Level 2) ☐ FULLT1 (Level 3+4) ☐ NJ Reduced ☐ Commercial "C" ☐ NJ Data of Known Quality Protocol Reporting Commercial "A" = Results Only, Commercial "B" = Results + QC Summary NJ Reduced = Results + QC Summary + Partial Raw data	
Comments / Special Instructions Please combine all samples from Ball Field 9 (Prefix RHBF9-) into one report. *4 samples need to be filtered in lab are labeled appropriately on bottle		INITIAL ASSESSMENT LABEL VERIFICATION	
Sample Custody must be documented below each time samples change possession, including courier delivery.			
Relinquished by Sampler: 1 Robert chambers Relinquished by Sampler: 3 Relinquished by Sampler: 5	Date Time: 12/28/16 9:16 Date Time: Date Time: 	Received By: 1 Robert chambers Received By: 3 Received By: 5	Date Time: 12/28/16 Date Time: Date Time:
Emergency & Rush T/A data available VIA Lablink		Preserved where applicable 583 ☐ Intact ☐ Not intact	
On Ice I.G 3.2°C		Cooler Temp. 3.2°C	

SGS Accutest Sample Receipt Summary

Job Number: JC34266

Client: _____

Project: _____

Date / Time Received: 12/28/2016 12:13:00 PM

Delivery Method: _____

Airbill #s: _____

Cooler Temps (Raw Measured) °C: Cooler 5: (3.2);

Cooler Temps (Corrected) °C: Cooler 5: (4.6);

Cooler Security

Y or N

Y or N

- | | |
|--|---|
| 1. Custody Seals Present: ☒ ☐ | 3. COC Present: ☒ ☐ |
| 2. Custody Seals Intact: ☒ ☐ | 4. Smpl Dates/Time OK: ☒ ☐ |

Cooler Temperature

Y or N

- | | |
|---|-----------|
| 1. Temp criteria achieved: ☒ ☐ | IR Gun |
| 2. Cooler temp verification: _____ | |
| 3. Cooler media: _____ | Ice (Bag) |
| 4. No. Coolers: _____ | 1 |

Quality Control Preservation

Y or N

N/A

- | | |
|---|---|
| 1. Trip Blank present / cooler: ☐ ☐ | ✓ |
| 2. Trip Blank listed on COC: ☐ ☐ | ✓ |
| 3. Samples preserved properly: ☒ ☐ | |
| 4. VOCs headspace free: ☐ ☐ | ✓ |

Sample Integrity - Documentation

Y or N

- | | |
|---|--|
| 1. Sample labels present on bottles: ☒ ☐ | |
| 2. Container labeling complete: ☒ ☐ | |
| 3. Sample container label / COC agree: ☒ ☐ | |

Sample Integrity - Condition

Y or N

- | | |
|---|--------|
| 1. Sample recvd within HT: ☒ ☐ | |
| 2. All containers accounted for: ☒ ☐ | |
| 3. Condition of sample: _____ | Intact |

Sample Integrity - Instructions

Y or N N/A

- | | |
|---|---|
| 1. Analysis requested is clear: ☒ ☐ | |
| 2. Bottles received for unspecified tests: ☐ ☒ | |
| 3. Sufficient volume recvd for analysis: ☒ ☐ | |
| 4. Compositing instructions clear: ☐ ☐ | ✓ |
| 5. Filtering instructions clear: ☐ ☐ | ✓ |

Comments

SM089-02
Rev. Date 12/1/16

JC34266: Chain of Custody

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SGS Accutest Sample Receipt Summary

Job Number: JC34266

Client: _____

Project: _____

Date / Time Received: _____

Delivery Method: _____

Airbill #s: _____

Cooler Temps (Raw Measured) °C: Cooler 1: (2.4); Cooler 2: (4.0); Cooler 3: (3.9); Cooler 4: (4.1); Cooler 5: (3.2);

Cooler Temps (Corrected) °C: Cooler 1: (3.8); Cooler 2: (5.4); Cooler 3: (5.3); Cooler 4: (5.5); Cooler 5: (4.6);

Cooler Security

Y or N

Y or N

- | | |
|--|---|
| 1. Custody Seals Present: ☒ ☐ | 3. COC Present: ☒ ☐ |
| 2. Custody Seals Intact: ☒ ☐ | 4. Smpl Dates/Time OK: ☒ ☐ |

Cooler Temperature

Y or N

- | | |
|---|-----------|
| 1. Temp criteria achieved: ☒ ☐ | IR Gun |
| 2. Cooler temp verification: _____ | |
| 3. Cooler media: _____ | Ice (Bag) |
| 4. No. Coolers: _____ | 1 |

Quality Control Preservation

Y or N

N/A

- | | |
|---|--|
| 1. Trip Blank present / cooler: ☐ ☒ ☐ | |
| 2. Trip Blank listed on COC: ☐ ☒ ☐ | |
| 3. Samples preserved properly: ☒ ☐ ☐ | |
| 4. VOCs headspace free: ☐ ☐ ☒ | |

Sample Integrity - Documentation

Y or N

- | | |
|---|--|
| 1. Sample labels present on bottles: ☒ ☐ | |
| 2. Container labeling complete: ☒ ☐ | |
| 3. Sample container label / COC agree: ☒ ☐ | |

Sample Integrity - Condition

Y or N

- | | |
|---|--------|
| 1. Sample recvd within HT: ☒ ☐ | |
| 2. All containers accounted for: ☒ ☐ | |
| 3. Condition of sample: _____ | Intact |

Sample Integrity - Instructions

Y or N N/A

- | | |
|--|--|
| 1. Analysis requested is clear: ☒ ☐ | |
| 2. Bottles received for unspecified tests: ☐ ☒ | |
| 3. Sufficient volume recvd for analysis: ☒ ☐ | |
| 4. Compositing instructions clear: ☐ ☐ ☒ | |
| 5. Filtering instructions clear: ☐ ☐ ☒ | |

Comments

SM089-02
Rev. Date 12/1/16

JC34266: Chain of Custody

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SGS Accutest Sample Receipt Summary

Job Number: JC34266

Client: TRC

Project: Red Hook Ball Field 9

Date / Time Received: _____

Delivery Method: Accutest Courier

Airbill #s: _____

Cooler Temps (Raw Measured) °C: Cooler 1: (2.4);

Cooler Temps (Corrected) °C: Cooler 1: (3.8);

Cooler Security

Y or N

Y or N

- | | | | | | |
|---------------------------|-------------------------------------|--------------------------|-----------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | ☒ | ☐ | 3. COC Present: | ☒ | ☐ |
| 2. Custody Seals Intact: | ☒ | ☐ | 4. Smpl Dates/Time OK | ☒ | ☐ |

Cooler Temperature

Y or N

- | | | |
|------------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved: | ☒ | ☐ |
| 2. Cooler temp verification: | IR Gun | |
| 3. Cooler media: | Ice (Bag) | |
| 4. No. Coolers: | 3 | |

Quality Control Preservation

Y or N

N/A

- | | | | |
|---------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Trip Blank present / cooler: | ☐ | ☒ | ☐ |
| 2. Trip Blank listed on COC: | ☐ | ☒ | ☐ |
| 3. Samples preserved properly: | ☒ | ☐ | |
| 4. VOCs headspace free: | ☐ | ☐ | ☒ |

Sample Integrity - Documentation

Y or N

- | | | |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles: | ☒ | ☐ |
| 2. Container labeling complete: | ☒ | ☐ |
| 3. Sample container label / COC agree: | ☒ | ☐ |

Sample Integrity - Condition

Y or N

- | | | |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample recvd within HT: | ☒ | ☐ |
| 2. All containers accounted for: | ☒ | ☐ |
| 3. Condition of sample: | Intact | |

Sample Integrity - Instructions

Y or N

N/A

- | | | | |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear: | ☒ | ☐ | |
| 2. Bottles received for unspecified tests | ☐ | ☒ | |
| 3. Sufficient volume recvd for analysis: | ☒ | ☐ | |
| 4. Compositing instructions clear: | ☐ | ☐ | ☒ |
| 5. Filtering instructions clear: | ☐ | ☐ | ☒ |

Comments -17 Rec'd limited volume of 1x 950ml for SVOC.
 -18 Diss Metals and Diss XCR noted as "Not Field Filtered" on bottle. Please verify if needed. Sample is a FB. We will send filtration requested for Diss XCR.

SM089-02
 Rev. Date 12/1/16

JC34266: Chain of Custody

Page 7 of 10

Response:

- 17- proceed
- 18 proceed with Dissolved and Total Metals and XCR

Job Change Order: JC34266

Requested Date: 1/30/2017 Received Date: 12/22/2016
Account Name: TRC Due Date: 1/10/2017
Project Description: Red Hook Ballfields Soil, Brooklyn, NY Deliverable: NYASPB
CSR: mattc TAT (Days): 14

Sample #: JC34266-10,11,13,14,15, Change:
Log in for GRAINS but SUB to Golder
Dept:
TAT: 14

Above Changes Per: Wes Lindemuth

Date/Time: 1/30/2017 5:35:12 PM

To Client: This Change Order is confirmation of the revisions, previously discussed with the SGS Accutest Client Service Representative.

Job Change Order: JC34266

Requested Date: 1/30/2017 Received Date: 12/22/2016
Account Name: TRC Due Date: 1/10/2017
Project Description: Red Hook Ballfields Soil, Brooklyn, NY Deliverable: NYASPB
CSR: mattc TAT (Days): 14

Sample #: JC34266-1,3 Change:
Dept: Log in for GRAINS but SUB to Golder
TAT:

Above Changes Per: Wes Lindemuth Date/Time: 1/30/2017 5:39:28 PM

To Client: This Change Order is confirmation of the revisions, previously discussed with the SGS Accutest Client Service Representative.

Technical Report for

TRC

Red Hook Ballfields Soil, Brooklyn, NY

246184.1000.0000 / PO#103737

SGS Accutest Job Number: JC34266X

Sampling Dates: 12/22/16 - 12/27/16

Report to:

TRC
1430 Broadway 10th Floor
New York, NY 10018
WLindemuth@trcsolutions.com

ATTN: Wes Lindemuth

Total number of pages in report: 23



Test results contained within this data package meet the requirements
of the National Environmental Laboratory Accreditation Program
and/or state specific certification programs as applicable.

Nancy F. Cole

Nancy Cole
Laboratory Director

Client Service contact: Matt Cordova 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC,
OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (L-A-B L2248)

This report shall not be reproduced, except in its entirety, without the written approval of SGS Accutest.
Test results relate only to samples analyzed.

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Section 3: Misc. Forms 13

3.1: Chain of Custody 14



Sample Summary

TRC

Job No: JC34266X

Red Hook Ballfields Soil, Brooklyn, NY
Project No: 246184.1000.0000 / PO#103737

Sample Number	Collected			Received	Matrix		Client Sample ID
	Date	Time	By		Code	Type	
JC34266-1X	12/22/16	13:20	RA	12/22/16	SO	Soil	RHBF9-01 (2-4)
JC34266-3X	12/22/16	13:30	RA	12/22/16	SO	Soil	RHBF9-01 (8-10)
JC34266-10X	12/27/16	11:50	RA	12/27/16	SO	Soil	RHBF9-03 (5-7)
JC34266-11X	12/27/16	11:55	RA	12/27/16	SO	Soil	RHBF9-03 (8-10)
JC34266-13X	12/27/16	13:10	RA	12/27/16	SO	Soil	RHBF9-04 (2-4)
JC34266-14X	12/27/16	13:15	RA	12/27/16	SO	Soil	RHBF9-04 (5-7)
JC34266-15X	12/27/16	13:20	RA	12/27/16	SO	Soil	RHBF9-04 (8-10)

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Subcontract Lab Data

Report of Analysis

FEBRUARY 2017

1773946.02

ACCUTEST/JC34266-X RED HOOK BALLFIELDS SOIL/NY
SUMMARY OF SOIL DATA

Sample Identification	Sample Type	Sample Depth	Soil Classification	Natural Moisture %	Atterberg Limits				Grain Size Distribution			Compaction		Gs	Unit Weight		Permeability (cm/sec)	Additional Tests Conducted (See Notes)
									% Finer No. 4 Sieve	% Finer No. 200 Sieve	% Finer .005 mm	Maximum Dry Density (lb/cuft)	Optimum Moisture %		Moisture %	Dry (lb/cuft)		
					L.L.	P.L.	P.I.	L.I.										
1 RHBF9-01	Jar	2.0-4.0'	(SM)	12.4	-	-	-	-	100.0	33.3	12.0	-	-	-	-	-	-	-
3 RHBF9-01	Jar	8.0-10.0'	(SM)	12.5	-	-	-	-	100.0	26.2	9.5	-	-	-	-	-	-	-
10 RHBF9-03	Jar	5.0-7.0'	(SM)	30.3	-	-	-	-	100.0	27.4	11.0	-	-	-	-	-	-	-
11 RHBF9-03	Jar	8.0-10.0'	(SM)	23.9	-	-	-	-	100.0	25.0	9.5	-	-	-	-	-	-	-
13 RHBF9-04	Jar	2.0-4.0'	(SM)	14.5	-	-	-	-	100.0	40.5	12.0	-	-	-	-	-	-	-
14 RHBF9-04	Jar	5.0-7.0'	(SM)	19.2	-	-	-	-	100.0	19.4	9.3	-	-	-	-	-	-	-
15 RHBF9-04	Jar	8.0-10.0'	(SM)	61.6	-	-	-	-	100.0	27.0	9.5	-	-	-	-	-	-	-

ABBREVIATIONS: LIQUID LIMIT (LL)
 PLASTIC LIMIT (PL)
 PLASTICITY INDEX (PI)
 LIQUIDITY INDEX (LI)
 SPECIFIC GRAVITY (Gs)
 MOISTURE (Mc)

NOTES: T = TRIAXIAL TEST
 U = UNCONFINED COMPRESSION TEST
 C = CONSOLIDATION TEST
 DS = DIRECT SHEAR TEST
 O = ORGANIC CONTENT
 P = pH

Golder Associates Inc.

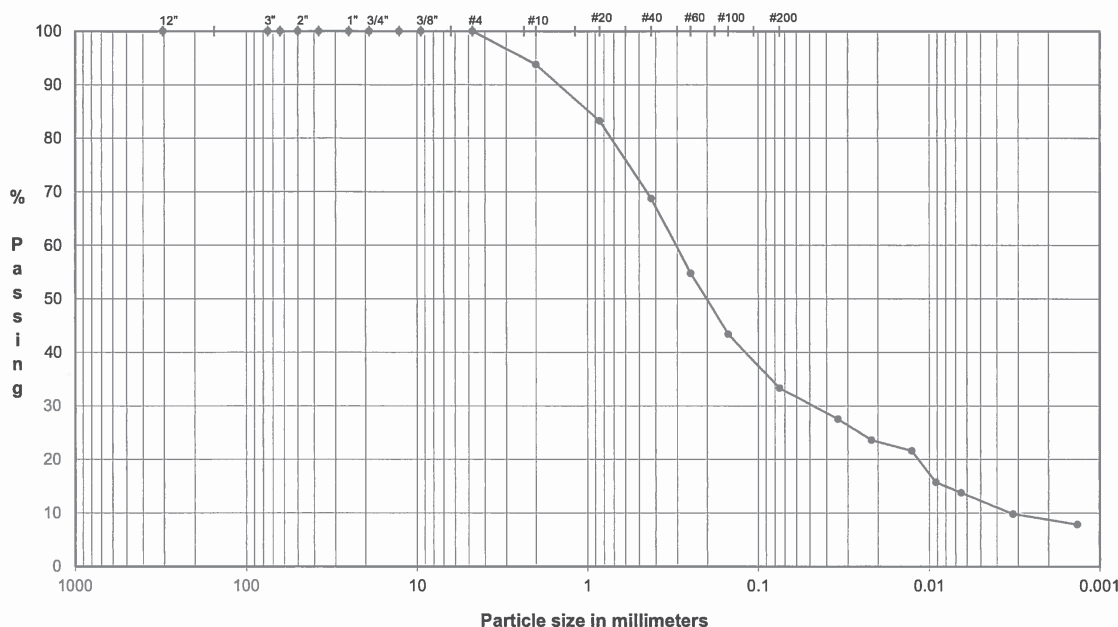
FEBRUARY 2017

1773946.02

PARTICLE SIZE DISTRIBUTION & ATTERBERG LIMITS

ASTM D421, D422, D4318

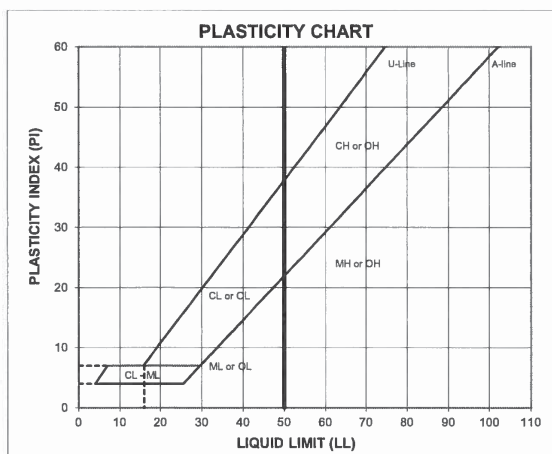
PROJECT NAME: ACCUTEST/JC34266-X RED HOOK BALLFIELDS SOIL/NY
SAMPLE ID: 1 RHBFB9-01 Depth: 2.0-4.0'
TYPE: Jar



COBBLES	Coarse	Fine	Coarse	Medium	Fine	Silt or Clay
	GRAVEL		SAND			FINES

U.S. Standard Sieves Sizes and Numbers	Particle Size (mm)		% Passing	Classification	Percentage
	12.0"	304.8	100.0	Cobbles	0.0
	3.0"	75.0	100.0		
	2.5"	63.5	100.0		
	2.0"	50.0	100.0		
	1.5"	37.5	100.0		
	1.0"	25.0	100.0	Coarse Gravel	0.0
	0.75"	19.0	100.0		
	0.50"	12.7	100.0		
	0.375"	9.5	100.0	Fine Gravel	0.0
	#4	4.8	100.0		
	#10	2.00	93.8	Coarse Sand	6.2
	#20	0.85	83.2		
	#40	0.43	68.7	Medium Sand	25.0
	#60	0.25	54.8		
	#100	0.15	43.4	Fine Sand	35.4
	#200	0.075	33.3		

Hydrometer Analysis	(mm)	% Finer	Fines Silt or Clay	33.3
	0.034	27.5		
	0.022	23.6		
	0.013	21.6		
	0.0092	15.7		
	0.0065	13.8		
	0.0032	9.8		
	0.0014	7.9		



ATTERBERG LIMITS
Method -B (Dry preparation)

M _L	LL	PL	PI	LI
12.4				

LL (oven-dried)	
< 0.75 - ORGANIC (OL/OH)	

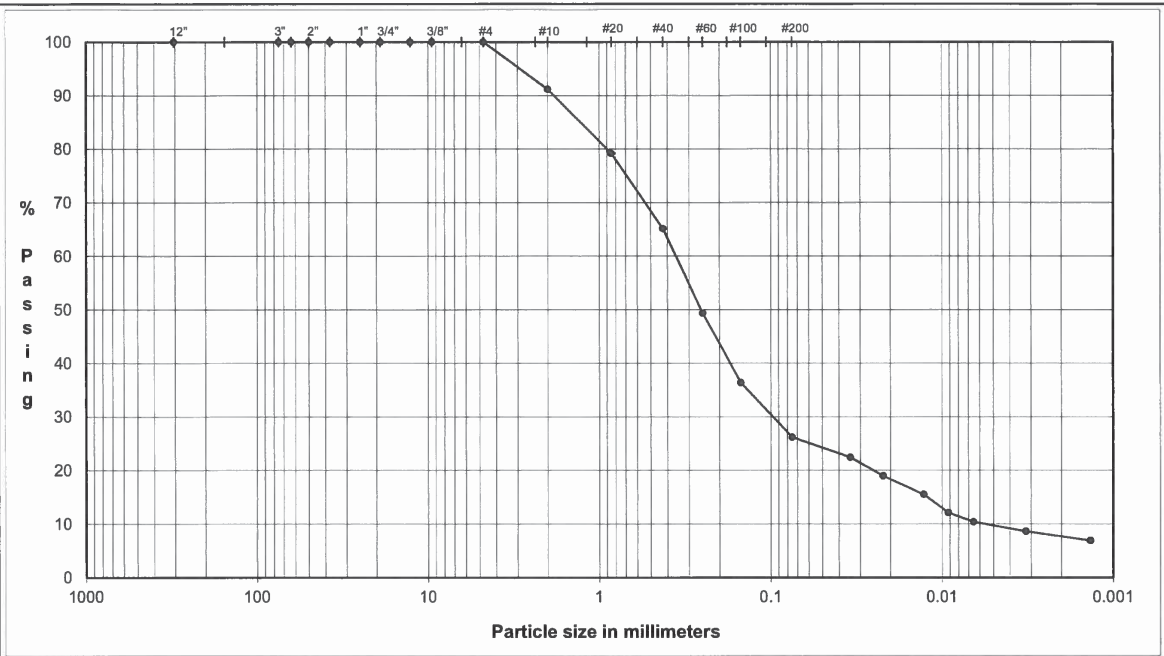
DESCRIPTION: SILTY SAND, fine to coarse; grayish brown.

USCS: (SM)

TECH	TJFT
DATE	2/1/17
CHECK	
REVIEW	
APPROVE	

PARTICLE SIZE DISTRIBUTION & ATTERBERG LIMITS
ASTM D421, D422, D4318

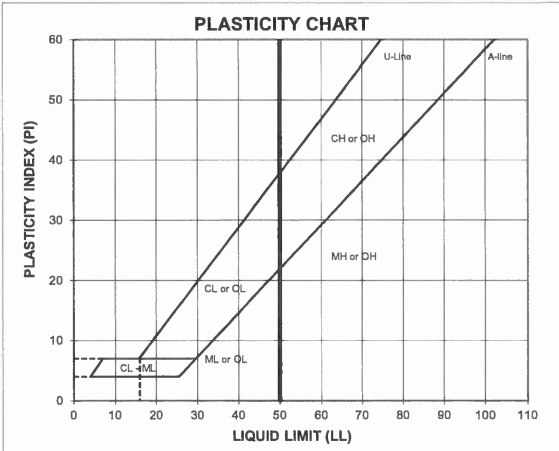
PROJECT NAME: ACCUTEST/JC34266-X RED HOOK BALLFIELDS SOIL/NY
SAMPLE ID: 3 RHB9-01
TYPE: Jar Depth: 8.0-10.0'



	Coarse	Fine	Coarse	Medium	Fine	Silt or Clay
COBBLES	GRAVEL		SAND			FINES

U.S. Standard Sieves Sizes and Numbers	Particle Size			Particle Size	
	(mm)	% Passing	Classification	Percentage	
	12.0"	304.8	100.0	Cobbles	0.0
	3.0"	75.0	100.0		
	2.5"	63.5	100.0		
	2.0"	50.0	100.0		
	1.5"	37.5	100.0		
	1.0"	25.0	100.0	Coarse Gravel	0.0
	0.75"	19.0	100.0		
	0.50"	12.7	100.0		
	0.375"	9.5	100.0	Fine Gravel	0.0
	#4	4.8	100.0		
	#10	2.00	91.2	Coarse Sand	8.8
	#20	0.85	79.2	Medium Sand	26.0
	#40	0.43	65.2		
#60	0.25	49.4			
#100	0.15	36.4	Fine Sand	39.0	
#200	0.075	26.2			

Hydrometer Analysis	(mm)	%Finer	Fines Silt or Clay	26.2
	0.034	22.4		
	0.022	19.0		
	0.013	15.5		
	0.0092	12.1		
	0.0065	10.3		
	0.0032	8.6		
	0.0014	6.9		



ATTERBERG LIMITS Method -B (Dry preparation)				
M _L	LL	PL	PI	LI
12.5				

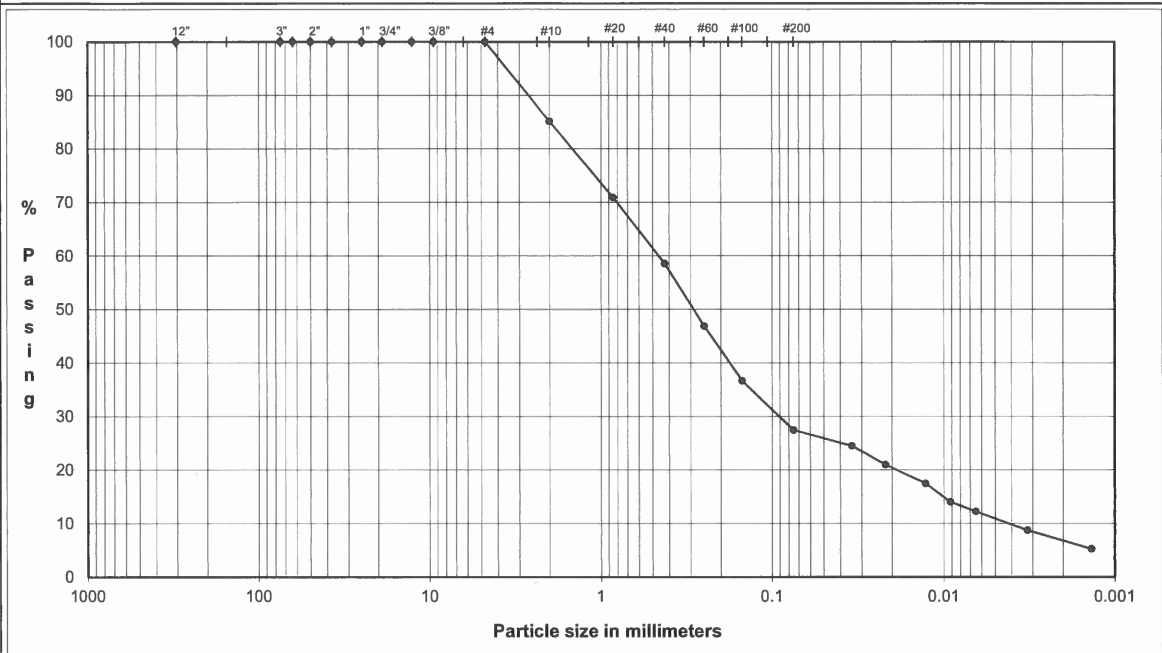
LL (oven-dried)
< 0.75 - ORGANIC (LO/LOH)

DESCRIPTION: SILTY SAND, fine to coarse; grayish brown.
USCS: (SM)

TECH TJ/FT
DATE 2/1/17
CHECK
REVIEW
APPROVE

PARTICLE SIZE DISTRIBUTION & ATTERBERG LIMITS
ASTM D421, D422, D4318

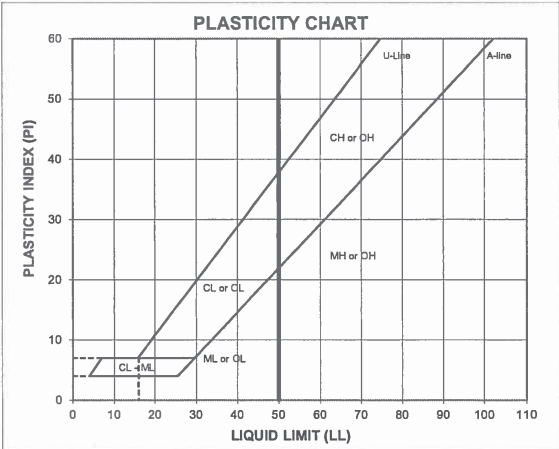
PROJECT NAME: ACCUTEST/JC34266-X RED HOOK BALLFIELDS SOIL/NY
SAMPLE ID: 10 RHB9-03 Depth: 5.0-7.0'
TYPE: Jar



COBBLES	Coarse	Fine	Coarse	Medium	Fine	Silt or Clay
	GRAVEL		SAND			FINES

U.S. Standard Sieves Sizes and Numbers	Particle Size (mm)		% Passing	Classification	Percentage
	12.0"	304.8	100.0	Cobbles	0.0
	3.0"	75.0	100.0		
	2.5"	63.5	100.0		
	2.0"	50.0	100.0		
	1.5"	37.5	100.0		
	1.0"	25.0	100.0	Coarse Gravel	0.0
	0.75"	19.0	100.0		
	0.50"	12.7	100.0	Fine Gravel	0.0
	0.375"	9.5	100.0		
	#4	4.8	100.0		
	#10	2.00	85.1	Coarse Sand	14.9
	#20	0.85	70.9		
	#40	0.43	58.5	Medium Sand	26.6
	#60	0.25	46.9		
	#100	0.15	36.6	Fine Sand	31.1
	#200	0.075	27.4		

Hydrometer Analysis	(mm)	% Finer	Fines Silt or Clay	27.4
	0.034	24.5		
	0.022	21.0		
	0.013	17.5		
	0.0092	14.0		
	0.0065	12.2		
	0.0032	8.7		
	0.0014	5.2		



ATTERBERG LIMITS
Method -B (Dry preparation)

M _c	LL	PL	PI	LI
30.3				

LL (oven-dried)	
< 0.75 = ORGANIC (OL/OH)	

DESCRIPTION: SILTY SAND, fine to coarse; dark grayish brown.
USCS: (SM)

TECH TJ
DATE 2/1/17
CHECK
REVIEW
APPROVE

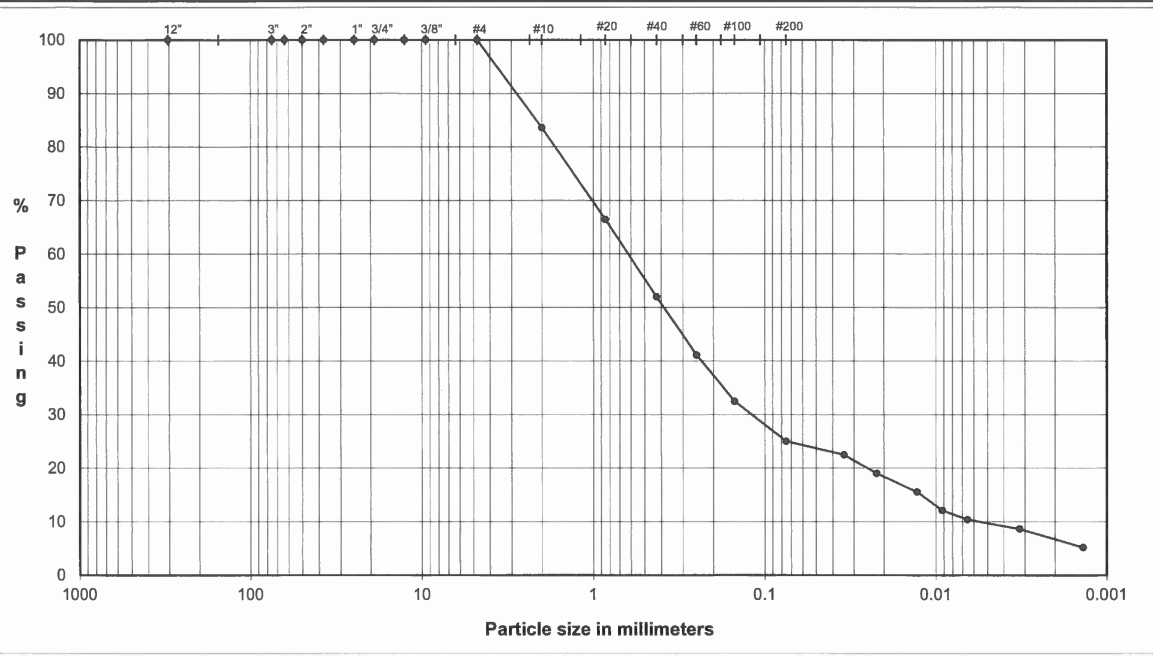


FEBRUARY 2017

1773946.02

PARTICLE SIZE DISTRIBUTION & ATTERBERG LIMITS
ASTM D421, D422, D4318

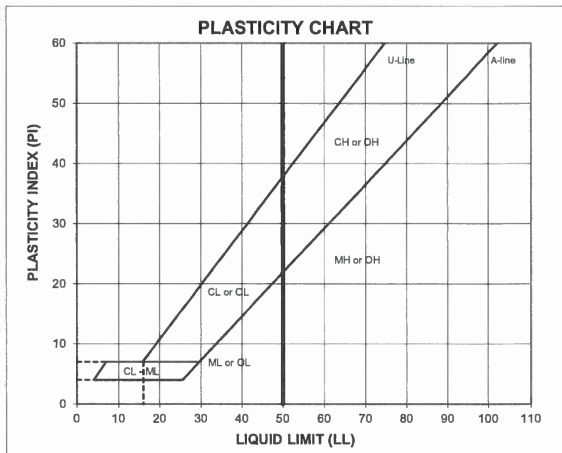
PROJECT NAME: ACCUTEST/JC34266-X RED HOOK BALLFIELDS SOIL/NY
SAMPLE ID: 11 RHB9-03 Depth: 8.0-10.0'
TYPE: Jar



	Coarse	Fine	Coarse	Medium	Fine	Silt or Clay
COBBLES	GRAVEL		SAND			FINES

U.S. Standard Sieves Sizes and Numbers	Particle Size		Particle Size	
	(mm)	% Passing	Classification	Percentage
	12.0"	304.8	100.0	
	3.0"	75.0	100.0	
	2.5"	63.5	100.0	
	2.0"	50.0	100.0	
	1.5"	37.5	100.0	
	1.0"	25.0	100.0	
	0.75"	19.0	100.0	
	0.50"	12.7	100.0	
	0.375"	9.5	100.0	
	#4	4.8	100.0	
	#10	2.00	83.6	
	#20	0.85	66.4	
	#40	0.43	52.0	
	#60	0.25	41.1	
	#100	0.15	32.4	
	#200	0.075	25.0	

Hydrometer Analysis	(mm)	% Finer		
	0.034	22.5	Fines Silt or Clay	25.0
	0.022	19.0		
	0.013	15.6		
	0.0092	12.1		
	0.0065	10.4		
	0.0032	8.7		
	0.0014	5.2		



ATTERBERG LIMITS
Method -B (Dry preparation)

M _L	LL	PL	PI	LI
23.9				

LL (oven-dried)
< 0.75 - ORGANIC (LOOH)

DESCRIPTION: SILTY SAND, fine to coarse; dark gray.
USCS: (SM)

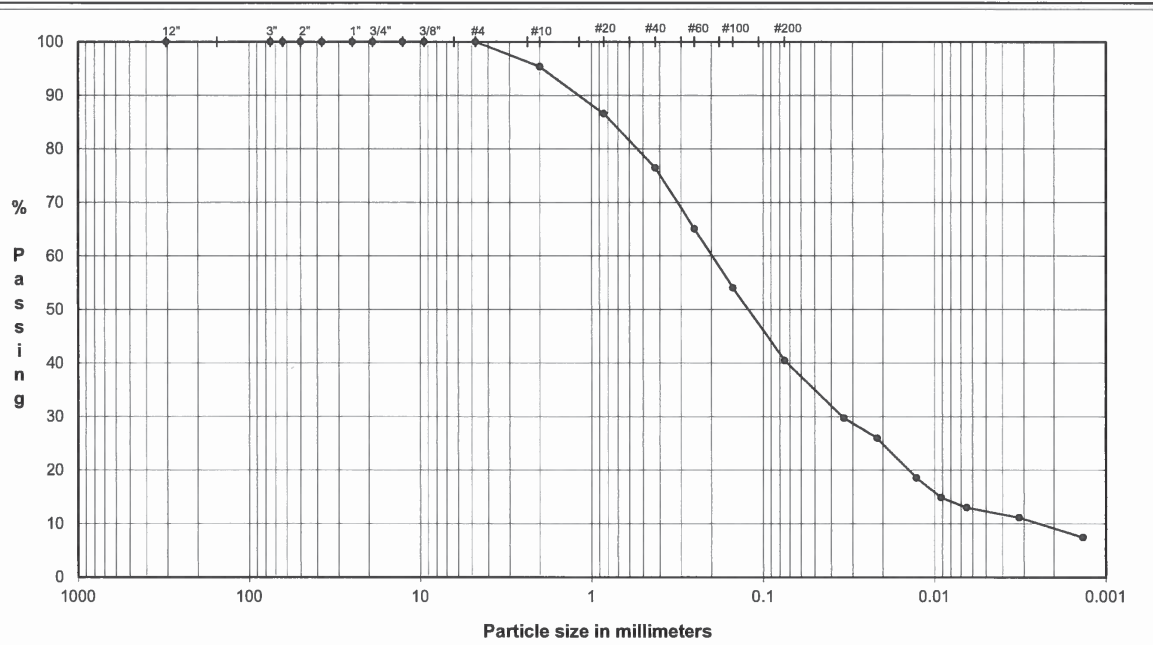
TECH TJ
DATE 2/1/17
CHECK [Signature]
REVIEW [Signature]
APPROVE

FEBRUARY 2017

1773946.02

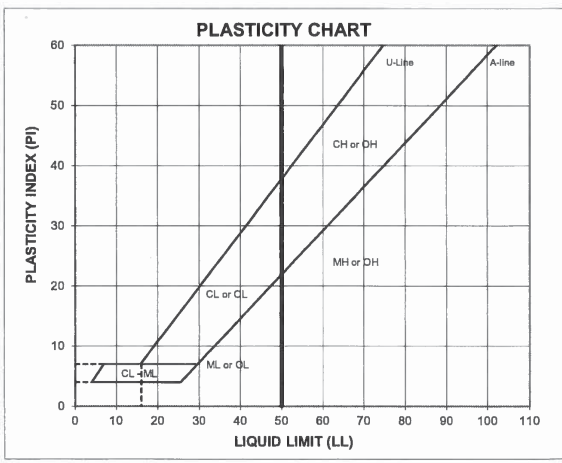
PARTICLE SIZE DISTRIBUTION & ATTERBERG LIMITS
ASTM D421, D422, D4318

PROJECT NAME: ACCUTEST/JC34266-X RED HOOK BALLFIELDS SOIL/NY
SAMPLE ID: 13 RHB9-04 Depth: 2.0-4.0'
TYPE: Jar



	Coarse	Fine	Coarse	Medium	Fine	Silt or Clay
COBBLES	GRAVEL		SAND			FINES

U.S. Standard Sieves Sizes and Numbers	Particle Size		Particle Size		
	(mm)	% Passing	Classification	Percentage	
	12.0"	304.8	100.0	Cobbles	0.0
	3.0"	75.0	100.0		
	2.5"	63.5	100.0		
	2.0"	50.0	100.0	Coarse Gravel	0.0
	1.5"	37.5	100.0		
	1.0"	25.0	100.0		
	0.75"	19.0	100.0		
	0.50"	12.7	100.0		
	0.375"	9.5	100.0	Fine Gravel	0.0
	#4	4.8	100.0		
	#10	2.00	95.4		
	#20	0.85	86.6	Medium Sand	18.9
	#40	0.43	76.4		
	#60	0.25	65.1		
	#100	0.15	54.0		
	#200	0.075	40.5	Fine Sand	36.0
	Hydrometer Analysis	(mm)	%Finer		
0.034		29.7	Fines Silt or Clay	40.5	
0.022		26.0			
0.013		18.6			
0.0092		14.8			
0.0065		13.0			
0.0032		11.1			
0.0014		7.4			



ATTERBERG LIMITS				
Method -B (Dry preparation)				
LL	PL	PI	LI	
14.5				

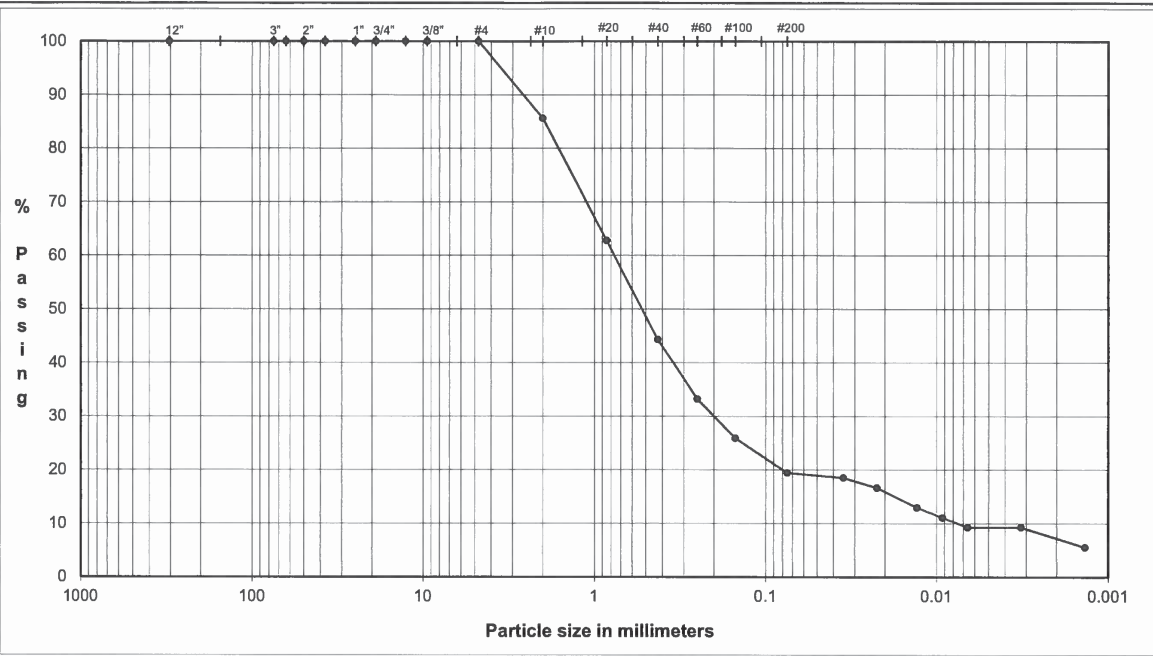
LL (oven-dried)
 < 0.75 - ORGANIC (LO/CH)

DESCRIPTION: SAND and SILT, fine to coarse; reddish brown and gray.
USCS: (SM)

TECH TJ/FT
DATE 2/1/17
CHECK
REVIEW
APPROVE

PARTICLE SIZE DISTRIBUTION & ATTERBERG LIMITS
ASTM D421, D422, D4318

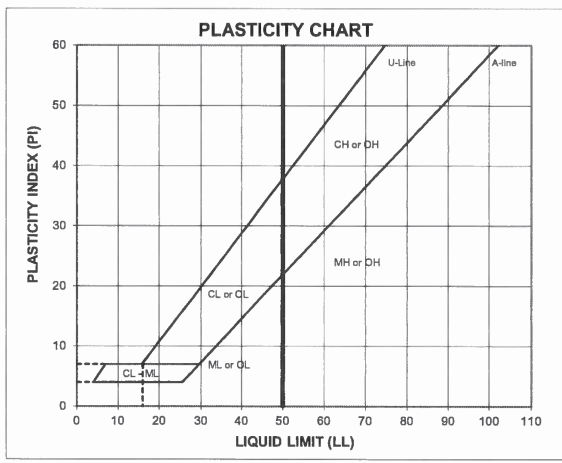
PROJECT NAME: ACCUTEST/JC34266-X RED HOOK BALLFIELDS SOIL/NY
SAMPLE ID: 14 RHB9-04 Depth: 5.0-7.0'
TYPE: Jar



	Coarse	Fine	Coarse	Medium	Fine	Silt or Clay
COBBLES	GRAVEL		SAND			FINES

U.S. Standard Sieves Sizes and Numbers	Particle Size		Particle Size	
	(mm)	% Passing	Classification	Percentage
	12.0"	304.8	100.0	
	3.0"	75.0	100.0	
	2.5"	63.5	100.0	
	2.0"	50.0	100.0	
	1.5"	37.5	100.0	
	1.0"	25.0	100.0	
	0.75"	19.0	100.0	
	0.50"	12.7	100.0	
	0.375"	9.5	100.0	
	#4	4.8	100.0	
	#10	2.00	85.6	
	#20	0.85	62.8	
	#40	0.43	44.3	
	#60	0.25	33.2	
	#100	0.15	25.9	
	#200	0.075	19.4	

Hydrometer Analysis	(mm)	% Finer	Fines Silt or Clay	19.4
	0.035	18.5		
	0.022	16.7		
	0.013	13.0		
	0.0093	11.1		
	0.0066	9.3		
	0.0032	9.3		
	0.0014	5.6		



ATTERBERG LIMITS Method -B (Dry preparation)				
LL	PL	FI	LI	
19.2				

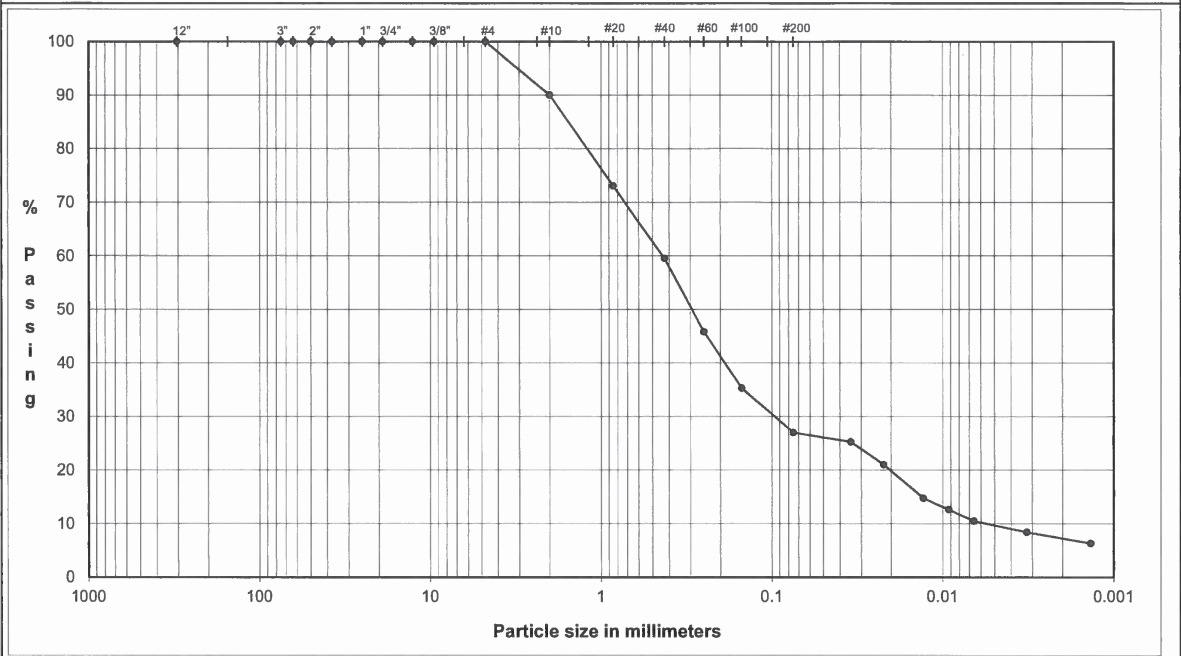
LL (oven-dried)
 < 0.75 = ORGANIC (OL/OH)

DESCRIPTION: SILTY SAND, fine to coarse; grayish brown and red.
USCS: (SM)

TECH TJ/FT
DATE 2/1/17
CHECK
REVIEW
APPROVE

PARTICLE SIZE DISTRIBUTION & ATTERBERG LIMITS
ASTM D421, D422, D4318

PROJECT NAME: ACCUTEST/JC34266-X RED HOOK BALLFIELDS SOIL/NY
SAMPLE ID: 15 RHB9-04 Depth: 8.0-10.0'
TYPE: Jar

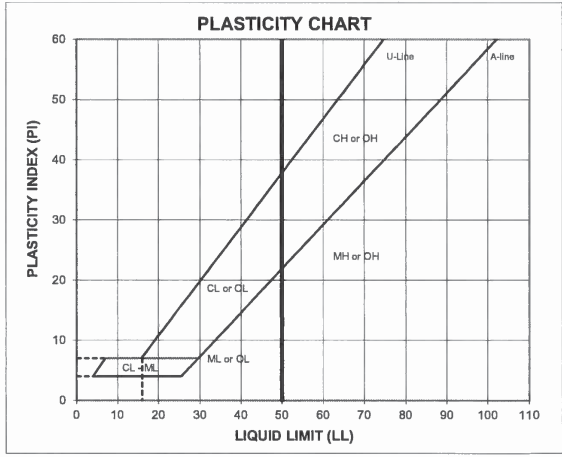


	Coarse	Fine	Coarse	Medium	Fine	Silt or Clay
COBBLES	GRAVEL		SAND			FINES

Particle Size	(mm)	% Passing	Particle Size	
			Classification	Percentage
12.0"	304.8	100.0	Cobbles	0.0
3.0"	75.0	100.0		
2.5"	63.5	100.0		
2.0"	50.0	100.0		
1.5"	37.5	100.0		
1.0"	25.0	100.0	Coarse Gravel	0.0
0.75"	19.0	100.0		
0.50"	12.7	100.0		
0.375"	9.5	100.0		
#4	4.8	100.0	Fine Gravel	0.0
#10	2.00	90.1	Coarse Sand	9.9
#20	0.85	73.1		
#40	0.43	59.5	Medium Sand	30.6
#60	0.25	45.8		
#100	0.15	35.3	Fine Sand	32.5
#200	0.075	27.0		

U.S. Standard Sieves Sizes and Numbers

Hydrometer Analysis	(mm)	% Finer	Particle Size	
			Classification	Percentage
	0.035	25.2	Fines Silt or Clay	27.0
	0.022	21.0		
	0.013	14.7		
	0.0093	12.6		
	0.0066	10.5		
	0.0032	8.4		
	0.0014	6.3		



ATTERBERG LIMITS
Method -B (Dry preparation)

ML	LL	PL	PI	LI
61.6				

LL (oven-dried)
< 0.75 = ORGANIC (OL, OH)

DESCRIPTION: SILTY SAND, fine to coarse; dark gray and red, organics.
USCS: (SM)

TECH TJ/FT
DATE 2/1/17
CHECK
REVIEW
APPROVE

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody



ACCUTEST

CHAIN OF CUSTODY

SGS Accutest - Dayton
2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

PAGE 1 OF 1

Client / Reporting Information				Project Information				Requested Analysis (see TEST CODE sheet)				Matrix Codes			
Company Name TRC Engineers Inc.				Project Name Red Hook Ball Field 9				FED-EX Tracking #				Bottle Order Control # JC34266			
Street Address 1430 Broadway				Street Bay St.				SGS Accutest Quote #				SGS Accutest Job #			
City New York				City Brooklyn				SGS Accutest Job #				SGS Accutest Job #			
State NY				State NY				SGS Accutest Job #				SGS Accutest Job #			
Zip 10018				Zip 11201				SGS Accutest Job #				SGS Accutest Job #			
Project Contact Wes Lindemuth				Project # 24684.1000.0000				SGS Accutest Job #				SGS Accutest Job #			
Phone # 212 221 7822				Client Purchase Order #				SGS Accutest Job #				SGS Accutest Job #			
Sample(s) Name(s) K Adams				Project Manager Wes Lindemuth				SGS Accutest Job #				SGS Accutest Job #			
Phone # 631 329 0020				Attention:				SGS Accutest Job #				SGS Accutest Job #			
SGS Accutest Sample #				Collection				Number of preserved Bottles				LAB USE ONLY			
Field ID / Point of Collection				MEOH/DI Vial #				Date				Time			
1 RHBFG (2-4)				12/22/16				1320				RA			
2 RHBFG (5-7)				1325				1325				SO			
3 RHBFG (8-10)				1330				1330				GW			
4 RHBFG				1440				1440				GW			
INITIAL ASSESSMENT				2Bx				INITIAL ASSESSMENT				2Bx			
LABEL VERIFICATION				OC				LABEL VERIFICATION				OC			
Turnaround Time (Business days)				Data Deliverable Information				Comments / Special Instructions				Sample inventory is verified upon receipt in the Laboratory			
☒ Std. 10 Business Days				Approved by (SGS Accutest PM): / Date:				☐ Commercial "a" (Level 1)				☐ NYASP Category A			
☐ 5 Day RUSH								☐ Commercial "b" (Level 2)				☐ NYASP Category B			
☐ 3 Day RUSH								☐ FULLT1 (Level 3+4)				☐ State Forms			
☐ 2 Day RUSH								☐ NJ Reduced				☐ EDD Format			
☐ 1 Day RUSH								☐ Commercial "C"				☐ Other			
☐ other								☐ NJ Data of Known Quality Protocol Reporting							
Emergency & Rush T/A data available VIA Lablink				Commercial "A" = Results Only, Commercial "B" = Results + QC Summary				Commercial "A" = Results Only, Commercial "B" = Results + QC Summary							
NJ Reduced = Results + QC Summary + Partial Raw data															
Sample Custody must be documented below each time samples change possession, including courier delivery.															
Relinquished by Sampler: 1 [Signature]				Date/Time: 12/22/16 16:50				Received By: 1 [Signature]				Date/Time: 12/22/16 16:50			
Relinquished by Sampler: 3 [Signature]				Date/Time:				Received By: 3 [Signature]				Date/Time:			
Relinquished by Sampler: 5 [Signature]				Date/Time:				Received By: 5 [Signature]				Date/Time:			
Custody Seal #				☐ Intact				Preserved where applicable				☐ On Ice			
☐ Not Intact												Cooler Temp: 2.9°C			

JC34266X: Chain of Custody

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ACCUTEST

CHAIN OF CUSTODY

SGS Accutest - Dayton
2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0300 FAX: 732-329-3499/3480
www.accutest.com

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E/11/16

31
3

Client / Reporting Information		Project Information		Requested Analysis (see TEST CODE sheet)										Matrix Codes	
Company Name TRC Engineers, Inc.		Project Name Red Hook Ball Field 9		Request Analysis (see TEST CODE sheet) Matrix Codes DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LID - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank										Matrix Codes	
Street Address 1430 Broadway		Street Bay St.													
City New York NY		City Brooklyn NY													
State NY		State NY													
Zip 10018		Zip 11201													
Project Contact Wes Lindemuth		Project # 246184.1000.000		Billing Information (if different from Report to)											
Phone # 212-221-7822		Fax # 212-221-7840		Company Name											
Sample(s) Name(s) R. Adams		Client Purchase Order #		Street Address											
Phone #		Project Manager		City											
Field ID / Point of Collection		MEOH/DI Vial #		Date											
Time		Sampled by		Matrix											
# of bottles		PCI		NI Water											
MEOH		ENCODE													
LAB USE ONLY															
5 RHBFA-02 (2-4)		12/27/16		0850		RA		SO		1				E8	
6 RHBFA-02 (5-7)				0855		SO		1						A40	
7 RHBFA-02 (8-10)				0900		SO		1						C42	
8 RHBFA-02				1045		GW		11		1		2		62271	
9 RHBFA-03 (2-4)				1145		SO		1						E60	
10 RHBFA-03 (5-7)				1150		SO		1							
11 RHBFA-03 (8-10)				1155		SO		1						D23	
12 RHBFA-03				1305		GW		11		1		2		E	
13 RHBFA-04 (2-4)				1310		SO		1							
14 RHBFA-04 (5-7)				1315		SO		3							
15 RHBFA-04 (8-10)				1320		SO		1							
16 RHBFA-DUP-01				1400		SO		1							
Turnaround Time (Business days)		Approved by (SGS Accutest PM): / Date:		Data Deliverable Information										Comments / Special Instructions	
☒ Std. 10 Business Days		INITIAL ASSESSMENT 3/1/16		☐ Commercial "a" (Level 1) ☐ NYASP Category A										Please combine all samples from Ball Field 9 (Prefix RHBFA-) into one report including field blank and eqip blank. All samples for Ball Field 9 have now been collected and submitted. Sample inventory is verified upon receipt in the Laboratory.	
☐ 5 Day RUSH		LABEL VERIFICATION 3/1/16		☐ Commercial "b" (Level 2) ☐ NYASP Category B											
☐ 3 Day RUSH				☐ FULLT1 (Level 3+4) ☐ State Forms											
☐ 2 Day RUSH				☐ NJ Reduced ☐ EDD Format											
☐ 1 Day RUSH				☐ Commercial "C" ☐ Other											
☐ other				☐ NJ Data of Known Quality Protocol Reporting											
Emergency & Rush T/A data available VIA Lablink		Commercial "A" = Results Only, Commercial "B" = Results + QC Summary		Commercial "C" = Results + QC Summary + Partial Raw data											
Relinquished by Sampler:		Date/Time		Received By:		Relinquished By:		Date/Time		Received By:		Date/Time		Received By:	
3		12/27/16 1510		1		2		12/27/16 1650		2		12/27/16 1650		2	
Relinquished by Sampler:		Date/Time		Received By:		Relinquished By:		Date/Time		Received By:		Date/Time		Received By:	
5				3		4				4				4	
Relinquished by Sampler:		Date/Time		Received By:		Relinquished By:		Date/Time		Received By:		Date/Time		Received By:	
5				5		5				5				5	
Custody Seal #		Intact		Not Intact		Preserved where applicable		On Ice		Cooler Temp.					

04.0 03.9 04.1 50

JC34266X: Chain of Custody

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SGS Accutest - Dayton
2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

[illegible]

040, 039, 041 C_{10}

JC34266X: Chain of Custody

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Client / Reporting Information	Project Information	Requested Analysis (see TEST CODE sheet)	Matrix Codes
Company Name TRC Engineers Inc. Street Address 1430 Broadway City New York NY State NY Zip 10018 Project Contact Wes Lindemuth Phone # 212-221-7822 E-mail WES@TRCSOLUTIONS.COM Project Manager R. Adams	Project Name: Red Hook Ball Field 9 Street: Bay St. City: Brooklyn NY State: NY Zip: 11201 Billing Information (If different from Report to) Company Name: SAME Street Address: SAME City: SAME State: SAME Zip: SAME Client Purchase Order # 246184-1000.0000 Attention: Wes Lindemuth	Part 315-SVOCs (EPA 8270.D) Part 315-Pesticides (EPA 8081.B) Part 315-Silox (EPA 8151) TCL PCBs (EPA 8082A) Volatile (EPA 9012B) The Metals (EPA 9012B) NIOSMDS PCP 300 d. And HCB	Matrix Codes DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OL - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank
SGS Account Sample # -20 Field ID / Point of Collection RHBF9-04	MEOH/DI Vial # Date 12/27/16 Time 14:35 Sampled by RA Matrix GW # of bottles 33	Number of preserved bottles HCl 36 NaOH 24 HNO3 H2SO4 NONE IN Water MEGH ENCORE	LAB USE ONLY E42
Turnaround Time (Business days) ☒ Std. 10 Business Days ☐ 5 Day RUSH ☐ 3 Day RUSH ☐ 2 Day RUSH ☐ 1 Day RUSH ☐ other			
Approved by (SGS Accutest PM) / Date: 		Data Deliverable Information ☐ Commercial "a" (Level 1) ☐ Commercial "b" (Level 2) ☐ FULLT1 (Level 3+4) ☐ NJ Reduced ☐ Commercial "C" ☐ NJ Data of Known Quality Protocol Reporting Commercial "A" = Results Only, Commercial "B" = Results + QC Summary NJ Reduced = Results + QC Summary + Partial Raw data	
Comments / Special Instructions Please combine all samples from Ball Field 9 (Prefix RHBF9-) into one report. *4 samples need to be filtered in lab are labeled appropriately on bottle		INITIAL ASSESSMENT LABEL VERIFICATION	
Sample Custody must be documented below each time samples change possession, including courier delivery.			
Relinquished by Sampler: 1 Robert Chambers Relinquished by Sampler: 3 Relinquished by Sampler: 5	Date Time: 12/28/16 9:16 Date Time: Date Time: 	Received By: 1 Robert Chambers Received By: 3 Received By: 5	Date Time: 12/28/16 Date Time: Date Time:
Emergency & Rush T/A data available VIA Lablink		Custody Seal # 583 ☐ Intact ☐ Not intact	Preserved where applicable ☒
On Ice I.G 9.20C		Cooler Temp. 9.20C	

JC34266X: Chain of Custody

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SGS Accutest Sample Receipt Summary

Job Number: JC34266

Client: _____

Project: _____

Date / Time Received: 12/28/2016 12:13:00 PM

Delivery Method: _____

Airbill #'s: _____

Cooler Temps (Raw Measured) °C: Cooler 5: (3.2);

Cooler Temps (Corrected) °C: Cooler 5: (4.6);

Cooler Security

Y or N

Y or N

- | | |
|--|---|
| 1. Custody Seals Present: ☒ ☐ | 3. COC Present: ☒ ☐ |
| 2. Custody Seals Intact: ☒ ☐ | 4. Smpl Dates/Time OK: ☒ ☐ |

Cooler Temperature

Y or N

- | | |
|---|-----------|
| 1. Temp criteria achieved: ☒ ☐ | IR Gun |
| 2. Cooler temp verification: _____ | |
| 3. Cooler media: _____ | Ice (Bag) |
| 4. No. Coolers: _____ | 1 |

Quality Control Preservation

Y or N

N/A

- | | |
|---|---|
| 1. Trip Blank present / cooler: ☐ ☐ | ✓ |
| 2. Trip Blank listed on COC: ☐ ☐ | ✓ |
| 3. Samples preserved properly: ☒ ☐ | |
| 4. VOCs headspace free: ☐ ☐ | ✓ |

Sample Integrity - Documentation

Y or N

- | | |
|---|--|
| 1. Sample labels present on bottles: ☒ ☐ | |
| 2. Container labeling complete: ☒ ☐ | |
| 3. Sample container label / COC agree: ☒ ☐ | |

Sample Integrity - Condition

Y or N

- | | |
|---|--------|
| 1. Sample recvd within HT: ☒ ☐ | |
| 2. All containers accounted for: ☒ ☐ | |
| 3. Condition of sample: _____ | Intact |

Sample Integrity - Instructions

Y or N N/A

- | | |
|---|---|
| 1. Analysis requested is clear: ☒ ☐ | |
| 2. Bottles received for unspecified tests: ☐ ☒ | |
| 3. Sufficient volume recvd for analysis: ☒ ☐ | |
| 4. Compositing instructions clear: ☐ ☐ | ✓ |
| 5. Filtering instructions clear: ☐ ☐ | ✓ |

Comments

SM089-02
Rev. Date 12/1/16

JC34266X: Chain of Custody

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SGS Accutest Sample Receipt Summary

Job Number: JC34266

Client: _____

Project: _____

Date / Time Received: _____

Delivery Method: _____

Airbill #s: _____

Cooler Temps (Raw Measured) °C: Cooler 1: (2.4); Cooler 2: (4.0); Cooler 3: (3.9); Cooler 4: (4.1); Cooler 5: (3.2);

Cooler Temps (Corrected) °C: Cooler 1: (3.8); Cooler 2: (5.4); Cooler 3: (5.3); Cooler 4: (5.5); Cooler 5: (4.6);

Cooler Security

Y or N

Y or N

- | | | | | | |
|---------------------------|-------------------------------------|--------------------------|-----------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | ☒ | ☐ | 3. COC Present: | ☒ | ☐ |
| 2. Custody Seals Intact: | ☒ | ☐ | 4. Smpl Dates/Time OK | ☒ | ☐ |

Cooler Temperature

Y or N

- | | | |
|------------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved: | ☒ | ☐ |
| 2. Cooler temp verification: | IR Gun | |
| 3. Cooler media: | Ice (Bag) | |
| 4. No. Coolers: | 1 | |

Quality Control Preservation

Y or N

N/A

- | | | | |
|---------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Trip Blank present / cooler: | ☐ | ☒ | ☐ |
| 2. Trip Blank listed on COC: | ☐ | ☒ | ☐ |
| 3. Samples preserved properly: | ☒ | ☐ | |
| 4. VOCs headspace free: | ☐ | ☐ | ☒ |

Sample Integrity - Documentation

Y or N

- | | | |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles: | ☒ | ☐ |
| 2. Container labeling complete: | ☒ | ☐ |
| 3. Sample container label / COC agree: | ☒ | ☐ |

Sample Integrity - Condition

Y or N

- | | | |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample recvd within HT: | ☒ | ☐ |
| 2. All containers accounted for: | ☒ | ☐ |
| 3. Condition of sample: | Intact | |

Sample Integrity - Instructions

Y or N N/A

- | | | | |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear: | ☒ | ☐ | |
| 2. Bottles received for unspecified tests | ☐ | ☒ | |
| 3. Sufficient volume recvd for analysis: | ☒ | ☐ | |
| 4. Compositing instructions clear: | ☐ | ☐ | ☒ |
| 5. Filtering instructions clear: | ☐ | ☐ | ☒ |

Comments

SM089-02
Rev. Date 12/1/16

JC34266X: Chain of Custody

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SGS Accutest Sample Receipt Summary

Job Number: JC34266

Client: TRC

Project: Red Hook Ball Field 9

Date / Time Received:
Delivery Method: Accutest Courier

Airbill #s:
Cooler Temps (Raw Measured) °C: Cooler 1: (2.4);

Cooler Temps (Corrected) °C: Cooler 1: (3.8);

Cooler Security
Y or N
Y or N

- | | | | | | |
|---------------------------|-------------------------------------|--------------------------|-----------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | ☒ | ☐ | 3. COC Present: | ☒ | ☐ |
| 2. Custody Seals Intact: | ☒ | ☐ | 4. Smpl Dates/Time OK | ☒ | ☐ |

Cooler Temperature
Y or N

- | | | |
|------------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved: | ☒ | ☐ |
| 2. Cooler temp verification: | IR Gun | |
| 3. Cooler media: | Ice (Bag) | |
| 4. No. Coolers: | 3 | |

Quality Control Preservation
Y or N
N/A

- | | | | |
|---------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Trip Blank present / cooler: | ☐ | ☒ | ☐ |
| 2. Trip Blank listed on COC: | ☐ | ☒ | ☐ |
| 3. Samples preserved properly: | ☒ | ☐ | |
| 4. VOCs headspace free: | ☐ | ☐ | ☒ |

Sample Integrity - Documentation
Y or N

- | | | |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles: | ☒ | ☐ |
| 2. Container labeling complete: | ☒ | ☐ |
| 3. Sample container label / COC agree: | ☒ | ☐ |

Sample Integrity - Condition
Y or N

- | | | |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample recvd within HT: | ☒ | ☐ |
| 2. All containers accounted for: | ☒ | ☐ |
| 3. Condition of sample: | Intact | |

Sample Integrity - Instructions
Y or N N/A

- | | | | |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear: | ☒ | ☐ | |
| 2. Bottles received for unspecified tests | ☐ | ☒ | |
| 3. Sufficient volume recvd for analysis: | ☒ | ☐ | |
| 4. Compositing instructions clear: | ☐ | ☐ | ☒ |
| 5. Filtering instructions clear: | ☐ | ☐ | ☒ |

Comments -17 Rec'd limited volume of 1x 950ml for SVOC.
 -18 Diss Metals and Diss XCR noted as "Not Field Filtered" on bottle. Please verify if needed. Sample is a FB. We will send filtration requested for Diss XCR.

 SM089-02
 Rev. Date 12/1/16

JC34266X: Chain of Custody
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Response:

- 17- proceed
- 18 proceed with Dissolved and Total Metals and XCR

Job Change Order: JC34266

Requested Date: 1/30/2017 Received Date: 12/22/2016
Account Name: TRC Due Date: 1/10/2017
Project Description: Red Hook Ballfields Soil, Brooklyn, NY Deliverable: NYASPB
CSR: mattc TAT (Days): 14

Sample #: JC34266-10,11,13,14,15, Change: Log in for GRAINS but SUB to Golder
Dept:
TAT: 14

Above Changes Per: Wes Lindemuth

Date/Time: 1/30/2017 5:35:12 PM

To Client: This Change Order is confirmation of the revisions, previously discussed with the SGS Accutest Client Service Representative.

Job Change Order: JC34266

Requested Date: 1/30/2017 Received Date: 12/22/2016
Account Name: TRC Due Date: 1/10/2017
Project Description: Red Hook Ballfields Soil, Brooklyn, NY Deliverable: NYASPB
CSR: mattc TAT (Days): 14

Sample #: JC34266-1,3 Change: Log in for GRAINS but SUB to Golder
Dept:
TAT:

Above Changes Per: Wes Lindemuth

Date/Time: 1/30/2017 5:39:28 PM

To Client: This Change Order is confirmation of the revisions, previously discussed with the SGS Accutest Client Service Representative.

APPENDIX E
DATA VALIDATION REPORTS

Data Validation Report

Site: Red Hook Ball Field 9
Laboratory: SGS-Accutest, Dayton, NJ
SDG No.: JC34266
Parameter: Total and Dissolved Metals, Cyanide, Total and Dissolved Hexavalent and Trivalent Chromium
Reviewer: Kristen Morin/TRC
Date: February 10, 2017

Samples Reviewed and Evaluation Summary

13 Soil samples: RHBF9-01 (2-4'), RHBF9-01 (5-7'), RHBF9-01 (8-10'), RHBF9-02 (2-4'), RHBF9-02 (5-7'), RHBF9-02 (8-10'), RHBF9-03 (2-4'), RHBF9-03 (5-7'), RHBF9-03 (8-10'), RHBF9-04 (2-4'), RHBF9-04 (5-7'), RHBF9-04 (8-10'), RHBF9-DUP-01¹

5 Groundwater samples*: RHBF9-01, RHBF9-02, RHBF9-03, RHBF9-04, RHBF9-GW-DUP-01²

1 Equipment blank*: RHBF9-EQUIPMENT BLANK

1 Field Blank* : RHBF9-FIELD BLANK

*filtered and unfiltered for all parameters except cyanide

¹Field duplicate of RHBF9-02 (2-4)

²Field duplicate of RHBF9-02

The above-listed soil samples, groundwater samples, and aqueous equipment and field blank samples were collected on December 22 and 27, 2016 and were analyzed for the following parameters:

- Metals by SW-846 Methods 6010C/7470A/7471B
- Cyanide by SW-846 Method 9012B and EPA Method 335.4
- Hexavalent chromium by SW-846 Method 7196A
- Trivalent chromium by calculation

The data validation was performed in accordance with the following validation guidelines, modified for the SW-846 methodologies utilized:

- National Functional Guidelines for Inorganic Superfund Methods Data Review, EPA 540-R-2016-001, September 2016.
- Region 2 ICP-AES Data Validation, HW-3A, Revision 0, July 2015
- Region 2 Mercury and Cyanide Data Validation, HW-3C, Revision 0, July 2015

The data were evaluated based on the following parameters:

- Overall Evaluation of Data and Potential Usability Issues
- Data Completeness
- Holding Times and Sample Preservation
- * • Initial and Continuing Calibrations
- Interference Check Sample (ICS) Results
- * • Blanks
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- * • Laboratory Duplicate Results
- * • ICP Serial Dilution Results
- * • Laboratory Control Sample (LCS) Results
- * • Internal Standard Results
- Field Duplicate Results
- Total and Dissolved Results
- Sample Results and Reported Quantitation Limits

- * - All criteria were met.

Overall Evaluation of Data and Potential Usability Issues

All results are usable for project objectives with the exception of cyanide in soil sample RHBF9-04 (5-7') and hexavalent chromium in soil samples RHBF9-01 (5-7'), RHBF9-02 (5-7'), RHBF9-03 (8-10'), RHBF9-04 (2-4'), and RHBF9-04 (8-10'). Qualifications applied to the data as a result of sampling error are discussed below.

- The positive and nondetect results for dissolved lead in all groundwater samples were qualified as estimated (J/UJ) due to field duplicate variability. These results can be used for project objectives as an estimated value and as a nondetect with an estimated quantitation limit (QL) which may have a minor impact on the data usability.

Qualifications applied to the data as a result of analytical error are discussed below.

- The nondetect result for cyanide in soil sample RHBF9-04 (5-7') was rejected (R) due to lack of recovery in the MS analysis and the positive result for cyanide in sample RHBF9-04 (8-10') was qualified as estimated (J-) with a potential low bias due to significantly low recovery in the MS analysis. The positive result can be used for project objectives as an estimated value, which may have a minor impact on the data usability. The nondetect result is not usable for project objectives; this may have a major impact on the data usability.
- The nondetect results for hexavalent chromium soil samples RHBF9-01 (5-7'), RHBF9-02 (5-7'), RHBF9-03 (8-10'), RHBF9-04 (2-4'), and RHBF9-04 (8-10') were rejected (R) and the positive results for hexavalent chromium in the remaining soil samples were qualified as estimated (J-) with a potential low bias due to MS recovery <30% and post digestion spike (PDS) recovery <75%. The positive results can be used for project objectives as estimated

values, which may have a minor impact on the data usability. The nondetect result is not usable for project objectives; this may have a major impact on the data usability.

- The positive result for silver in soil sample RHB9-01 (2-4') was qualified as a nondetect at the reported concentration (U) and the positive results for silver in soil samples RHB9-03 (8-10'), RHB9-04 (2-4'), RHB9-DUP-01, RHB9-03 (2-4'), and RHB9-03 (5-7') were qualified as estimated (J+) with a potential high bias due to positive interference in the ICS analyses. These results can be used for project objectives as a nondetect value and as estimated values, which may have a minor impact on the data usability.
- The nondetect result for lead in groundwater sample RHB9-03 (filtered) was qualified as estimated (UJ) with a potential low bias due to negative interference in the ICS analysis. This result can be used for project objectives as a nondetect result with an estimated QL, which may have a minor impact on the data usability.
- The positive results for aluminum and magnesium in all soil samples were qualified as estimated (J+) with a potential high bias due to MS/MSD nonconformances. These results can be used for project objectives as estimated values, which may have a minor impact on the data usability.
- The positive results for calcium in all soil samples were qualified as estimated (J-) with a potential low bias due to low recovery in the MSD analysis. These results can be used for project objectives as estimated values, which may have a minor impact on the data usability.
- The nondetect result for hexavalent chromium in groundwater sample RHB9-04 (filtered) was qualified as estimated (UJ) and the positive result for hexavalent chromium in groundwater sample RHB9-04 was qualified as estimated with a potential low bias (J-) due to a holding time exceedance. These results can be used for project objectives as a nondetect with an estimated QL and as an estimated value, which may have a minor impact on the data usability.
- The positive and nondetect results for hexavalent chromium in all groundwater samples were qualified as estimated (J-/UJ) with a potential low bias due to low recoveries in the MS analyses. These results can be used for project objectives as estimated values and as nondetect results with estimated QLs, which may have a minor impact on the data usability.
- The positive and nondetect results for trivalent chromium in all groundwater and select soil samples were qualified as estimated (J/UJ) since calculations were performed using estimated hexavalent chromium results. The results for trivalent chromium in soil samples RHB9-01 (5-7'), RHB9-02 (5-7'), RHB9-03 (8-10'), RHB9-04 (2-4'), and RHB9-04 (8-10') were not calculable (NC) due to the rejection of the hexavalent chromium result. The positive and nondetect results can be used for project objectives as estimated values and as nondetect results with estimated QLs, which may have a minor impact on the data usability.
- The nondetect results for cyanide in all groundwater samples were qualified as estimated (UJ) with a potential low bias due low recoveries in the MS analyses. These results can be used for

project objectives as nondetects with estimated QLs, which may have a minor impact on the data usability.

Data Completeness

The data package was a complete Level IV data deliverable package. The following issue was noted regarding sample receipt:

- A discrepancy was noted between the chain-of-custody and the laboratory's sample IDs for the soil and groundwater samples that were collected on 12/22/16.

The project manager was contacted during validation and verified that sample IDs were correct as logged in by the laboratory. There was no adverse impact on the data usability.

Holding Times and Sample Preservation

All holding time and sample preservation method criteria were met for the metals, cyanide, and hexavalent chromium analyses with one exception. Groundwater sample RHBF9-04 (total and filtered) was analyzed approximately two hours outside of the 24-hour holding time for hexavalent chromium. The nondetect result for hexavalent chromium in groundwater sample RHBF9-04 (filtered) was qualified as estimated (UJ) and the positive result for hexavalent chromium in groundwater sample RHBF9-04 was qualified as estimated (J-) with a potential low bias. Professional judgement was used to also qualify the corresponding trivalent chromium results as estimated (J/UJ).

Initial and Continuing Calibrations

The correlation coefficients (r) met the method acceptance limits for the mercury analyses. The initial calibration verification (ICV) and continuing calibration verification (CCV) percent recoveries (%Rs) met the method acceptance limits for the metals analyses. The low-level check standard %Rs met the QC acceptance limits of 70-130% for the metals analyses.

The ICV and/or CCV %Rs and correlation coefficients (r) met the method acceptance limits for the cyanide and hexavalent chromium analyses.

ICS Results

All analytes recovered within the acceptance limits in the ICSAB sample analyses. However, there were several analytes detected as positive and/or negative interference in the ICSA analyses. The following table lists the analytes that were impacted by the iron or calcium interferences, the associated samples, and the validation actions based on the positive and negative interference detected.

Batch	Analyte	ICSA Concentration (µg/L)	Validation Actions
MA41074 @11:18	Lead	5.4	Qualification of the lead results in the associated samples was not required due to one of the following reasons. 1. Lead was not detected and nondetects are not affected by the positive interference. 2. The concentration of the interferent present in the samples was not comparable (less than 50%) to the concentration detected in the ICSA solution. 3. Even though the concentration of the interferent present in the sample was comparable to the ICSA level, the lead concentration in the sample was significantly greater than the concentration detected in the ICSA. 4. Lead was reported from a different analysis.
	Thallium	3.2	Qualification of the thallium results in the associated samples was not required due to one of the following reasons. 1. Thallium was not detected and nondetects are not affected by the positive interference. 2. The concentration of the interferent present in the samples was not comparable (less than 50%) to the concentration detected in the ICSA solution. 3. Thallium was reported from a different analysis.
Associated Groundwater Samples: RHB9-01, RHB9-01 (filtered), RHB9-02, RHB9-02 (filtered), RHB9-03, RHB9-03 (filtered), RHB9-GW-DUP-01, RHB9-GW-DUP-01 (filtered), RHB9-FIELD BLANK, RHB9-FIELD BLANK (filtered), RHB9-EQUIPMENT BLANK, RHB9-EQUIPMENT BLANK (filtered)			
MA41074 @17:36	Lead	5.6	Qualification of the lead results in the associated samples was not required due to one of the following reasons. 1. Lead was not detected and nondetects are not affected by the positive interference. 2. Even though the concentration of the interferent present in the sample was comparable to the ICSA level, the lead concentration in the sample was significantly greater than the concentration detected in the ICSA.
Associated Groundwater Samples: RHB9-04, RHB9-04 (filtered)			
MA41085 @10:02	Silver	5.6	The positive result for silver in sample RHB9-01 (2-4') was qualified as a nondetect at the reported concentration (U) since the result was entirely due to interference. The positive results for silver in samples RHB9-03 (8-10'), RHB9-04 (2-4'), and RHB9-DUP-01 were qualified as estimated (J+) with a potential high bias. Qualification of the silver results in the remaining associated samples was not required since silver was not detected and nondetects are not affected by the positive interference.
Associated Soil Samples: RHB9-01 (2-4'), RHB9-01 (5-7'), RHB9-01 (8-10'), RHB9-02 (2-4'), RHB9-02 (5-7'), RHB9-02 (8-10'), RHB9-03 (8-10'), RHB9-04 (2-4'), RHB9-04 (8-10'), RHB9-DUP-01			

Batch	Analyte	ICSA Concentration (µg/L)	Validation Actions
MA41088 @12:27	Silver	5.8	The positive results for silver in samples RHBF9-03 (2-4') and RHBF9-03 (5-7') were qualified as estimated (J+) with a potential high bias. Qualification of the silver result in the remaining associated sample was not required since silver was not detected and nondetects are not affected by the positive interference.
Associated Soil Samples: RHBF9-03 (2-4'), RHBF9-03 (5-7'), RHBF9-04 (5-7')			
MA41091 @11:30	Lead	-4.4	The nondetect result for lead in groundwater sample RHBF9-03 (filtered) was qualified as estimated (UJ) with a potential low bias. Qualification of the lead result in the remaining associated sample was not required since lead was detected at a concentration greater than 10x the absolute difference of the negative ICS interference.
Associated Groundwater Samples: RHBF9-03, RHBF9-03 (filtered)			
MA41116 @18:15	Thallium	2.3	Qualification of the thallium result in the associated sample was not required since the concentration of the interferent present in the sample was not comparable (less than 50%) to the concentration detected in the ICSA solution.
Associated Groundwater Sample: RHBF9-GW-DUP-01			

Blanks

Target analytes were not detected in the laboratory instrument blanks, preparation blanks, field blank, or equipment blank associated with the samples in this data set.

MS/MSD Results

MS and/or MSD analyses were performed on the samples tabulated below.

Sample ID	Parameter
RHBF9-01	Total Metals, Total and Dissolved Hexavalent Chromium
RHBF9-03	Total and Dissolved Hexavalent Chromium
RHBF9-04	Total and Dissolved Metals (including mercury), Total and Dissolved Hexavalent Chromium, Cyanide
RHBF9-04 (5-7')	Metals (including mercury), Cyanide, Hexavalent chromium
RHBF9-GW-DUP-01	Cyanide
RHBF9-04 (8-10')	Cyanide
RHBF9-02 (5-7')	Cyanide

The table below summarizes the metals MS/MSD %Rs and relative percent differences (RPDs) that did not meet the laboratory acceptance criteria of 75-125%R and RPD ≤20, the associated samples, and

the validation actions. Qualification of sample results is not required in cases of nonconformances where the sample concentration is greater than four times the spike concentration. Therefore, these results are not summarized below.

MS/MSD Sample ID	Analyte	MS %R	MSD %R	RPD	Validation Action
RHBF9-04 (5-7')	Aluminum	184.4	163.1	-	The positive results for aluminum and magnesium in all soil samples were qualified as estimated (J+) with a potential high bias.
	Magnesium	126.6	-	-	
	Calcium	-	64.7	-	The positive results for calcium in all soil samples were qualified as estimated (J-) with a potential low bias.
Associated samples: All soil samples					

"-" Criteria met

The table below summarizes the hexavalent chromium MS and PDS %Rs that did not meet the project-specific quality assurance project plan (QAPP) acceptance criteria of 85-115%R for groundwater samples and 75-125%R for soil samples, the associated samples, and the validation actions.

MS/MSD Sample ID	Analyte	MS %R	PDS %R	Validation Action
RHBF9-01	Hexavalent chromium	6.1	-	The positive and nondetect results for hexavalent chromium in all groundwater samples were qualified as estimated (J-/UJ) with a potential low bias. Note that Eh and pH data collected during sampling were reviewed during validation and showed that all groundwater samples were a reducing matrix; therefore, rejection of the nondetect results was not required.
RHBF9-01 (filtered)		0	-	
RHBF9-04		8.0	-	
RHBF9-04 (filtered)		19.3	-	
RHBF9-03		54	62	
RHBF9-03 (filtered)		54.7	61	
Professional judgement was used to also qualify the corresponding trivalent chromium results as estimated (J/UJ).				
Associated samples: All groundwater samples				

"-" Criteria met

MS/MSD Sample ID	Analyte	Insoluble MS %R	Soluble MS %R	PDS %Rs	Validation Action
RHBF9-04 (5-7')	Hexavalent chromium	-	0.6	35/ 41 (pH adjusted)	The nondetect results for hexavalent chromium in samples RHBF9-01 (5-7'), RHBF9-02 (5-7'), RHBF9-03 (8-10'), RHBF9-04 (2-4'), and RHBF9-04 (8-10') were rejected (R) since the soluble MS %R was <30% and the PDS %R was <75%. The positive results for hexavalent chromium in the remaining associated samples were qualified as estimated (J-) with a potential low bias. Professional judgement was used to also qualify the corresponding trivalent chromium results as estimated (J/UJ). The trivalent chromium result associated with samples RHBF9-01 (5-7'), RHBF9-02 (5-7'), RHBF9-03 (8-10'), RHBF9-04 (2-4'), and RHBF9-04 (8-10') was not calculable due to a rejected hexavalent chromium result.
Associated samples: All soil samples					

"-" Criteria met

The table below summarizes the cyanide MS %Rs that did not meet the project-specific QAPP acceptance criteria of 75-125%R for soil samples and 90-110%R for groundwater samples, the associated samples, and the validation actions.

MS/MSD Sample ID	Analyte	MS %R	Validation Action
RHBF9-04	Cyanide	57.6	The nondetect results for cyanide in all groundwater samples were qualified as estimated (UJ) with a potential low bias.
RHBF9-GW-DUP-01	Cyanide	56.4	
Associated samples: All groundwater samples			
RHBF9-04 (5-7')	Cyanide	0	Professional judgement was used to apply actions only to the parent samples since the other soil matrix spike analysis on sample RHBF9-02 (5-7') met all criteria. The nondetect result for cyanide in sample RHBF9-04 (5-7') was rejected (R) and the positive result for cyanide in sample RHBF9-04 (8-10') was qualified as estimated (J-) with a potential low bias.
Associated sample: RHBF9-04 (5-7')			
RHBF9-04 (8-10')	Cyanide	-21.6	
Associated sample: RHBF9-04 (8-10')			

Laboratory Duplicate Results

Laboratory duplicate analyses were performed on the following samples tabulated below. All criteria were met.

Sample ID	Parameter
RHBF9-01	Hexavalent chromium (total and filtered)
RHBF9-03	Hexavalent chromium (total and filtered)
RHBF9-04	Hexavalent chromium (total and filtered), Cyanide
RHBF9-04 (5-7')	Cyanide, Hexavalent chromium
RHBF9-02 (5-7')	Cyanide

ICP Serial Dilution Results

ICP serial dilutions were performed on samples RHBF9-01 for total metals, RHBF9-04 for total and dissolved metals, and RHBF9-04 (5-7') for total metals. All criteria were met.

LCS Results

The LCS %Rs were within the laboratory acceptance criteria in the metal, hexavalent chromium, and cyanide analyses.

Internal Standard Results (Metals by 6010C only)

The percent relative intensities (%RIs) of the internal standards met the method acceptance criteria.

Field Duplicate Results

The field duplicate samples are tabulated below.

Sample ID	Field duplicate
RHBF9-02 (2-4')	RHBF9-DUP-01
RHBF9-02	RHBF9-GW-DUP-01

The following tables summarize the RPDs of the detected analytes in the field duplicate pairs and indicate the RPDs that were not within the acceptance criteria along with the validation action.

Analyte	QL (mg/kg)	RHBF9-02 (2-4') (mg/kg)	RHBF9- DUP-01 (mg/kg)	RPD	Validation Action
Aluminum	56	6,310	6,590	4.3	None
Arsenic	2.3	10.3	10	3.0	
Barium	23	212	213	0.50	
Beryllium	0.23	0.43	0.43	0	
Cadmium	0.56	0.75	1.2	46.2	
Calcium	560	14,800	10,900	30.4	
Chromium	1.1	22.1	20.7	6.5	
Cobalt	5.6	7.1	6.4	10.4	
Copper	2.8	130	124	4.7	
Iron	56	17,800	18,300	2.8	

Analyte	QL (mg/kg)	RHBF9-02 (2-4') (mg/kg)	RHBF9- DUP-01 (mg/kg)	RPD	Validation Action
Lead	2.3	460	504	9.1	None
Magnesium	560	3,480	3,080	12.2	
Manganese	1.7	262	294	11.5	
Mercury	0.17	2.1	3.5	50.0	
Nickel	4.5	33.1	30.2	9.2	
Silver	0.56	0.56 U	0.61	NC	
Tin	5.6	21.8	25	13.7	
Vanadium	5.6	33.8	33.5	0.90	
Zinc	5.6	420	572	30.6	
Hexavalent chromium	0.45/0.46	1.0	0.97	3.0	
Trivalent chromium	1.6	21.1	19.7	6.9	
NC: Not calculable					
Criteria: RPD ≤ 50 when both sample results are ≥ 5x QL, or Absolute difference < 4x QL if both sample results are < 5x QL					

Analyte	QL (µg/L)	RHBF9-02 (µg/L)	RHBF9- GW-DUP-01 (µg/L)	RPD	Validation Action
Aluminum	200	4,400	4,490	2.0	None
Antimony	6.0	6.2	7.4	17.6	
Arsenic	3.0	29.6	31.0	4.6	
Barium	200	538	523	2.8	
Calcium	5,000	80,700	76,300	5.6	
Chromium	10	30.2	28.6	5.4	
Copper	10	170	164	3.6	
Iron	100	29,200	27,600	5.6	
Lead	3.0	1,160	1,170	0.9	
Magnesium	5,000	50,200	46,200	8.3	
Manganese	15	412	404	2.0	
Mercury	0.2	4.8	4.0	18.2	
Nickel	10	17.8	17.4	2.3	
Potassium	10,000	28,500	26,300	8.0	
Sodium	10,000	52,200	48,100	8.2	
Tin	10	107	107	0	
Zinc	20	667	668	0.1	
Trivalent chromium	20	22	20 U	NC	
NC – Not calculable					
Criteria: RPD ≤ 30 when positive results for both samples are > 5x QL, or Absolute difference < 2x QL if both sample results are < 5x QL					

Analyte	QL (µg/L)	RHBF9-02 (filtered) (µg/L)	RHBF9-GW- DUP-01 (filtered) (µg/L)	RPD	Validation Action
Arsenic	3.0	12.7	12.4	2.4	None
Barium	200	245	255	4.0	
Calcium	5,000	76,200	76,500	0.4	
Iron	100	16,500	17,000	3.0	
Magnesium	5,000	47,100	47,900	1.7	
Manganese	15	328	324	1.2	
Potassium	10,000	26,800	27,200	1.5	
Sodium	10,000	50,300	50,500	0.4	
Lead	3.0	3.0 U	10.1	NC	The positive and nondetect results for dissolved lead in all groundwater samples were qualified as estimated (J/UJ).
NC – Not calculable Criteria: RPD ≤ 30 when positive results for both samples are > 5x QL, or Absolute difference < 2x QL if both sample results are < 5x QL					

Analyte	QL (mg/L)	RHBF9-02 (mg/L)	RHBF9-GW- DUP-01 (mg/L)	RPD	Validation Action
Hexavalent chromium	0.010	0.010 U	0.014	NC	None
NC: Not calculable Criteria: Absolute difference < 2x QL if both sample results are < 5x QL					

Analyte	QL (mg/L)	RHBF9-02 (filtered) (mg/L)	RHBF9-GW- DUP-01 (filtered) (mg/L)	RPD	Validation Action
Hexavalent chromium	0.010	0.013	0.018	32.3	None
NC: Not calculable Criteria: Absolute difference < 2x QL if both sample results are < 5x QL					

Total and Dissolved Results

The total and dissolved metals results were evaluated to ensure that the concentration of dissolved metals was not greater than the concentration of total metals when detected at concentrations greater than 5x the QL. All criteria were met with the following exception. The dissolved calcium, potassium, magnesium, sodium, barium, and/or manganese results were greater than the corresponding total results in samples RHBF9-03, RHBF9-04, and RHBF9-GW-DUP-01. However, all dissolved results were within 20% of the total results; therefore, no data validation actions were taken on this basis.

Sample Results and Reported Quantitation Limits

Sample calculations were spot-checked; there were no errors noted.

Several sample results were reported from diluted analyses due to the concentrations of metals that would have exceeded the calibration range if not diluted or due to high concentrations of interfering analytes; as a result the project-specified QLs were not met for select results.

Although results for hexavalent chromium were not reported between the method detection limit (MDL) and QL on the Form 1s, the laboratory calculated the trivalent chromium results using results for hexavalent chromium that were between the MDL and QL. The following samples were affected: groundwater sample RHBF9-02 and soil samples RHBF9-01 (5-7), RHBF9-04 (2-4), and RHBF9-04 (8-10). However, the trivalent chromium results in soil samples RHBF9-01 (5-7), RHBF9-04 (2-4), and RHBF9-04 (8-10) were not calculable due to a rejected hexavalent chromium result. No further validation action is required.

Note that the QL for trivalent chromium in groundwater sample RHBF9-04 was raised by the laboratory since the hexavalent chromium result was greater than the total chromium result.

QUALIFIED FORM 1s

Report of Analysis

Client Sample ID: RHBF9-01 (2-4)

Lab Sample ID: JC34266-1

Matrix: SO - Soil

Date Sampled: 12/22/16

Date Received: 12/22/16

Percent Solids: 86.0

Project: Red Hook Ballfields Soil, Brooklyn, NY

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	7920 <i>J+</i>	57 <i>✓</i>	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Antimony	8.6	2.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Arsenic	29.0	2.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Barium	655	23	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Beryllium	0.59	0.23	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Cadmium	3.3	0.57	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Calcium	4250 <i>J-</i>	570 <i>✓</i>	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Chromium	41.9	1.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Cobalt	12.2	5.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Copper	541	2.8	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Iron	29500	57	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Lead	1600	4.6	mg/kg	2	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁵
Magnesium	2820 <i>J+</i>	570 <i>✓</i>	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Manganese	363	1.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Mercury	2.0	0.19	mg/kg	5	12/30/16	12/30/16 JPM	SW846 7471B ¹	SW846 7471B ⁴
Nickel	37.5	4.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Potassium	< 1100	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Selenium	< 2.3	2.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Silver	0.81 <i>0.81 u</i>	0.57 <i>✓</i>	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Sodium	< 1100	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Thallium	< 1.1	1.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Tin	274	5.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Vanadium	39.4	5.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁵
Zinc	1070	11	mg/kg	2	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁵

(1) Instrument QC Batch: MA41069

(2) Instrument QC Batch: MA41085

(3) Instrument QC Batch: MA41088

(4) Prep QC Batch: MP97905

(5) Prep QC Batch: MP97914

RL = Reporting Limit

Report of Analysis

Client Sample ID: RHBF9-01 (5-7)

Lab Sample ID: JC34266-2

Matrix: SO - Soil

Date Sampled: 12/22/16

Date Received: 12/22/16

Percent Solids: 88.1

Project: Red Hook Ballfields Soil, Brooklyn, NY

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	5100 <i>J+</i>	56	✓ mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Antimony	< 2.2	2.2	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Arsenic	10.2	2.2	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Barium	661	22	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Beryllium	0.36	0.22	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cadmium	1.5	0.56	✓ mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Calcium	8960 <i>J+</i>	560	✓ mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Chromium	21.3	1.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cobalt	< 5.6	5.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Copper	239	2.8	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Iron	15700	56	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Lead	998	2.2	✓ mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Magnesium	1990 <i>J+</i>	560	✓ mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Manganese	216	1.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Mercury	0.76	0.038	mg/kg	1	12/30/16	12/30/16 JPM	SW846 7471B ¹	SW846 7471B ³
Nickel	24.2	4.5	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Potassium	< 1100	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Selenium	< 2.2	2.2	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Silver	< 0.56	0.56	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Sodium	< 1100	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Thallium	< 1.1	1.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Tin	69.2	5.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Vanadium	28.0	5.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Zinc	712	5.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴

(1) Instrument QC Batch: MA41069

(2) Instrument QC Batch: MA41085

(3) Prep QC Batch: MP97905

(4) Prep QC Batch: MP97914

RL = Reporting Limit

Report of Analysis

Client Sample ID: RHBF9-01 (8-10)

Lab Sample ID: JC34266-3

Matrix: SO - Soil

Date Sampled: 12/22/16

Date Received: 12/22/16

Percent Solids: 90.0

Project: Red Hook Ballfields Soil, Brooklyn, NY

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	6120 J+	53	✓ mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Antimony	< 2.1	2.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Arsenic	9.5	2.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Barium	137	21	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Beryllium	0.45	0.21	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 0.53	0.53	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Calcium	5790 J-	530	✓ mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Chromium	19.1	1.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cobalt	< 5.3	5.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Copper	62.8	2.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Iron	10400	53	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Lead	315	2.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Magnesium	1790 J+	530	✓ mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Manganese	205	1.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Mercury	0.77	0.035	mg/kg	1	12/30/16	12/30/16 JPM	SW846 7471B ¹	SW846 7471B ³
Nickel	13.5	4.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Potassium	1340	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Selenium	< 2.1	2.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Silver	< 0.53	0.53	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Sodium	< 1100	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Thallium	< 1.1	1.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Tin	23.2	5.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Vanadium	16.8	5.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Zinc	208	5.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴

(1) Instrument QC Batch: MA41069

(2) Instrument QC Batch: MA41085

(3) Prep QC Batch: MP97905

(4) Prep QC Batch: MP97914

RL = Reporting Limit

Report of Analysis

Client Sample ID: RHBF9-02 (2-4)

Lab Sample ID: JC34266-5

Matrix: SO - Soil

Date Sampled: 12/27/16

Date Received: 12/27/16

Percent Solids: 89.4

Project: Red Hook Ballfields Soil, Brooklyn, NY

4.6

4

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	6310 J+	56	✓ mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Antimony	< 2.3	2.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Arsenic	10.3	2.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Barium	212	23	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Beryllium	0.43	0.23	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cadmium	0.75	0.56	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Calcium	14800 J-	560	✓ mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Chromium	22.1	1.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cobalt	7.1	5.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Copper	130	2.8	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Iron	17800	56	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Lead	460	2.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Magnesium	3480 J+	560	✓ mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Manganese	262	1.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Mercury	2.1	0.17	mg/kg	5	12/30/16	12/30/16 JPM	SW846 7471B ¹	SW846 7471B ³
Nickel	33.1	4.5	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Potassium	< 1100	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Selenium	< 2.3	2.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Silver	< 0.56	0.56	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Sodium	< 1100	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Thallium	< 1.1	1.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Tin	21.8	5.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Vanadium	33.8	5.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Zinc	420	5.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴

(1) Instrument QC Batch: MA41069

(2) Instrument QC Batch: MA41085

(3) Prep QC Batch: MP97907

(4) Prep QC Batch: MP97914

RL = Reporting Limit

Report of Analysis

Client Sample ID: RHBF9-02 (5-7)

Lab Sample ID: JC34266-6

Matrix: SO - Soil

Date Sampled: 12/27/16

Date Received: 12/27/16

Percent Solids: 88.5

Project: Red Hook Ballfields Soil, Brooklyn, NY

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	6430 J+	54 ✓	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Antimony	< 2.2	2.2	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Arsenic	3.8	2.2	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Barium	51.9	22	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Beryllium	0.30	0.22	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 0.54	0.54	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Calcium	6170 J-	540 ✓	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Chromium	18.1	1.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cobalt	5.5	5.4	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Copper	73.7	2.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Iron	12700	54	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Lead	96.8	2.2	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Magnesium	3800 J+	540 ✓	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Manganese	227	1.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Mercury	0.28	0.035	mg/kg	1	12/30/16	12/30/16 JPM	SW846 7471B ¹	SW846 7471B ³
Nickel	31.5	4.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Potassium	1130	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Selenium	< 2.2	2.2	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Silver	< 0.54	0.54	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Sodium	< 1100	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Thallium	< 1.1	1.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Tin	11.3	5.4	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Vanadium	23.7	5.4	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Zinc	81.4	5.4	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴

(1) Instrument QC Batch: MA41069

(2) Instrument QC Batch: MA41085

(3) Prep QC Batch: MP97907

(4) Prep QC Batch: MP97914

RL = Reporting Limit

Report of Analysis

Client Sample ID: RHBF9-02 (8-10)

Lab Sample ID: JC34266-7

Matrix: SO - Soil

Date Sampled: 12/27/16

Date Received: 12/27/16

Percent Solids: 77.8

Project: Red Hook Ballfields Soil, Brooklyn, NY

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	5190 ³⁺	64	✓ mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Antimony	< 2.6	2.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Arsenic	17.6	2.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Barium	468	26	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Beryllium	0.41	0.26	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cadmium	1.4	0.64	✓ mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Calcium	6330 ³⁻	640	✓ mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Chromium	24.8	1.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cobalt	10.3	6.4	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Copper	207	3.2	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Iron	30600	64	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Lead	830	2.6	✓ mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Magnesium	1670 ³⁺	640	✓ mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Manganese	239	1.9	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Mercury	2.7	0.17	mg/kg	5	12/30/16	12/30/16 JPM	SW846 7471B ¹	SW846 7471B ³
Nickel	28.7	5.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Potassium	< 1300	1300	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Selenium	< 2.6	2.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Silver	< 0.64	0.64	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Sodium	< 1300	1300	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Thallium	< 1.3	1.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Tin	104	6.4	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Vanadium	22.9	6.4	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Zinc	510	6.4	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴

(1) Instrument QC Batch: MA41069

(2) Instrument QC Batch: MA41085

(3) Prep QC Batch: MP97907

(4) Prep QC Batch: MP97914

RL = Reporting Limit

Report of Analysis

Client Sample ID: RHBF9-03 (2-4)

Lab Sample ID: JC34266-9

Matrix: SO - Soil

Date Sampled: 12/27/16

Date Received: 12/27/16

Percent Solids: 83.5

Project: Red Hook Ballfields Soil, Brooklyn, NY

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	5560 J ⁺	59	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Antimony ^a	37.4	4.7	mg/kg	2	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Arsenic	41.8	2.4	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Barium	724	24	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Beryllium	0.39	0.24	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Cadmium ^a	5.3	1.2	mg/kg	2	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Calcium	5040 J ⁻	590	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Chromium ^a	32.7	5.9	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Cobalt	12.3	5.9	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Copper	1660	15	mg/kg	5	12/31/16	01/04/17 DE	SW846 6010C ⁴	SW846 3050B ⁶
Iron	93400	300	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Lead	4310	12	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Magnesium	1920 J ⁺	590	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Manganese ^a	641	8.9	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Mercury	4.0	0.40	mg/kg	10	12/30/16	12/30/16 JPM	SW846 7471B ¹	SW846 7471B ⁵
Nickel	40.7	4.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Potassium	< 1200	1200	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Selenium ^a	< 12	12	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Silver ^a	4.3 J ⁺	3.0	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Sodium	< 1200	1200	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Thallium ^a	< 5.9	5.9	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Tin	1250	12	mg/kg	2	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Vanadium	24.2	5.9	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Zinc	3140	30	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶

(1) Instrument QC Batch: MA41069

(2) Instrument QC Batch: MA41085

(3) Instrument QC Batch: MA41088

(4) Instrument QC Batch: MA41097

(5) Prep QC Batch: MP97907

(6) Prep QC Batch: MP97914

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID: RHBF9-03 (5-7)

Lab Sample ID: JC34266-10

Matrix: SO - Soil

Date Sampled: 12/27/16

Date Received: 12/27/16

Percent Solids: 75.5

Project: Red Hook Ballfields Soil, Brooklyn, NY

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	4150 J+	67 ✓	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Antimony	17.6	2.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Arsenic	39.3	2.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Barium	1030	27	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Beryllium	0.44	0.27	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Cadmium ^a	9.3	1.3	mg/kg	2	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Calcium	7760 J-	670 ✓	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Chromium ^a	29.4	2.7	mg/kg	2	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Cobalt	10.5	6.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Copper	1360	6.7	mg/kg	2	12/31/16	01/04/17 DE	SW846 6010C ⁴	SW846 3050B ⁶
Iron	60800	130	mg/kg	2	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Lead	3590	27	mg/kg	10	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Magnesium	1330 J+	670 ✓	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Manganese ^a	405	4.0	mg/kg	2	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Mercury	1.5	0.067	mg/kg	2	12/30/16	12/30/16 JPM	SW846 7471B ¹	SW846 7471B ⁵
Nickel	45.6	5.4	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Potassium	< 1300	1300	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Selenium ^a	< 5.4	5.4	mg/kg	2	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Silver ^a	1.7 J+	1.3 ✓	mg/kg	2	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Sodium	< 1300	1300	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Thallium ^a	< 2.7	2.7	mg/kg	2	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Tin	906	6.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Vanadium	36.8	6.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Zinc	2370	13	mg/kg	2	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶

(1) Instrument QC Batch: MA41069

(2) Instrument QC Batch: MA41085

(3) Instrument QC Batch: MA41088

(4) Instrument QC Batch: MA41097

(5) Prep QC Batch: MP97907

(6) Prep QC Batch: MP97914

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID: RHBF9-03 (8-10)

Lab Sample ID: JC34266-11

Matrix: SO - Soil

Date Sampled: 12/27/16

Date Received: 12/27/16

Percent Solids: 78.0

Project: Red Hook Ballfields Soil, Brooklyn, NY

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	5800 Jx	67	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Antimony	< 2.7	2.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Arsenic	23.0	2.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Barium	290	27	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Beryllium	0.52	0.27	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cadmium	1.6	0.67	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Calcium	4830 Jx	670	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Chromium	18.1	1.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cobalt	7.7	6.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Copper	333	3.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Iron	16200	67	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Lead	1130	2.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Magnesium	940 Jx	670	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Manganese	221	2.0	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Mercury	3.4	0.34	mg/kg	10	12/30/16	12/30/16 JPM	SW846 7471B ¹	SW846 7471B ³
Nickel	23.5	5.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Potassium	< 1300	1300	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Selenium	< 2.7	2.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Silver	1.1 Jx	0.67	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Sodium	< 1300	1300	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Thallium	< 1.3	1.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Tin	94.5	6.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Vanadium	22.7	6.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Zinc	753	6.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴

(1) Instrument QC Batch: MA41069

(2) Instrument QC Batch: MA41085

(3) Prep QC Batch: MP97907

(4) Prep QC Batch: MP97914

RL = Reporting Limit

Report of Analysis

Client Sample ID: RHBF9-04 (2-4)

Lab Sample ID: JC34266-13

Matrix: SO - Soil

Date Sampled: 12/27/16

Date Received: 12/27/16

Percent Solids: 87.6

Project: Red Hook Ballfields Soil, Brooklyn, NY

4.16

4

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	9880 <i>J+</i>	55	✓ mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Antimony	6.9	2.2	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Arsenic	11.6	2.2	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Barium	122	22	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Beryllium	0.47	0.22	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cadmium	1.1	0.55	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Calcium	2930 <i>J+</i>	550	✓ mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Chromium	15.9	1.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cobalt	5.9	5.5	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Copper	356	2.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Iron	17000	55	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Lead	375	2.2	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Magnesium	1970 <i>J+</i>	550	✓ mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Manganese	172	1.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Mercury	1.5	0.074	mg/kg	2	12/30/16	12/30/16 JPM	SW846 7471B ¹	SW846 7471B ³
Nickel	24.2	4.4	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Potassium	<1100	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Selenium	<2.2	2.2	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Silver	0.58 <i>J+</i>	0.55	✓ mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Sodium	<1100	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Thallium	<1.1	1.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Tin	72.8	5.5	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Vanadium	19.8	5.5	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Zinc	696	5.5	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴

(1) Instrument QC Batch: MA41069

(2) Instrument QC Batch: MA41085

(3) Prep QC Batch: MP97907

(4) Prep QC Batch: MP97914

RL = Reporting Limit

Report of Analysis

Client Sample ID: RHBF9-04 (5-7)

Lab Sample ID: JC34266-14

Matrix: SO - Soil

Date Sampled: 12/27/16

Date Received: 12/27/16

Percent Solids: 86.0

Project: Red Hook Ballfields Soil, Brooklyn, NY

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	3400 ⁵⁺	57	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Antimony	20.6	2.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Arsenic	54.8	2.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Barium	1930	110	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Beryllium	0.46	0.23	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Cadmium ^a	< 2.8	2.8	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Calcium	10300 ⁵⁻	570	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Chromium ^a	44.4	5.7	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Cobalt	25.4	5.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Copper	1280	14	mg/kg	5	12/31/16	01/04/17 DE	SW846 6010C ⁴	SW846 3050B ⁶
Iron	116000	280	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Lead ^a	4230	11	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Magnesium	1380 ³⁺	570	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Manganese ^a	4020 ³⁺	8.5	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Mercury	6.1	0.35	mg/kg	10	12/30/16	12/30/16 JPM	SW846 7471B ¹	SW846 7471B ⁵
Nickel	75.5	4.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Potassium	< 1100	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Selenium ^a	< 11	11	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Silver ^a	< 2.8	2.8	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Sodium	< 1100	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Thallium ^a	< 5.7	5.7	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶
Tin	172	5.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Vanadium	35.0	5.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁶
Zinc	1100	28	mg/kg	5	12/31/16	01/03/17 RP	SW846 6010C ³	SW846 3050B ⁶

(1) Instrument QC Batch: MA41069

(2) Instrument QC Batch: MA41085

(3) Instrument QC Batch: MA41088

(4) Instrument QC Batch: MA41097

(5) Prep QC Batch: MP97907

(6) Prep QC Batch: MP97914

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID: RHBF9-04 (8-10)

Lab Sample ID: JC34266-15

Matrix: SO - Soil

Date Sampled: 12/27/16

Date Received: 12/27/16

Percent Solids: 89.9

Project: Red Hook Ballfields Soil, Brooklyn, NY

4.18

4

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	3840 st	56	✓ mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Antimony	< 2.2	2.2	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Arsenic	10.2	2.2	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Barium	133	22	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Beryllium	0.24	0.22	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 0.56	0.56	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Calcium	17300 st	560	✓ mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Chromium	14.1	1.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cobalt	< 5.6	5.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Copper	48.2	2.8	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Iron	10200	56	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Lead	245	2.2	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Magnesium	2370 st	560	✓ mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Manganese	93.9	1.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Mercury	2.7	0.18	mg/kg	5	12/30/16	12/30/16 JPM	SW846 7471B ¹	SW846 7471B ³
Nickel	23.4	4.4	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Potassium	< 1100	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Selenium	< 2.2	2.2	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Silver	< 0.56	0.56	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Sodium	< 1100	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Thallium	< 1.1	1.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Tin	7.5	5.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Vanadium	17.6	5.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Zinc	359	5.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴

(1) Instrument QC Batch: MA41069

(2) Instrument QC Batch: MA41085

(3) Prep QC Batch: MP97907

(4) Prep QC Batch: MP97914

RL = Reporting Limit

Report of Analysis

Client Sample ID: RHBF9-DUP-01

Lab Sample ID: JC34266-16

Matrix: SO - Soil

Date Sampled: 12/27/16

Date Received: 12/27/16

Percent Solids: 86.1

Project: Red Hook Ballfields Soil, Brooklyn, NY

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	6590 <i>J+</i>	56	✓ mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Antimony	< 2.3	2.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Arsenic	10	2.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Barium	213	23	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Beryllium	0.43 <i>ⓧ</i>	0.23	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cadmium	1.2 <i>ⓧ</i>	0.56	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Calcium	10900 <i>J+</i>	560	✓ mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Chromium	20.7	1.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Cobalt	6.4	5.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Copper	124	2.8	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Iron	18300	56	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Lead	504	2.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Magnesium	3080 <i>J+</i>	560	✓ mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Manganese	294	1.7	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Mercury	3.5	0.18	mg/kg	5	12/30/16	12/30/16 JPM	SW846 7471B ¹	SW846 7471B ³
Nickel	30.2	4.5	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Potassium	< 1100	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Selenium	< 2.3	2.3	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Silver	0.61 <i>J+</i>	0.56	✓ mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Sodium	< 1100	1100	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Thallium	< 1.1	1.1	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Tin	25.0	5.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Vanadium	33.5	5.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴
Zinc	572	5.6	mg/kg	1	12/31/16	01/02/17 GT	SW846 6010C ²	SW846 3050B ⁴

(1) Instrument QC Batch: MA41069

(2) Instrument QC Batch: MA41085

(3) Prep QC Batch: MP97907

(4) Prep QC Batch: MP97914

RL = Reporting Limit

Report of Analysis

Client Sample ID: RHBF9-01
 Lab Sample ID: JC34266-4
 Matrix: AQ - Ground Water
 Project: Red Hook Ballfields Soil, Brooklyn, NY

Date Sampled: 12/22/16
 Date Received: 12/22/16
 Percent Solids: n/a

4.4

4

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	369	200	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Antimony	< 6.0	6.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Arsenic	11.5	3.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Barium	528	200	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Beryllium	< 1.0	1.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Cadmium	< 3.0	3.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Calcium	186000	5000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Chromium	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Cobalt	< 50	50	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Copper	20.8	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Iron	32800	100	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Lead	50.0	3.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Magnesium	39100	5000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Manganese	1060	15	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Mercury	0.22	0.20	ug/l	1	12/29/16	12/29/16 JA	SW846 7470A ¹	SW846 7470A ⁴
Nickel	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Potassium	28000	10000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Selenium	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Silver	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Sodium	71300	10000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Thallium	< 2.0	2.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Tin	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Vanadium	< 50	50	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Zinc	98.5	20	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³

- (1) Instrument QC Batch: MA41061
 (2) Instrument QC Batch: MA41074
 (3) Prep QC Batch: MP97878
 (4) Prep QC Batch: MP97892

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RHBF9-01	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-4F	Date Received:	12/22/16
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	< 200	200	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Antimony	< 6.0	6.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Arsenic	10.1	3.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Barium	494	200	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Beryllium	< 1.0	1.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Cadmium	< 3.0	3.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Calcium	183000	5000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Chromium	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Cobalt	< 50	50	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Copper	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Iron	31300	100	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Lead	< 3.0 <i>US</i>	3.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Magnesium	38600	5000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Manganese	1020	15	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Mercury	< 0.20	0.20	ug/l	1	12/29/16	12/29/16	JA	SW846 7470A ¹ SW846 7470A ⁴
Nickel	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Potassium	27500	10000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Selenium	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Silver	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Sodium	70100	10000	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Thallium	< 2.0	2.0	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Tin	< 10	10	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Vanadium	< 50	50	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³
Zinc	21.3	20	ug/l	1	12/28/16	12/30/16	DE	SW846 6010C ² SW846 3010A ³

(1) Instrument QC Batch: MA41061

(2) Instrument QC Batch: MA41074

(3) Prep QC Batch: MP97878

(4) Prep QC Batch: MP97892

RL = Reporting Limit

Report of Analysis

Client Sample ID: RHBF9-02
 Lab Sample ID: JC34266-8
 Matrix: AQ - Ground Water
 Project: Red Hook Ballfields Soil, Brooklyn, NY

Date Sampled: 12/27/16
 Date Received: 12/27/16
 Percent Solids: n/a

4.9

4

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	4400	200	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Antimony	6.2	6.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Arsenic	29.6	3.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Barium	538	200	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Beryllium	< 1.0	1.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Cadmium	< 3.0	3.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Calcium	80700	5000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Chromium	30.2	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Cobalt	< 50	50	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Copper	170	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Iron	29200	100	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Lead	1160	3.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Magnesium	50200	5000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Manganese	412	15	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Mercury	4.8	0.20	ug/l	1	12/29/16	12/29/16 JA	SW846 7470A ¹	SW846 7470A ⁴
Nickel	17.8	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Potassium	28500	10000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Selenium	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Silver	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Sodium	52200	10000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Thallium	< 2.0	2.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Tin	107	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Vanadium	< 50	50	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Zinc	667	20	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³

(1) Instrument QC Batch: MA41061

(2) Instrument QC Batch: MA41074

(3) Prep QC Batch: MP97878

(4) Prep QC Batch: MP97892

RL = Reporting Limit

Report of Analysis

Client Sample ID: RHBF9-02
 Lab Sample ID: JC34266-8F
 Matrix: AQ - Groundwater Filtered
 Project: Red Hook Ballfields Soil, Brooklyn, NY

Date Sampled: 12/27/16
 Date Received: 12/27/16
 Percent Solids: n/a

4.10

4

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	< 200	200	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Antimony	< 6.0	6.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Arsenic	12.7	3.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Barium	245	200	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Beryllium	< 1.0	1.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Cadmium	< 3.0	3.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Calcium	76200	5000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Chromium	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Cobalt	< 50	50	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Copper	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Iron	16500	100	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Lead	< 3.0 <i>US</i>	3.0 <i>✓</i>	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Magnesium	47100	5000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Manganese	328	15	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Mercury	< 0.20	0.20	ug/l	1	12/29/16	12/29/16 JA	SW846 7470A ¹	SW846 7470A ⁴
Nickel	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Potassium	26800	10000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Selenium	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Silver	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Sodium	50300	10000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Thallium	< 2.0	2.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Tin	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Vanadium	< 50	50	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Zinc	< 20	20	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³

- (1) Instrument QC Batch: MA41061
 (2) Instrument QC Batch: MA41074
 (3) Prep QC Batch: MP97878
 (4) Prep QC Batch: MP97892

RL = Reporting Limit

Report of Analysis

Client Sample ID: RHBF9-03
 Lab Sample ID: JC34266-12
 Matrix: AQ - Ground Water
 Project: Red Hook Ballfields Soil, Brooklyn, NY

Date Sampled: 12/27/16
 Date Received: 12/27/16
 Percent Solids: n/a

4.14

4

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	1600	200	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Antimony	< 6.0	6.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Arsenic	10.0	3.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Barium	277	200	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Beryllium	< 1.0	1.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Cadmium	< 3.0	3.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Calcium	496000	25000	ug/l	5	12/28/16	01/03/17 KS	SW846 6010C ³	SW846 3010A ⁵
Chromium ^a	< 50	50	ug/l	5	12/28/16	01/03/17 KS	SW846 6010C ³	SW846 3010A ⁵
Cobalt	< 50	50	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Copper	31.7	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Iron	5330	100	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Lead ^a	148	15	ug/l	5	12/28/16	01/03/17 KS	SW846 6010C ³	SW846 3010A ⁵
Magnesium	78100	5000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Manganese	192	15	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Mercury	0.36	0.20	ug/l	1	12/29/16	12/29/16 JA	SW846 7470A ¹	SW846 7470A ⁶
Nickel	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Potassium	47400	10000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Selenium	11.7	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Silver	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Sodium	152000	10000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Thallium ^a	< 20	20	ug/l	10	12/28/16	01/04/17 KS	SW846 6010C ⁴	SW846 3010A ⁵
Tin	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Vanadium	< 50	50	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Zinc	124	20	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵

(1) Instrument QC Batch: MA41061

(2) Instrument QC Batch: MA41074

(3) Instrument QC Batch: MA41091

(4) Instrument QC Batch: MA41099

(5) Prep QC Batch: MP97878

(6) Prep QC Batch: MP97892

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID: RHBF9-03
 Lab Sample ID: JC34266-12F
 Matrix: AQ - Groundwater Filtered
 Project: Red Hook Ballfields Soil, Brooklyn, NY

Date Sampled: 12/27/16
 Date Received: 12/27/16
 Percent Solids: n/a

4.15

4

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	< 200	200	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Antimony	< 6.0	6.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Arsenic	9.7	3.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Barium	289	200	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Beryllium	< 1.0	1.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Cadmium	< 3.0	3.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Calcium	421000	25000	ug/l	5	12/28/16	01/03/17 KS	SW846 6010C ³	SW846 3010A ⁵
Chromium ^a	< 50	50	ug/l	5	12/28/16	01/03/17 KS	SW846 6010C ³	SW846 3010A ⁵
Cobalt	< 50	50	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Copper	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Iron	3530	100	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Lead ^a	< 15 <i>UT</i> ✓	15	ug/l	5	12/28/16	01/03/17 KS	SW846 6010C ³	SW846 3010A ⁵
Magnesium	64700	5000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Manganese	234	15	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Mercury	< 0.20	0.20	ug/l	1	12/29/16	12/29/16 JA	SW846 7470A ¹	SW846 7470A ⁶
Nickel	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Potassium	40300	10000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Selenium	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Silver	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Sodium	117000	10000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Thallium ^a	< 10	10	ug/l	5	12/28/16	01/04/17 KS	SW846 6010C ⁴	SW846 3010A ⁵
Tin	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Vanadium	< 50	50	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Zinc	< 20	20	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵

- (1) Instrument QC Batch: MA41061
 (2) Instrument QC Batch: MA41074
 (3) Instrument QC Batch: MA41091
 (4) Instrument QC Batch: MA41099
 (5) Prep QC Batch: MP97878
 (6) Prep QC Batch: MP97892

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID: RHBF9-GW-DUP-01

Lab Sample ID: JC34266-17

Matrix: AQ - Ground Water

Date Sampled: 12/27/16

Date Received: 12/27/16

Percent Solids: n/a

Project: Red Hook Ballfields Soil, Brooklyn, NY

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	4490	200	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Antimony	7.4	6.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Arsenic	31.0	3.0	ug/l	1	12/28/16	01/03/17 KS	SW846 6010C ³	SW846 3010A ⁵
Barium	523	200	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Beryllium	< 1.0	1.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Cadmium	< 3.0	3.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Calcium	76300	5000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Chromium	28.6	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Cobalt	< 50	50	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Copper	164	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Iron	27600	100	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Lead	1170	3.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Magnesium	46200	5000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Manganese	404	15	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Mercury	4.0	0.20	ug/l	1	12/29/16	12/29/16 JA	SW846 7470A ¹	SW846 7470A ⁶
Nickel	17.4	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Potassium	26300	10000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Selenium	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Silver	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Sodium	48100	10000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Thallium	< 2.0	2.0	ug/l	1	01/07/17	01/07/17 GT	SW846 6010C ⁴	SW846 3010A ⁷
Tin	107	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Vanadium	< 50	50	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Zinc	668	20	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵

(1) Instrument QC Batch: MA41061

(2) Instrument QC Batch: MA41074

(3) Instrument QC Batch: MA41091

(4) Instrument QC Batch: MA41116

(5) Prep QC Batch: MP97878

(6) Prep QC Batch: MP97892

(7) Prep QC Batch: MP97990

RL = Reporting Limit

Report of Analysis

Client Sample ID: RHBF9-GW-DUP-01
 Lab Sample ID: JC34266-17F
 Matrix: AQ - Groundwater Filtered

Date Sampled: 12/27/16
 Date Received: 12/27/16
 Percent Solids: n/a

Project: Red Hook Ballfields Soil, Brooklyn, NY

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	< 200	200	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Antimony	< 6.0	6.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Arsenic	12.4	3.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Barium	255	200	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Beryllium	< 1.0	1.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Cadmium	< 3.0	3.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Calcium	76500	5000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Chromium	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Cobalt	< 50	50	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Copper	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Iron	17000	100	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Lead	10.1	3.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Magnesium	47900	5000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Manganese	324	15	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Mercury	< 0.20	0.20	ug/l	1	12/29/16	12/29/16 JA	SW846 7470A ¹	SW846 7470A ⁴
Nickel	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Potassium	27200	10000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Selenium	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Silver	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Sodium	50500	10000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Thallium	< 2.0	2.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Tin	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Vanadium	< 50	50	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Zinc	< 20	20	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³

- (1) Instrument QC Batch: MA41061
 (2) Instrument QC Batch: MA41074
 (3) Prep QC Batch: MP97878
 (4) Prep QC Batch: MP97892

RL = Reporting Limit

Report of Analysis

Client Sample ID: RHBF9-FIELD BLANK

Lab Sample ID: JC34266-18

Matrix: AQ - Field Blank Water

Date Sampled: 12/27/16

Date Received: 12/27/16

Percent Solids: n/a

Project: Red Hook Ballfields Soil, Brooklyn, NY

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	< 200	200	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Antimony	< 6.0	6.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Arsenic	< 3.0	3.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Barium	< 200	200	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Beryllium	< 1.0	1.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Cadmium	< 3.0	3.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Calcium	< 5000	5000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Chromium	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Cobalt	< 50	50	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Copper	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Iron	< 100	100	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Lead	< 3.0	3.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Magnesium	< 5000	5000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Manganese	< 15	15	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Mercury	< 0.20	0.20	ug/l	1	12/29/16	12/29/16 JA	SW846 7470A ¹	SW846 7470A ⁴
Nickel	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Potassium	< 10000	10000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Selenium	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Silver	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Sodium	< 10000	10000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Thallium	< 2.0	2.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Tin	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Vanadium	< 50	50	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Zinc	< 20	20	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³

(1) Instrument QC Batch: MA41061

(2) Instrument QC Batch: MA41074

(3) Prep QC Batch: MP97878

(4) Prep QC Batch: MP97892

RL = Reporting Limit

Report of Analysis

Client Sample ID: RHBF9-FIELD BLANK
 Lab Sample ID: JC34266-18F
 Matrix: AQ - Field Blank Filtered

Date Sampled: 12/27/16
 Date Received: 12/27/16
 Percent Solids: n/a

Project: Red Hook Ballfields Soil, Brooklyn, NY

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	< 200	200	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Antimony	< 6.0	6.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Arsenic	< 3.0	3.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Barium	< 200	200	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Beryllium	< 1.0	1.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Cadmium	< 3.0	3.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Calcium	< 5000	5000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Chromium	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Cobalt	< 50	50	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Copper	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Iron	< 100	100	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Lead	< 3.0 ^{UJ}	3.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Magnesium	< 5000	5000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Manganese	< 15	15	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Mercury	< 0.20	0.20	ug/l	1	12/29/16	12/29/16 JA	SW846 7470A ¹	SW846 7470A ⁴
Nickel	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Potassium	< 10000	10000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Selenium	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Silver	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Sodium	< 10000	10000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Thallium	< 2.0	2.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Tin	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Vanadium	< 50	50	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Zinc	< 20	20	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³

(1) Instrument QC Batch: MA41061

(2) Instrument QC Batch: MA41074

(3) Prep QC Batch: MP97878

(4) Prep QC Batch: MP97892

RL = Reporting Limit

Report of Analysis

Client Sample ID: RHBF9-EQUIPMENT BLANK
 Lab Sample ID: JC34266-19
 Matrix: AQ - Equipment Blank
 Project: Red Hook Ballfields Soil, Brooklyn, NY

Date Sampled: 12/27/16
 Date Received: 12/27/16
 Percent Solids: n/a

4.24

4

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	< 200	200	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Antimony	< 6.0	6.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Arsenic	< 3.0	3.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Barium	< 200	200	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Beryllium	< 1.0	1.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Cadmium	< 3.0	3.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Calcium	< 5000	5000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Chromium	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Cobalt	< 50	50	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Copper	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Iron	< 100	100	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Lead	< 3.0	3.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Magnesium	< 5000	5000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Manganese	< 15	15	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Mercury	< 0.20	0.20	ug/l	1	12/29/16	12/29/16 JA	SW846 7470A ¹	SW846 7470A ⁴
Nickel	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Potassium	< 10000	10000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Selenium	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Silver	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Sodium	< 10000	10000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Thallium	< 2.0	2.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Tin	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Vanadium	< 50	50	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Zinc	< 20	20	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³

- (1) Instrument QC Batch: MA41061
 (2) Instrument QC Batch: MA41074
 (3) Prep QC Batch: MP97878
 (4) Prep QC Batch: MP97892

RL = Reporting Limit

Report of Analysis

Client Sample ID: RHBF9-EQUIPMENT BLANK

Lab Sample ID: JC34266-19F

Matrix: AQ - Equip Blank Filtered

Date Sampled: 12/27/16

Date Received: 12/27/16

Percent Solids: n/a

Project: Red Hook Ballfields Soil, Brooklyn, NY

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	< 200	200	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Antimony	< 6.0	6.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Arsenic	< 3.0	3.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Barium	< 200	200	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Beryllium	< 1.0	1.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Cadmium	< 3.0	3.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Calcium	< 5000	5000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Chromium	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Cobalt	< 50	50	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Copper	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Iron	< 100	100	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Lead	< 3.0 US	3.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Magnesium	< 5000	5000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Manganese	< 15	15	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Mercury	< 0.20	0.20	ug/l	1	12/29/16	12/29/16 JA	SW846 7470A ¹	SW846 7470A ⁴
Nickel	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Potassium	< 10000	10000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Selenium	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Silver	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Sodium	< 10000	10000	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Thallium	< 2.0	2.0	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Tin	< 10	10	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Vanadium	< 50	50	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³
Zinc	< 20	20	ug/l	1	12/28/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ³

(1) Instrument QC Batch: MA41061

(2) Instrument QC Batch: MA41074

(3) Prep QC Batch: MP97878

(4) Prep QC Batch: MP97892

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RHBF9-04	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-20	Date Received:	12/28/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	2040	200	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁶
Antimony	< 6.0	6.0	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁶
Arsenic	198	3.0	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁶
Barium	569	200	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁶
Beryllium	< 1.0	1.0	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁶
Cadmium	< 3.0	3.0	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁶
Calcium	232000	5000	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁶
Chromium	12.7	10	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁶
Cobalt	< 50	50	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁶
Copper	38.7	10	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁶
Iron	19200	100	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁶
Lead	143	3.0	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁶
Magnesium	44100	5000	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁶
Manganese	1110	15	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁶
Mercury	1.9	0.20	ug/l	1	12/29/16	12/29/16 JA	SW846 7470A ¹	SW846 7470A ⁵
Nickel	< 10	10	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁶
Potassium	23600	10000	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁶
Selenium	< 10	10	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁶
Silver	< 10	10	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁶
Sodium	324000	20000	ug/l	2	12/30/16	01/03/17 RP	SW846 6010C ³	SW846 3010A ⁶
Thallium	< 2.0	2.0	ug/l	1	12/30/16	01/04/17 DE	SW846 6010C ⁴	SW846 3010A ⁶
Tin	< 10	10	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁶
Vanadium	< 50	50	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁶
Zinc	163	20	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁶

- (1) Instrument QC Batch: MA41061
 (2) Instrument QC Batch: MA41074
 (3) Instrument QC Batch: MA41088
 (4) Instrument QC Batch: MA41097
 (5) Prep QC Batch: MP97892
 (6) Prep QC Batch: MP97900

RL = Reporting Limit

Report of Analysis

Client Sample ID: RHBF9-04
 Lab Sample ID: JC34266-20F
 Matrix: AQ - Groundwater Filtered
 Project: Red Hook Ballfields Soil, Brooklyn, NY

Date Sampled: 12/27/16
 Date Received: 12/28/16
 Percent Solids: n/a

4.27

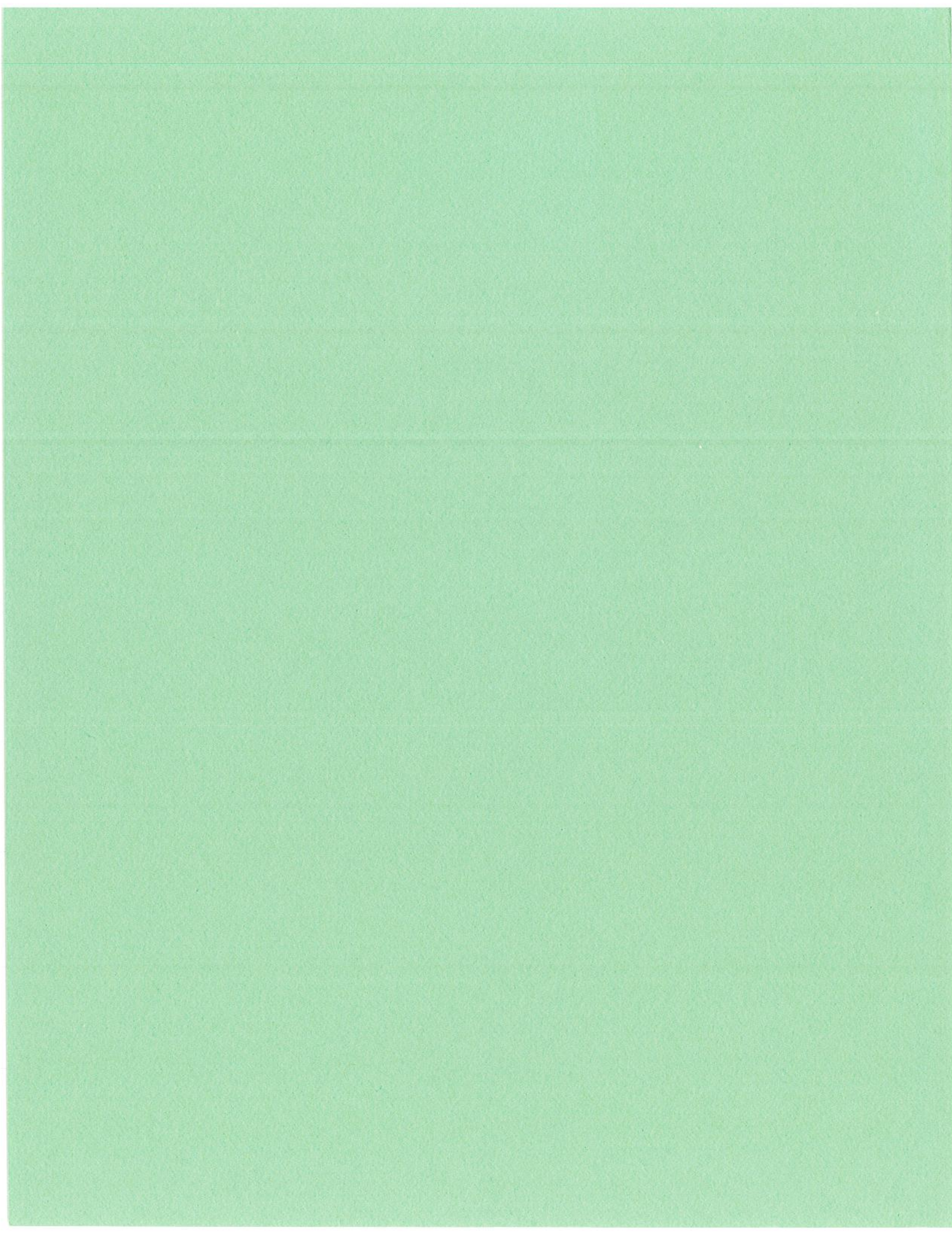
4

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analized By	Method	Prep Method
Aluminum	< 200	200	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Antimony	< 6.0	6.0	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Arsenic	174	3.0	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Barium	556	200	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Beryllium	< 1.0	1.0	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Cadmium	< 3.0	3.0	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Calcium	250000	5000	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Chromium	< 10	10	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Cobalt	< 50	50	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Copper	< 10	10	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Iron	14200	100	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Lead	< 3.0 US	3.0	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Magnesium	49000	5000	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Manganese	1170	15	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Mercury	< 0.20	0.20	ug/l	1	12/29/16	12/29/16 JA	SW846 7470A ¹	SW846 7470A ⁴
Nickel	< 10	10	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Potassium	26900	10000	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Selenium	< 10	10	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Silver	< 10	10	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Sodium	365000	20000	ug/l	2	12/30/16	01/03/17 RP	SW846 6010C ³	SW846 3010A ⁵
Thallium	< 2.0	2.0	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Tin	< 10	10	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Vanadium	< 50	50	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵
Zinc	< 20	20	ug/l	1	12/30/16	12/30/16 DE	SW846 6010C ²	SW846 3010A ⁵

- (1) Instrument QC Batch: MA41061
 (2) Instrument QC Batch: MA41074
 (3) Instrument QC Batch: MA41088
 (4) Prep QC Batch: MP97892
 (5) Prep QC Batch: MP97900

RL = Reporting Limit



Report of Analysis

Page 1 of 1

Client Sample ID: RHBF9-01 (2-4)

Lab Sample ID: JC34266-1

Matrix: SO - Soil

Project: Red Hook Ballfields Soil, Brooklyn, NY

Date Sampled: 12/22/16

Date Received: 12/22/16

Percent Solids: 86.0

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	2.7 J-✓	0.47	mg/kg	1	01/05/17 12:50	RP	SW846 3060A/7196A
Chromium, Trivalent ^a	39.2 J✓	1.6	mg/kg	1	01/05/17 12:50	RP	SW846 6010/7196A M
Cyanide	0.79	0.26	mg/kg	1	01/05/17 13:13	BM	SW846 9012B/LACHAT
Solids, Percent	86		%	1	12/23/16 17:22	YR	SM2540 G-97

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID: RHBF9-01 (5-7)

Lab Sample ID: JC34266-2

Matrix: SO - Soil

Date Sampled: 12/22/16

Date Received: 12/22/16

Percent Solids: 88.1

Project: Red Hook Ballfields Soil, Brooklyn, NY

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	R < 0.45	0.45	mg/kg	1	01/05/17 12:50	RP	SW846 3060A/7196A
Chromium, Trivalent ^a	NG 20.9	1.6	mg/kg	1	01/05/17 12:50	RP	SW846 6010/7196A M
Cyanide	0.30	0.25	mg/kg	1	01/05/17 13:15	BM	SW846 9012B/LACHAT
Solids, Percent	88.1		%	1	12/23/16 17:22	YR	SM2540 G-97

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID: RHBF9-01 (8-10)
Lab Sample ID: JC34266-3
Matrix: SO - Soil
Project: Red Hook Ballfields Soil, Brooklyn, NY

Date Sampled: 12/22/16
Date Received: 12/22/16
Percent Solids: 90.0

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	1.1 3-✓	0.44	mg/kg	1	01/05/17 12:50	RP	SW846 3060A/7196A
Chromium, Trivalent ^a	18.0 3✓	1.5	mg/kg	1	01/05/17 12:50	RP	SW846 6010/7196A M
Cyanide	0.26	0.26	mg/kg	1	01/05/17 13:16	BM	SW846 9012B/LACHAT
Solids, Percent	90		%	1	12/23/16 17:22	YR	SM2540 G-97

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID: RHBF9-02 (2-4)

Lab Sample ID: JC34266-5

Matrix: SO - Soil

Project: Red Hook Ballfields Soil, Brooklyn, NY

Date Sampled: 12/27/16

Date Received: 12/27/16

Percent Solids: 89.4

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	1.0 <i>3- ✓</i>	0.45	mg/kg	1	01/05/17 12:50	RP	SW846 3060A/7196A
Chromium, Trivalent ^a	21.1 <i>3 ✓</i>	1.6	mg/kg	1	01/05/17 12:50	RP	SW846 6010/7196A M
Cyanide	< 0.22	0.22	mg/kg	1	01/05/17 12:23	BM	SW846 9012B/LACHAT
Solids, Percent	89.4		%	1	12/28/16 16:40	SP	SM2540 G-97

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID: RHBF9-02 (5-7)

Lab Sample ID: JC34266-6

Matrix: SO - Soil

Project: Red Hook Ballfields Soil, Brooklyn, NY

Date Sampled: 12/27/16

Date Received: 12/27/16

Percent Solids: 88.5

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<0.45 <i>R</i>	0.45 <i>US</i>	mg/kg	1	01/05/17 12:50	RP	SW846 3060A/7196A
Chromium, Trivalent ^a	18.1 <i>NC</i>	1.6 <i>S</i>	mg/kg	1	01/05/17 12:50	RP	SW846 6010/7196A M
Cyanide	<0.27	0.27	mg/kg	1	01/10/17 10:29	BM	SW846 9012B/LACHAT
Solids, Percent	88.5		%	1	12/28/16 16:40	SP	SM2540 G-97

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Client Sample ID: RHBF9-02 (8-10)

Lab Sample ID: JC34266-7

Matrix: SO - Soil

Project: Red Hook Ballfields Soil, Brooklyn, NY

Date Sampled: 12/27/16

Date Received: 12/27/16

Percent Solids: 77.8

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.68 <i>J-✓</i>	0.51	mg/kg	1	01/05/17 12:50	RP	SW846 3060A/7196A
Chromium, Trivalent ^a	24.1 <i>J-✓</i>	1.8	mg/kg	1	01/05/17 12:50	RP	SW846 6010/7196A M
Cyanide	< 0.28	0.28	mg/kg	1	01/05/17 12:24	BM	SW846 9012B/LACHAT
Solids, Percent	77.8		%	1	12/28/16 16:40	SP	SM2540 G-97

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID: RHBF9-03 (2-4)

Lab Sample ID: JC34266-9

Matrix: SO - Soil

Project: Red Hook Ballfields Soil, Brooklyn, NY

Date Sampled: 12/27/16

Date Received: 12/27/16

Percent Solids: 83.5

4.11

4

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.85 <i>3-</i> ✓	0.48	mg/kg	1	01/05/17 12:50	RP	SW846 3060A/7196A
Chromium, Trivalent ^a	31.9 <i>3</i> ✓	6.4	mg/kg	1	01/05/17 12:50	RP	SW846 6010/7196A M
Cyanide	< 0.24	0.24	mg/kg	1	01/05/17 12:26	BM	SW846 9012B/LACHAT
Solids, Percent	83.5		%	1	12/28/16 16:40	SP	SM2540 G-97

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID: RHBF9-03 (5-7)

Lab Sample ID: JC34266-10

Matrix: SO - Soil

Project: Red Hook Ballfields Soil, Brooklyn, NY

Date Sampled: 12/27/16

Date Received: 12/27/16

Percent Solids: 75.5

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	2.4 J- ✓	0.53	mg/kg	1	01/05/17 12:50	RP	SW846 3060A/7196A
Chromium, Trivalent ^a	27.0 J ✓	3.2	mg/kg	1	01/05/17 12:50	RP	SW846 6010/7196A M
Cyanide	0.43	0.28	mg/kg	1	01/05/17 12:27	BM	SW846 9012B/LACHAT
Solids, Percent	75.5		%	1	12/28/16 16:40	SP	SM2540 G-97

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID: RHBF9-03 (8-10)
 Lab Sample ID: JC34266-11
 Matrix: SO - Soil
 Project: Red Hook Ballfields Soil, Brooklyn, NY

Date Sampled: 12/27/16
 Date Received: 12/27/16
 Percent Solids: 78.0

4.13

4

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	R < 0.51 ^{0.51}	0.51	mg/kg	1	01/05/17 12:50	RP	SW846 3060A/7196A
Chromium, Trivalent ^a	NC 18.1 ^{1.8}	1.8	mg/kg	1	01/05/17 12:50	RP	SW846 6010/7196A M
Cyanide	< 0.27	0.27	mg/kg	1	01/05/17 12:28	BM	SW846 9012B/LACHAT
Solids, Percent	78		%	1	12/28/16 16:40	SP	SM2540 G-97

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID: RHBF9-04 (2-4)
Lab Sample ID: JC34266-13
Matrix: SO - Soil
Project: Red Hook Ballfields Soil, Brooklyn, NY

Date Sampled: 12/27/16
Date Received: 12/27/16
Percent Solids: 87.6

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	< 0.46 15.5	0.46	mg/kg	1	01/05/17 12:50	RP	SW846 3060A/7196A
Chromium, Trivalent ^a	15.5 15.5	1.6	mg/kg	1	01/05/17 12:50	RP	SW846 6010/7196A M
Cyanide	< 0.25	0.25	mg/kg	1	01/05/17 12:30	BM	SW846 9012B/LACHAT
Solids, Percent	87.6		%	1	12/28/16 16:40	SP	SM2540 G-97

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Client Sample ID: RHBF9-04 (5-7)

Lab Sample ID: JC34266-14

Matrix: SO - Soil

Project: Red Hook Ballfields Soil, Brooklyn, NY

Date Sampled: 12/27/16

Date Received: 12/27/16

Percent Solids: 86.0

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.89 <i>45-✓</i>	0.47	mg/kg	1	01/05/17 12:00	RP	SW846 3060A/7196A
Chromium, Trivalent ^a	43.5 <i>5✓</i>	6.2	mg/kg	1	01/05/17 12:00	RP	SW846 6010/7196A M
Cyanide	< 0.25 <i>R</i>	0.25 <i>✓</i>	mg/kg	1	01/05/17 12:34	BM	SW846 9012B/LACHAT
Solids, Percent	86		%	1	12/28/16 16:40	SP	SM2540 G-97

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-04 (8-10)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-15	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	89.9
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<0.44	0.44	mg/kg	1	01/05/17 12:54	RP	SW846 3060A/7196A
Chromium, Trivalent ^a	13.8	1.5	mg/kg	1	01/05/17 12:54	RP	SW846 6010/7196A M
Cyanide	0.31	0.23	mg/kg	1	01/05/17 12:35	BM	SW846 9012B/LACHAT
Solids, Percent	89.9		%	1	12/28/16 16:40	SP	SM2540 G-97

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-DUP-01	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-16	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	86.1
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.97 <i>5-</i>	0.46	mg/kg	1	01/05/17 12:54	RP	SW846 3060A/7196A
Chromium, Trivalent ^a	19.7 <i>5</i>	1.6	mg/kg	1	01/05/17 12:54	RP	SW846 6010/7196A M
Cyanide	< 0.22	0.22	mg/kg	1	01/05/17 12:37	BM	SW846 9012B/LACHAT
Solids, Percent	86.1		%	1	12/28/16 16:40	SP	SM2540 G-97

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

The first part of the paper discusses the importance of maintaining accurate records of all transactions. This is essential for ensuring the integrity of the financial system and for providing a clear audit trail. The second part of the paper focuses on the role of the auditor in verifying the accuracy of the records. The auditor must ensure that all transactions are properly recorded and that the records are consistent with the underlying business transactions. The third part of the paper discusses the importance of maintaining accurate records of all transactions. This is essential for ensuring the integrity of the financial system and for providing a clear audit trail. The fourth part of the paper focuses on the role of the auditor in verifying the accuracy of the records. The auditor must ensure that all transactions are properly recorded and that the records are consistent with the underlying business transactions.

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-01	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-4	Date Received:	12/22/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	< 0.010	0.010	mg/l	1	12/22/16 22:00	JOO	SW846 7196A
Chromium, Trivalent ^a	< 0.020	0.020	mg/l	1	12/30/16 13:26	DE	SW846 6010/7196A M
Cyanide	< 0.010	0.010	mg/l	1	01/04/17 16:35	BM	EPA 335.4/LACHAT

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-01	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-4F	Date Received:	12/22/16
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	< 0.010	0.010	mg/l	1	12/22/16 22:00	JOO	SW846 7196A
Chromium, Trivalent ^a	< 0.020	0.020	mg/l	1	12/30/16 14:35	DE	SW846 6010/7196A M

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-02	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-8	Date Received:	12/27/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	< 0.010 UJ✓	0.010	mg/l	1	12/27/16 21:45	AT	SW846 7196A
Chromium, Trivalent ^a	0.022 J✓	0.020	mg/l	1	12/30/16 14:13	DE	SW846 6010/7196A M
Cyanide	< 0.010 UJ✓	0.010	mg/l	1	01/05/17 14:04	BM	EPA 335.4/LACHAT

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-02	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-8F	Date Received:	12/27/16
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.013 <i>J-✓</i>	0.010	mg/l	1	12/27/16 21:55	AT	SW846 7196A
Chromium, Trivalent ^a	<0.020 <i>VJ/</i>	0.020	mg/l	1	12/30/16 14:39	DE	SW846 6010/7196A M

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID: RHBF9-03
Lab Sample ID: JC34266-12
Matrix: AQ - Ground Water
Project: Red Hook Ballfields Soil, Brooklyn, NY

Date Sampled: 12/27/16
Date Received: 12/27/16
Percent Solids: n/a

4.14

4

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	< 0.010	0.010	mg/l	1	12/27/16 21:45	AT	SW846 7196A
Chromium, Trivalent ^a	< 0.060	0.060	mg/l	1	01/03/17 14:35	KS	SW846 6010/7196A M
Cyanide	< 0.010	0.010	mg/l	1	01/05/17 14:05	BM	EPA 335.4/LACHAT

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-03	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-12F	Date Received:	12/27/16
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	< 0.010 VJ ✓	0.010	mg/l	1	12/27/16 21:55	AT	SW846 7196A
Chromium, Trivalent ^a	< 0.060 VJ ✓	0.060	mg/l	1	01/03/17 14:38	KS	SW846 6010/7196A M

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-GW-DUP-01	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-17	Date Received:	12/27/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.014 J-✓	0.010	mg/l	1	12/27/16 21:45	AT	SW846 7196A
Chromium, Trivalent ^a	< 0.020 VJ✓	0.020	mg/l	1	12/30/16 14:22	DE	SW846 6010/7196A M
Cyanide	< 0.010 VJ✓	0.010	mg/l	1	01/05/17 14:07	BM	EPA 335.4/LACHAT

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-GW-DUP-01	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-17F	Date Received:	12/27/16
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.018 <i>5-✓</i>	0.010	mg/l	1	12/27/16 21:55	AT	SW846 7196A
Chromium, Trivalent ^a	< 0.020 <i>UJ✓</i>	0.020	mg/l	1	12/30/16 14:48	DE	SW846 6010/7196A M

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RHBF9-FIELD BLANK	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-18	Date Received:	12/27/16
Matrix:	AQ - Field Blank Water	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	< 0.010	0.010	mg/l	1	12/27/16 21:45	AT	SW846 7196A
Chromium, Trivalent ^a	< 0.020	0.020	mg/l	1	12/30/16 14:26	DE	SW846 6010/7196A M
Cyanide	< 0.010	0.010	mg/l	1	01/05/17 14:08	BM	EPA 335.4/LACHAT

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-FIELD BLANK	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-18F	Date Received:	12/27/16
Matrix:	AQ - Field Blank Filtered	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	< 0.010 <i>W</i>	0.010	mg/l	1	12/27/16 21:55	AT	SW846 7196A
Chromium, Trivalent ^a	< 0.020 <i>W</i>	0.020	mg/l	1	12/30/16 15:01	DE	SW846 6010/7196A M

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-EQUIPMENT BLANK	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-19	Date Received:	12/27/16
Matrix:	AQ - Equipment Blank	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	< 0.010 <i>VJ</i> ✓	0.010	mg/l	1	12/27/16 21:45	AT	SW846 7196A
Chromium, Trivalent ^a	< 0.020 <i>VJ</i> ✓	0.020	mg/l	1	12/30/16 14:30	DE	SW846 6010/7196A M
Cyanide	< 0.010 <i>VJ</i> ✓	0.010	mg/l	1	01/05/17 14:12	BM	EPA 335.4/LACHAT

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-EQUIPMENT BLANK	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-19F	Date Received:	12/27/16
Matrix:	AQ - Equip Blank Filtered	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	< 0.010 <i>UJ</i> ✓	0.010	mg/l	1	12/27/16 21:55	AT	SW846 7196A
Chromium, Trivalent ^a	< 0.020 <i>UJ</i> ✓	0.020	mg/l	1	12/30/16 15:05	DE	SW846 6010/7196A M

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-04	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-20	Date Received:	12/28/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

4.26

4

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent ^a	0.034 <i>JS</i>	0.010	mg/l	1	12/28/16 16:05	RP	SW846 7196A
Chromium, Trivalent ^b	< 0.030 <i>UJ</i>	0.030	mg/l	1	12/30/16 18:10	DE	SW846 6010/7196A M
Cyanide	< 0.010 <i>UJ</i>	0.010	mg/l	1	01/05/17 14:13	BM	EPA 335.4/LACHAT

(a) Analysis done out of holding time.

(b) Calculated as: (Chromium) - (Chromium, Hexavalent). Detection limit raised due to variations in the total and hexavalent chromium.

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID:	RHBF9-04	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-20F	Date Received:	12/28/16
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent ^a	< 0.010	0.010	mg/l	1	12/28/16 16:05	RP	SW846 7196A
Chromium, Trivalent ^b	< 0.020	0.020	mg/l	1	12/30/16 18:27	DE	SW846 6010/7196A M

(a) Analysis done out of holding time.

(b) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Data Validation Report

Site: Red Hook Ball Field 9
Laboratory: SGS-Accutest, Dayton, NJ
SDG No.: JC34266
Parameter: Semivolatile Organic Compounds (SVOCs), Organochlorine Pesticides, Herbicides, and Polychlorinated Biphenyl (PCB) Aroclors
Reviewer: Kristen Morin/TRC
Date: February 10, 2017

Samples Reviewed and Evaluation Summary

13 Soil samples: RHBFB9-01 (2-4'), RHBFB9-01 (5-7'), RHBFB9-01 (8-10'), RHBFB9-02 (2-4'), RHBFB9-02 (5-7'), RHBFB9-02 (8-10'), RHBFB9-03 (2-4'), RHBFB9-03 (5-7'), RHBFB9-03 (8-10'), RHBFB9-04 (2-4'), RHBFB9-04 (5-7'), RHBFB9-04 (8-10'), RHBFB9-DUP-01¹

5 Groundwater samples: RHBFB9-01, RHBFB9-02, RHBFB9-03, RHBFB9-04, RHBFB9-GW-DUP-01²

1 Equipment blank: RHBFB9-EQUIPMENT BLANK

1 Field Blank : RHBFB9-FIELD BLANK

¹Field duplicate of RHBFB9-02 (2-4')

²Field duplicate of RHBFB9-02

The above-listed soil samples, groundwater samples, and aqueous equipment and field blank samples were collected on December 22 and 27, 2016 and were analyzed for the following parameters:

- SVOCs by SW-846 Method 8270D
- Organochlorine Pesticides by SW-846 Method 8081B
- Herbicide [2,4,5-TP (Silvex)] by SW-846 Method 8151A
- PCB Aroclors by SW-846 Method 8082A

The data validation was performed in accordance with the following USEPA Region 2 Standard Operating Procedures (SOPs), modified for the SW-846 methodologies utilized.

- SOP HW-35A, Revision 0, *Semivolatile Data Validation*, June 2015
- SOP HW-36A, Revision 0, *Pesticide Data Validation*, June 2015
- SOP HW-37A, Revision 0, *PCB Aroclor Data Validation*, June 2015

The data were evaluated based on the following parameters:

- Overall Evaluation of Data and Potential Usability Issues
- * • Data Completeness
- * • Holding Times and Sample Preservation

- * • Gas Chromatography/Electron Capture Detector (GC/ECD) Instrument Performance Checks
- * • Gas Chromatography/Mass Spectrometry (GC/MS) Tunes
- Initial and Continuing Calibrations
- * • Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- * • Internal Standards
- Laboratory Control Sample (LCS) Results
- Field Duplicate Results
- Sample Results and Reported Quantitation Limits
- Target Compound Identification
- * - All criteria were met.

Overall Evaluation of Data and Potential Usability Issues

All results are usable for project objectives. Qualifications applied to the data as a result of sampling error are discussed below.

- The positive results for dibenz(a,h) anthracene and naphthalene in soil samples RHBF9-02 (2-4') and RHBF9-DUP-01 and the positive results for select SVOCs in groundwater samples RHBF9-02 and RHBF9-GW-DUP-01 were qualified as estimated (J) due to field duplicate variability. These results can be used for project objectives as estimated values, which may have a minor impact on the data usability.
- The positive and nondetect results for 4-4'-DDE in soil samples RHBF9-02 (2-4') and RHBF9-DUP-01 were qualified as estimated (J/UJ) due to field duplicate variability. These results can be used for project objectives as an estimated value and as a nondetect with an estimated QL, which may have a minor impact on the data usability.

Qualifications applied to the data as a result of analytical error are discussed below.

- Potential uncertainty exists for select SVOC results that were below the lowest calibration standard and quantitation limit (QL). These results were qualified as estimated (J) in the associated samples. These results can be used for project objectives as estimated values, which may have a minor impact on the data usability.
- The nondetect results for pentachlorophenol in several groundwater samples were qualified as estimated (UJ) due to continuing calibration nonconformances. These results can be used for project objectives as nondetects with estimated QLs, which may have a minor impact on the data usability.
- The nondetect result for heptachlor in groundwater sample RHBF9-01 was qualified as estimated (UJ) with a potential low bias due to low recovery in the LCS analysis. This result can be used for project objectives as a nondetect with an estimated QL, which may have a minor impact on the data usability.

- The positive results for 4,4'-DDT in soil samples RHBF9-03 (5-7') and RHBF9-04 (5-7') were qualified as estimated concentrations with tentative identifications (NJ), the positive results for 4-4'-DDT in samples RHBF9-02 (5-7'), RHBF9-02 (8-10'), RHBF9-03 (8-10'), and RHBF9-DUP-01, and the positive results for 4-4'-DDD, 4-4'-DDE, and 4-4'-DDT in soil sample RHBF9-03 (2-4') were qualified as estimated (J) due to dual column variability. These results can be used for project objectives as estimated values, which may have a minor impact on the data usability.
- The positive results for anthracene, benzo(g,h,i)perylene, and dibenz(a,h)anthracene were qualified as estimated (J+) with a potential high bias in soil sample RHBF9-04 (5-7') due to high recoveries in the MS and/or MSD analyses. These results can be used for project objectives as estimated values, which may have a minor impact on the data usability.
- The positive results for acenaphthylene, dibenzofuran, fluorene, and naphthalene were qualified as estimated (J) in soil sample RHBF9-04 (5-7') due to MS/MSD nonconformances. These results can be used for project objectives as estimated values, which may have a minor impact on the data usability.

Data Completeness

The data package was a complete Level IV data deliverable package. The following issues were noted:

- A discrepancy was noted between the chain-of-custody and the laboratory's sample IDs for the soil and groundwater samples that were collected on 12/22/16.
- Groundwater sample RHBF9-01 was not flagged by the laboratory as being re-extracted outside of the 7-day holding time for pesticide analysis.

The project manager was contacted during validation and verified that sample IDs were correct as logged in by the laboratory. The laboratory issued a revised report on February 7, 2017 to include the original pesticide analysis of sample RHBF9-01 which was within the recommended holding time and a footnote regarding the re-extraction being performed outside of holding time.

Holding Times and Sample Preservation

All holding time and sample preservation method criteria were met for the SVOC, herbicide, pesticide, and PCB analyses.

GC/ECD Instrument Performance Checks

All criteria were met for the DDT/endrin breakdown checks associated with the pesticide analyses.

GC/MS Tunes

All criteria were met in the SVOC analyses.

Initial and Continuing Calibrations

SVOCs

All percent relative standard deviations (%RSDs), correlation coefficients, and relative response factors (RRFs) were within the method acceptance criteria in the initial calibrations (ICs) associated with the samples in this data set.

The following table summarizes the percent differences or percent drifts (%Ds) that did not meet the method acceptance criteria in the continuing calibration (CC) standards associated with the samples in this data set.

CC	Compound	%D	Validation Action
12/30/16 @20:43 GCMS2P	Pentachlorophenol	34.2	The nondetect result for pentachlorophenol in the associated sample was qualified as estimated (UJ).
Associated sample: RHBF9-04			
1/4/17 @12:21 GCMSZ	Pentachlorophenol	-20.5	The nondetect results for pentachlorophenol in the associated samples were qualified as estimated (UJ).
Associated samples: RHBF9-02, RHBF9-03, RHBF9-GW-DUP-01, RHBF9-EQUIPMENT BLANK, RHBF9-FIELD BLANK			

Herbicides

All %RSDs were within the method acceptance criteria for the target analytes in the ICs associated with the samples in this data set.

The following table summarizes the %Ds that did not meet the method acceptance criteria in the CC standards associated with the samples in this data set.

CC	Compound	%D		Validation Action
		Column 1	Column 2	
1/5/17 @05:08 GCOA	2,4,5-TP (Silvex)	-	32.9	No qualification was required since the results for 2,4,5-TP (Silvex) were nondetect and the %D was acceptable on column 1.
Associated samples: RHBF9-01 (2-4'), RHBF9-01 (5-7'), RHBF9-01 (8-10')				
1/5/17 @23:11 GCOA	2,4,5-TP (Silvex)	-	22.0	
1/6/17 @04:24 GCOA	2,4,5-TP (Silvex)	-	20.1	
Associated samples: RHBF9-03 (2-4'), RHBF9-03 (5-7'), RHBF9-03 (8-10'), RHBF9-04 (2-4'), RHBF9-04 (5-7')				

“-” Criteria met

Pesticides

All %RSDs and correlation coefficients were within the method acceptance criteria for the target analytes in the ICs associated with the samples in this data set.

The following table summarizes the %Ds that did not meet the method acceptance criteria in the CC standards associated with the samples in this data set.

CC	Compound	%D		Validation Action
		Column 1	Column 2	
12/27/16 @09:24 GC6G	Endosulfan I	-20.3	-	No qualification was required since the results for endosulfan I and endrin ketone were nondetect and the %D was acceptable on column 2.
	Endrin ketone	-35.5	-	
Associated sample: RHBf9-01				
1/6/17 @22:51 GC4G	Endosulfan I	-20.3	-	No qualification was required since the results for endosulfan I were nondetect and the %D was acceptable on column 2.
Associated samples: RHBf9-02 (8-10'), RHBf9-03 (5-7'), RHBf9-03 (8-10'), RHBf9-04 (2-4'), RHBf9-04 (5-7')				

“-” Criteria met

PCBs

All %RSDs were within the method acceptance criteria for the target analytes in the ICs associated with the samples in this data set.

The following table summarizes the %Ds that did not meet the method acceptance criteria in the CC standards associated with the samples in this data set.

CC	Compound	%D		Associated sample(s)	Validation Action
		Column 1	Column 2		
12/28/16@04:33 GC5G	Aroclor 1260-D	-20.1	-	RHBf9-01	Qualification of the data was not required since Aroclors were not detected and the %D was acceptable on column 2.
	Aroclor 1260-E	-21.1	-		
12/28/16 @06:59 GC5G	Aroclor 1016-B	-25.8	-		
	Aroclor 1016-D	-22.8	-		
	Aroclor 1016-E	-21.2	-		
	Aroclor 1260-A	-24.7	-		
	Aroclor 1260-B	-31.0	-		
	Aroclor 1260-C	-34.0	-		
	Aroclor 1260-D	-36.1	-		
	Aroclor 1260-E	-40.3	-		
1/6/17 @01:08 GCEF	Aroclor 1016-D	-	-26.2	RHBf9-03 (8-10')	Qualification of the data was not required since Aroclors were not detected and the %D was acceptable on column 1.

“-” Criteria met

Blanks

There were no target compounds detected in the method blanks, equipment blank, and field blank associated with this sample set for SVOC, pesticide, herbicide and PCB analyses.

Surrogate Recoveries

SVOCs

The surrogate percent recoveries (%Rs) met the laboratory acceptance criteria in the SVOC analyses. Note that the surrogate 2-fluorophenol was outside of the acceptance limits in the 20-fold diluted analysis of sample RHBF9-03 (5-7'). All surrogate recoveries were within the acceptance limits in the undiluted analysis; thus, qualification of the data was not required.

Herbicides and Pesticides

The surrogate %Rs met the laboratory acceptance criteria in the herbicide and pesticide analyses.

PCBs

The following table lists the surrogate %Rs outside of the acceptance limits and the resulting validation actions.

Sample ID	Surrogate	Column 1 %R	Column 2 %R	%R QC Limits	Validation Action
RHBF9-02 (2-4')	Decachlorobiphenyl	-	161	12-157	All PCB results were nondetect; therefore, qualification of the data was not required due to the high %Rs.
RHBF9-02 (8-10')	Decachlorobiphenyl	-	218	12-157	
RHBF9-03 (2-4')	Tetrachloro-m-xylene	204	207	20-152	
	Decachlorobiphenyl	637	860	12-157	
RHBF9-03 (5-7')	Tetrachloro-m-xylene	-	185	20-152	
	Decachlorobiphenyl	-	278	12-157	
RHBF9-03 (8-10')	Tetrachloro-m-xylene	171	178	20-152	
	Decachlorobiphenyl	-	268	12-157	
RHBF9-04 (5-7')	Tetrachloro-m-xylene	-	175	20-152	
	Decachlorobiphenyl	-	439	12-157	
RHBF9-DUP-01	Tetrachloro-m-xylene	-	164	20-152	
	Decachlorobiphenyl	-	167	12-157	

"-" Criteria met

MS/MSD Results

MS and/or MSD analyses were performed on the following samples tabulated below.

Sample ID	Parameter
RHBF9-04	SVOCs, Herbicides, Pesticides, PCBs
RHBF9-04 (5-7')	SVOCs, Herbicides, Pesticides, PCBs

Fluoranthene, phenanthrene, and pyrene results were >4x the spike level in sample RHBF9-04 (5-7'); therefore, these results were not evaluated in the MS/MSD performed on this sample. It should also be noted that the results for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene were reported from the 20-fold diluted analysis of sample RHBF9-04 (5-7'); therefore, these results were not evaluated in the MS/MSD analyses performed on this sample since the MS/MSD results were reported from undiluted analyses that exceeded the calibration range.

The table below summarizes the MS/MSD %Rs and relative percent differences (RPDs) that did not meet the laboratory acceptance criteria and the validation actions.

MS/MSD Sample ID	Compound	MS %R	MSD %R	RPD	MS/MSD %R/RPD QC Limits	Validation Action
RHBF9-04	4-4'-DDE	-	-	38	-/36	Qualification of the data was not required since 4-4'-DDE was not detected in groundwater sample RHBF9-04.
RHBF9-04 (5-7')	Anthracene	147	310	-	31-131/-	The positive results for anthracene, benzo(g,h,i)perylene, and dibenz(a,h)anthracene were qualified as estimated (J+) with a potential high bias in soil sample RHBF9-04 (5-7').
	Benzo(g,h,i)perylene	178	286	-	20-138/-	
	Dibenz(a,h)anthracene	-	172	-	25-135/-	
	Acenaphthylene	133	273	46	28-113/34	The positive results for acenaphthylene, dibenzofuran, fluorene, and naphthalene were qualified as estimated (J) in soil sample RHBF9-04 (5-7').
	Dibenzofuran	-	178	36	30-125/35	
	Fluorene	140	272	43	30-129/37	
	Naphthalene	124	223	38	24-118/35	
	beta-BHC	387	559	-	10-145/-	Qualification of the data was not required for beta-BHC, endosulfan sulfate, Aroclor 1016, Aroclor 1260, and total PCBs since these compounds were not detected in soil sample RHBF9-04 (5-7').
	Endosulfan sulfate	149	237	-	16-140/-	
	Aroclor 1016	221	199	-	32-176/-	
	Aroclor 1260	202	-	-	19-180/-	

"-" Criteria met

Internal Standards

All criteria met the method acceptance criteria in the SVOC and pesticide analyses.

LCS Results

The LCS %Rs were within the laboratory acceptance criteria in the SVOC, herbicide, pesticide, and PCB analyses with one exception.

The following table summarizes the pesticide LCS %R that did not meet the laboratory's acceptance criteria and the validation action.

Compound	LCS %R	LCS %R QC Limits	Validation Action
Heptachlor	42	45-137	The nondetect result for heptachlor in sample RHBF9-01 was qualified as estimated (UJ) with a potential low bias.
LCS ID: Associated sample: OP99451-BS1: RHBF9-01			

Note that the laboratory re-extracted sample RHBF9-01 out of the 7-day holding time due to the low recovery of heptachlor in the original LCS (OP99451-BS1). The original analysis of this sample, which was extracted within holding time, should be used for decision-making purposes.

Field Duplicate Results

The field duplicate samples are tabulated below.

Sample ID	Field duplicate
RHBF9-02 (2-4')	RHBF9-DUP-01
RHBF9-02	RHBF9-GW-DUP-01

The following table summarizes the RPDs of the detected compounds in the soil field duplicate pair and the associated validation actions.

Compound	QL (µg/kg)	RHBF9-02 (2-4') (µg/kg)	RHBF9-DUP-01 (µg/kg)	RPD	Validation Action
Acenaphthene	37/38	808	633	24.3	No validation actions required since RPD criterion was met.
Acenaphthylene	37/38	146	225	42.6	
Anthracene	37/38	1900	1950	2.6	
Benzo(a)anthracene	370/960	3800	5340	33.7	
Benzo(a)pyrene	37/960	3630	4560	22.7	
Benzo(b)fluoranthene	370/960	4140	4970	18.2	
Benzo(g,h,i)perylene	37/38	2150	3330	43.1	
Benzo(k)fluoranthene	37/38	1360	1860	31.1	
Chrysene	370/960	3600	4960	31.8	
Dibenzofuran	73/77	469	456	2.8	
Fluoranthene	370/960	8200	9980	19.6	
Fluorene	37/38	698	634	9.6	
Indeno(1,2,3-cd)pyrene	37/38	2220	3530	45.6	
Phenanthrene	370/960	7090	8520	18.3	
Pyrene	370/960	7260	9610	27.9	
4-4'-DDT	0.74/0.75	7.8	5.7	31.1	

Compound	QL (µg/kg)	RHBF9-02 (2-4') (µg/kg)	RHBF9-DUP-01 (µg/kg)	RPD	Validation Action
4-4'-DDE	0.74/0.75	2.1	0.75 U	NC	The positive and nondetect results for 4-4'-DDE were qualified as estimated (J/UJ) in soil samples RHBF9-02 (2-4') and RHBF9-DUP-01 since one result is detected at > 2x QL and other result is not detected.
Dibenzo(a,h)anthracene	37/38	519	1040	66.8	The positive results for these SVOCs in soil samples RHBF9-02 (2-4') and RHBF9-DUP-01 were qualified as estimated (J).
Naphthalene	37/38	279	488	54.5	
NC: Not calculable due to a nondetect result in one of the samples					
Criteria: RPD ≤ 50 when positive results for both samples are ≥ 2x QL					
RPD ≤ 50 when positive result for one sample is ≥ 2x QL and positive result for other sample is < 2x QL					
No situations where one result is detected at > 2x QL and other result is not detected					

The following table summarizes the RPDs of the detected compounds in the groundwater field duplicate pair and the associated validation actions.

Compound	QL (µg/L)	RHBF9-02 (µg/L)	RHBF9-GW-DUP-01 (µg/L)	RPD	Validation Action
Naphthalene	1.1/1.0	1.1 U	0.50 J	NC	No validation actions required since RPD criterion was met.
Acenaphthylene	1.1/1.0	1.1 U	0.44 J	NC	
Dibenzo(a,h)anthracene	1.1/1.0	1.1 U	0.59 J	NC	
Acenaphthene	1.1/1.0	0.44 J	0.55 J	22.2	
Anthracene	1.1/1.0	0.91 J	1.2	27.5	
Benzo(a)pyrene	1.1/1.0	2.5	3.3	27.6	
Chrysene	1.1/1.0	2.2	2.9	27.5	
Fluorene	1.1/1.0	0.47 J	0.57 J	19.2	
Benzo(k)fluoranthene	1.1/1.0	0.86 J	1.2	33.0	
Benzo(a)anthracene	1.1/1.0	2.2	3.1	34.0	The positive results for these SVOCs in groundwater samples RHBF9-02 and RHBF9-GW-DUP-01 were qualified as estimated (J).
Benzo(b)fluoranthene	1.1/1.0	2.5	3.7	38.7	
Benzo(g,h,i)perylene	1.1/1.0	1.5	2.2	37.8	
Fluoranthene	1.1/1.0	4.6	6.4	32.7	
Indeno(1,2,3-cd)pyrene	1.1/1.0	1.7	2.4	34.1	
Phenanthrene	1.1/1.0	3.4	4.7	32.1	
Pyrene	1.1/1.0	4.0	5.6	33.3	
NC: Not calculable due to a nondetect result in one of the samples					
Criteria: RPD ≤ 30 when positive results for both samples are ≥ 2x QL					
RPD ≤ 30 when positive result for one sample is ≥ 2x QL and positive result for other sample is < 2x QL					
RPD ≤ 60 when positive results for both samples are ≤ 2x QL					

Sample Results and Reported Quantitation Limits

Sample calculations were spot-checked; there were no errors noted. All project-specified QLs were met prior to the application of dilution factors. All herbicide soil samples were analyzed at a 2-fold dilution

due to matrix interferences; QLs were elevated accordingly in all soil samples. The following table summarizes other dilutions performed on samples in this data set.

Sample ID	Dilution	Reason for Dilution
RHBF9-01 (2-4')	10-fold	Dilutions were performed due to the concentrations of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene, which exceeded the calibration range in the undiluted analysis.
RHBF9-03 (5-7')	20-fold	
RHBF9-04 (2-4')	25-fold	
RHBF9-01 (5-7')	5-fold	Dilutions were performed due to the concentrations of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, fluoranthene, phenanthrene, and pyrene, which exceeded the calibration range in the undiluted analysis.
RHBF9-02 (8-10')	20-fold	
RHBF9-03 (8-10')	25-fold	
RHBF9-DUP-01	25-fold	The laboratory combined the results of the diluted and undiluted analyses.
RHBF9-02 (2-4')	10-fold	A 10-fold dilution was performed due to the concentrations of benzo(a)anthracene, benzo(b)fluoranthene, chrysene, fluoranthene, phenanthrene, and pyrene, which exceeded the calibration range in the undiluted analysis. The laboratory combined the results of the diluted and undiluted analyses.
RHBF9-03 (2-4')	20-fold	A 20-fold dilution was performed due to the concentrations of anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene, which exceeded the calibration range in the undiluted analysis. The laboratory combined the results of the diluted and undiluted analyses.
RHBF9-04 (5-7')	20-fold	A 20-fold dilution was performed due to the concentrations of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene, which exceeded the calibration range in the undiluted analysis. The laboratory combined the results of the diluted and undiluted analyses.

Select SVOC results were reported below the lowest calibration standard level and QL. These results were qualified as estimated (J) in the associated samples by the laboratory.

Target Compound Identification

SVOCs, Herbicides, and PCBs

All criteria were met for the SVOC, herbicide, and PCB analyses.

Pesticides

The following table lists the dual column RPDs which were outside of acceptance limits and the resulting validation actions.

Sample	Compound	RPD (%)	Validation Action
RHBF9-02 (5-7')	4,4'-DDT	51.6	The positive results for 4,4'-DDT in these samples were qualified as estimated (J) due to dual column RPDs >40% but ≤70%.
RHBF9-02 (8-10')	4,4'-DDT	43.1	
RHBF9-03 (8-10')	4,4'-DDT	54.8	
RHBF9-DUP-01	4,4'-DDT	66.7	
RHBF9-03 (2-4')	4,4'-DDD	60.4	The positive results for 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT in this sample were qualified as estimated (J) due to dual column RPDs >40% but ≤70%.
	4,4'-DDE	65.1	
	4,4'-DDT	47.3	
RHBF9-03 (5-7')	4,4'-DDT	71.4	The positive results for 4,4'-DDT in these samples were qualified as tentative identifications with estimated concentrations (NJ) due to dual column RPDs >70% but ≤100%.
RHBF9-04 (5-7')	4,4'-DDT	77.5	

QUALIFIED FORM 1s

SGS Accutest

Report of Analysis

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Client Sample ID: RHBF9-01 (2-4)		Date Sampled: 12/22/16	
Lab Sample ID: JC34266-1		Date Received: 12/22/16	
Matrix: SO - Soil		Percent Solids: 86.0	
Method: SW846 8270D SW846 3546			
Project: Red Hook Ballfields Soil, Brooklyn, NY			

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P34517.D	1	01/05/17	JJ	01/03/17	OP99582	E5P1731
Run #2	5P34539.D	10	01/05/17	AN	01/03/17	OP99582	E5P1732

Run #	Initial Weight	Final Volume
Run #1	31.0 g	1.0 ml
Run #2	31.0 g	1.0 ml

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	75	24	ug/kg	
	3&4-Methylphenol	121	75	31	ug/kg	
87-86-5	Pentachlorophenol	ND	150	35	ug/kg	
108-95-2	Phenol	74.4	75	20	ug/kg	J
83-32-9	Acenaphthene	1430	38	13	ug/kg	
208-96-8	Acenaphthylene	797	38	19	ug/kg	
120-12-7	Anthracene	3440	38	23	ug/kg	
56-55-3	Benzo(a)anthracene	9550 a	380	110	ug/kg	
50-32-8	Benzo(a)pyrene	8670 a	380	170	ug/kg	
205-99-2	Benzo(b)fluoranthene	11000 a	380	170	ug/kg	
191-24-2	Benzo(g,h,i)perylene	4980 a	380	190	ug/kg	
207-08-9	Benzo(k)fluoranthene	3270	38	18	ug/kg	
218-01-9	Chrysene	9320 a	380	120	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	1490	38	17	ug/kg	
132-64-9	Dibenzofuran	1050	75	15	ug/kg	
206-44-0	Fluoranthene	19600 a	380	170	ug/kg	
86-73-7	Fluorene	1340	38	17	ug/kg	
118-74-1	Hexachlorobenzene	ND	75	9.5	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	5600 a	380	180	ug/kg	
91-20-3	Naphthalene	955	38	11	ug/kg	
85-01-8	Phenanthrene	16800 a	380	130	ug/kg	
129-00-0	Pyrene	20700 a	380	120	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	61%	55%	30-106%
4165-62-2	Phenol-d5	68%	61%	30-106%
118-79-6	2,4,6-Tribromophenol	75%	78%	24-140%
4165-60-0	Nitrobenzene-d5	67%	63%	26-122%
321-60-8	2-Fluorobiphenyl	71%	66%	36-112%
1718-51-0	Terphenyl-d14	79%	85%	36-132%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

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Client Sample ID:	RHBF9-01 (5-7)	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-2	Date Received:	12/22/16
Matrix:	SO - Soil	Percent Solids:	88.1
Method:	SW846 8270D SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P34518.D	1	01/05/17	JJ	01/03/17	OP99582	E5P1731
Run #2	5P34540.D	5	01/05/17	AN	01/03/17	OP99582	E5P1732

Run #	Initial Weight	Final Volume
Run #1	32.2 g	1.0 ml
Run #2	32.2 g	1.0 ml

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	71	23	ug/kg	
	3&4-Methylphenol	56.1	71	29	ug/kg	J
87-86-5	Pentachlorophenol	ND	140	33	ug/kg	
108-95-2	Phenol	39.8	71	18	ug/kg	J
83-32-9	Acenaphthene	709	35	12	ug/kg	
208-96-8	Acenaphthylene	251	35	18	ug/kg	
120-12-7	Anthracene	1610	35	22	ug/kg	
56-55-3	Benzo(a)anthracene	3670 ^a	180	50	ug/kg	
50-32-8	Benzo(a)pyrene	3320 ^a	180	80	ug/kg	
205-99-2	Benzo(b)fluoranthene	4360 ^a	180	78	ug/kg	
191-24-2	Benzo(g,h,i)perylene	2260	35	18	ug/kg	
207-08-9	Benzo(k)fluoranthene	1480	35	16	ug/kg	
218-01-9	Chrysene	3600 ^a	180	56	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	628	35	16	ug/kg	
132-64-9	Dibenzofuran	493	71	14	ug/kg	
206-44-0	Fluoranthene	7220 ^a	180	79	ug/kg	
86-73-7	Fluorene	660	35	16	ug/kg	
118-74-1	Hexachlorobenzene	ND	71	8.9	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	2500	35	17	ug/kg	
91-20-3	Naphthalene	656	35	9.9	ug/kg	
85-01-8	Phenanthrene	6670 ^a	180	59	ug/kg	
129-00-0	Pyrene	7810 ^a	180	56	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	70%	61%	30-106%
4165-62-2	Phenol-d5	74%	63%	30-106%
118-79-6	2,4,6-Tribromophenol	79%	79%	24-140%
4165-60-0	Nitrobenzene-d5	74%	63%	26-122%
321-60-8	2-Fluorobiphenyl	74%	66%	36-112%
1718-51-0	Terphenyl-d14	78%	73%	36-132%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-01 (8-10)	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-3	Date Received:	12/22/16
Matrix:	SO - Soil	Percent Solids:	90.0
Method:	SW846 8270D SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P34519.D	1	01/05/17	JJ	01/03/17	OP99582	E5P1731
Run #2							

Run #	Initial Weight	Final Volume
Run #1	32.3 g	1.0 ml
Run #2		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	69	22	ug/kg	
	3&4-Methylphenol	ND	69	28	ug/kg	
87-86-5	Pentachlorophenol	ND	140	32	ug/kg	
108-95-2	Phenol	ND	69	18	ug/kg	
83-32-9	Acenaphthene	83.7	34	12	ug/kg	
208-96-8	Acenaphthylene	93.2	34	17	ug/kg	
120-12-7	Anthracene	263	34	21	ug/kg	
56-55-3	Benzo(a)anthracene	887	34	9.7	ug/kg	
50-32-8	Benzo(a)pyrene	894	34	16	ug/kg	
205-99-2	Benzo(b)fluoranthene	1130	34	15	ug/kg	
191-24-2	Benzo(g,h,i)perylene	552	34	17	ug/kg	
207-08-9	Benzo(k)fluoranthene	406	34	16	ug/kg	
218-01-9	Chrysene	910	34	11	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	162	34	15	ug/kg	
132-64-9	Dibenzofuran	75.5	69	14	ug/kg	
206-44-0	Fluoranthene	1420	34	15	ug/kg	
86-73-7	Fluorene	91.6	34	16	ug/kg	
118-74-1	Hexachlorobenzene	ND	69	8.7	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	608	34	16	ug/kg	
91-20-3	Naphthalene	117	34	9.7	ug/kg	
85-01-8	Phenanthrene	1200	34	12	ug/kg	
129-00-0	Pyrene	1900	34	11	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	61%		30-106%
4165-62-2	Phenol-d5	67%		30-106%
118-79-6	2,4,6-Tribromophenol	80%		24-140%
4165-60-0	Nitrobenzene-d5	63%		26-122%
321-60-8	2-Fluorobiphenyl	69%		36-112%
1718-51-0	Terphenyl-d14	81%		36-132%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-02 (2-4)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-5	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	89.4
Method:	SW846 8270D SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M130678.D	1	01/07/17	KM	01/03/17	OP99614	EM5581
Run #2	M130719.D	10	01/09/17	JJ	01/03/17	OP99614	EM5583

Run #	Initial Weight	Final Volume
Run #1	30.6 g	1.0 ml
Run #2	30.6 g	1.0 ml

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	73	23	ug/kg	
	3&4-Methylphenol	ND	73	30	ug/kg	
87-86-5	Pentachlorophenol	ND	150	34	ug/kg	
108-95-2	Phenol	ND	73	19	ug/kg	
83-32-9	Acenaphthene	808	37	13	ug/kg	
208-96-8	Acenaphthylene	146	37	19	ug/kg	
120-12-7	Anthracene	1900	37	22	ug/kg	
56-55-3	Benzo(a)anthracene	3800 ^a	370	100	ug/kg	
50-32-8	Benzo(a)pyrene	3630	37	17	ug/kg	
205-99-2	Benzo(b)fluoranthene	4140 ^a	370	160	ug/kg	
191-24-2	Benzo(g,h,i)perylene	2150	37	18	ug/kg	
207-08-9	Benzo(k)fluoranthene	1360	37	17	ug/kg	
218-01-9	Chrysene	3600 ^a	370	120	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	519 J✓	37	16	ug/kg	
132-64-9	Dibenzofuran	469	73	15	ug/kg	
206-44-0	Fluoranthene	8200 ^a	370	160	ug/kg	
86-73-7	Fluorene	698	37	17	ug/kg	
118-74-1	Hexachlorobenzene	ND	73	9.2	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	2220	37	17	ug/kg	
91-20-3	Naphthalene	279 J✓	37	10	ug/kg	
85-01-8	Phenanthrene	7090 ^a	370	120	ug/kg	
129-00-0	Pyrene	7260 ^a	370	120	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	60%	51%	30-106%
4165-62-2	Phenol-d5	64%	57%	30-106%
118-79-6	2,4,6-Tribromophenol	91%	83%	24-140%
4165-60-0	Nitrobenzene-d5	67%	66%	26-122%
321-60-8	2-Fluorobiphenyl	80%	79%	36-112%
1718-51-0	Terphenyl-d14	91%	85%	36-132%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-02 (5-7)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-6	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	88.5
Method:	SW846 8270D SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M130679.D	1	01/07/17	KM	01/03/17	OP99614	EM5581
Run #2							

Run #	Initial Weight	Final Volume
Run #1	30.5 g	1.0 ml
Run #2		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	74	24	ug/kg	
	3&4-Methylphenol	ND	74	30	ug/kg	
87-86-5	Pentachlorophenol	ND	150	35	ug/kg	
108-95-2	Phenol	ND	74	19	ug/kg	
83-32-9	Acenaphthene	80.9	37	13	ug/kg	
208-96-8	Acenaphthylene	56.8	37	19	ug/kg	
120-12-7	Anthracene	202	37	23	ug/kg	
56-55-3	Benzo(a)anthracene	730	37	10	ug/kg	
50-32-8	Benzo(a)pyrene	689	37	17	ug/kg	
205-99-2	Benzo(b)fluoranthene	676	37	16	ug/kg	
191-24-2	Benzo(g,h,i)perylene	365	37	19	ug/kg	
207-08-9	Benzo(k)fluoranthene	297	37	17	ug/kg	
218-01-9	Chrysene	753	37	12	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	84.8	37	16	ug/kg	
132-64-9	Dibenzofuran	55.2	74	15	ug/kg	J
206-44-0	Fluoranthene	1220	37	17	ug/kg	
86-73-7	Fluorene	79.9	37	17	ug/kg	
118-74-1	Hexachlorobenzene	ND	74	9.4	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	365	37	17	ug/kg	
91-20-3	Naphthalene	68.0	37	10	ug/kg	
85-01-8	Phenanthrene	997	37	12	ug/kg	
129-00-0	Pyrene	1680	37	12	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	63%		30-106%
4165-62-2	Phenol-d5	63%		30-106%
118-79-6	2,4,6-Tribromophenol	83%		24-140%
4165-60-0	Nitrobenzene-d5	66%		26-122%
321-60-8	2-Fluorobiphenyl	76%		36-112%
1718-51-0	Terphenyl-d14	93%		36-132%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-02 (8-10)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-7	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	77.8
Method:	SW846 8270D SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M130680.D	1	01/07/17	KM	01/03/17	OP99614	EM5581
Run #2	M130720.D	20	01/09/17	JJ	01/03/17	OP99614	EM5583

Run #	Initial Weight	Final Volume
Run #1	30.5 g	1.0 ml
Run #2	30.5 g	1.0 ml

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	84	27	ug/kg	
	3&4-Methylphenol	561	84	35	ug/kg	
87-86-5	Pentachlorophenol	ND	170	40	ug/kg	
108-95-2	Phenol	ND	84	22	ug/kg	
83-32-9	Acenaphthene	813	42	15	ug/kg	
208-96-8	Acenaphthylene	490	42	21	ug/kg	
120-12-7	Anthracene	2080	42	26	ug/kg	
56-55-3	Benzo(a)anthracene	5960 a	840	240	ug/kg	
50-32-8	Benzo(a)pyrene	5950 a	840	380	ug/kg	
205-99-2	Benzo(b)fluoranthene	7030 a	840	370	ug/kg	
191-24-2	Benzo(g,h,i)perylene	3800	42	21	ug/kg	
207-08-9	Benzo(k)fluoranthene	2030	42	20	ug/kg	
218-01-9	Chrysene	5690 a	840	270	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	743	42	19	ug/kg	
132-64-9	Dibenzofuran	670	84	17	ug/kg	
206-44-0	Fluoranthene	14300 a	840	380	ug/kg	
86-73-7	Fluorene	944	42	19	ug/kg	
118-74-1	Hexachlorobenzene	ND	84	11	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	3860	42	20	ug/kg	
91-20-3	Naphthalene	832	42	12	ug/kg	
85-01-8	Phenanthrene	11500 a	840	280	ug/kg	
129-00-0	Pyrene	12900 a	840	270	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	64%	57%	30-106%
4165-62-2	Phenol-d5	66%	57%	30-106%
118-79-6	2,4,6-Tribromophenol	84%	87%	24-140%
4165-60-0	Nitrobenzene-d5	47%	51%	26-122%
321-60-8	2-Fluorobiphenyl	75%	76%	36-112%
1718-51-0	Terphenyl-d14	69%	80%	36-132%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-03 (2-4)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-9	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	83.5
Method:	SW846 8270D SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M130681.D	1	01/07/17	KM	01/03/17	OP99614	EM5581
Run #2	M130721.D	20	01/09/17	JJ	01/03/17	OP99614	EM5583

Run #	Initial Weight	Final Volume
Run #1	30.0 g	1.0 ml
Run #2	30.0 g	1.0 ml

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	63.0	80	26	ug/kg	J
	3&4-Methylphenol	233	80	33	ug/kg	
87-86-5	Pentachlorophenol	ND	160	37	ug/kg	
108-95-2	Phenol	167	80	21	ug/kg	
83-32-9	Acenaphthene	3050	40	14	ug/kg	
208-96-8	Acenaphthylene	3600	40	20	ug/kg	
120-12-7	Anthracene	9650 ^a	800	490	ug/kg	
56-55-3	Benzo(a)anthracene	29500 ^a	800	230	ug/kg	
50-32-8	Benzo(a)pyrene	28400 ^a	800	360	ug/kg	
205-99-2	Benzo(b)fluoranthene	36900 ^a	800	350	ug/kg	
191-24-2	Benzo(g,h,i)perylene	15600 ^a	800	400	ug/kg	
207-08-9	Benzo(k)fluoranthene	12200 ^a	800	370	ug/kg	
218-01-9	Chrysene	30700 ^a	800	250	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	3680 ^a	800	350	ug/kg	
132-64-9	Dibenzofuran	3060	80	16	ug/kg	
206-44-0	Fluoranthene	74600 ^a	800	360	ug/kg	
86-73-7	Fluorene	4600 ^a	800	370	ug/kg	
118-74-1	Hexachlorobenzene	ND	80	10	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	17800 ^a	800	370	ug/kg	
91-20-3	Naphthalene	3700 ^a	800	230	ug/kg	
85-01-8	Phenanthrene	57700 ^a	800	270	ug/kg	
129-00-0	Pyrene	64300 ^a	800	260	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	70%	58%	30-106%
4165-62-2	Phenol-d5	68%	64%	30-106%
118-79-6	2,4,6-Tribromophenol	121%	76%	24-140%
4165-60-0	Nitrobenzene-d5	67%	66%	26-122%
321-60-8	2-Fluorobiphenyl	82%	75%	36-112%
1718-51-0	Terphenyl-d14	54%	75%	36-132%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-03 (5-7)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-10	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	75.5
Method:	SW846 8270D SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M130682.D	1	01/07/17	KM	01/03/17	OP99614	EM5581
Run #2	M130723.D	20	01/10/17	JJ	01/03/17	OP99614	EM5583

Run #	Initial Weight	Final Volume
Run #1	30.6 g	1.0 ml
Run #2	30.6 g	1.0 ml

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	87	28	ug/kg	
	3&4-Methylphenol	146	87	36	ug/kg	
87-86-5	Pentachlorophenol	ND	170	41	ug/kg	
108-95-2	Phenol	99.3	87	23	ug/kg	
83-32-9	Acenaphthene	1410	43	15	ug/kg	
208-96-8	Acenaphthylene	1460	43	22	ug/kg	
120-12-7	Anthracene	3450	43	27	ug/kg	
56-55-3	Benzo(a)anthracene	10200 ^a	870	240	ug/kg	
50-32-8	Benzo(a)pyrene	8970 ^a	870	390	ug/kg	
205-99-2	Benzo(b)fluoranthene	12600 ^a	870	380	ug/kg	
191-24-2	Benzo(g,h,i)perylene	5730 ^a	870	430	ug/kg	
207-08-9	Benzo(k)fluoranthene	3370	43	20	ug/kg	
218-01-9	Chrysene	11900 ^a	870	270	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	2220	43	19	ug/kg	
132-64-9	Dibenzofuran	1280	87	18	ug/kg	
206-44-0	Fluoranthene	25800 ^a	870	390	ug/kg	
86-73-7	Fluorene	1700	43	20	ug/kg	
118-74-1	Hexachlorobenzene	ND	87	11	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	6650 ^a	870	410	ug/kg	
91-20-3	Naphthalene	1790	43	12	ug/kg	
85-01-8	Phenanthrene	23200 ^a	870	290	ug/kg	
129-00-0	Pyrene	23000 ^a	870	280	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	32%	25% ^b	30-106%
4165-62-2	Phenol-d5	36%	38%	30-106%
118-79-6	2,4,6-Tribromophenol	43%	41%	24-140%
4165-60-0	Nitrobenzene-d5	60%	62%	26-122%
321-60-8	2-Fluorobiphenyl	74%	68%	36-112%
1718-51-0	Terphenyl-d14	66%	74%	36-132%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID: RHBF9-03 (8-10)		Date Sampled: 12/27/16	
Lab Sample ID: JC34266-11		Date Received: 12/27/16	
Matrix: SO - Soil		Percent Solids: 78.0	
Method: SW846 8270D SW846 3546			
Project: Red Hook Ballfields Soil, Brooklyn, NY			

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M130683.D	1	01/07/17	KM	01/03/17	OP99614	EM5581
Run #2	M130724.D	25	01/10/17	JJ	01/03/17	OP99614	EM5583

Run #	Initial Weight	Final Volume
Run #1	30.0 g	1.0 ml
Run #2	30.0 g	1.0 ml

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	85	27	ug/kg	
	3&4-Methylphenol	175	85	35	ug/kg	
87-86-5	Pentachlorophenol	ND	170	40	ug/kg	
108-95-2	Phenol	ND	85	22	ug/kg	
83-32-9	Acenaphthene	1470	43	15	ug/kg	
208-96-8	Acenaphthylene	789	43	22	ug/kg	
120-12-7	Anthracene	3520	43	26	ug/kg	
56-55-3	Benzo(a)anthracene	5200 a	1100	300	ug/kg	
50-32-8	Benzo(a)pyrene	4370 a	1100	490	ug/kg	
205-99-2	Benzo(b)fluoranthene	5220 a	1100	470	ug/kg	
191-24-2	Benzo(g,h,i)perylene	2520	43	21	ug/kg	
207-08-9	Benzo(k)fluoranthene	1850	43	20	ug/kg	
218-01-9	Chrysene	5460 a	1100	340	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	691	43	19	ug/kg	
132-64-9	Dibenzofuran	1480	85	17	ug/kg	
206-44-0	Fluoranthene	14100 a	1100	480	ug/kg	
86-73-7	Fluorene	2280	43	20	ug/kg	
118-74-1	Hexachlorobenzene	ND	85	11	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	2840	43	20	ug/kg	
91-20-3	Naphthalene	2790	43	12	ug/kg	
85-01-8	Phenanthrene	15400 a	1100	360	ug/kg	
129-00-0	Pyrene	11200 a	1100	340	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	57%	43%	30-106%
4165-62-2	Phenol-d5	57%	51%	30-106%
118-79-6	2,4,6-Tribromophenol	77%	92%	24-140%
4165-60-0	Nitrobenzene-d5	61%	64%	26-122%
321-60-8	2-Fluorobiphenyl	71%	58%	36-112%
1718-51-0	Terphenyl-d14	72%	65%	36-132%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-04 (2-4)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-13	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	87.6
Method:	SW846 8270D SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M130684.D	1	01/07/17	KM	01/03/17	OP99614	EM5581
Run #2	M130725.D	25	01/10/17	JJ	01/03/17	OP99614	EM5583

Run #	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2	30.1 g	1.0 ml

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	76	24	ug/kg	
	3&4-Methylphenol	79.2	76	31	ug/kg	
87-86-5	Pentachlorophenol	ND	150	36	ug/kg	
108-95-2	Phenol	ND	76	20	ug/kg	
83-32-9	Acenaphthene	283	38	13	ug/kg	
208-96-8	Acenaphthylene	943	38	19	ug/kg	
120-12-7	Anthracene	1500	38	23	ug/kg	
56-55-3	Benzo(a)anthracene	5860 ^a	950	270	ug/kg	
50-32-8	Benzo(a)pyrene	6010 ^a	950	430	ug/kg	
205-99-2	Benzo(b)fluoranthene	6940 ^a	950	420	ug/kg	
191-24-2	Benzo(g,h,i)perylene	3300 ^a	950	470	ug/kg	
207-08-9	Benzo(k)fluoranthene	2460	38	18	ug/kg	
218-01-9	Chrysene	5900 ^a	950	300	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	1370	38	17	ug/kg	
132-64-9	Dibenzofuran	263	76	15	ug/kg	
206-44-0	Fluoranthene	10700 ^a	950	420	ug/kg	
86-73-7	Fluorene	461	38	17	ug/kg	
118-74-1	Hexachlorobenzene	ND	76	9.6	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	3870 ^a	950	440	ug/kg	
91-20-3	Naphthalene	331	38	11	ug/kg	
85-01-8	Phenanthrene	5370 ^a	950	320	ug/kg	
129-00-0	Pyrene	9710 ^a	950	300	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	62%	46%	30-106%
4165-62-2	Phenol-d5	63%	45%	30-106%
118-79-6	2,4,6-Tribromophenol	93%	97%	24-140%
4165-60-0	Nitrobenzene-d5	69%	53%	26-122%
321-60-8	2-Fluorobiphenyl	83%	73%	36-112%
1718-51-0	Terphenyl-d14	79%	87%	36-132%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-04 (5-7)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-14	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	86.0
Method:	SW846 8270D SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M130532.D	1	01/04/17	JJ	01/03/17	OP99614	EM5576
Run #2	M130562.D	20	01/04/17	KM	01/03/17	OP99614	EM5577

Run #	Initial Weight	Final Volume
Run #1	30.0 g	1.0 ml
Run #2	30.0 g	1.0 ml

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	65.5	78	25	ug/kg	J
	3&4-Methylphenol	233	78	32	ug/kg	
87-86-5	Pentachlorophenol	ND	160	36	ug/kg	
108-95-2	Phenol	146	78	20	ug/kg	
83-32-9	Acenaphthene	1010	39	13	ug/kg	
208-96-8	Acenaphthylene	1970 J+	39	20	ug/kg	
120-12-7	Anthracene	3470 J+	39	24	ug/kg	
56-55-3	Benzo(a)anthracene	5680	780	220	ug/kg	
50-32-8	Benzo(a)pyrene	5500	780	350	ug/kg	
205-99-2	Benzo(b)fluoranthene	6620	780	340	ug/kg	
191-24-2	Benzo(g,h,i)perylene	3680 J+	39	19	ug/kg	
207-08-9	Benzo(k)fluoranthene	2690	780	360	ug/kg	
218-01-9	Chrysene	5700	780	240	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	993 J+	39	17	ug/kg	
132-64-9	Dibenzofuran	1360 J	78	16	ug/kg	
206-44-0	Fluoranthene	12900	780	350	ug/kg	
86-73-7	Fluorene	1950 J	39	18	ug/kg	
118-74-1	Hexachlorobenzene	ND	78	9.8	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	3290	780	360	ug/kg	
91-20-3	Naphthalene	1700 J	39	11	ug/kg	
85-01-8	Phenanthrene	12100	780	260	ug/kg	
129-00-0	Pyrene	13200	780	250	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	61%	42%	30-106%
4165-62-2	Phenol-d5	61%	44%	30-106%
118-79-6	2,4,6-Tribromophenol	72%	58%	24-140%
4165-60-0	Nitrobenzene-d5	49%	37%	26-122%
321-60-8	2-Fluorobiphenyl	68%	51%	36-112%
1718-51-0	Terphenyl-d14	69%	68%	36-132%

ND = Not detected MDL = Method Detection Limit
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Client Sample ID:	RHBF9-04 (8-10)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-15	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	89.9
Method:	SW846 8270D SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M130685.D	1	01/07/17	KM	01/03/17	OP99614	EM5581
Run #2							

Run #	Initial Weight	Final Volume
Run #1	30.2 g	1.0 ml
Run #2		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	74	24	ug/kg	
	3&4-Methylphenol	76.9	74	30	ug/kg	
87-86-5	Pentachlorophenol	ND	150	35	ug/kg	
108-95-2	Phenol	ND	74	19	ug/kg	
83-32-9	Acenaphthene	147	37	13	ug/kg	
208-96-8	Acenaphthylene	112	37	19	ug/kg	
120-12-7	Anthracene	470	37	23	ug/kg	
56-55-3	Benzo(a)anthracene	1240	37	10	ug/kg	
50-32-8	Benzo(a)pyrene	1210	37	17	ug/kg	
205-99-2	Benzo(b)fluoranthene	1410	37	16	ug/kg	
191-24-2	Benzo(g,h,i)perylene	715	37	18	ug/kg	
207-08-9	Benzo(k)fluoranthene	469	37	17	ug/kg	
218-01-9	Chrysene	1230	37	12	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	185	37	16	ug/kg	
132-64-9	Dibenzofuran	145	74	15	ug/kg	
206-44-0	Fluoranthene	2680	37	16	ug/kg	
86-73-7	Fluorene	135	37	17	ug/kg	
118-74-1	Hexachlorobenzene	ND	74	9.3	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	794	37	17	ug/kg	
91-20-3	Naphthalene	172	37	10	ug/kg	
85-01-8	Phenanthrene	2100	37	12	ug/kg	
129-00-0	Pyrene	2650	37	12	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	59%		30-106%
4165-62-2	Phenol-d5	60%		30-106%
118-79-6	2,4,6-Tribromophenol	82%		24-140%
4165-60-0	Nitrobenzene-d5	62%		26-122%
321-60-8	2-Fluorobiphenyl	72%		36-112%
1718-51-0	Terphenyl-d14	73%		36-132%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID: RHBF9-DUP-01
 Lab Sample ID: JC34266-16
 Matrix: SO - Soil
 Method: SW846 8270D SW846 3546
 Project: Red Hook Ballfields Soil, Brooklyn, NY

Date Sampled: 12/27/16
 Date Received: 12/27/16
 Percent Solids: 86.1

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M130686.D	1	01/07/17	KM	01/03/17	OP99614	EM5581
Run #2	M130726.D	25	01/10/17	JJ	01/03/17	OP99614	EM5583

Run #	Initial Weight	Final Volume
Run #1	30.2 g	1.0 ml
Run #2	30.2 g	1.0 ml

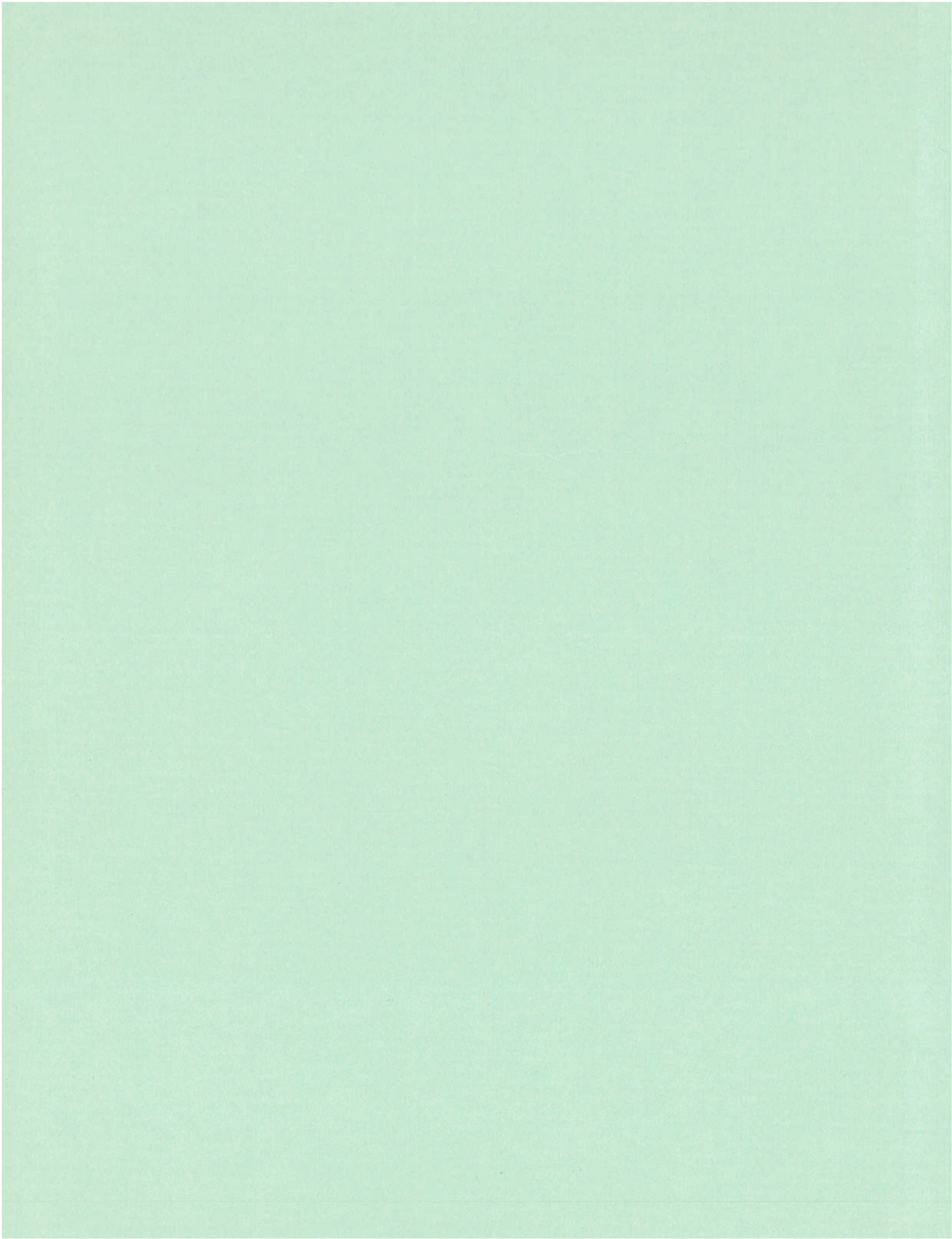
ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	77	25	ug/kg	
	3&4-Methylphenol	ND	77	32	ug/kg	
87-86-5	Pentachlorophenol	ND	150	36	ug/kg	
108-95-2	Phenol	ND	77	20	ug/kg	
83-32-9	Acenaphthene	633	38	13	ug/kg	
208-96-8	Acenaphthylene	225	38	20	ug/kg	
120-12-7	Anthracene	1950	38	24	ug/kg	
56-55-3	Benzo(a)anthracene	5340 ^a	960	270	ug/kg	
50-32-8	Benzo(a)pyrene	4560 ^a	960	440	ug/kg	
205-99-2	Benzo(b)fluoranthene	4970 ^a	960	420	ug/kg	
191-24-2	Benzo(g,h,i)perylene	3330	38	19	ug/kg	
207-08-9	Benzo(k)fluoranthene	1860	38	18	ug/kg	
218-01-9	Chrysene	4960 ^a	960	300	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	1040 ^J	38	17	ug/kg	
132-64-9	Dibenzofuran	456	77	16	ug/kg	
206-44-0	Fluoranthene	9980 ^a	960	430	ug/kg	
86-73-7	Fluorene	634	38	18	ug/kg	
118-74-1	Hexachlorobenzene	ND	77	9.7	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	3530	38	18	ug/kg	
91-20-3	Naphthalene	488 ^J	38	11	ug/kg	
85-01-8	Phenanthrene	8520 ^a	960	320	ug/kg	
129-00-0	Pyrene	9610 ^a	960	310	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	69%	40%	30-106%
4165-62-2	Phenol-d5	68%	62%	30-106%
118-79-6	2,4,6-Tribromophenol	101%	79%	24-140%
4165-60-0	Nitrobenzene-d5	74%	68%	26-122%
321-60-8	2-Fluorobiphenyl	89%	69%	36-112%
1718-51-0	Terphenyl-d14	94%	85%	36-132%

ND = Not detected MDL = Method Detection Limit
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 E = Indicates value exceeds calibration range

J = Indicates an estimated value
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 N = Indicates presumptive evidence of a compound



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Report of Analysis

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Client Sample ID:	RHBF9-01	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-4	Date Received:	12/22/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270D SW846 3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P110145.D	1	12/30/16	JJ	12/29/16	OP99540	EP4891
Run #2							

Run #	Initial Volume	Final Volume
Run #1	980 ml	1.0 ml
Run #2		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	2.0	0.91	ug/l	
	3&4-Methylphenol	ND	2.0	0.90	ug/l	
87-86-5	Pentachlorophenol	ND	4.1	1.4	ug/l	
108-95-2	Phenol	ND	2.0	0.40	ug/l	
83-32-9	Acenaphthene	ND	1.0	0.19	ug/l	
208-96-8	Acenaphthylene	ND	1.0	0.14	ug/l	
120-12-7	Anthracene	ND	1.0	0.22	ug/l	
56-55-3	Benzo(a)anthracene	0.53	1.0	0.21	ug/l	J
50-32-8	Benzo(a)pyrene	0.53	1.0	0.22	ug/l	J
205-99-2	Benzo(b)fluoranthene	0.54	1.0	0.21	ug/l	J
191-24-2	Benzo(g,h,i)perylene	ND	1.0	0.35	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	1.0	0.21	ug/l	
218-01-9	Chrysene	ND	1.0	0.18	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	1.0	0.34	ug/l	
132-64-9	Dibenzofuran	ND	5.1	0.22	ug/l	
206-44-0	Fluoranthene	0.52	1.0	0.17	ug/l	J
86-73-7	Fluorene	ND	1.0	0.17	ug/l	
118-74-1	Hexachlorobenzene	ND	1.0	0.33	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	1.0	0.34	ug/l	
91-20-3	Naphthalene	ND	1.0	0.24	ug/l	
85-01-8	Phenanthrene	ND	1.0	0.18	ug/l	
129-00-0	Pyrene	0.75	1.0	0.22	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	22%		14-88%
4165-62-2	Phenol-d5	16%		10-110%
118-79-6	2,4,6-Tribromophenol	83%		39-149%
4165-60-0	Nitrobenzene-d5	57%		32-128%
321-60-8	2-Fluorobiphenyl	65%		35-119%
1718-51-0	Terphenyl-d14	58%		10-126%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-02	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-8	Date Received:	12/27/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270D SW846 3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z117763.D	1	01/04/17	AC	12/29/16	OP99556	EZ5851
Run #2							

Run #	Initial Volume	Final Volume
Run #1	930 ml	1.0 ml
Run #2		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	2.2	0.95	ug/l	
	3&4-Methylphenol	ND	2.2	0.95	ug/l	
87-86-5	Pentachlorophenol	ND <i>UJ</i> ✓	4.3	1.5	ug/l	
108-95-2	Phenol	ND	2.2	0.42	ug/l	
83-32-9	Acenaphthene	0.44	1.1	0.21	ug/l	J
208-96-8	Acenaphthylene	ND	1.1	0.15	ug/l	
120-12-7	Anthracene	0.91	1.1	0.23	ug/l	J
56-55-3	Benzo(a)anthracene	2.2 <i>J</i> ✓	1.1	0.22	ug/l	
50-32-8	Benzo(a)pyrene	2.5	1.1	0.23	ug/l	
205-99-2	Benzo(b)fluoranthene	2.5 <i>J</i> ✓	1.1	0.22	ug/l	
191-24-2	Benzo(g,h,i)perylene	1.5 <i>J</i> ✓	1.1	0.37	ug/l	
207-08-9	Benzo(k)fluoranthene	0.86	1.1	0.22	ug/l	J
218-01-9	Chrysene	2.2	1.1	0.19	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	1.1	0.36	ug/l	
132-64-9	Dibenzofuran	ND	5.4	0.24	ug/l	
206-44-0	Fluoranthene	4.6 <i>J</i> ✓	1.1	0.18	ug/l	
86-73-7	Fluorene	0.47	1.1	0.18	ug/l	J
118-74-1	Hexachlorobenzene	ND	1.1	0.35	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	1.7 <i>J</i> ✓	1.1	0.36	ug/l	
91-20-3	Naphthalene	ND	1.1	0.25	ug/l	
85-01-8	Phenanthrene	3.4 <i>J</i> ✓	1.1	0.19	ug/l	
129-00-0	Pyrene	4.0 <i>J</i> ✓	1.1	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	51%		14-88%
4165-62-2	Phenol-d5	36%		10-110%
118-79-6	2,4,6-Tribromophenol	113%		39-149%
4165-60-0	Nitrobenzene-d5	73%		32-128%
321-60-8	2-Fluorobiphenyl	70%		35-119%
1718-51-0	Terphenyl-d14	62%		10-126%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-03	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-12	Date Received:	12/27/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270D SW846 3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z117764.D	1	01/04/17	AC	12/29/16	OP99556	EZ5851
Run #2							

Run #	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	2.0	0.90	ug/l	
	3&4-Methylphenol	ND	2.0	0.89	ug/l	
87-86-5	Pentachlorophenol	ND ND UJ ✓	4.0	1.4	ug/l	
108-95-2	Phenol	ND	2.0	0.40	ug/l	
83-32-9	Acenaphthene	ND	1.0	0.19	ug/l	
208-96-8	Acenaphthylene	ND	1.0	0.14	ug/l	
120-12-7	Anthracene	ND	1.0	0.21	ug/l	
56-55-3	Benzo(a)anthracene	ND	1.0	0.21	ug/l	
50-32-8	Benzo(a)pyrene	ND	1.0	0.22	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	1.0	0.21	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	1.0	0.34	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	1.0	0.21	ug/l	
218-01-9	Chrysene	ND	1.0	0.18	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	1.0	0.33	ug/l	
132-64-9	Dibenzofuran	ND	5.1	0.22	ug/l	
206-44-0	Fluoranthene	0.63	1.0	0.17	ug/l	J
86-73-7	Fluorene	ND	1.0	0.17	ug/l	
118-74-1	Hexachlorobenzene	ND	1.0	0.33	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	1.0	0.34	ug/l	
91-20-3	Naphthalene	ND	1.0	0.23	ug/l	
85-01-8	Phenanthrene	0.82	1.0	0.18	ug/l	J
129-00-0	Pyrene	0.56	1.0	0.22	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	47%		14-88%
4165-62-2	Phenol-d5	34%		10-110%
118-79-6	2,4,6-Tribromophenol	124%		39-149%
4165-60-0	Nitrobenzene-d5	75%		32-128%
321-60-8	2-Fluorobiphenyl	79%		35-119%
1718-51-0	Terphenyl-d14	74%		10-126%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-04	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-20	Date Received:	12/28/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270D SW846 3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2P65895.D	1	12/31/16	CS	12/30/16	OP99558	E2P2886
Run #2							

Run #	Initial Volume	Final Volume
Run #1	975 ml	1.0 ml
Run #2		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	2.1	0.91	ug/l	
	3&4-Methylphenol	ND	2.1	0.90	ug/l	
87-86-5	Pentachlorophenol	ND	4.1	1.4	ug/l	
108-95-2	Phenol	ND	2.1	0.40	ug/l	
83-32-9	Acenaphthene	7.9	1.0	0.20	ug/l	
208-96-8	Acenaphthylene	ND	1.0	0.14	ug/l	
120-12-7	Anthracene	2.5	1.0	0.22	ug/l	
56-55-3	Benzo(a)anthracene	0.93	1.0	0.21	ug/l	J
50-32-8	Benzo(a)pyrene	0.83	1.0	0.22	ug/l	J
205-99-2	Benzo(b)fluoranthene	0.82	1.0	0.21	ug/l	J
191-24-2	Benzo(g,h,i)perylene	0.43	1.0	0.35	ug/l	J
207-08-9	Benzo(k)fluoranthene	ND	1.0	0.21	ug/l	
218-01-9	Chrysene	1.3	1.0	0.18	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	1.0	0.34	ug/l	
132-64-9	Dibenzofuran	2.8	5.1	0.23	ug/l	J
206-44-0	Fluoranthene	2.9	1.0	0.17	ug/l	
86-73-7	Fluorene	5.2	1.0	0.18	ug/l	
118-74-1	Hexachlorobenzene	ND	1.0	0.33	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	1.0	0.34	ug/l	
91-20-3	Naphthalene	56.4	1.0	0.24	ug/l	
85-01-8	Phenanthrene	11.3	1.0	0.18	ug/l	
129-00-0	Pyrene	3.1	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	36%		14-88%
4165-62-2	Phenol-d5	28%		10-110%
118-79-6	2,4,6-Tribromophenol	127%		39-149%
4165-60-0	Nitrobenzene-d5	72%		32-128%
321-60-8	2-Fluorobiphenyl	79%		35-119%
1718-51-0	Terphenyl-d14	85%		10-126%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID: RHBF9-GW-DUP-01
 Lab Sample ID: JC34266-17
 Matrix: AQ - Ground Water
 Method: SW846 8270D SW846 3510C
 Project: Red Hook Ballfields Soil, Brooklyn, NY

Date Sampled: 12/27/16
 Date Received: 12/27/16
 Percent Solids: n/a

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z117765.D	1	01/04/17	AC	12/29/16	OP99556	EZ5851
Run #2							

Run #	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	2.0	0.90	ug/l	
	3&4-Methylphenol	ND	2.0	0.89	ug/l	
87-86-5	Pentachlorophenol	ND <i>UJ</i> ✓	4.0	1.4	ug/l	
108-95-2	Phenol	ND	2.0	0.40	ug/l	
83-32-9	Acenaphthene	0.55	1.0	0.19	ug/l	J
208-96-8	Acenaphthylene	0.44	1.0	0.14	ug/l	J
120-12-7	Anthracene	1.2	1.0	0.21	ug/l	
56-55-3	Benzo(a)anthracene	3.1 <i>J</i> ✓	1.0	0.21	ug/l	
50-32-8	Benzo(a)pyrene	3.3	1.0	0.22	ug/l	
205-99-2	Benzo(b)fluoranthene	3.7 <i>J</i> ✓	1.0	0.21	ug/l	
191-24-2	Benzo(g,h,i)perylene	2.2 <i>J</i> ✓	1.0	0.34	ug/l	
207-08-9	Benzo(k)fluoranthene	1.2	1.0	0.21	ug/l	
218-01-9	Chrysene	2.9	1.0	0.18	ug/l	
53-70-3	Dibenzo(a,h)anthracene	0.59	1.0	0.33	ug/l	J
132-64-9	Dibenzofuran	ND	5.1	0.22	ug/l	
206-44-0	Fluoranthene	6.4 <i>J</i> ✓	1.0	0.17	ug/l	
86-73-7	Fluorene	0.57	1.0	0.17	ug/l	J
118-74-1	Hexachlorobenzene	ND	1.0	0.33	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	2.4 <i>J</i> ✓	1.0	0.34	ug/l	
91-20-3	Naphthalene	0.50	1.0	0.23	ug/l	J
85-01-8	Phenanthrene	4.7 <i>J</i> ✓	1.0	0.18	ug/l	
129-00-0	Pyrene	5.6 <i>J</i> ✓	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	44%		14-88%
4165-62-2	Phenol-d5	32%		10-110%
118-79-6	2,4,6-Tribromophenol	103%		39-149%
4165-60-0	Nitrobenzene-d5	75%		32-128%
321-60-8	2-Fluorobiphenyl	68%		35-119%
1718-51-0	Terphenyl-d14	47%		10-126%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID: RHBF9-FIELD BLANK
 Lab Sample ID: JC34266-18
 Matrix: AQ - Field Blank Water
 Method: SW846 8270D SW846 3510C
 Project: Red Hook Ballfields Soil, Brooklyn, NY

Date Sampled: 12/27/16
 Date Received: 12/27/16
 Percent Solids: n/a

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z117766.D	1	01/04/17	AC	12/29/16	OP99556	EZ5851
Run #2							

Run #	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	2.0	0.90	ug/l	
	3&4-Methylphenol	ND	2.0	0.89	ug/l	
87-86-5	Pentachlorophenol	ND 0.5 ✓	4.0	1.4	ug/l	
108-95-2	Phenol	ND	2.0	0.40	ug/l	
83-32-9	Acenaphthene	ND	1.0	0.19	ug/l	
208-96-8	Acenaphthylene	ND	1.0	0.14	ug/l	
120-12-7	Anthracene	ND	1.0	0.21	ug/l	
56-55-3	Benzo(a)anthracene	ND	1.0	0.21	ug/l	
50-32-8	Benzo(a)pyrene	ND	1.0	0.22	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	1.0	0.21	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	1.0	0.34	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	1.0	0.21	ug/l	
218-01-9	Chrysene	ND	1.0	0.18	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	1.0	0.33	ug/l	
132-64-9	Dibenzofuran	ND	5.1	0.22	ug/l	
206-44-0	Fluoranthene	ND	1.0	0.17	ug/l	
86-73-7	Fluorene	ND	1.0	0.17	ug/l	
118-74-1	Hexachlorobenzene	ND	1.0	0.33	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	1.0	0.34	ug/l	
91-20-3	Naphthalene	ND	1.0	0.23	ug/l	
85-01-8	Phenanthrene	ND	1.0	0.18	ug/l	
129-00-0	Pyrene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	45%		14-88%
4165-62-2	Phenol-d5	30%		10-110%
118-79-6	2,4,6-Tribromophenol	95%		39-149%
4165-60-0	Nitrobenzene-d5	71%		32-128%
321-60-8	2-Fluorobiphenyl	67%		35-119%
1718-51-0	Terphenyl-d14	78%		10-126%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID: RHB9-EQUIPMENT BLANK
 Lab Sample ID: JC34266-19
 Matrix: AQ - Equipment Blank
 Method: SW846 8270D SW846 3510C
 Project: Red Hook Ballfields Soil, Brooklyn, NY

Date Sampled: 12/27/16
 Date Received: 12/27/16
 Percent Solids: n/a

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z117762.D	1	01/04/17	AC	12/29/16	OP99556	EZ5851
Run #2							

Run #	Initial Volume	Final Volume
Run #1	980 ml	1.0 ml
Run #2		

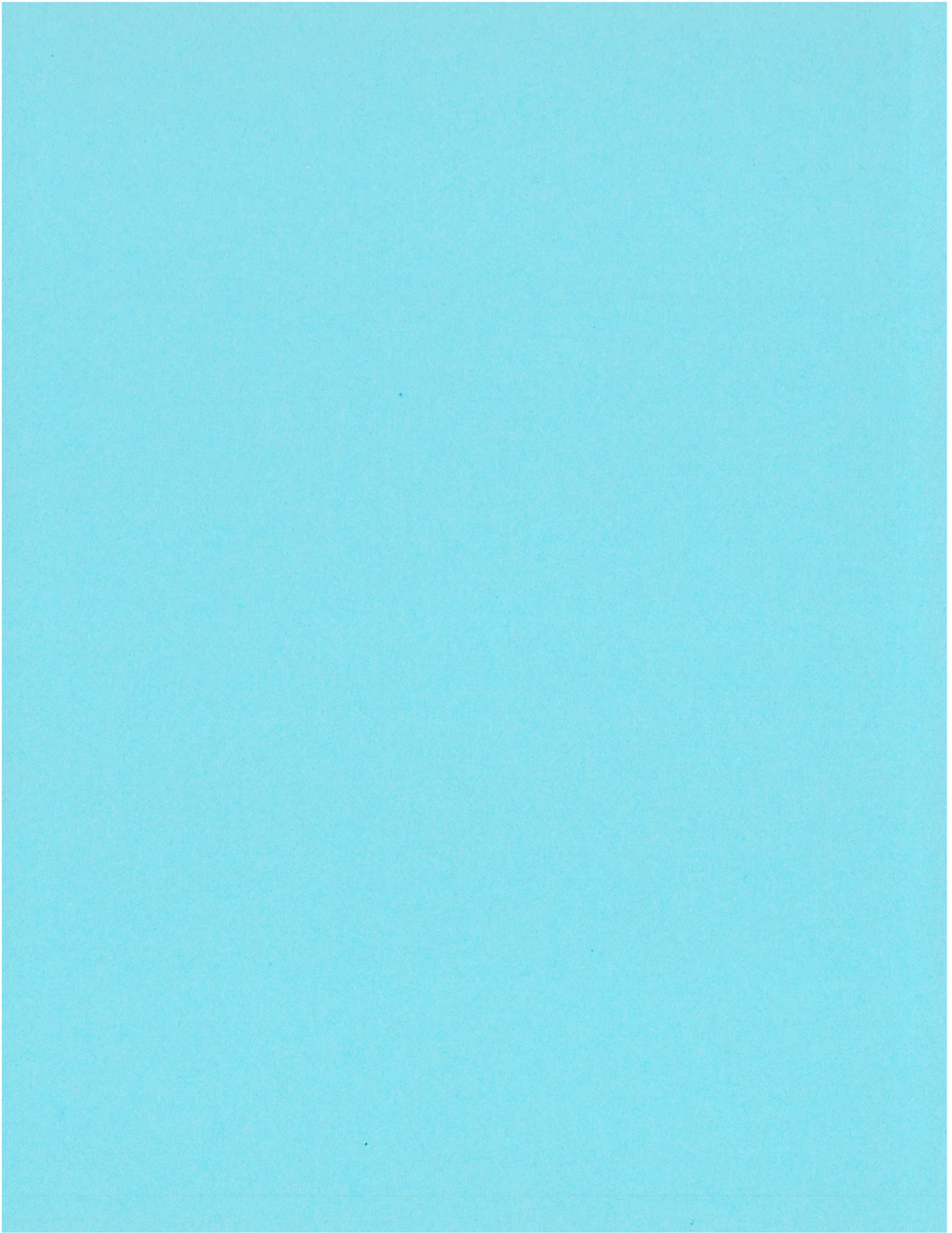
ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	2.0	0.91	ug/l	
	3&4-Methylphenol	ND	2.0	0.90	ug/l	
87-86-5	Pentachlorophenol	ND <i>NDVJ</i> ✓	4.1	1.4	ug/l	
108-95-2	Phenol	ND	2.0	0.40	ug/l	
83-32-9	Acenaphthene	ND	1.0	0.19	ug/l	
208-96-8	Acenaphthylene	ND	1.0	0.14	ug/l	
120-12-7	Anthracene	ND	1.0	0.22	ug/l	
56-55-3	Benzo(a)anthracene	ND	1.0	0.21	ug/l	
50-32-8	Benzo(a)pyrene	ND	1.0	0.22	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	1.0	0.21	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	1.0	0.35	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	1.0	0.21	ug/l	
218-01-9	Chrysene	ND	1.0	0.18	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	1.0	0.34	ug/l	
132-64-9	Dibenzofuran	ND	5.1	0.22	ug/l	
206-44-0	Fluoranthene	ND	1.0	0.17	ug/l	
86-73-7	Fluorene	ND	1.0	0.17	ug/l	
118-74-1	Hexachlorobenzene	ND	1.0	0.33	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	1.0	0.34	ug/l	
91-20-3	Naphthalene	ND	1.0	0.24	ug/l	
85-01-8	Phenanthrene	ND	1.0	0.18	ug/l	
129-00-0	Pyrene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	48%		14-88%
4165-62-2	Phenol-d5	32%		10-110%
118-79-6	2,4,6-Tribromophenol	109%		39-149%
4165-60-0	Nitrobenzene-d5	71%		32-128%
321-60-8	2-Fluorobiphenyl	71%		35-119%
1718-51-0	Terphenyl-d14	87%		10-126%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



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Client Sample ID:	RHBF9-01 (2-4)	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-1	Date Received:	12/22/16
Matrix:	SO - Soil	Percent Solids:	86.0
Method:	SW846 8151 SW846 8151/3550C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OA122530.D	2	01/05/17	VDT	01/02/17	OP99579	GOA4207
Run #2							

Run #	Initial Weight	Final Volume
Run #1	15.3 g	5.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	7.6	2.8	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	35%		10-156%
19719-28-9	2,4-DCAA	38%		10-156%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-01 (5-7)	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-2	Date Received:	12/22/16
Matrix:	SO - Soil	Percent Solids:	88.1
Method:	SW846 8151 SW846 8151/3550C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OA122531.D	2	01/05/17	VDT	01/02/17	OP99579	GOA4207
Run #2							

Run #	Initial Weight	Final Volume
Run #1	15.0 g	5.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	7.6	2.8	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	22%		10-156%
19719-28-9	2,4-DCAA	23%		10-156%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-01 (8-10)	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-3	Date Received:	12/22/16
Matrix:	SO - Soil	Percent Solids:	90.0
Method:	SW846 8151 SW846 8151/3550C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OA122532.D	2	01/05/17	VDT	01/02/17	OP99579	GOA4207
Run #2							

Run #	Initial Weight	Final Volume
Run #1	16.0 g	5.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	6.9	2.5	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	21%		10-156%
19719-28-9	2,4-DCAA	19%		10-156%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-02 (2-4)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-5	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	89.4
Method:	SW846 8151 SW846 8151/3550C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OA122608.D	2	01/06/17	VDT	01/04/17	OP99621	GOA4209
Run #2							

Run #	Initial Weight	Final Volume
Run #1	15.3 g	5.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	7.3	2.7	ug/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
19719-28-9	2,4-DCAA	19%		10-156%		
19719-28-9	2,4-DCAA	15%		10-156%		

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-02 (5-7)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-6	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	88.5
Method:	SW846 8151 SW846 8151/3550C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OA122609.D	2	01/06/17	VDT	01/04/17	OP99621	GOA4209
Run #2							

	Initial Weight	Final Volume
Run #1	15.0 g	5.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	7.5	2.7	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	19%		10-156%
19719-28-9	2,4-DCAA	11%		10-156%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-02 (8-10)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-7	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	77.8
Method:	SW846 8151 SW846 8151/3550C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OA122610.D	2	01/07/17	VDT	01/04/17	OP99621	GOA4209
Run #2							

	Initial Weight	Final Volume
Run #1	15.2 g	5.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	8.5	3.1	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	24%		10-156%
19719-28-9	2,4-DCAA	24%		10-156%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-03 (2-4)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-9	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	83.5
Method:	SW846 8151 SW846 8151/3550C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OA122566.D	2	01/06/17	VDT	01/04/17	OP99621	GOA4208
Run #2							

Run #	Initial Weight	Final Volume
Run #1	15.8 g	5.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	7.6	2.8	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	12%		10-156%
19719-28-9	2,4-DCAA	10%		10-156%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-03 (5-7)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-10	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	75.5
Method:	SW846 8151 SW846 8151/3550C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OA122567.D	2	01/06/17	VDT	01/04/17	OP99621	GOA4208
Run #2							

Run #	Initial Weight	Final Volume
Run #1	15.2 g	5.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	8.7	3.2	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	22%		10-156%
19719-28-9	2,4-DCAA	23%		10-156%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-03 (8-10)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-11	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	78.0
Method:	SW846 8151 SW846 8151/3550C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OA122568.D	2	01/06/17	VDT	01/04/17	OP99621	GOA4208
Run #2							

Run #	Initial Weight	Final Volume
Run #1	15.0 g	5.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	8.5	3.1	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	18%		10-156%
19719-28-9	2,4-DCAA	15%		10-156%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-04 (2-4)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-13	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	87.6
Method:	SW846 8151 SW846 8151/3550C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OA122569.D	2	01/06/17	VDT	01/04/17	OP99621	GOA4208
Run #2							

Run #	Initial Weight	Final Volume
Run #1	15.2 g	5.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	7.5	2.7	ug/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
19719-28-9	2,4-DCAA	16%		10-156%		
19719-28-9	2,4-DCAA	14%		10-156%		

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID: RHBF9-04 (5-7)	Date Sampled: 12/27/16
Lab Sample ID: JC34266-14	Date Received: 12/27/16
Matrix: SO - Soil	Percent Solids: 86.0
Method: SW846 8151 SW846 8151/3550C	
Project: Red Hook Ballfields Soil, Brooklyn, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OA122570.D	2	01/06/17	VDT	01/04/17	OP99621	GOA4208
Run #2							

Run #	Initial Weight	Final Volume
Run #1	15.0 g	5.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	7.8	2.8	ug/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
19719-28-9	2,4-DCAA	11%		10-156%		
19719-28-9	2,4-DCAA	11%		10-156%		

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-04 (8-10)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-15	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	89.9
Method:	SW846 8151 SW846 8151/3550C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OA122611.D	2	01/07/17	VDT	01/04/17	OP99621	GOA4209
Run #2							

Run #	Initial Weight	Final Volume
Run #1	15.2 g	5.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	7.3	2.7	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	13%		10-156%
19719-28-9	2,4-DCAA	14%		10-156%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID: RHBF9-DUP-01
 Lab Sample ID: JC34266-16
 Matrix: SO - Soil
 Method: SW846 8151 SW846 8151/3550C
 Project: Red Hook Ballfields Soil, Brooklyn, NY

Date Sampled: 12/27/16
 Date Received: 12/27/16
 Percent Solids: 86.1

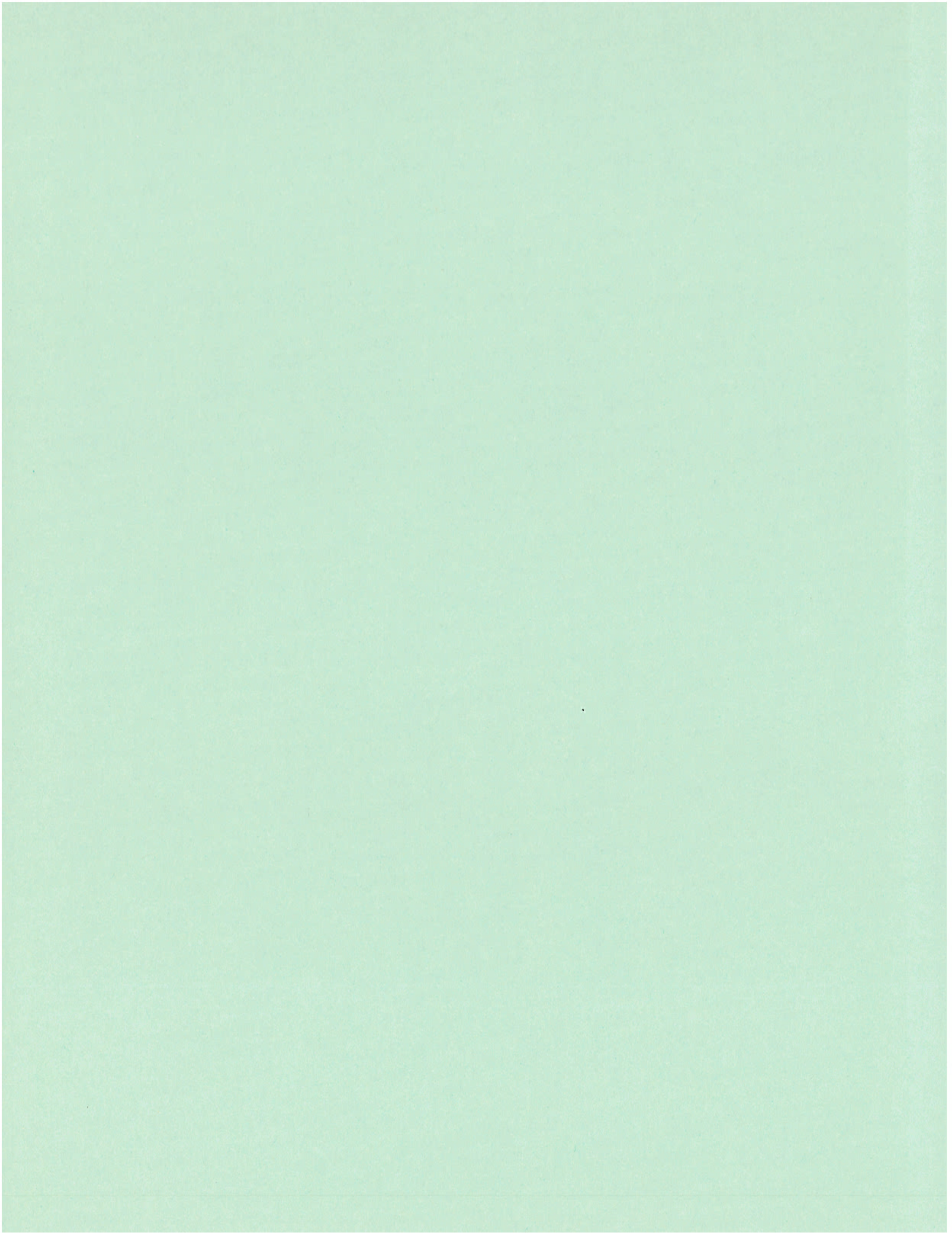
	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OA122612.D	2	01/07/17	VDT	01/04/17	OP99621	GOA4209
Run #2							

	Initial Weight	Final Volume
Run #1	15.3 g	5.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	7.6	2.8	ug/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
19719-28-9	2,4-DCAA	19%		10-156%		
19719-28-9	2,4-DCAA	20%		10-156%		

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



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Client Sample ID:	RHBF9-01	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-4	Date Received:	12/22/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8151 SW846 8151/3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G105272.D	1	01/04/17	VDT	12/29/16	OP99541	G3G3681
Run #2							

Run #	Initial Volume	Final Volume
Run #1	300 ml	2.5 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	0.083	0.039	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
19719-28-9	2,4-DCAA	99%		39-159%		
19719-28-9	2,4-DCAA	92%		39-159%		

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-02	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-8	Date Received:	12/27/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8151 SW846 8151/3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G105300.D	1	01/05/17	VDT	12/29/16	OP99567	G3G3682
Run #2							

Run #	Initial Volume	Final Volume
Run #1	300 ml	2.5 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	0.083	0.039	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	139%		39-159%
19719-28-9	2,4-DCAA	109%		39-159%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-03	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-12	Date Received:	12/27/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8151 SW846 8151/3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G105301.D	1	01/05/17	VDT	12/29/16	OP99567	G3G3682
Run #2							

	Initial Volume	Final Volume
Run #1	300 ml	2.5 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	0.083	0.039	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	119%		39-159%
19719-28-9	2,4-DCAA	103%		39-159%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-GW-DUP-01	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-17	Date Received:	12/27/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8151 SW846 8151/3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G105302.D	1	01/05/17	VDT	12/29/16	OP99567	G3G3682
Run #2							

Run #	Initial Volume	Final Volume
Run #1	300 ml	2.5 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	0.083	0.039	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
19719-28-9	2,4-DCAA	118%		39-159%		
19719-28-9	2,4-DCAA	102%		39-159%		

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID: RHBF9-FIELD BLANK
 Lab Sample ID: JC34266-18
 Matrix: AQ - Field Blank Water
 Method: SW846 8151 SW846 8151/3510C
 Project: Red Hook Ballfields Soil, Brooklyn, NY

Date Sampled: 12/27/16
 Date Received: 12/27/16
 Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G105303.D	1	01/05/17	VDT	12/29/16	OP99567	G3G3682
Run #2							

	Initial Volume	Final Volume
Run #1	300 ml	2.5 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	0.083	0.039	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
19719-28-9	2,4-DCAA	95%		39-159%		
19719-28-9	2,4-DCAA	85%		39-159%		

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-EQUIPMENT BLANK	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-19	Date Received:	12/27/16
Matrix:	AQ - Equipment Blank	Percent Solids:	n/a
Method:	SW846 8151 SW846 8151/3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G105304.D	1	01/05/17	VDT	12/29/16	OP99567	G3G3682
Run #2							

	Initial Volume	Final Volume
Run #1	300 ml	2.5 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	0.083	0.039	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	101%		39-159%
19719-28-9	2,4-DCAA	109%		39-159%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-04	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-20	Date Received:	12/28/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8151 SW846 8151/3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G105305.D	1	01/05/17	VDT	12/29/16	OP99567	G3G3682
Run #2							

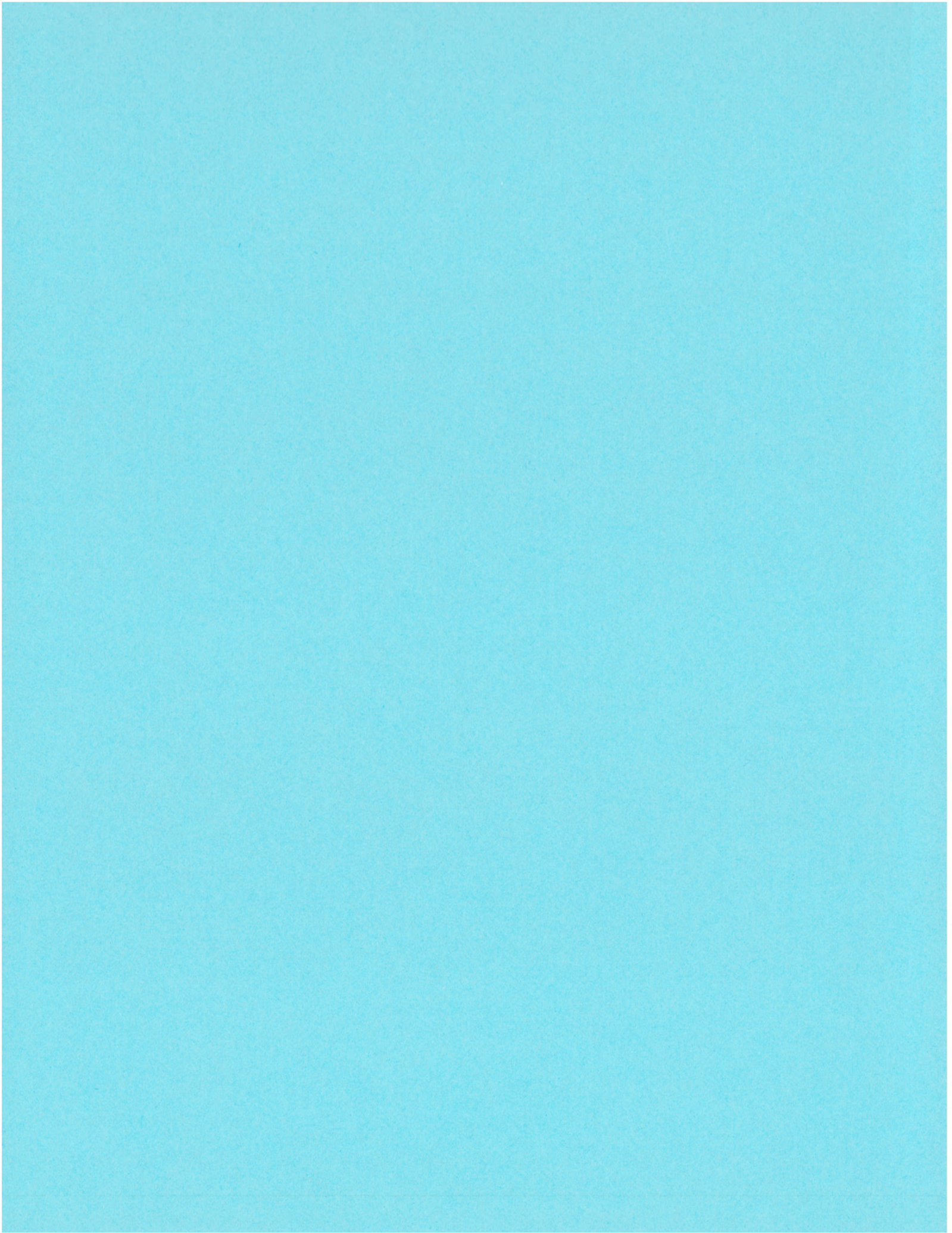
Run #	Initial Volume	Final Volume
Run #1	300 ml	2.5 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	0.083	0.039	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	80%		39-159%
19719-28-9	2,4-DCAA	86%		39-159%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



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Client Sample ID:	RHBF9-01 (2-4)	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-1	Date Received:	12/22/16
Matrix:	SO - Soil	Percent Solids:	86.0
Method:	SW846 8081B SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G76562.D	1	01/04/17	RK	01/03/17	OP99586	G4G1993
Run #2							

Run #	Initial Weight	Final Volume
Run #1	15.8 g	10.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.74	0.35	ug/kg	
319-84-6	alpha-BHC	ND	0.74	0.39	ug/kg	
319-85-7	beta-BHC	ND	0.74	0.46	ug/kg	
319-86-8	delta-BHC	2.4	0.74	0.33	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	0.74	0.33	ug/kg	
5103-71-9	alpha-Chlordane	ND	0.74	0.35	ug/kg	
60-57-1	Dieldrin	71.3	0.74	0.37	ug/kg	
72-54-8	4,4'-DDD	4.8	0.74	0.47	ug/kg	
72-55-9	4,4'-DDE	24.6	0.74	0.38	ug/kg	
50-29-3	4,4'-DDT	56.7	0.74	0.44	ug/kg	
72-20-8	Endrin	ND	0.74	0.35	ug/kg	
1031-07-8	Endosulfan sulfate	ND	0.74	0.30	ug/kg	
959-98-8	Endosulfan-I	ND	0.74	0.38	ug/kg	
33213-65-9	Endosulfan-II	ND	0.74	0.38	ug/kg	
76-44-8	Heptachlor	ND	0.74	0.36	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	73%		24-136%
877-09-8	Tetrachloro-m-xylene	84%		24-136%
2051-24-3	Decachlorobiphenyl	103%		10-153%
2051-24-3	Decachlorobiphenyl	70%		10-153%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-01 (5-7)	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-2	Date Received:	12/22/16
Matrix:	SO - Soil	Percent Solids:	88.1
Method:	SW846 8081B SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G76563.D	1	01/04/17	RK	01/03/17	OP99586	G4G1993
Run #2							

Run #	Initial Weight	Final Volume
Run #1	16.0 g	10.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.71	0.34	ug/kg	
319-84-6	alpha-BHC	ND	0.71	0.38	ug/kg	
319-85-7	beta-BHC	ND	0.71	0.45	ug/kg	
319-86-8	delta-BHC	1.4	0.71	0.32	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	0.71	0.31	ug/kg	
5103-71-9	alpha-Chlordane	ND	0.71	0.34	ug/kg	
60-57-1	Dieldrin	ND	0.71	0.35	ug/kg	
72-54-8	4,4'-DDD	ND	0.71	0.45	ug/kg	
72-55-9	4,4'-DDE	1.9	0.71	0.37	ug/kg	
50-29-3	4,4'-DDT	8.8	0.71	0.42	ug/kg	
72-20-8	Endrin	ND	0.71	0.33	ug/kg	
1031-07-8	Endosulfan sulfate	ND	0.71	0.28	ug/kg	
959-98-8	Endosulfan-I	ND	0.71	0.37	ug/kg	
33213-65-9	Endosulfan-II	ND	0.71	0.37	ug/kg	
76-44-8	Heptachlor	ND	0.71	0.35	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	89%		24-136%
877-09-8	Tetrachloro-m-xylene	79%		24-136%
2051-24-3	Decachlorobiphenyl	147%		10-153%
2051-24-3	Decachlorobiphenyl	72%		10-153%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-01 (8-10)	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-3	Date Received:	12/22/16
Matrix:	SO - Soil	Percent Solids:	90.0
Method:	SW846 8081B SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G76564.D	1	01/04/17	RK	01/03/17	OP99586	G4G1993
Run #2							

Run #	Initial Weight	Final Volume
Run #1	15.3 g	10.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.73	0.35	ug/kg	
319-84-6	alpha-BHC	ND	0.73	0.39	ug/kg	
319-85-7	beta-BHC	ND	0.73	0.46	ug/kg	
319-86-8	delta-BHC	ND	0.73	0.33	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	0.73	0.32	ug/kg	
5103-71-9	alpha-Chlordane	ND	0.73	0.34	ug/kg	
60-57-1	Dieldrin	2.4	0.73	0.36	ug/kg	
72-54-8	4,4'-DDD	1.6	0.73	0.47	ug/kg	
72-55-9	4,4'-DDE	11.3	0.73	0.38	ug/kg	
50-29-3	4,4'-DDT	6.8	0.73	0.43	ug/kg	
72-20-8	Endrin	ND	0.73	0.34	ug/kg	
1031-07-8	Endosulfan sulfate	ND	0.73	0.29	ug/kg	
959-98-8	Endosulfan-I	ND	0.73	0.38	ug/kg	
33213-65-9	Endosulfan-II	ND	0.73	0.38	ug/kg	
76-44-8	Heptachlor	ND	0.73	0.36	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	96%		24-136%
877-09-8	Tetrachloro-m-xylene	75%		24-136%
2051-24-3	Decachlorobiphenyl	83%		10-153%
2051-24-3	Decachlorobiphenyl	74%		10-153%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-02 (2-4)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-5	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	89.4
Method:	SW846 8081B SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G76591.D	1	01/04/17	RK	01/03/17	OP99589	G4G1993
Run #2							

Run #	Initial Weight	Final Volume
Run #1	15.2 g	10.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.74	0.35	ug/kg	
319-84-6	alpha-BHC	ND	0.74	0.39	ug/kg	
319-85-7	beta-BHC	ND	0.74	0.46	ug/kg	
319-86-8	delta-BHC	ND	0.74	0.33	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	0.74	0.33	ug/kg	
5103-71-9	alpha-Chlordane	ND	0.74	0.35	ug/kg	
60-57-1	Dieldrin	ND	0.74	0.37	ug/kg	
72-54-8	4,4'-DDD	ND	0.74	0.47	ug/kg	
72-55-9	4,4'-DDE	2.1 J ✓	0.74	0.38	ug/kg	
50-29-3	4,4'-DDT	7.8	0.74	0.44	ug/kg	
72-20-8	Endrin	ND	0.74	0.35	ug/kg	
1031-07-8	Endosulfan sulfate	ND	0.74	0.30	ug/kg	
959-98-8	Endosulfan-I	ND	0.74	0.38	ug/kg	
33213-65-9	Endosulfan-II	ND	0.74	0.38	ug/kg	
76-44-8	Heptachlor	ND	0.74	0.36	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	95%		24-136%
877-09-8	Tetrachloro-m-xylene	83%		24-136%
2051-24-3	Decachlorobiphenyl	85%		10-153%
2051-24-3	Decachlorobiphenyl	90%		10-153%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID: RHBF9-02 (5-7)		Date Sampled: 12/27/16	
Lab Sample ID: JC34266-6		Date Received: 12/27/16	
Matrix: SO - Soil		Percent Solids: 88.5	
Method: SW846 8081B SW846 3546			
Project: Red Hook Ballfields Soil, Brooklyn, NY			

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G76592.D	1	01/04/17	RK	01/03/17	OP99589	G4G1993
Run #2							

Run #	Initial Weight	Final Volume
Run #1	15.9 g	10.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.71	0.34	ug/kg	
319-84-6	alpha-BHC	ND	0.71	0.38	ug/kg	
319-85-7	beta-BHC	ND	0.71	0.45	ug/kg	
319-86-8	delta-BHC	ND	0.71	0.32	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	0.71	0.31	ug/kg	
5103-71-9	alpha-Chlordane	ND	0.71	0.34	ug/kg	
60-57-1	Dieldrin	ND	0.71	0.36	ug/kg	
72-54-8	4,4'-DDD	ND	0.71	0.46	ug/kg	
72-55-9	4,4'-DDE	ND	0.71	0.37	ug/kg	
50-29-3	4,4'-DDT ^a	2.3 J ✓	0.71	0.42	ug/kg	
72-20-8	Endrin	ND	0.71	0.33	ug/kg	
1031-07-8	Endosulfan sulfate	ND	0.71	0.28	ug/kg	
959-98-8	Endosulfan-I	ND	0.71	0.37	ug/kg	
33213-65-9	Endosulfan-II	ND	0.71	0.37	ug/kg	
76-44-8	Heptachlor	ND	0.71	0.35	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	96%		24-136%
877-09-8	Tetrachloro-m-xylene	81%		24-136%
2051-24-3	Decachlorobiphenyl	81%		10-153%
2051-24-3	Decachlorobiphenyl	93%		10-153%

(a) More than 40 % RPD for detected concentrations between the two GC columns.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-02 (8-10)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-7	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	77.8
Method:	SW846 8081B SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G76711.D	1	01/07/17	KD	01/03/17	OP99589	G4G1995
Run #2							

Run #	Initial Weight	Final Volume
Run #1	15.6 g	10.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.82	0.39	ug/kg	
319-84-6	alpha-BHC	ND	0.82	0.44	ug/kg	
319-85-7	beta-BHC	ND	0.82	0.52	ug/kg	
319-86-8	delta-BHC	ND	0.82	0.37	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	0.82	0.36	ug/kg	
5103-71-9	alpha-Chlordane	ND	0.82	0.39	ug/kg	
60-57-1	Dieldrin	ND	0.82	0.41	ug/kg	
72-54-8	4,4'-DDD	ND	0.82	0.53	ug/kg	
72-55-9	4,4'-DDE	ND	0.82	0.43	ug/kg	
50-29-3	4,4'-DDT ^a	6.0 J ✓	0.82	0.49	ug/kg	
72-20-8	Endrin	ND	0.82	0.39	ug/kg	
1031-07-8	Endosulfan sulfate	ND	0.82	0.33	ug/kg	
959-98-8	Endosulfan-I	ND	0.82	0.43	ug/kg	
33213-65-9	Endosulfan-II	ND	0.82	0.43	ug/kg	
76-44-8	Heptachlor	ND	0.82	0.40	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	90%		24-136%
877-09-8	Tetrachloro-m-xylene	74%		24-136%
2051-24-3	Decachlorobiphenyl	84%		10-153%
2051-24-3	Decachlorobiphenyl	92%		10-153%

(a) More than 40 % RPD for detected concentrations between the two GC columns.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-03 (2-4)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-9	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	83.5
Method:	SW846 8081B SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G76594.D	1	01/04/17	RK	01/03/17	OP99589	G4G1993
Run #2							

Run #	Initial Weight	Final Volume
Run #1	15.0 g	10.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.80	0.38	ug/kg	
319-84-6	alpha-BHC	ND	0.80	0.43	ug/kg	
319-85-7	beta-BHC	ND	0.80	0.50	ug/kg	
319-86-8	delta-BHC	ND	0.80	0.36	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	0.80	0.35	ug/kg	
5103-71-9	alpha-Chlordane	ND	0.80	0.38	ug/kg	
60-57-1	Dieldrin	ND	0.80	0.40	ug/kg	
72-54-8	4,4'-DDD ^a	8.2 J ✓	0.80	0.51	ug/kg	
72-55-9	4,4'-DDE ^a	50.9 J ✓	0.80	0.42	ug/kg	
50-29-3	4,4'-DDT ^a	66.1 J ✓	0.80	0.48	ug/kg	
72-20-8	Endrin	ND	0.80	0.37	ug/kg	
1031-07-8	Endosulfan sulfate	ND	0.80	0.32	ug/kg	
959-98-8	Endosulfan-I	ND	0.80	0.42	ug/kg	
33213-65-9	Endosulfan-II	ND	0.80	0.42	ug/kg	
76-44-8	Heptachlor	ND	0.80	0.39	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	126%		24-136%
877-09-8	Tetrachloro-m-xylene	96%		24-136%
2051-24-3	Decachlorobiphenyl	71%		10-153%
2051-24-3	Decachlorobiphenyl	118%		10-153%

(a) More than 40 % RPD for detected concentrations between the two GC columns.

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J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID: RHBF9-03 (5-7)		Date Sampled: 12/27/16	
Lab Sample ID: JC34266-10		Date Received: 12/27/16	
Matrix: SO - Soil		Percent Solids: 75.5	
Method: SW846 8081B SW846 3546			
Project: Red Hook Ballfields Soil, Brooklyn, NY			

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G76712.D	1	01/07/17	KD	01/03/17	OP99589	G4G1995
Run #2							

Run #	Initial Weight	Final Volume
Run #1	15.1 g	10.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.88	0.42	ug/kg	
319-84-6	alpha-BHC	ND	0.88	0.47	ug/kg	
319-85-7	beta-BHC	ND	0.88	0.55	ug/kg	
319-86-8	delta-BHC	ND	0.88	0.40	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	0.88	0.39	ug/kg	
5103-71-9	alpha-Chlordane	ND	0.88	0.42	ug/kg	
60-57-1	Dieldrin	ND	0.88	0.44	ug/kg	
72-54-8	4,4'-DDD	ND	0.88	0.56	ug/kg	
72-55-9	4,4'-DDE	ND	0.88	0.46	ug/kg	
50-29-3	4,4'-DDT ^a	10.9 NJ	0.88	0.52	ug/kg	
72-20-8	Endrin	ND	0.88	0.41	ug/kg	
1031-07-8	Endosulfan sulfate	ND	0.88	0.35	ug/kg	
959-98-8	Endosulfan-I	ND	0.88	0.46	ug/kg	
33213-65-9	Endosulfan-II	ND	0.88	0.46	ug/kg	
76-44-8	Heptachlor	ND	0.88	0.43	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	100%		24-136%
877-09-8	Tetrachloro-m-xylene	77%		24-136%
2051-24-3	Decachlorobiphenyl	90%		10-153%
2051-24-3	Decachlorobiphenyl	80%		10-153%

(a) More than 40 % RPD for detected concentrations between the two GC columns.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
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J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID: RHB9-03 (8-10)		Date Sampled: 12/27/16	
Lab Sample ID: JC34266-11		Date Received: 12/27/16	
Matrix: SO - Soil		Percent Solids: 78.0	
Method: SW846 8081B SW846 3546			
Project: Red Hook Ballfields Soil, Brooklyn, NY			

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G76713.D	1	01/07/17	KD	01/03/17	OP99589	G4G1995
Run #2							

Run #	Initial Weight	Final Volume
Run #1	15.8 g	10.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.81	0.39	ug/kg	
319-84-6	alpha-BHC	ND	0.81	0.43	ug/kg	
319-85-7	beta-BHC	ND	0.81	0.51	ug/kg	
319-86-8	delta-BHC	ND	0.81	0.37	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	0.81	0.36	ug/kg	
5103-71-9	alpha-Chlordane	ND	0.81	0.39	ug/kg	
60-57-1	Dieldrin	ND	0.81	0.41	ug/kg	
72-54-8	4,4'-DDD	ND	0.81	0.52	ug/kg	
72-55-9	4,4'-DDE	ND	0.81	0.42	ug/kg	
50-29-3	4,4'-DDT ^a	9.0 J ✓	0.81	0.48	ug/kg	
72-20-8	Endrin	ND	0.81	0.38	ug/kg	
1031-07-8	Endosulfan sulfate	ND	0.81	0.33	ug/kg	
959-98-8	Endosulfan-I	ND	0.81	0.42	ug/kg	
33213-65-9	Endosulfan-II	ND	0.81	0.42	ug/kg	
76-44-8	Heptachlor	ND	0.81	0.40	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	111%		24-136%
877-09-8	Tetrachloro-m-xylene	93%		24-136%
2051-24-3	Decachlorobiphenyl	94%		10-153%
2051-24-3	Decachlorobiphenyl	104%		10-153%

(a) More than 40 % RPD for detected concentrations between the two GC columns.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-04 (2-4)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-13	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	87.6
Method:	SW846 8081B SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G76714.D	1	01/07/17	KD	01/03/17	OP99589	G4G1995
Run #2							

Run #	Initial Weight	Final Volume
Run #1	15.2 g	10.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.75	0.36	ug/kg	
319-84-6	alpha-BHC	ND	0.75	0.40	ug/kg	
319-85-7	beta-BHC	ND	0.75	0.47	ug/kg	
319-86-8	delta-BHC	ND	0.75	0.34	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	0.75	0.33	ug/kg	
5103-71-9	alpha-Chlordane	ND	0.75	0.36	ug/kg	
60-57-1	Dieldrin	ND	0.75	0.38	ug/kg	
72-54-8	4,4'-DDD	ND	0.75	0.48	ug/kg	
72-55-9	4,4'-DDE	ND	0.75	0.39	ug/kg	
50-29-3	4,4'-DDT	2.8	0.75	0.45	ug/kg	
72-20-8	Endrin	ND	0.75	0.35	ug/kg	
1031-07-8	Endosulfan sulfate	ND	0.75	0.30	ug/kg	
959-98-8	Endosulfan-I	ND	0.75	0.39	ug/kg	
33213-65-9	Endosulfan-II	ND	0.75	0.39	ug/kg	
76-44-8	Heptachlor	ND	0.75	0.37	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	96%		24-136%
877-09-8	Tetrachloro-m-xylene	76%		24-136%
2051-24-3	Decachlorobiphenyl	101%		10-153%
2051-24-3	Decachlorobiphenyl	89%		10-153%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-04 (5-7)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-14	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	86.0
Method:	SW846 8081B SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G76715.D	1	01/07/17	KD	01/03/17	OP99589	G4G1995
Run #2							

Run #	Initial Weight	Final Volume
Run #1	15.4 g	10.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.76	0.36	ug/kg	
319-84-6	alpha-BHC	ND	0.76	0.40	ug/kg	
319-85-7	beta-BHC	ND	0.76	0.47	ug/kg	
319-86-8	delta-BHC	ND	0.76	0.34	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	0.76	0.33	ug/kg	
5103-71-9	alpha-Chlordane	ND	0.76	0.36	ug/kg	
60-57-1	Dieldrin	ND	0.76	0.38	ug/kg	
72-54-8	4,4'-DDD	ND	0.76	0.48	ug/kg	
72-55-9	4,4'-DDE	ND	0.76	0.39	ug/kg	
50-29-3	4,4'-DDT ^a	12.5 NJ ✓	0.76	0.45	ug/kg	
72-20-8	Endrin	ND	0.76	0.35	ug/kg	
1031-07-8	Endosulfan sulfate	ND	0.76	0.30	ug/kg	
959-98-8	Endosulfan-I	ND	0.76	0.39	ug/kg	
33213-65-9	Endosulfan-II	ND	0.76	0.39	ug/kg	
76-44-8	Heptachlor	ND	0.76	0.37	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	120%		24-136%
877-09-8	Tetrachloro-m-xylene	78%		24-136%
2051-24-3	Decachlorobiphenyl	88%		10-153%
2051-24-3	Decachlorobiphenyl	90%		10-153%

(a) More than 40 % RPD for detected concentrations between the two GC columns.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-04 (8-10)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-15	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	89.9
Method:	SW846 8081B SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G76601.D	1	01/04/17	RK	01/03/17	OP99589	G4G1993
Run #2							

Run #	Initial Weight	Final Volume
Run #1	16.0 g	10.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.70	0.33	ug/kg	
319-84-6	alpha-BHC	ND	0.70	0.37	ug/kg	
319-85-7	beta-BHC	ND	0.70	0.44	ug/kg	
319-86-8	delta-BHC	ND	0.70	0.31	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	0.70	0.31	ug/kg	
5103-71-9	alpha-Chlordane	ND	0.70	0.33	ug/kg	
60-57-1	Dieldrin	ND	0.70	0.35	ug/kg	
72-54-8	4,4'-DDD	ND	0.70	0.45	ug/kg	
72-55-9	4,4'-DDE	ND	0.70	0.36	ug/kg	
50-29-3	4,4'-DDT	2.3	0.70	0.41	ug/kg	
72-20-8	Endrin	ND	0.70	0.33	ug/kg	
1031-07-8	Endosulfan sulfate	ND	0.70	0.28	ug/kg	
959-98-8	Endosulfan-I	ND	0.70	0.36	ug/kg	
33213-65-9	Endosulfan-II	ND	0.70	0.36	ug/kg	
76-44-8	Heptachlor	ND	0.70	0.34	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	101%		24-136%
877-09-8	Tetrachloro-m-xylene	80%		24-136%
2051-24-3	Decachlorobiphenyl	86%		10-153%
2051-24-3	Decachlorobiphenyl	86%		10-153%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID: RHBF9-DUP-01		Date Sampled: 12/27/16	
Lab Sample ID: JC34266-16		Date Received: 12/27/16	
Matrix: SO - Soil		Percent Solids: 86.1	
Method: SW846 8081B SW846 3546			
Project: Red Hook Ballfields Soil, Brooklyn, NY			

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G76602.D	1	01/05/17	RK	01/03/17	OP99589	G4G1993
Run #2							

Run #	Initial Weight	Final Volume
Run #1	15.4 g	10.0 ml
Run #2		

Pesticide TCL List

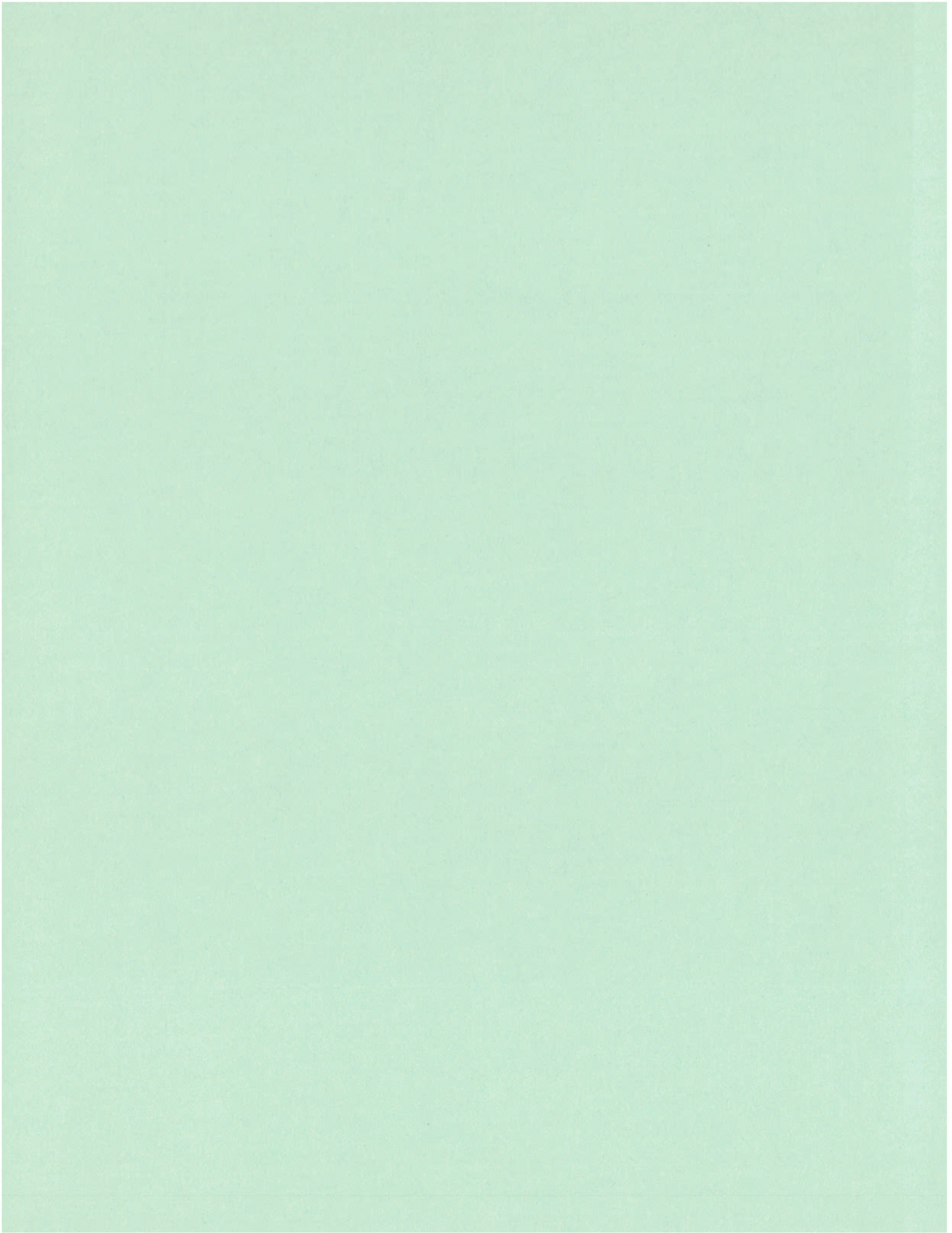
CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.75	0.36	ug/kg	
319-84-6	alpha-BHC	ND	0.75	0.40	ug/kg	
319-85-7	beta-BHC	ND	0.75	0.47	ug/kg	
319-86-8	delta-BHC	ND	0.75	0.34	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	0.75	0.33	ug/kg	
5103-71-9	alpha-Chlordane	ND	0.75	0.36	ug/kg	
60-57-1	Dieldrin	ND	0.75	0.38	ug/kg	
72-54-8	4,4'-DDD	ND	0.75	0.48	ug/kg	
72-55-9	4,4'-DDE	ND ^{JS} ✓	0.75	0.39	ug/kg	
50-29-3	4,4'-DDT ^a	5.7 ^{JS} ✓	0.75	0.45	ug/kg	
72-20-8	Endrin	ND	0.75	0.35	ug/kg	
1031-07-8	Endosulfan sulfate	ND	0.75	0.30	ug/kg	
959-98-8	Endosulfan-I	ND	0.75	0.39	ug/kg	
33213-65-9	Endosulfan-II	ND	0.75	0.39	ug/kg	
76-44-8	Heptachlor	ND	0.75	0.37	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	103%		24-136%
877-09-8	Tetrachloro-m-xylene	73%		24-136%
2051-24-3	Decachlorobiphenyl	84%		10-153%
2051-24-3	Decachlorobiphenyl	76%		10-153%

(a) More than 40 % RPD for detected concentrations between the two GC columns.

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J = Indicates an estimated value
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 N = Indicates presumptive evidence of a compound



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Client Sample ID: RHBF9-01		Date Sampled: 12/22/16	
Lab Sample ID: JC34266-4		Date Received: 12/22/16	
Matrix: AQ - Ground Water		Percent Solids: n/a	
Method: SW846 8081B SW846 3510C			
Project: Red Hook Ballfields Soil, Brooklyn, NY			

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6G42689.D	1	12/27/16	CP	12/24/16	OP99451	G6G1213
Run #2 ^a	1G131083.D	1	01/04/17	JR	12/30/16	OP99565	G1G4188

Run #	Initial Volume	Final Volume
Run #1	300 ml	2.0 ml
Run #2	300 ml	2.0 ml

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.0067	0.0040	ug/l	
319-84-6	alpha-BHC	ND	0.0067	0.0040	ug/l	
319-85-7	beta-BHC	ND	0.0067	0.0038	ug/l	
319-86-8	delta-BHC	ND	0.0067	0.0030	ug/l	
58-89-9	gamma-BHC (Lindane)	ND	0.0067	0.0019	ug/l	
5103-71-9	alpha-Chlordane	ND	0.0067	0.0031	ug/l	
60-57-1	Dieldrin	ND	0.0067	0.0024	ug/l	
72-54-8	4,4'-DDD	ND	0.0067	0.0025	ug/l	
72-55-9	4,4'-DDE	ND	0.0067	0.0041	ug/l	
50-29-3	4,4'-DDT	ND	0.0067	0.0033	ug/l	
72-20-8	Endrin	ND	0.0067	0.0034	ug/l	
1031-07-8	Endosulfan sulfate	ND	0.0067	0.0035	ug/l	
959-98-8	Endosulfan-I	ND	0.0067	0.0033	ug/l	
33213-65-9	Endosulfan-II	ND	0.0067	0.0029	ug/l	
76-44-8	Heptachlor ^b	NDUJ ✓	0.0067	0.0025	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	88%	81%	13-153%
877-09-8	Tetrachloro-m-xylene	79%	75%	13-153%
2051-24-3	Decachlorobiphenyl	32%	42%	10-138%
2051-24-3	Decachlorobiphenyl	30%	52%	10-138%

(a) Re-extracted due to BS outside in house QC limits. Original prep date was within holding time. Confirmation run.

(b) This compound in the BS was outside of the in house control limits. Re-extraction was performed outside of method holding time.

ND = Not detected MDL = Method Detection Limit
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J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-02	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-8	Date Received:	12/27/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8081B SW846 3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1G131084.D	1	01/04/17	JR	12/30/16	OP99565	G1G4188
Run #2							

Run #	Initial Volume	Final Volume
Run #1	300 ml	2.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.0067	0.0040	ug/l	
319-84-6	alpha-BHC	ND	0.0067	0.0040	ug/l	
319-85-7	beta-BHC	ND	0.0067	0.0038	ug/l	
319-86-8	delta-BHC	ND	0.0067	0.0030	ug/l	
58-89-9	gamma-BHC (Lindane)	ND	0.0067	0.0019	ug/l	
5103-71-9	alpha-Chlordane	ND	0.0067	0.0031	ug/l	
60-57-1	Dieldrin	ND	0.0067	0.0024	ug/l	
72-54-8	4,4'-DDD	ND	0.0067	0.0025	ug/l	
72-55-9	4,4'-DDE	ND	0.0067	0.0041	ug/l	
50-29-3	4,4'-DDT	ND	0.0067	0.0033	ug/l	
72-20-8	Endrin	ND	0.0067	0.0034	ug/l	
1031-07-8	Endosulfan sulfate	ND	0.0067	0.0035	ug/l	
959-98-8	Endosulfan-I	ND	0.0067	0.0033	ug/l	
33213-65-9	Endosulfan-II	ND	0.0067	0.0029	ug/l	
76-44-8	Heptachlor	ND	0.0067	0.0025	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	70%		26-132%
877-09-8	Tetrachloro-m-xylene	82%		26-132%
2051-24-3	Decachlorobiphenyl	25%		10-118%
2051-24-3	Decachlorobiphenyl	50%		10-118%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-03	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-12	Date Received:	12/27/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8081B SW846 3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1G131125.D	1	01/04/17	RK	12/30/16	OP99565	G1G4189
Run #2							

	Initial Volume	Final Volume
Run #1	300 ml	2.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.0067	0.0040	ug/l	
319-84-6	alpha-BHC	ND	0.0067	0.0040	ug/l	
319-85-7	beta-BHC	ND	0.0067	0.0038	ug/l	
319-86-8	delta-BHC	ND	0.0067	0.0030	ug/l	
58-89-9	gamma-BHC (Lindane)	ND	0.0067	0.0019	ug/l	
5103-71-9	alpha-Chlordane	ND	0.0067	0.0031	ug/l	
60-57-1	Dieldrin	ND	0.0067	0.0024	ug/l	
72-54-8	4,4'-DDD	ND	0.0067	0.0025	ug/l	
72-55-9	4,4'-DDE	ND	0.0067	0.0041	ug/l	
50-29-3	4,4'-DDT	ND	0.0067	0.0033	ug/l	
72-20-8	Endrin	ND	0.0067	0.0034	ug/l	
1031-07-8	Endosulfan sulfate	ND	0.0067	0.0035	ug/l	
959-98-8	Endosulfan-I	ND	0.0067	0.0033	ug/l	
33213-65-9	Endosulfan-II	ND	0.0067	0.0029	ug/l	
76-44-8	Heptachlor	ND	0.0067	0.0025	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	93%		26-132%
877-09-8	Tetrachloro-m-xylene	83%		26-132%
2051-24-3	Decachlorobiphenyl	88%		10-118%
2051-24-3	Decachlorobiphenyl	110%		10-118%

ND = Not detected MDL = Method Detection Limit
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J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-GW-DUP-01	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-17	Date Received:	12/27/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8081B SW846 3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1G131126.D	1	01/04/17	RK	12/30/16	OP99565	G1G4189
Run #2							

Run #	Initial Volume	Final Volume
Run #1	300 ml	2.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.0067	0.0040	ug/l	
319-84-6	alpha-BHC	ND	0.0067	0.0040	ug/l	
319-85-7	beta-BHC	ND	0.0067	0.0038	ug/l	
319-86-8	delta-BHC	ND	0.0067	0.0030	ug/l	
58-89-9	gamma-BHC (Lindane)	ND	0.0067	0.0019	ug/l	
5103-71-9	alpha-Chlordane	ND	0.0067	0.0031	ug/l	
60-57-1	Dieldrin	ND	0.0067	0.0024	ug/l	
72-54-8	4,4'-DDD	ND	0.0067	0.0025	ug/l	
72-55-9	4,4'-DDE	ND	0.0067	0.0041	ug/l	
50-29-3	4,4'-DDT	ND	0.0067	0.0033	ug/l	
72-20-8	Endrin	ND	0.0067	0.0034	ug/l	
1031-07-8	Endosulfan sulfate	ND	0.0067	0.0035	ug/l	
959-98-8	Endosulfan-I	ND	0.0067	0.0033	ug/l	
33213-65-9	Endosulfan-II	ND	0.0067	0.0029	ug/l	
76-44-8	Heptachlor	ND	0.0067	0.0025	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	80%		26-132%
877-09-8	Tetrachloro-m-xylene	70%		26-132%
2051-24-3	Decachlorobiphenyl	32%		10-118%
2051-24-3	Decachlorobiphenyl	52%		10-118%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-FIELD BLANK	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-18	Date Received:	12/27/16
Matrix:	AQ - Field Blank Water	Percent Solids:	n/a
Method:	SW846 8081B SW846 3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1G131067.D	1	01/03/17	JR	12/30/16	OP99565	G1G4188
Run #2							

Run #	Initial Volume	Final Volume
Run #1	300 ml	2.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.0067	0.0040	ug/l	
319-84-6	alpha-BHC	ND	0.0067	0.0040	ug/l	
319-85-7	beta-BHC	ND	0.0067	0.0038	ug/l	
319-86-8	delta-BHC	ND	0.0067	0.0030	ug/l	
58-89-9	gamma-BHC (Lindane)	ND	0.0067	0.0019	ug/l	
5103-71-9	alpha-Chlordane	ND	0.0067	0.0031	ug/l	
60-57-1	Dieldrin	ND	0.0067	0.0024	ug/l	
72-54-8	4,4'-DDD	ND	0.0067	0.0025	ug/l	
72-55-9	4,4'-DDE	ND	0.0067	0.0041	ug/l	
50-29-3	4,4'-DDT	ND	0.0067	0.0033	ug/l	
72-20-8	Endrin	ND	0.0067	0.0034	ug/l	
1031-07-8	Endosulfan sulfate	ND	0.0067	0.0035	ug/l	
959-98-8	Endosulfan-I	ND	0.0067	0.0033	ug/l	
33213-65-9	Endosulfan-II	ND	0.0067	0.0029	ug/l	
76-44-8	Heptachlor	ND	0.0067	0.0025	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	94%		26-132%
877-09-8	Tetrachloro-m-xylene	90%		26-132%
2051-24-3	Decachlorobiphenyl	51%		10-118%
2051-24-3	Decachlorobiphenyl	55%		10-118%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID: RHBF9-EQUIPMENT BLANK
 Lab Sample ID: JC34266-19
 Matrix: AQ - Equipment Blank
 Method: SW846 8081B SW846 3510C
 Project: Red Hook Ballfields Soil, Brooklyn, NY

Date Sampled: 12/27/16
 Date Received: 12/27/16
 Percent Solids: n/a

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1G131068.D	1	01/03/17	JR	12/30/16	OP99565	G1G4188
Run #2							

Run #	Initial Volume	Final Volume
Run #1	300 ml	2.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.0067	0.0040	ug/l	
319-84-6	alpha-BHC	ND	0.0067	0.0040	ug/l	
319-85-7	beta-BHC	ND	0.0067	0.0038	ug/l	
319-86-8	delta-BHC	ND	0.0067	0.0030	ug/l	
58-89-9	gamma-BHC (Lindane)	ND	0.0067	0.0019	ug/l	
5103-71-9	alpha-Chlordane	ND	0.0067	0.0031	ug/l	
60-57-1	Dieldrin	ND	0.0067	0.0024	ug/l	
72-54-8	4,4'-DDD	ND	0.0067	0.0025	ug/l	
72-55-9	4,4'-DDE	ND	0.0067	0.0041	ug/l	
50-29-3	4,4'-DDT	ND	0.0067	0.0033	ug/l	
72-20-8	Endrin	ND	0.0067	0.0034	ug/l	
1031-07-8	Endosulfan sulfate	ND	0.0067	0.0035	ug/l	
959-98-8	Endosulfan-I	ND	0.0067	0.0033	ug/l	
33213-65-9	Endosulfan-II	ND	0.0067	0.0029	ug/l	
76-44-8	Heptachlor	ND	0.0067	0.0025	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	93%		26-132%
877-09-8	Tetrachloro-m-xylene	87%		26-132%
2051-24-3	Decachlorobiphenyl	42%		10-118%
2051-24-3	Decachlorobiphenyl	47%		10-118%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-04	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-20	Date Received:	12/28/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8081B SW846 3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1G131122.D	1	01/04/17	RK	12/30/16	OP99565	G1G4189
Run #2							

Run #	Initial Volume	Final Volume
Run #1	300 ml	2.0 ml
Run #2		

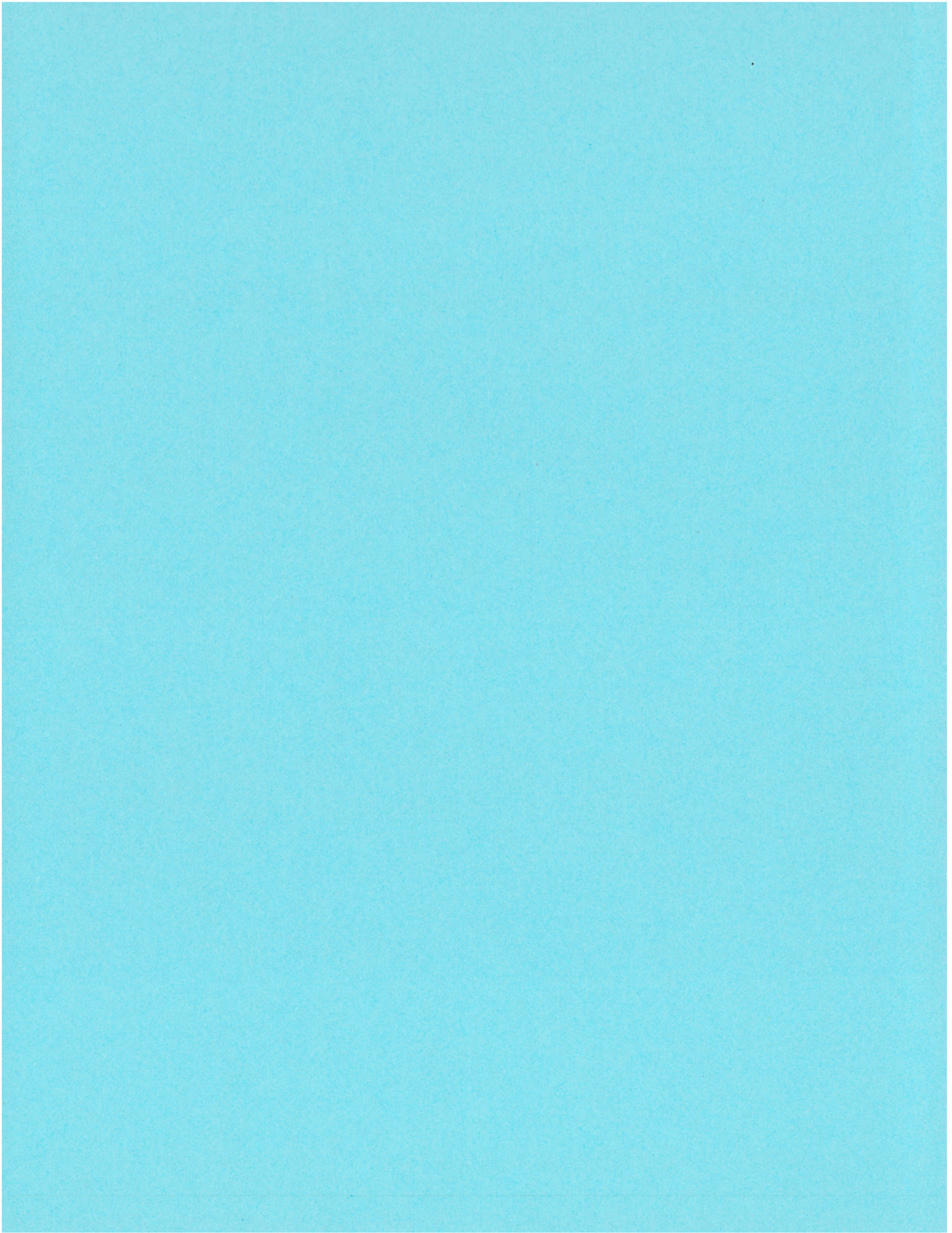
Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.0067	0.0040	ug/l	
319-84-6	alpha-BHC	ND	0.0067	0.0040	ug/l	
319-85-7	beta-BHC	ND	0.0067	0.0038	ug/l	
319-86-8	delta-BHC	ND	0.0067	0.0030	ug/l	
58-89-9	gamma-BHC (Lindane)	ND	0.0067	0.0019	ug/l	
5103-71-9	alpha-Chlordane	ND	0.0067	0.0031	ug/l	
60-57-1	Dieldrin	ND	0.0067	0.0024	ug/l	
72-54-8	4,4'-DDD	ND	0.0067	0.0025	ug/l	
72-55-9	4,4'-DDE	ND	0.0067	0.0041	ug/l	
50-29-3	4,4'-DDT	ND	0.0067	0.0033	ug/l	
72-20-8	Endrin	ND	0.0067	0.0034	ug/l	
1031-07-8	Endosulfan sulfate	ND	0.0067	0.0035	ug/l	
959-98-8	Endosulfan-I	ND	0.0067	0.0033	ug/l	
33213-65-9	Endosulfan-II	ND	0.0067	0.0029	ug/l	
76-44-8	Heptachlor	ND	0.0067	0.0025	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	100%		26-132%
877-09-8	Tetrachloro-m-xylene	80%		26-132%
2051-24-3	Decachlorobiphenyl	45%		10-118%
2051-24-3	Decachlorobiphenyl	61%		10-118%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



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Client Sample ID:	RHBF9-01 (2-4)	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-1	Date Received:	12/22/16
Matrix:	SO - Soil	Percent Solids:	86.0
Method:	SW846 8082A SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX202642.D	1	01/04/17	HB	01/03/17	OP99585	GXX5902
Run #2							

Run #	Initial Weight	Final Volume
Run #1	15.8 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	37	18	ug/kg	
11104-28-2	Aroclor 1221	ND	37	18	ug/kg	
11141-16-5	Aroclor 1232	ND	37	14	ug/kg	
53469-21-9	Aroclor 1242	ND	37	13	ug/kg	
12672-29-6	Aroclor 1248	ND	37	23	ug/kg	
11097-69-1	Aroclor 1254	ND	37	18	ug/kg	
11096-82-5	Aroclor 1260	ND	37	16	ug/kg	
1336-36-3	Total PCBs	ND	37		ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	65%		20-152%
877-09-8	Tetrachloro-m-xylene	80%		20-152%
2051-24-3	Decachlorobiphenyl	88%		12-157%
2051-24-3	Decachlorobiphenyl	83%		12-157%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-01 (5-7)	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-2	Date Received:	12/22/16
Matrix:	SO - Soil	Percent Solids:	88.1
Method:	SW846 8082A SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX202643.D	1	01/04/17	HB	01/03/17	OP99585	GXX5902
Run #2							

Run #	Initial Weight	Final Volume
Run #1	16.0 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	35	18	ug/kg	
11104-28-2	Aroclor 1221	ND	35	17	ug/kg	
11141-16-5	Aroclor 1232	ND	35	14	ug/kg	
53469-21-9	Aroclor 1242	ND	35	13	ug/kg	
12672-29-6	Aroclor 1248	ND	35	22	ug/kg	
11097-69-1	Aroclor 1254	ND	35	18	ug/kg	
11096-82-5	Aroclor 1260	ND	35	15	ug/kg	
1336-36-3	Total PCBs	ND	35		ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	71%		20-152%
877-09-8	Tetrachloro-m-xylene	91%		20-152%
2051-24-3	Decachlorobiphenyl	92%		12-157%
2051-24-3	Decachlorobiphenyl	102%		12-157%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-01 (8-10)	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-3	Date Received:	12/22/16
Matrix:	SO - Soil	Percent Solids:	90.0
Method:	SW846 8082A SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX202644.D	1	01/04/17	HB	01/03/17	OP99585	GXX5902
Run #2							

Run #	Initial Weight	Final Volume
Run #1	15.3 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	36	18	ug/kg	
11104-28-2	Aroclor 1221	ND	36	18	ug/kg	
11141-16-5	Aroclor 1232	ND	36	14	ug/kg	
53469-21-9	Aroclor 1242	ND	36	13	ug/kg	
12672-29-6	Aroclor 1248	ND	36	23	ug/kg	
11097-69-1	Aroclor 1254	ND	36	18	ug/kg	
11096-82-5	Aroclor 1260	ND	36	15	ug/kg	
1336-36-3	Total PCBs	ND	36		ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	76%		20-152%
877-09-8	Tetrachloro-m-xylene	81%		20-152%
2051-24-3	Decachlorobiphenyl	68%		12-157%
2051-24-3	Decachlorobiphenyl	105%		12-157%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-02 (2-4)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-5	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	89.4
Method:	SW846 8082A SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF165195.D	1	01/04/17	HB	01/03/17	OP99588	GEF5850
Run #2							

Run #	Initial Weight	Final Volume
Run #1	15.2 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	37	18	ug/kg	
11104-28-2	Aroclor 1221	ND	37	18	ug/kg	
11141-16-5	Aroclor 1232	ND	37	14	ug/kg	
53469-21-9	Aroclor 1242	ND	37	13	ug/kg	
12672-29-6	Aroclor 1248	ND	37	23	ug/kg	
11097-69-1	Aroclor 1254	ND	37	18	ug/kg	
11096-82-5	Aroclor 1260	ND	37	16	ug/kg	
1336-36-3	Total PCBs	ND	37		ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	107%		20-152%
877-09-8	Tetrachloro-m-xylene	128%		20-152%
2051-24-3	Decachlorobiphenyl	95%		12-157%
2051-24-3	Decachlorobiphenyl	161% ^a		12-157%

(a) Outside control limits due to matrix interference.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-02 (5-7)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-6	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	88.5
Method:	SW846 8082A SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF165196.D	1	01/04/17	HB	01/03/17	OP99588	GEF5850
Run #2							

Run #	Initial Weight	Final Volume
Run #1	15.9 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	36	18	ug/kg	
11104-28-2	Aroclor 1221	ND	36	17	ug/kg	
11141-16-5	Aroclor 1232	ND	36	14	ug/kg	
53469-21-9	Aroclor 1242	ND	36	13	ug/kg	
12672-29-6	Aroclor 1248	ND	36	22	ug/kg	
11097-69-1	Aroclor 1254	ND	36	18	ug/kg	
11096-82-5	Aroclor 1260	ND	36	15	ug/kg	
1336-36-3	Total PCBs	ND	36		ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	89%		20-152%
877-09-8	Tetrachloro-m-xylene	108%		20-152%
2051-24-3	Decachlorobiphenyl	97%		12-157%
2051-24-3	Decachlorobiphenyl	109%		12-157%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-02 (8-10)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-7	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	77.8
Method:	SW846 8082A SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF165197.D	1	01/04/17	HB	01/03/17	OP99588	GEF5850
Run #2							

Run #	Initial Weight	Final Volume
Run #1	15.6 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	41	20	ug/kg	
11104-28-2	Aroclor 1221	ND	41	20	ug/kg	
11141-16-5	Aroclor 1232	ND	41	16	ug/kg	
53469-21-9	Aroclor 1242	ND	41	15	ug/kg	
12672-29-6	Aroclor 1248	ND	41	26	ug/kg	
11097-69-1	Aroclor 1254	ND	41	21	ug/kg	
11096-82-5	Aroclor 1260	ND	41	17	ug/kg	
1336-36-3	Total PCBs	ND	41		ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	104%		20-152%
877-09-8	Tetrachloro-m-xylene	136%		20-152%
2051-24-3	Decachlorobiphenyl	87%		12-157%
2051-24-3	Decachlorobiphenyl	218% ^a		12-157%

(a) Outside control limits due to matrix interference.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-03 (2-4)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-9	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	83.5
Method:	SW846 8082A SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF165198.D	1	01/04/17	HB	01/03/17	OP99588	GEF5850
Run #2							

Run #	Initial Weight	Final Volume
Run #1	15.0 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	40	20	ug/kg	
11104-28-2	Aroclor 1221	ND	40	20	ug/kg	
11141-16-5	Aroclor 1232	ND	40	16	ug/kg	
53469-21-9	Aroclor 1242	ND	40	14	ug/kg	
12672-29-6	Aroclor 1248	ND	40	25	ug/kg	
11097-69-1	Aroclor 1254	ND	40	20	ug/kg	
11096-82-5	Aroclor 1260	ND	40	17	ug/kg	
1336-36-3	Total PCBs	ND	40		ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	204% ^a		20-152%
877-09-8	Tetrachloro-m-xylene	207% ^a		20-152%
2051-24-3	Decachlorobiphenyl	637% ^a		12-157%
2051-24-3	Decachlorobiphenyl	860% ^a		12-157%

(a) Outside control limits due to matrix interference.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-03 (5-7)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-10	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	75.5
Method:	SW846 8082A SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF165199.D	1	01/04/17	HB	01/03/17	OP99588	GEF5850
Run #2							

Run #	Initial Weight	Final Volume
Run #1	15.7 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	42	21	ug/kg	
11104-28-2	Aroclor 1221	ND	42	21	ug/kg	
11141-16-5	Aroclor 1232	ND	42	17	ug/kg	
53469-21-9	Aroclor 1242	ND	42	15	ug/kg	
12672-29-6	Aroclor 1248	ND	42	27	ug/kg	
11097-69-1	Aroclor 1254	ND	42	21	ug/kg	
11096-82-5	Aroclor 1260	ND	42	18	ug/kg	
1336-36-3	Total PCBs	ND	42		ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	137%		20-152%
877-09-8	Tetrachloro-m-xylene	185% ^a		20-152%
2051-24-3	Decachlorobiphenyl	99%		12-157%
2051-24-3	Decachlorobiphenyl	278% ^a		12-157%

(a) Outside control limits due to matrix interference.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
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J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-03 (8-10)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-11	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	78.0
Method:	SW846 8082A SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF165250.D	1	01/05/17	HB	01/03/17	OP99588	GEF5851
Run #2							

Run #	Initial Weight	Final Volume
Run #1	15.8 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	41	20	ug/kg	
11104-28-2	Aroclor 1221	ND	41	20	ug/kg	
11141-16-5	Aroclor 1232	ND	41	16	ug/kg	
53469-21-9	Aroclor 1242	ND	41	14	ug/kg	
12672-29-6	Aroclor 1248	ND	41	26	ug/kg	
11097-69-1	Aroclor 1254	ND	41	20	ug/kg	
11096-82-5	Aroclor 1260	ND	41	17	ug/kg	
1336-36-3	Total PCBs	ND	41		ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	171% ^a		20-152%
877-09-8	Tetrachloro-m-xylene	178% ^a		20-152%
2051-24-3	Decachlorobiphenyl	91%		12-157%
2051-24-3	Decachlorobiphenyl	268% ^a		12-157%

(a) Outside control limits due to matrix interference.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-04 (2-4)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-13	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	87.6
Method:	SW846 8082A SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF165206.D	1	01/04/17	HB	01/03/17	OP99588	GEF5850
Run #2							

Run #	Initial Weight	Final Volume
Run #1	15.2 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	38	19	ug/kg	
11104-28-2	Aroclor 1221	ND	38	18	ug/kg	
11141-16-5	Aroclor 1232	ND	38	15	ug/kg	
53469-21-9	Aroclor 1242	ND	38	13	ug/kg	
12672-29-6	Aroclor 1248	ND	38	24	ug/kg	
11097-69-1	Aroclor 1254	ND	38	19	ug/kg	
11096-82-5	Aroclor 1260	ND	38	16	ug/kg	
1336-36-3	Total PCBs	ND	38		ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	84%		20-152%
877-09-8	Tetrachloro-m-xylene	122%		20-152%
2051-24-3	Decachlorobiphenyl	88%		12-157%
2051-24-3	Decachlorobiphenyl	113%		12-157%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-04 (5-7)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-14	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	86.0
Method:	SW846 8082A SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF165189.D	1	01/04/17	HB	01/03/17	OP99588	GEF5850
Run #2							

Run #	Initial Weight	Final Volume
Run #1	15.4 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	38	19	ug/kg	
11104-28-2	Aroclor 1221	ND	38	18	ug/kg	
11141-16-5	Aroclor 1232	ND	38	15	ug/kg	
53469-21-9	Aroclor 1242	ND	38	13	ug/kg	
12672-29-6	Aroclor 1248	ND	38	24	ug/kg	
11097-69-1	Aroclor 1254	ND	38	19	ug/kg	
11096-82-5	Aroclor 1260	ND	38	16	ug/kg	
1336-36-3	Total PCBs	ND	38		ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	141%		20-152%
877-09-8	Tetrachloro-m-xylene	175% ^a		20-152%
2051-24-3	Decachlorobiphenyl	97%		12-157%
2051-24-3	Decachlorobiphenyl	439% ^a		12-157%

(a) Outside control limits due to matrix interference.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-04 (8-10)	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-15	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	89.9
Method:	SW846 8082A SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF165207.D	1	01/04/17	HB	01/03/17	OP99588	GEF5850
Run #2							

Run #	Initial Weight	Final Volume
Run #1	16.0 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	35	17	ug/kg	
11104-28-2	Aroclor 1221	ND	35	17	ug/kg	
11141-16-5	Aroclor 1232	ND	35	14	ug/kg	
53469-21-9	Aroclor 1242	ND	35	12	ug/kg	
12672-29-6	Aroclor 1248	ND	35	22	ug/kg	
11097-69-1	Aroclor 1254	ND	35	17	ug/kg	
11096-82-5	Aroclor 1260	ND	35	15	ug/kg	
1336-36-3	Total PCBs	ND	35		ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	87%		20-152%
877-09-8	Tetrachloro-m-xylene	108%		20-152%
2051-24-3	Decachlorobiphenyl	88%		12-157%
2051-24-3	Decachlorobiphenyl	106%		12-157%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-DUP-01	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-16	Date Received:	12/27/16
Matrix:	SO - Soil	Percent Solids:	86.1
Method:	SW846 8082A SW846 3546		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF165208.D	1	01/04/17	HB	01/03/17	OP99588	GEF5850
Run #2							

Run #	Initial Weight	Final Volume
Run #1	15.4 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	38	19	ug/kg	
11104-28-2	Aroclor 1221	ND	38	18	ug/kg	
11141-16-5	Aroclor 1232	ND	38	15	ug/kg	
53469-21-9	Aroclor 1242	ND	38	13	ug/kg	
12672-29-6	Aroclor 1248	ND	38	24	ug/kg	
11097-69-1	Aroclor 1254	ND	38	19	ug/kg	
11096-82-5	Aroclor 1260	ND	38	16	ug/kg	
1336-36-3	Total PCBs	ND	38		ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	136%		20-152%
877-09-8	Tetrachloro-m-xylene	164% ^a		20-152%
2051-24-3	Decachlorobiphenyl	87%		12-157%
2051-24-3	Decachlorobiphenyl	167% ^a		12-157%

(a) Outside control limits due to matrix interference.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



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Client Sample ID:	RHBF9-01	Date Sampled:	12/22/16
Lab Sample ID:	JC34266-4	Date Received:	12/22/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8082A SW846 3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5G66255.D	1	12/28/16	HB	12/24/16	OP99450	G5G1540
Run #2							

Run #	Initial Volume	Final Volume
Run #1	300 ml	2.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.33	0.10	ug/l	
11104-28-2	Aroclor 1221	ND	0.33	0.20	ug/l	
11141-16-5	Aroclor 1232	ND	0.33	0.13	ug/l	
53469-21-9	Aroclor 1242	ND	0.33	0.19	ug/l	
12672-29-6	Aroclor 1248	ND	0.33	0.28	ug/l	
11097-69-1	Aroclor 1254	ND	0.33	0.16	ug/l	
11096-82-5	Aroclor 1260	ND	0.33	0.27	ug/l	
1336-36-3	Total PCBs	ND	0.33		ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	100%		10-161%
877-09-8	Tetrachloro-m-xylene	93%		10-161%
2051-24-3	Decachlorobiphenyl	28%		10-137%
2051-24-3	Decachlorobiphenyl	27%		10-137%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-02	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-8	Date Received:	12/27/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8082A SW846 3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G140893.D	1	01/02/17	HB	12/30/16	OP99564	G2G3906
Run #2							

Run #	Initial Volume	Final Volume
Run #1	300 ml	2.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.33	0.10	ug/l	
11104-28-2	Aroclor 1221	ND	0.33	0.20	ug/l	
11141-16-5	Aroclor 1232	ND	0.33	0.13	ug/l	
53469-21-9	Aroclor 1242	ND	0.33	0.19	ug/l	
12672-29-6	Aroclor 1248	ND	0.33	0.28	ug/l	
11097-69-1	Aroclor 1254	ND	0.33	0.16	ug/l	
11096-82-5	Aroclor 1260	ND	0.33	0.27	ug/l	
1336-36-3	Total PCBs	ND	0.33		ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	77%		10-161%
877-09-8	Tetrachloro-m-xylene	75%		10-161%
2051-24-3	Decachlorobiphenyl	39%		10-137%
2051-24-3	Decachlorobiphenyl	32%		10-137%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-03	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-12	Date Received:	12/27/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8082A SW846 3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G140894.D	1	01/02/17	HB	12/30/16	OP99564	G2G3906
Run #2							

Run #	Initial Volume	Final Volume
Run #1	300 ml	2.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.33	0.10	ug/l	
11104-28-2	Aroclor 1221	ND	0.33	0.20	ug/l	
11141-16-5	Aroclor 1232	ND	0.33	0.13	ug/l	
53469-21-9	Aroclor 1242	ND	0.33	0.19	ug/l	
12672-29-6	Aroclor 1248	ND	0.33	0.28	ug/l	
11097-69-1	Aroclor 1254	ND	0.33	0.16	ug/l	
11096-82-5	Aroclor 1260	ND	0.33	0.27	ug/l	
1336-36-3	Total PCBs	ND	0.33		ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	82%		10-161%
877-09-8	Tetrachloro-m-xylene	82%		10-161%
2051-24-3	Decachlorobiphenyl	79%		10-137%
2051-24-3	Decachlorobiphenyl	76%		10-137%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-GW-DUP-01	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-17	Date Received:	12/27/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8082A SW846 3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G140895.D	1	01/02/17	HB	12/30/16	OP99564	G2G3906
Run #2							

Run #	Initial Volume	Final Volume
Run #1	300 ml	2.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.33	0.10	ug/l	
11104-28-2	Aroclor 1221	ND	0.33	0.20	ug/l	
11141-16-5	Aroclor 1232	ND	0.33	0.13	ug/l	
53469-21-9	Aroclor 1242	ND	0.33	0.19	ug/l	
12672-29-6	Aroclor 1248	ND	0.33	0.28	ug/l	
11097-69-1	Aroclor 1254	ND	0.33	0.16	ug/l	
11096-82-5	Aroclor 1260	ND	0.33	0.27	ug/l	
1336-36-3	Total PCBs	ND	0.33		ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	75%		10-161%
877-09-8	Tetrachloro-m-xylene	72%		10-161%
2051-24-3	Decachlorobiphenyl	43%		10-137%
2051-24-3	Decachlorobiphenyl	32%		10-137%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-04	Date Sampled:	12/27/16
Lab Sample ID:	JC34266-20	Date Received:	12/28/16
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8082A SW846 3510C		
Project:	Red Hook Ballfields Soil, Brooklyn, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G140890.D	1	01/02/17	HB	12/30/16	OP99564	G2G3906
Run #2							

Run #	Initial Volume	Final Volume
Run #1	300 ml	2.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.33	0.10	ug/l	
11104-28-2	Aroclor 1221	ND	0.33	0.20	ug/l	
11141-16-5	Aroclor 1232	ND	0.33	0.13	ug/l	
53469-21-9	Aroclor 1242	ND	0.33	0.19	ug/l	
12672-29-6	Aroclor 1248	ND	0.33	0.28	ug/l	
11097-69-1	Aroclor 1254	ND	0.33	0.16	ug/l	
11096-82-5	Aroclor 1260	ND	0.33	0.27	ug/l	
1336-36-3	Total PCBs	ND	0.33		ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	83%		10-161%
877-09-8	Tetrachloro-m-xylene	74%		10-161%
2051-24-3	Decachlorobiphenyl	39%		10-137%
2051-24-3	Decachlorobiphenyl	36%		10-137%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID: RHBF9-FIELD BLANK
 Lab Sample ID: JC34266-18
 Matrix: AQ - Field Blank Water
 Method: SW846 8082A SW846 3510C
 Project: Red Hook Ballfields Soil, Brooklyn, NY

Date Sampled: 12/27/16
 Date Received: 12/27/16
 Percent Solids: n/a

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G140857.D	1	12/30/16	SP	12/30/16	OP99564	G2G3905
Run #2							

Run #	Initial Volume	Final Volume
Run #1	300 ml	2.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.33	0.10	ug/l	
11104-28-2	Aroclor 1221	ND	0.33	0.20	ug/l	
11141-16-5	Aroclor 1232	ND	0.33	0.13	ug/l	
53469-21-9	Aroclor 1242	ND	0.33	0.19	ug/l	
12672-29-6	Aroclor 1248	ND	0.33	0.28	ug/l	
11097-69-1	Aroclor 1254	ND	0.33	0.16	ug/l	
11096-82-5	Aroclor 1260	ND	0.33	0.27	ug/l	
1336-36-3	Total PCBs	ND	0.33		ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	86%		10-161%
877-09-8	Tetrachloro-m-xylene	90%		10-161%
2051-24-3	Decachlorobiphenyl	41%		10-137%
2051-24-3	Decachlorobiphenyl	38%		10-137%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RHBF9-EQUIPMENT BLANK			Date Sampled:	12/27/16
Lab Sample ID:	JC34266-19			Date Received:	12/27/16
Matrix:	AQ - Equipment Blank			Percent Solids:	n/a
Method:	SW846 8082A SW846 3510C				
Project:	Red Hook Ballfields Soil, Brooklyn, NY				

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G140858.D	1	12/30/16	SP	12/30/16	OP99564	G2G3905
Run #2							

Run #	Initial Volume	Final Volume
Run #1	300 ml	2.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.33	0.10	ug/l	
11104-28-2	Aroclor 1221	ND	0.33	0.20	ug/l	
11141-16-5	Aroclor 1232	ND	0.33	0.13	ug/l	
53469-21-9	Aroclor 1242	ND	0.33	0.19	ug/l	
12672-29-6	Aroclor 1248	ND	0.33	0.28	ug/l	
11097-69-1	Aroclor 1254	ND	0.33	0.16	ug/l	
11096-82-5	Aroclor 1260	ND	0.33	0.27	ug/l	
1336-36-3	Total PCBs	ND	0.33		ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	88%		10-161%
877-09-8	Tetrachloro-m-xylene	93%		10-161%
2051-24-3	Decachlorobiphenyl	36%		10-137%
2051-24-3	Decachlorobiphenyl	34%		10-137%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound