

Voluntary Remediation Program Status Report No.2

Former E. Cohn Property Site
Columbus, Muscogee County, Georgia
Parcels 020 008 003, 020 008 004, 020 004 001,
and 020 004 002
HSI Site No. 10933

Submission Date:
June 1, 2018

Prepared by:
Wood Environment & Infrastructure Solutions, Inc.
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On behalf of:
Central of Georgia Railroad Company
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Steven Aufdenkampe
Regional Manager
Environmental Remediation

May 30, 2018

Mr. Tom Brodell
Georgia Department of Natural Resources
Environmental Protection Division
Response and Remediation Program
2 Martin Luther King, Jr. Drive
Suite 1054, East Tower
Atlanta, Georgia 30334

**Subject: Voluntary Remediation Program Status Report No. 2
Former E. Cohn Property Site – Columbus, Georgia
HSI No. 10933**

Dear Mr. Brodell:

Norfolk Southern Railway Corporation (NSRC) and our consultant, Wood Environment & Infrastructure Solutions, Inc. (Wood), respectfully submit the attached Voluntary Remediation Program Status Report No. 2 to the Georgia Environmental Protection Division (EPD). This Status Report No. 2 is issued in relation to the former E. Cohn Property Site – Columbus, Georgia (hereinafter referred to as the “Site”). This Status Report, required by the Voluntary Remediation Program, documents the activities conducted at the site from November 2017 to May 2018.

We respectfully request that the appropriate parties at the EPD review the Status Report No. 2. NSRC intends to proceed with the further soil investigation and groundwater monitoring. We look forward to hearing from you at your earliest convenience. Please contact us if further information or clarification is necessary.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read 'S. Aufdenkampe', written over a light blue horizontal line.

Steven Aufdenkampe
Regional Manager Environmental Remediation

cc: Rhonda Quinn/Greg Wrenn - Wood Environment & Infrastructure Solutions, Inc.

Attachment: Voluntary Remediation Program Status Report No. 2



1 June 2018

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USA

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**RE: Voluntary Remediation Program Status Report No. 2
Former E. Cohn Property Site – Columbus, Georgia
HSI No. 10933/Parcels 020 008 003 and 020 008 004
Wood Project No. 6123-14-0242**

Dear Mr. Aufdenkampe:

Wood Environment & Infrastructure Solutions, Inc. is pleased to submit the attached Voluntary Remediation Program Status Report No. 2 for the Former E. Cohn Property Site in Columbus, Georgia. The enclosed report is for your submittal to the Georgia Environmental Protection Division. The report is required by the Georgia Voluntary Remediation Program.

We appreciate the opportunity to provide environmental consulting services to Norfolk Southern Corporation. Please feel free to contact us at (770) 421-3400 if you have questions or require additional information.

Sincerely,

Wood Environment & Infrastructure Solutions, Inc.

Rhonda N. Quinn, P.G.
Senior Geologist
Georgia Professional Geologist # 1031

Gregory J. Wrenn, P.E.
Associate Engineer/Project Manager
Georgia Professional Engineer # 025565

Enclosure: Voluntary Remediation Program Status Report No. 2 (posted to Share Point Site)

Cc: Mr. Tom Brodell – Georgia EPD (1 paper copy and PDF copies on 2 CDs)



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List of Acronyms and Abbreviations

bgs	below ground surface
COG	Central of Georgia Railroad
CSR	Compliance Status Report
GA EPD	Georgia Environmental Protection Division
HSRA	Hazardous Site Response Act
HSI	Hazardous Site Inventory
mg/kg	milligrams per kilograms
mg/L	milligrams per liter
PCBs	Polychlorinated Biphenyls
RRS	Risk Reduction Standards
SVOC	Semi-Volatile Organic Compounds
USEPA	United States Environmental Protection Agency
VOCs	Volatile Organic Compounds
VRP	Voluntary Remediation Program (Georgia)

Professional Geologist Certification

"I certify under penalty of law that this report and all attachments were prepared by me or under my direct supervision in accordance with the Voluntary Remediation Program Act (O.C.G.A. Section 12-8-101, et seq.). I am a professional geologist who is registered with the Georgia State Board of Registration for Professional Geologists and I have the necessary experience and am in charge of the investigation and remediation of this release of regulated substances.

Furthermore, to document my direct oversight of the Voluntary Remediation Plan development, implementation of corrective action, and long term monitoring, I have attached a monthly summary of hours invoiced and description of services provided by me to the Voluntary Remediation Program participant since the previous submittal to the Georgia Environmental Protection Division.

The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Rhonda N. Quinn/ Georgia P.G. #1031

Printed Name and GA PG Number

5-31-18

Date

A circular professional seal for a geologist in Georgia, featuring a central emblem with a mountain and water, surrounded by the text "PROFESSIONAL GEOLOGISTS STATE OF GEORGIA". A blue ink signature, "Rhonda N. Quinn", is written across the seal. Below the seal is a horizontal line.

Signature and Stamp

Executive Summary

This Voluntary Remediation Program (VRP) Status Report No. 2 documents the VRP activities conducted from November 2017 to May 2018 on the Former E Cohn Property site. The property (parcels 020 008 003 and 020 008 004) located at 715 5th Street in Columbus, Georgia was leased to E. Cohn Company for metal scrapping operations for over fifty years. E. Cohn Company vacated the property in 2014 and Central of Georgia conducted environmental due diligence and found evidence of impacts to the soil from Cohn's long-term operations. COG submitted a Hazardous Site Response Act (HSRA) release notification, dated March 17, 2015 to the Georgia Environmental Protection Division (EPD). EPD scored the site for exposure to soil impacts only; there is not an exposure pathway to groundwater. The site was listed on the Georgia Hazardous Waste Inventory on September 5, 2015 as site number 10933 for soil only. EPD then called for a HSRA Compliance Status Report to be prepared for the site by E Cohn Company and COG. E Cohn Company declined to participate in the investigation and remediation of the site due to insolvency. The call-in letter also allowed for the options of 1) conducting corrective action to bring the site into compliance with risk reduction standards and then submit a CSR or 2) enter the site into the VRP. In lieu of submitting a CSR, COG elected to prepare and submit a VRP Application to enter the site into the VRP. A VRP Application was submitted to EPD on September 12, 2016 and was accepted into the VRP on June 1, 2017. The Application was for the two parcels used by E Cohn and also the two northern parcels (020 004 001 and 020 004 002) due to the detection of constituents on COG property to the north of 6th Street.

The activities conducted during this semi-annual period have included additional soil sampling and analysis for further delineation and characterization of soils at depth, groundwater sampling, and monthly inspections. Additional soil investigation conducted in March 2018 further delineated the extent of metals, VOCs, SVOCs and PCBs in surface and subsurface soils. The horizontal extent of mercury, nickel, cadmium, chromium, PCBs, SVOCs, and VOCs was defined during the March 2018 soil investigation. A few data gaps still exist for the horizontal delineation in surface soils for copper, lead, zinc, antimony, and arsenic. The vertical extent of site constituents has been delineated.

Soil borings drilled to near groundwater depth at locations adjacent to prior locations with elevated tetrachloroethene and metals concentrations, do not contain detectable or elevated tetrachloroethene or metals concentrations at depths near the groundwater and likely are not leaching constituents to the groundwater.

Soil samples were collected and analyzed for hexavalent chromium from prior locations with elevated total chromium concentrations. Hexavalent chromium was detected above the laboratory quantitation limit in shallow soils in two of four sampling locations in the interior of the property.

Three of the four existing monitoring wells were sampled. Well MW-03 was dry. Cis-1,2-dichloroethene, tetrachloroethene, and trichloroethene were detected in the three wells. Tetrachloroethene was slightly greater than the Type 1 RRS (0.005 mg/L) in wells MW-01 and MW-04, but was less than the Type 2 RRS of 0.02 mg/L. Metals (barium, chromium, copper, lead, nickel, and zinc) were detected at low concentrations and less than their respective Type 1 RRS values.

This report also presents a description of the activities proposed to be conducted during the next semi-annual period of June to December 2018. The proposed activities are additional soil sampling and analysis to fill in the delineation data gaps, further investigation of hexavalent

chromium in soils, groundwater monitoring, replacement of well MW-03, and evaluation of surface runoff pathways and potential sampling locations.

1.0 INTRODUCTION AND BACKGROUND

This Voluntary Remediation Program Semi-Annual Status Report No. 2 (Status Report) was prepared on behalf of Central of Georgia Railroad Company in accordance with the Voluntary Remediation Program (VRP) for the Former E Cohn Property site, Hazardous Site Inventory (HSI) No. 10933. The Georgia Environmental Protection Division (EPD) requested in their June 1, 2017 approval letter accepting the site into the VRP that status reports be submitted in December and June. This second Status Report covers the activities conducted from November 2017 until shortly before the submittal of this Status Report (May 2018).

The Former E Cohn Property site is located at 715 5th Street in Columbus, Muscogee County, Georgia. Currently, the site consists of two parcels (020 008 003 and 020 008 004) covering approximately 10.7 acres and additional parcels to the north (020 004 001 and 020 004 002). The property is owned by Central of Georgia Railroad Company (COG) and the two parcels (020 008 003 and 020 008 004) were leased to the E. Cohn Company and its predecessors for over fifty years. When E. Cohn Company vacated the property in 2014, COG conducted environmental due diligence and found evidence of impacts to the soil from Cohn's long-term operations. COG submitted a Hazardous Site Response Act (HSRA) release notification, dated March 17, 2015, to the EPD. EPD conducted a scoring of the site and listed the Cohn property on the HSI on September 4, 2015, as site number 10933. Subsequently, on November 5, 2015 EPD called-in a HSRA Compliance Status Report (CSR) for the site. The CSR call-in letters were sent to E Cohn Company and COG. E Cohn Company declined to participate in the investigation and remediation of the site due to insolvency. The call-in letter also allowed for the options of 1) conducting corrective action to bring the site into compliance with risk reduction standards and then submit a CSR or 2) enter the site into the VRP. In lieu of submitting a CSR, COG elected to prepare and submit a VRP Application to enter the site into the VRP. A VRP Application was submitted to EPD on September 12, 2016 and was accepted into the VRP on June 1, 2017. The first status report was submitted December 1, 2017.

2.0 WORK CONDUCTED FROM NOVEMBER 2017 TO MAY 2018

The activities currently identified to be performed at the Former E Cohn Property site under the VRP are outlined in the VRP Application, dated September 12, 2016, the EPD VRP approval letter dated June 1, 2017, and the EPD VRP comment letter dated June 1, 2017. The activities conducted from November 2017 through May 2018 have included additional soil sampling and analysis for further delineation and characterization, semi-annual groundwater sampling and analysis, and monthly inspections. These activities are described in the following sections.

2.1 Additional Soil Sampling and Analysis

Additional soil sampling and analysis were conducted March 5 to 9 and 14 to 16, 2018. The additional soil investigation was to further delineate constituents detected in soils from previous investigations, to obtain data on the vertical extent of constituents, and to evaluate the presence of hexavalent chromium. A total of 16 soil borings (SBO-30 to SBO-45) were drilled with either hand augers or with a direct-push technology (DPT) rig at locations shown on Figure 1. The soil samples were screened in the field for metals using x-ray fluorescence (XRF) and screened for volatile organic compounds (VOCs) using a photoionization detector (PID). A total of 39 soil samples were collected for laboratory analysis from the surface and subsurface soils and analyzed for one or more site constituents including volatile and semi-volatile organic compounds (VOCs and SVOCs), polychlorinated biphenyls (PCBs), and metals. The analytical results of these soil samples are summarized on Tables 1 and 2 and the laboratory data provided in Appendix A.

Most of the data gaps were filled in with the additional data; however, a few data gaps exist in the lateral extent of the surface soil on the northeast, south and east sides of the site. Figures 2 to 13 showing the extent of the site constituents were updated with the March 2018 data. The chart below summarizes where the data gaps are by constituent.

Constituent and Corresponding Figure Number	Surface Soil	Subsurface Soil
Mercury See Figure 2	Delineated	Delineated
Copper See Figure 3	Delineated, except for: Location on southwest	Delineated
Lead See Figure 4	Delineated, except for: Locations on southwest, southeast and east sides	Delineated
Nickel See Figure 5	Delineated	Delineated
Zinc See Figure 6	Delineated, except for: Locations on east	Delineated
Antimony See Figure 7	Delineated, except for: Location on east	Delineated
Arsenic See Figure 8	Delineated, except for: Location on northwest sides	Delineated

WORK CONDUCTED

Constituent and Corresponding Figure Number	Surface Soil	Subsurface Soil
Cadmium See Figure 9	Delineated	Delineated
Chromium See Figure 10	Delineated	Delineated
PCBs See Figure 11	Delineated	Delineated
SVOCs See Figure 12	Delineated	Delineated
VOCs See Figure 13	Delineated	Delineated

The vertical extent of the constituents has been delineated. Most of the metals, PCBs, SVOCs and VOCs concentrations greater than the delineation criteria (Type 1 RRS or background threshold) are limited to the top four feet of soil. A few exceptions are copper, lead, zinc, and PCBs. Copper, lead and PCBs concentrations at location MW-03 are greater than delineation criteria down to 8 feet, but are less than delineation concentration at 12 to 14 feet. Zinc concentrations at locations MW-03 and SBO-11 are greater than delineation criteria down to 8 feet, but are less than delineation concentration at 12 to 14 feet.

Three soil borings were drilled and soil samples were collected to evaluate constituent concentrations at depths near groundwater. Borings SBO-41, SBO-42, and SBO-43 (Figure 1) were sampled to 20 feet adjacent to prior shallow soil locations (SS-06, SS-07, SS-13, SS-14, and DT-03-40) where elevated VOC and metals concentrations were previously detected. Average depth to water for the property is about 27 feet below ground surface. The soil samples were analyzed for tetrachloroethene and select metals (antimony, cadmium, chromium, copper, lead, mercury, nickel, and zinc) (Tables 1 and 2) to evaluate if these constituents were leaching to groundwater. Tetrachloroethene was detected at concentrations ranging from 0.006 mg/kg to 8.6 mg/kg in samples from 0 to 4 feet and was not detected in soil samples deeper than 4 feet. The metals concentrations were either non-detect or were below the delineation criteria, with the exception of the SBO-43 (0 to 2 ft) sample where metals concentrations were greater than delineation concentrations. The soil samples from these three locations do not contain detectable or elevated tetrachloroethene or metals concentrations at depths near the groundwater and likely are not leaching constituents to the groundwater.

Four soil samples were collected and analyzed for hexavalent chromium at the request of EPD. The samples were collected at locations where elevated concentrations of total chromium had previously been detected. Hexavalent chromium was detected above the laboratory quantitation limit in two samples at 0 to 1.5 feet and 2 to 4 feet at 1.5 mg/kg and 1.9 mg/kg, respectively. The hexavalent chromium delineation criteria defaults to the detection limit; the detection of hexavalent chromium at concentrations above the laboratory quantitation limit may require further investigation for delineation of these two detections.

2.2 Groundwater Sampling and Analysis

On March 15 to 16, 2018, existing monitoring wells MW-01 to MW-04 were re-developed, purged and sampled. Monitoring well MW-03 was dry and was not re-developed or sampled. The results are summarized on Table 3 and laboratory reports provided in Appendix A. Three VOCs (cis-1,2-dichloroethene, tetrachloroethene, and trichloroethene) were detected in the three wells. Tetrachloroethene was slightly greater than the Type 1 RRS (0.005 mg/L) in wells MW-01 and MW-04, but was less than the Type 2 RRS of 0.02 mg/L. Metals (barium, chromium, copper, lead, nickel, and zinc) were detected at low concentrations less than their respective Type 1 RRS values. Figure 14 shows the groundwater flow direction and the chemical results of the March 2018 groundwater samples.

2.3 Property Records

The Muscogee County tax records show four property parcels are associated with the subject site property, but there are no deed or plat records on file for these four parcels. The existing property deed records, submitted with the VRP Application, are for a larger property tract of which the four parcels are a subset. Norfolk Southern is researching how the four parcels comprising the site were established and how these parcels correlate with the larger tract. To establish deed and plat records specific to these four parcels and to make the property records consistent with Muscogee County records, surveying may have to be conducted to prepare the documents. This is an on-going task.

2.4 Monthly Inspections

Wood, under contract to Norfolk Southern, conducts a monthly inspection of the site to check the condition of the site fencing and for evidence of unauthorized activity. Since July 2016, the site has been inspected once per month. The site fence around the two southern parcels is intact and the two gates are locked and no-trespassing signs are present on the gates. The northern parcels are not fenced. There does not appear to be evidence of trespassing or illegal trash dumping inside the fence. The existing buildings are intact.

3.0 WORK TO BE PERFORMED

Additional activities anticipated to be conducted during the next semi-annual period include additional soil sampling and analysis, groundwater sampling and analysis, monitoring well installation, and storm water runoff evaluation, and reporting. The sections below describe the status of the activities yet to be performed. Figure 15 is the updated Gantt Chart Schedule of VRP Activities.

3.1 Additional Soil Sampling and Analysis

As described in Section 2.1, there are a few minor remaining delineation data gaps, primarily in the surface soil. Additional soil sampling and analysis is proposed to be conducted to close data delineation gaps for antimony, arsenic, copper, lead, and zinc on the northwest, south and east sides of the site.

Hexavalent chromium was detected at two locations (SBO-43 and SBO-45) in the shallow soils within the interior of the property. Further investigation is proposed to evaluate the horizontal and vertical extent of hexavalent chromium around these two locations.

3.2 Groundwater Sampling and Analysis

Monitoring well MW-03 was dry during this sampling event. A replacement well installed deeper into the saturated zone is proposed for installation near well MW-03. Groundwater samples will be collected from the four existing monitoring wells (MW-1, MW-02, MW-03 (if water is present), and MW-04) and the replacement well during the second half of 2018. Constituents to be analyzed will be VOCs, SVOCs, PCBs, and total metals (antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, and zinc).

3.3 Surface Runoff Path Evaluation

EPD requested additional information and/or investigation along drainage pathways to evaluate if site contamination has migrated off-property and impacted sediments or poses a threat to surface water. No surface water body exists on or near the site. The closest surface water is the Chattahoochee River approximately 3600 feet to the west of the site and Weracoba Creek located approximately 2500 feet to the east of the site. There are numerous man-made structures and pavements located between the E Cohn Property site and these surface water bodies that impede surface runoff from the site toward these surface water bodies. The E Cohn Property site is vegetated which limits erosion of site soils. Storm drain manholes and curb inlets are present on 5th and 6th Streets, which bound the site on the south and north sides, respectively. Curb inlets convey storm water to a combined sewer system where it is conveyed to a treatment plant, treated, and discharged.

COG will evaluate the area along with the topographic survey map during a rainfall event to evaluate a primary flow path(s). If a flow path(s) are identified flowing directly

WORK TO BE PERFORMED

from the Cohn property an effort will be made to collect a sample to evaluate if the surface runoff is transporting site constituents of concern off-property.

4.0 PROFESSIONAL SERVICES HOURS THIS PERIOD

Approximately 370.5 professional service hours have been provided by Wood Environment & Infrastructure Solutions, Inc. from September 30, 2017 to March 2, 2018. The registered professional geologist responsible for implementation of the VRP at this site is Ms. Rhonda Quinn who has personally charged 79.8 labor hours. The labor effort during this period was for the following services.

- Preparation of scopes of work and procurement for March 2018 soil investigation and groundwater sampling
- Clearance of drilling locations in the interior of the property by a UXO Specialist
- Monthly site inspections
- Initiation of investigation into procurement of property records
- Management of investigation-derived waste
- Communications with client and general project management
- Data quality evaluation
- Data analysis
- Evaluation where additional delineation is needed
- Preparation of VRP Status Report No. 2

TABLES

Table 1: Summary of Surface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non-Residential RRS ^(c)	Background Threshold Value ^(d)	BK-01 0-2 BK-1-0-2-062316 6/23/2016 Sample	BK-02 0-2 BK-2-0-2-062316 6/23/2016 Sample	BK-03 0-2 BK-3-0-2-062316 6/23/2016 Sample	BK-04 0-2 BK-4-0-2-062316 6/23/2016 Sample	BK-05 0-2 BK-5-0-2-062316 6/23/2016 Sample	BK-06 0-2 BK-6-0-2-062316 6/23/2016 Sample	BK-07 0-2 BK-7-0-2-062316 6/23/2016 Sample	BK-08 0-2 BK-8-0-2-062316 6/23/2016 Sample	BK-09 0-2 BK-9-0-2-062316 6/23/2016 Sample	BK-10 0-2 BK-10-0-2-062316 6/23/2016 Sample	DT-01B 0-2 DT-1B-0-2-062216 6/22/2016 Sample
Explosives - SW846 8330B, mg/kg															
4-Nitrotoluene	1.12	1.12	1.12	--	NA	NA									
Mercury, Total - SW846 7471B, mg/kg															
Mercury	0.5	0.5	17	0.167	0.164	0.736	< 0.112	< 0.0979	< 0.102	0.126	< 0.102	0.701	0.113	< 0.111	NA
Metals, Total - SW846 6010C, mg/kg															
Barium	1000	1000	1000	--	NA	NA									
Copper	100	100	1500	58.5	15.7	36.2	29.8	65.9	37.1	156	21.7	38.5	58.4	36.3	77.7
Lead	125	75	400	125	26.2	90.1	26.4	74.8	63.3	293	35.2	141	49	24.5	126
Nickel	50	50	420	16.3	6.92	8.83	11.3	11.6	7.36	9.86	5.68	7.33	5.93	12.9	NA
Zinc	126	370	2800	126	42.4	123	71.9	63	150	387	53.7	91.1	55	77.6	NA
Metals, Total - SW846 6020A, mg/kg															
Antimony	4.0	4.0	10	3.96	< 0.409	0.42	< 0.455 UJ	3.96	0.45	7.87	< 0.374	1.3	0.689	< 0.426	1.77
Arsenic	20	20	38.12	9.41	2.66	4.81	3.92	8.0	5.54	51.7	3.26	10.5	7.86	2.74	34
Beryllium	2.0	32	180	--	NA	NA									
Cadmium	2.0	2.0	39	0.454	< 0.205	0.272	< 0.228	< 0.205	0.454	9.07	0.293	0.403	< 0.205	< 0.213	NA
Chromium	100	100	1200	43.9	21.7	25.2	34.8	19.1	15.9	40.7	8.97	23.2	19	30.2	NA
Lead	125	75	400	125.00	NA	NA									
Selenium	2.0	2.0	36	0.957	< 0.818	< 0.734	< 0.91	< 0.819	< 0.593	0.916	< 0.748	< 0.769	< 0.821	< 0.853	NA
Silver	2.0	2.0	10	--	NA	NA									
Thallium	2.0	2.0	10	--	NA	NA									
Hexavalent Chromium - SW846 7199, mg/kg															
Hexavalent Chromium	0.05	0.05	0.13	--	NA	NA									
Oxidation Reduction Potential mV	--	--	--	--	NA	NA									
pH std units	--	--	--	--	NA	NA									
Polychlorinated Biphenyls - SW846 8082A, mg/kg															
PCB-1242	1.55	1.55	1.55	--	NA	NA									
PCB-1248	1.55	1.55	1.55	--	NA	NA									
PCB-1254	1.55	1.55	1.55	--	NA	NA									
PCB-1260	1.55	1.55	1.55	--	NA	NA									
Semi-Volatile Organic Compounds - SW846 8270D, mg/kg															
2,4-Dimethylphenol	70	70	70	--	NA	NA									
2-Methylnaphthalene	1.0	1.0	2.11	--	NA	NA									
3+4-Methylphenol (m,p-Cresol)	3.8	3.8	4.2	--	NA	NA									
4-Chloroaniline	10	10	10	--	NA	NA									
Acenaphthene	300	300	300	--	NA	NA									
Acenaphthylene	130	130	130	--	NA	NA									
Acetophenone	400	400	400	--	NA	NA									
Anthracene	500	500	1200	--	NA	NA									
Benzo(a)anthracene	5.0	5.0	5.0	--	NA	NA									
Benzo(a)pyrene	1.64	1.64	3.8	--	NA	NA									
Benzo(b)fluoranthene	5.0	9.3	39	--	NA	NA									
Benzo(g,h,i)perylene	500	500	500	--	NA	NA									
Benzo(k)fluoranthene	5.0	91	380	--	NA	NA									
bis(2-Ethylhexyl)phthalate	50	50	56	--	NA	NA									
Butyl benzyl phthalate	50	50	50	--	NA	NA									
Chrysene	5.0	280	1200	--	NA	NA									
Dibenzo(a,h)anthracene	5.0	5.0	13	--	NA	NA									
Diethyl phthalate	500	500	500	--	NA	NA									
Dimethyl phthalate	40000	40000	40000	--	NA	NA									
Fluoranthene	500	500	520	--	NA	NA									
Fluorene	360	360	360	--	NA	NA									
Indeno(1,2,3-cd)pyrene	5.0	31	130	--	NA	NA									
Naphthalene	100	100	100	--	NA	NA									
Phenanthrene	110	110	110	--	NA	NA									
Phenol	400	400	400	--	NA	NA									

Table 1: Summary of Surface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non-Residential RRS ^(c)	Background Threshold Value ^(d)	BK-01 0-2 BK-1-0-2-062316 6/23/2016 Sample	BK-02 0-2 BK-2-0-2-062316 6/23/2016 Sample	BK-03 0-2 BK-3-0-2-062316 6/23/2016 Sample	BK-04 0-2 BK-4-0-2-062316 6/23/2016 Sample	BK-05 0-2 BK-5-0-2-062316 6/23/2016 Sample	BK-06 0-2 BK-6-0-2-062316 6/23/2016 Sample	BK-07 0-2 BK-7-0-2-062316 6/23/2016 Sample	BK-08 0-2 BK-8-0-2-062316 6/23/2016 Sample	BK-09 0-2 BK-9-0-2-062316 6/23/2016 Sample	BK-10 0-2 BK-10-0-2-062316 6/23/2016 Sample	DT-01B 0-2 DT-1B-0-2-062216 6/22/2016 Sample
Pyrene	500	500	500	--	NA	NA									
Volatiles Organic Compounds - SW846 8260C, mg/kg															
1,1,1-Trichloroethane	20	20	20	--	NA	NA									
1,1-Dichloroethane	400	400	400	--	NA	NA									
2-Butanone (Methyl ethyl ketone)	200	200	200	--	NA	NA									
Acetone	400	400	400	--	NA	NA									
Benzene	0.5	0.5	0.5	--	NA	NA									
Chloroethane	0.17	1.71	9.6	--	NA	NA									
cis-1,2-Dichloroethane	7.0	7.0	7.0	--	NA	NA									
Cyclohexane	20	20	20	--	NA	NA									
Ethylbenzene	70	70	70	--	NA	NA									
Methylene chloride (Dichloromethane)	0.5	0.5	0.5	--	NA	NA									
Styrene	14	14	14	--	NA	NA									
Tetrachloroethene (PCE)	0.5	0.5	0.5	--	NA	NA									
Toluene	100	100	100	--	NA	NA									
Trichloroethene (TCE)	0.5	0.5	0.5	--	NA	NA									
Trichlorofluoromethane (Freon 11)	200	200	200	--	NA	NA									
Xylenes, Total	1000	1000	1000	--	NA	NA									

Notes:
 mg/kg = milligrams per kilogram
 DAF = Dilution Attenuation Factor
 -- = No regulatory standard applicable
 RRS = Risk Reduction Standard
^(a) = Type 1 residential risk reduction standards, background threshold values (BTVs), or HSRA Notification Concentrations were used as the Delineation Value
^(b) = Higher of Type 1 and Type 2 Residential Risk Reduction Standards for Soil DAF = 1
^(c) = Higher of Type 3 and Type 4 surface soil Non-Residential Risk Reduction Standards for Soil DAF = 1
^(d) = Background Threshold Value
 HSRA regulated compounds shown

Data Qualifiers:
 J = Value listed is estimated based on associated QC data
 JH = Value listed is estimated, possibly biased high
 JL = Value listed is estimated, possibly biased low
 NA = Not Analyzed
 UJ = Constituent was not detected, estimated based on associated QC data
Bold = Detected Above the Laboratory Reporting Detection Limit

EXCEEDS DELINEATION VALUE^(a)

EXCEEDS SELECTED RESIDENTIAL RRS^(b)

EXCEEDS SELECTED NON-RESIDENTIAL RRS^(c)

Table 1: Summary of Surface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non-Residential RRS ^(c)	Background Threshold Value ^(d)	DT-02-120 0-2 DT-2-120-0-2-062316 6/23/2016 Sample	DT-03-40 0-2 DT-3-40-0-2-062316 6/23/2016 Sample	DT-04-100 0-2 DT-4-100-0-2-062216 6/22/2016 Sample	DT-05-50 0-2 DT-5-50-0-2-062116 6/21/2016 Sample	DT-05-50 0-2 DT-DUP1-062116 6/21/2016 Duplicate	DT-06-35 0-2 DT-6-35-0-2-062116 6/21/2016 Sample	DT-07-40 0-2 DT-7-40-0-2-062316 6/23/2016 Sample	DT-08-Offset 0-2 DT-8-0-2-062316_OFFSET 6/23/2016 Sample	DT-09-105 0-2 DT-9-105-0-2-062316 6/23/2016 Sample	DT-09-105 0-2 DT-DUP3-062316 6/23/2016 Duplicate
Explosives - SW846 8330B, mg/kg														
4-Nitrotoluene	1.12	1.12	1.12	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury, Total - SW846 7471B, mg/kg														
Mercury	0.5	0.5	17	0.167	NA	NA	NA	NA	NA	NA	< 0.102	< 0.104	0.166	0.204
Metals, Total - SW846 6010C, mg/kg														
Barium	1000	1000	1000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	100	100	1500	58.5	111	NA	NA	30.9	NA	NA	139	76	78.2	74.4
Lead	125	75	400	125	183	879	387	50.9	NA	58.9	23.4	237	285	247
Nickel	50	50	420	16.3	NA	NA	NA	NA	NA	NA	5.72	38.6	16.2 J	31.7 J
Zinc	126	370	2800	126	NA	NA	NA	NA	NA	NA	33.5	195	174	163
Metals, Total - SW846 6020A, mg/kg														
Antimony	4.0	4.0	10	3.96	3.85 JL	NA	NA	0.828	NA	NA	< 0.401	11.8	NA	NA
Arsenic	20	20	38.12	9.41	17.7	NA	23	NA	NA	10.8	NA	14.9	NA	NA
Beryllium	2.0	32	180	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.0	2.0	39	0.454	NA	NA	NA	0.182	NA	NA	< 0.201	1.39	0.662	0.657
Chromium	100	100	1200	43.9	NA	NA	NA	NA	NA	NA	5.67	27.8	36.8	35.6
Lead	125	75	400	125.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	2.0	2.0	36	0.957	NA	NA	1.05	NA	NA	< 0.648	NA	NA	NA	NA
Silver	2.0	2.0	10	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	2.0	2.0	10	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexavalent Chromium - SW846 7199, mg/kg														
Hexavalent Chromium	0.05	0.05	0.13	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oxidation Reduction Potential mV	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH std units	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated Biphenyls - SW846 8082A, mg/kg														
PCB-1242	1.55	1.55	1.55	--	< 0.019	NA	NA	NA	NA	NA	NA	< 0.017	< 0.018	< 0.018
PCB-1248	1.55	1.55	1.55	--	< 0.019	NA	NA	NA	NA	NA	NA	< 0.017	< 0.018	< 0.018
PCB-1254	1.55	1.55	1.55	--	< 0.019	NA	NA	NA	NA	NA	NA	< 0.017	< 0.018	< 0.018
PCB-1260	1.55	1.55	1.55	--	< 0.019	NA	NA	NA	NA	NA	NA	0.072	0.071	0.072
Semi-Volatile Organic Compounds - SW846 8270D, mg/kg														
2,4-Dimethylphenol	70	70	70	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	1.0	1.0	2.11	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3+4-Methylphenol (m,p-Cresol)	3.8	3.8	4.2	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	10	10	10	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	300	300	300	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	130	130	130	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	500	500	1200	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	5.0	5.0	5.0	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	1.64	1.64	3.8	--	0.061	NA	3.2	NA	NA	0.24	0.093	1.3	4.4	2.7
Benzo(b)fluoranthene	5.0	9.3	39	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	500	500	500	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	5.0	91	380	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	50	50	56	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate	50	50	50	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	5.0	280	1200	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	5.0	5.0	13	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethyl phthalate	500	500	500	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethyl phthalate	40000	40000	40000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	500	500	520	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	360	360	360	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	5.0	31	130	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	100	100	100	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	110	110	110	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 1: Summary of Surface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non-Residential RRS ^(c)	Background Threshold Value ^(d)	DT-02-120 0-2 DT-2-120-0-2-062316 6/23/2016 Sample	DT-03-40 0-2 DT-3-40-0-2-062316 6/23/2016 Sample	DT-04-100 0-2 DT-4-100-0-2-062216 6/22/2016 Sample	DT-05-50 0-2 DT-5-50-0-2-062116 6/21/2016 Sample	DT-05-50 0-2 DT-DUP1-062116 6/21/2016 Duplicate	DT-06-35 0-2 DT-6-35-0-2-062116 6/21/2016 Sample	DT-07-40 0-2 DT-7-40-0-2-062316 6/23/2016 Sample	DT-08-Offset 0-2 DT-8-0-2-062316_OFFSET 6/23/2016 Sample	DT-09-105 0-2 DT-9-105-0-2-062316 6/23/2016 Sample	DT-09-105 0-2 DT-DUP3-062316 6/23/2016 Duplicate
Pyrene	500	500	500	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatiles Organic Compounds - SW846 8260C, mg/kg														
1,1,1-Trichloroethane	20	20	20	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone (Methyl ethyl ketone)	200	200	200	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.5	0.5	0.5	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	0.17	1.71	9.6	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethane	7.0	7.0	7.0	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	20	20	20	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	70	70	70	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride (Dichloromethane)	0.5	0.5	0.5	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	14	14	14	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene (PCE)	0.5	0.5	0.5	--	NA	12	NA	2.6 J	0.029 J	NA	NA	NA	NA	NA
Toluene	100	100	100	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene (TCE)	0.5	0.5	0.5	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane (Freon 11)	200	200	200	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	1000	1000	1000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

mg/kg = milligrams per kilogram

DAF = Dilution Attenuation Factor

-- = No regulatory standard applicable

RRS = Risk Reduction Standard

^(a) = Type 1 residential risk reduction standards, background threshold values (BTVs), or HSRA Notification Concentrations were used as the Delineation Value

^(b) = Higher of Type 1 and Type 2 Residential Risk Reduction Standards for Soil DAF = 1

^(c) = Higher of Type 3 and Type 4 surface soil Non-Residential Risk Reduction Standards for Soil DAF = 1

^(d) = Background Threshold Value

HSRA regulated compounds shown

Data Qualifiers:

J = Value listed is estimated based on associated QC data

JH = Value listed is estimated, possibly biased high

JL = Value listed is estimated, possibly biased low

NA = Not Analyzed

UJ = Constituent was not detected, estimated based on associated QC data

Bold = Detected Above the Laboratory Reporting Detection Limit

EXCEEDS DELINEATION VALUE^(a)

EXCEEDS SELECTED RESIDENTIAL RRS^(b)

EXCEEDS SELECTED NON-RESIDENTIAL RRS^(c)

Table 1: Summary of Surface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non- Residential RRS ^(c)	Background Threshold Value ^(d)	DT-10B 0-2 DT-10B-0-2-062216 6/22/2016 Sample	DT-11B 0-2 DT-11B-0-2-062216 6/22/2016 Sample	DT-12B 0-2 DT-12B-0-2-062216 6/22/2016 Sample	MW-01 0-2 MW-1-0-2-022516 2/25/2016 Sample	MW-01 0-2 MW-1-0-2-022616 2/26/2016 Sample	MW-01 0-2 MW-1-0-2-DUP-022616 2/26/2016 Duplicate	MW-02 0-2 MW-2-0-2-022516 2/25/2016 Sample	MW-02 0-2 MW-DUP-03-022516FD 2/25/2016 Duplicate	MW-03 0-2 MW-3-0-2-022416 2/24/2016 Sample	MW-04 0-2 MW-4-0-2-022316 2/23/2016 Sample	SBO-01 0-2 SBO-01-0-2-022616 2/26/2016 Sample
Explosives - SW846 8330B, mg/kg															
4-Nitrotoluene	1.12	1.12	1.12	--	NA	NA	NA	< 0.13	NA	NA	< 0.14	< 0.13	< 0.14	< 0.13	< 0.14
Mercury, Total - SW846 7471B, mg/kg															
Mercury	0.5	0.5	17	0.167	NA	NA	NA	< 0.209	NA	NA	0.816	0.657	0.376	0.447	0.616
Metals, Total - SW846 6010C, mg/kg															
Barium	1000	1000	1000	--	NA	NA	NA	128	NA	NA	851	898	276	194	221
Copper	100	100	1500	58.5	30.9	276	47.2	1550	NA	NA	2220 J	943 J	1160	549 J	1380
Lead	125	75	400	125	44.2	95.1	102	131	NA	NA	1990	1490	279	276	714
Nickel	50	50	420	16.3	NA	30.6	NA	43.8	NA	NA	490	366	44.7	54.9 J	178
Zinc	126	370	2800	126	83.7	137	NA	400	NA	NA	10300 J	25000 J	657	643	1730
Metals, Total - SW846 6020A, mg/kg															
Antimony	4.0	4.0	10	3.96	NA	1.8	NA	3.31	NA	NA	17.8	21.4	3.8	5.87	9.47
Arsenic	20	20	38.12	9.41	NA	NA	NA	3.75	NA	NA	16.7	14.5	8.05	6.99	36.2
Beryllium	2.0	32	180	--	NA	NA	NA	0.645	NA	NA	0.348	0.259	0.505	0.573	0.433
Cadmium	2.0	2.0	39	0.454	NA	0.427	NA	2.89	NA	NA	21.6	20.9	1.86	1.92	9.0
Chromium	100	100	1200	43.9	NA	NA	NA	27.1	NA	NA	400	295	70.4	141	238
Lead	125	75	400	125.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	2.0	2.0	36	0.957	NA	NA	NA	< 0.775	NA	NA	0.959	0.836	< 0.731	< 0.866	1.11
Silver	2.0	2.0	10	--	NA	NA	NA	< 0.194	NA	NA	0.805	0.879	0.718	0.411	0.698
Thallium	2.0	2.0	10	--	NA	NA	NA	0.342	NA	NA	< 1.02	< 0.207	< 0.914	< 0.216	< 0.183
Hexavalent Chromium - SW846 7199, mg/kg															
Hexavalent Chromium	0.05	0.05	0.13	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oxidation Reduction Potential mV	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH std units	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated Biphenyls - SW846 8082A, mg/kg															
PCB-1242	1.55	1.55	1.55	--	< 0.019	< 0.088	NA	< 0.094	NA	NA	< 1.0	< 1.9	0.79	< 0.19	< 4.0
PCB-1248	1.55	1.55	1.55	--	< 0.019	< 0.088	NA	0.27	NA	NA	8.0 J	< 1.9 UJ	< 0.2	2.8	40
PCB-1254	1.55	1.55	1.55	--	< 0.019	0.13 JH	NA	0.17	NA	NA	14	12	1.8	1.4	10
PCB-1260	1.55	1.55	1.55	--	< 0.019	< 0.088	NA	< 0.094	NA	NA	< 1.0	< 1.9	< 0.2	0.32	< 4.0
Semi-Volatile Organic Compounds - SW846 8270D, mg/kg															
2,4-Dimethylphenol	70	70	70	--	NA	NA	NA	< 0.036	NA	NA	< 1.0	< 0.94	< 0.2	< 0.18	< 0.2
2-Methylnaphthalene	1.0	1.0	2.11	--	NA	NA	NA	< 0.018	NA	NA	2.0	2.1	< 0.1	< 0.093 UJ	0.28
3+4-Methylphenol (m,p-Cresol)	3.8	3.8	4.2	--	NA	NA	NA	< 0.036	NA	NA	< 1.0	< 0.94	< 0.2	< 0.18	< 0.2
4-Chloroaniline	10	10	10	--	NA	NA	NA	< 0.073	NA	NA	< 2.0	< 1.9	< 0.4	< 0.37 UJ	< 0.4
Acenaphthene	300	300	300	--	NA	NA	NA	< 0.018	NA	NA	< 0.52	< 0.48	< 0.1	0.13 J	0.19
Acenaphthylene	130	130	130	--	NA	NA	NA	< 0.018	NA	NA	< 0.52	< 0.48	< 0.1	< 0.093 UJ	< 0.1
Acetophenone	400	400	400	--	NA	NA	NA	< 0.036	NA	NA	< 1.0	< 0.94	< 0.2	< 0.18 UJ	< 0.2
Anthracene	500	500	1200	--	NA	NA	NA	< 0.018	NA	NA	0.62	< 0.48	< 0.1	0.31 J	0.32
Benzo(a)anthracene	5.0	5.0	5.0	--	NA	NA	NA	< 0.018	NA	NA	1.1	0.66	0.2	1.0 J	1.5
Benzo(a)pyrene	1.64	1.64	3.8	--	NA	NA	NA	< 0.018	NA	NA	2.3	0.96	0.36	1.1 J	2.5
Benzo(b)fluoranthene	5.0	9.3	39	--	NA	NA	NA	0.027	NA	NA	2.2	2.0	0.49	1.8 J	3.0
Benzo(g,h,i)perylene	500	500	500	--	NA	NA	NA	< 0.018	NA	NA	2.3	1.4	0.3	1.1 J	2.9
Benzo(k)fluoranthene	5.0	91	380	--	NA	NA	NA	< 0.018	NA	NA	1.1	0.72	0.19	0.6 J	1.3
bis(2-Ethylhexyl)phthalate	50	50	56	--	NA	NA	NA	< 0.18	NA	NA	10	8.1	< 1.0	3.5 J	1.1
Butyl benzyl phthalate	50	50	50	--	NA	NA	NA	< 0.18	NA	NA	< 5.1	< 4.7	< 0.99	< 0.92 UJ	< 1.0
Chrysene	5.0	280	1200	--	NA	NA	NA	0.02	NA	NA	1.4	1.1	0.31	1.0 J	1.7
Dibenzo(a,h)anthracene	5.0	5.0	13	--	NA	NA	NA	< 0.018	NA	NA	< 0.52	< 0.48	0.14	< 0.093 UJ	0.52
Diethyl phthalate	500	500	500	--	NA	NA	NA	< 0.18	NA	NA	< 5.1	< 4.7	< 0.99	< 0.92 UJ	< 1.0
Dimethyl phthalate	40000	40000	40000	--	NA	NA	NA	< 0.18	NA	NA	< 5.1	< 4.7	< 0.99	< 0.92 UJ	< 1.0
Fluoranthene	500	500	520	--	NA	NA	NA	0.025	NA	NA	1.8	1.0	0.36	2.0 J	1.9
Fluorene	360	360	360	--	NA	NA	NA	< 0.018	NA	NA	< 0.52	< 0.48	< 0.1	0.14 J	0.51
Indeno(1,2,3-cd)pyrene	5.0	31	130	--	NA	NA	NA	< 0.018	NA	NA	1.7	0.71	0.27	0.94 J	2.3
Naphthalene	100	100	100	--	NA	NA	NA	< 0.018	NA	NA	1.6	1.5	< 0.1	< 0.093 UJ	0.28
Phenanthrene	110	110	110	--	NA	NA	NA	0.019	NA	NA	1.9	1.2	0.18	1.2 J	1.5
Phenol	400	400	400	--	NA	NA	NA	< 0.036	NA	NA	< 1.0	< 0.94	< 0.2	0.41	0.34

Table 1: Summary of Surface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non-Residential RRS ^(c)	Background Threshold Value ^(d)	DT-10B 0-2 DT-10B-0-2-062216 6/22/2016 Sample	DT-11B 0-2 DT-11B-0-2-062216 6/22/2016 Sample	DT-12B 0-2 DT-12B-0-2-062216 6/22/2016 Sample	MW-01 0-2 MW-1-0-2-022516 2/25/2016 Sample	MW-01 0-2 MW-1-0-2-022616 2/26/2016 Sample	MW-01 0-2 MW-1-0-2 DUP-022616 2/26/2016 Duplicate	MW-02 0-2 MW-2-0-2-022516 2/25/2016 Sample	MW-02 0-2 MW-DUP-03-022516FD 2/25/2016 Duplicate	MW-03 0-2 MW-3-0-2-022416 2/24/2016 Sample	MW-04 0-2 MW-4-0-2-022316 2/23/2016 Sample	SBO-01 0-2 SBO-01-0-2-022616 2/26/2016 Sample
Pyrene	500	500	500	--	NA	NA	NA	0.022	NA	NA	2.1	1.6	0.42	2.1 J	2.2
Volatile Organic Compounds - SW846 8260C, mg/kg															
1,1,1-Trichloroethane	20	20	20	--	NA	NA	NA	< 0.005	NA	NA	< 0.21	< 0.006	< 0.004	< 0.21	< 0.005
1,1-Dichloroethane	400	400	400	--	NA	NA	NA	< 0.005	NA	NA	< 0.21	< 0.006	< 0.004	< 0.21	< 0.005
2-Butanone (Methyl ethyl ketone)	200	200	200	--	NA	NA	NA	< 0.011	NA	NA	< 0.41	0.022 JH	< 0.009	< 0.42	< 0.011
Acetone	400	400	400	--	NA	NA	NA	0.13	NA	NA	< 0.83	0.24 JH	0.023	< 0.84	0.046
Benzene	0.5	0.5	0.5	--	NA	NA	NA	< 0.005	NA	NA	< 0.21	0.007 JH	< 0.004	< 0.21	< 0.005
Chloroethane	0.17	1.71	9.6	--	NA	NA	NA	< 0.005	NA	NA	< 0.21	< 0.006	< 0.004	< 0.21	< 0.005
cis-1,2-Dichloroethene	7.0	7.0	7.0	--	NA	NA	NA	< 0.005	NA	NA	< 0.21	< 0.006	< 0.004	< 0.21	< 0.005
Cyclohexane	20	20	20	--	NA	NA	NA	< 0.005	NA	NA	< 0.21	< 0.006	< 0.004	< 0.21	< 0.005
Ethylbenzene	70	70	70	--	NA	NA	NA	< 0.005	NA	NA	0.73 J	< 0.006 UJ	< 0.004	< 0.21	< 0.005
Methylene chloride (Dichloromethane)	0.5	0.5	0.5	--	NA	NA	NA	< 0.005	NA	NA	< 0.21	< 0.006	< 0.004	< 0.21	< 0.005
Styrene	14	14	14	--	NA	NA	NA	< 0.005	NA	NA	0.32 J	< 0.006 UJ	< 0.004	< 0.21	< 0.005
Tetrachloroethene (PCE)	0.5	0.5	0.5	--	NA	NA	NA	0.06	NA	NA	< 0.21	< 0.006	< 0.004	< 0.21	0.033 JH
Toluene	100	100	100	--	NA	NA	NA	< 0.005	NA	NA	8.4 J	0.009 JH	< 0.004	< 0.21	< 0.005
Trichloroethene (TCE)	0.5	0.5	0.5	--	NA	NA	NA	< 0.005	NA	NA	< 0.21	< 0.006	< 0.004	< 0.21	< 0.005
Trichlorofluoromethane (Freon 11)	200	200	200	--	NA	NA	NA	< 0.005	NA	NA	0.21	< 0.006	< 0.004	< 0.21	< 0.005
Xylenes, Total	1000	1000	1000	--	NA	NA	NA	< 0.005	NA	NA	4.2 J	0.009 JH	< 0.004	< 0.21	< 0.005

Notes:

mg/kg = milligrams per kilogram
 DAF = Dilution Attenuation Factor
 -- = No regulatory standard applicable
 RRS = Risk Reduction Standard
^(a) = Type 1 residential risk reduction standards, background threshold values (BTVs), or HSRA Notification Concentrations were used as the Delineation Value
^(b) = Higher of Type 1 and Type 2 Residential Risk Reduction Standards for Soil DAF = 1
^(c) = Higher of Type 3 and Type 4 surface soil Non-Residential Risk Reduction Standards for Soil DAF = 1
^(d) = Background Threshold Value
 HSRA regulated compounds shown

Data Qualifiers:

J = Value listed is estimated based on associated QC data
 JH = Value listed is estimated, possibly biased high
 JL = Value listed is estimated, possibly biased low
 NA = Not Analyzed
 UJ = Constituent was not detected, estimated based on associated QC data
 Bold = Detected Above the Laboratory Reporting Detection Limit

EXCEEDS DELINEATION VALUE^(a)

EXCEEDS SELECTED RESIDENTIAL RRS^(b)

EXCEEDS SELECTED NON-RESIDENTIAL RRS^(c)

Table 1: Summary of Surface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non-Residential RRS ^(c)	Background Threshold Value ^(d)	SBO-01 0-2 SBO-01-0-2 DUP-022616 2/26/2016 Duplicate	SBO-02 0-2 SBO-02-0-2-022616 2/26/2016 Sample	SBO-03 0-2 SBO-03-0-2-022616 2/29/2016 Sample	SBO-04 0-2 SBO-04-0-2-022516 2/25/2016 Sample	SBO-05 0-2 SBO-05-0-2-022616 2/29/2016 Sample	SBO-06 0-2 SBO-06-0-2-022616 2/29/2016 Sample	SBO-07 0-2 SBO-07-0-2-022316 2/24/2016 Sample	SBO-08 0-2 SBO-08-0-2-022316 2/23/2016 Sample	SBO-08 0-2 SBO-08-0-2 DUP-022316 2/23/2016 Duplicate	SBO-09 0-2 SBO-09-0-2-022616 2/26/2016 Sample
Explosives - SW846 8330B, mg/kg														
4-Nitrotoluene	1.12	1.12	1.12	--	NA	< 0.14	< 0.14	< 0.15	< 0.14	< 0.13	< 0.14	< 0.15	NA	< 0.13
Mercury, Total - SW846 7471B, mg/kg														
Mercury	0.5	0.5	17	0.167	NA	1.25	1.37	1.07	1.3	1.9	1.43	4.07	NA	1.23
Metals, Total - SW846 6010C, mg/kg														
Barium	1000	1000	1000	--	NA	281	502	209	294	457	314	738	NA	331
Copper	100	100	1500	58.5	NA	858	760	354	1140	956	911	519	NA	732
Lead	125	75	400	125	NA	818	878	466	1970	922	1020	606	NA	746
Nickel	50	50	420	16.3	NA	171	249	91.7	141	295	190	185	NA	139
Zinc	126	370	2800	126	NA	2040	8210	1190	2750	2650	2060	1940	NA	2100
Metals, Total - SW846 6020A, mg/kg														
Antimony	4.0	4.0	10	3.96	NA	15.7	13.6	4.13	14.3	27	20.7	20.3	NA	18.4
Arsenic	20	20	38.12	9.41	NA	10.5	17.2	12.9	17.7	16.3	19.3	14	NA	12.3
Beryllium	2.0	32	180	--	NA	0.356	0.427	0.789	0.389	0.348	0.545	0.622	NA	0.351
Cadmium	2.0	2.0	39	0.454	NA	5.96	8.7	9.8	8.65	9.31	7.13	5.74	NA	14.8
Chromium	100	100	1200	43.9	NA	296	2100	107	232	566	448	178	NA	320
Lead	125	75	400	125.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	2.0	2.0	36	0.957	NA	< 0.935	< 0.965	< 0.733	< 0.89	< 0.799	< 0.919	< 1.06	NA	< 0.897
Silver	2.0	2.0	10	--	NA	1.27	1.21	0.538	1.37	10.3	2.24	0.788	NA	1.03
Thallium	2.0	2.0	10	--	NA	< 0.234	< 2.41	0.224	< 1.11	< 0.998	< 0.23	< 0.266	NA	< 0.224
Hexavalent Chromium - SW846 7199, mg/kg														
Hexavalent Chromium	0.05	0.05	0.13	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oxidation Reduction Potential mV	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH std units	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated Biphenyls - SW846 8082A, mg/kg														
PCB-1242	1.55	1.55	1.55	--	NA	< 0.99	< 1.0	< 0.41	< 2.1	< 1.9	< 0.4	< 0.45	NA	< 1.9
PCB-1248	1.55	1.55	1.55	--	NA	15	9.7	5.4	28	22	6.8	6.3	NA	13 J
PCB-1254	1.55	1.55	1.55	--	NA	11	3.9	6.6	11	20	4.5	4.5	NA	8.3 J
PCB-1260	1.55	1.55	1.55	--	NA	< 0.99	< 1.0	< 0.41	< 2.1	< 1.9	< 0.4	< 0.45	NA	< 1.9
Semi-Volatile Organic Compounds - SW846 8270D, mg/kg														
2,4-Dimethylphenol	70	70	70	--	NA	< 0.39	< 0.41	< 0.21	< 1.0	< 0.95	< 0.2	< 1.1	NA	0.86
2-Methylnaphthalene	1.0	1.0	2.11	--	NA	< 0.2	< 0.21	0.31	< 0.52	0.57	0.21	< 0.57	NA	0.4
3+4-Methylphenol (m,p-Cresol)	3.8	3.8	4.2	--	NA	< 0.39	< 0.41	< 0.21	< 1.0	< 0.95	< 0.2	< 1.1	NA	0.69
4-Chloroaniline	10	10	10	--	NA	< 0.78	< 0.81	< 0.41	< 2.0	< 1.9	< 0.4	< 2.2	NA	< 0.38
Acenaphthene	300	300	300	--	NA	< 0.2	< 0.21	0.55	< 0.52	< 0.48	0.32	< 0.57	NA	1.0 J
Acenaphthylene	130	130	130	--	NA	< 0.2	< 0.21	0.19	< 0.52	< 0.48	< 0.1	< 0.57	NA	0.13
Acetophenone	400	400	400	--	NA	< 0.39	< 0.41	< 0.21	< 1.0	< 0.95	< 0.2	< 1.1	NA	< 0.19
Anthracene	500	500	1200	--	NA	0.34	0.49	1.0	0.68	1.3	0.9	< 0.57	NA	3.4 J
Benzo(a)anthracene	5.0	5.0	5.0	--	NA	2.5	1.6	2.3	1.1	4.2	3.0	1.2	NA	6.1 J
Benzo(a)pyrene	1.64	1.64	3.8	--	NA	9.2	1.7	2.6	1.6	4.0	2.9	1.9	NA	5.3 J
Benzo(b)fluoranthene	5.0	9.3	39	--	NA	12	2.4	3.9	2.2	5.3	4.6	2.9	NA	7.1 J
Benzo(g,h,i)perylene	500	500	500	--	NA	8.1	1.6	2.5	1.8	2.9	2.7	2.0	NA	4.1 J
Benzo(k)fluoranthene	5.0	91	380	--	NA	4.5	1.0	1.4	1.1	2.6	1.7	0.87	NA	2.8 J
bis(2-Ethylhexyl)phthalate	50	50	56	--	NA	2.2	< 2.1	2.4	16	33	3.6	< 5.7	NA	60 J
Butyl benzyl phthalate	50	50	50	--	NA	< 1.9	< 2.0	< 1.0	< 5.1	5.5	1.5	< 5.6	NA	1.5
Chrysene	5.0	280	1200	--	NA	3.0	1.6	2.6	1.7	5.1	3.0	1.4	NA	6.6 J
Dibenzo(a,h)anthracene	5.0	5.0	13	--	NA	2.4	0.29	0.71	< 0.52	0.95	0.69	0.71	NA	1.1 J
Diethyl phthalate	500	500	500	--	NA	< 1.9	< 2.0	< 1.0	< 5.1	< 4.7	< 0.99	< 5.6	NA	< 0.94
Dimethyl phthalate	40000	40000	40000	--	NA	< 1.9	< 2.0	< 1.0	< 5.1	< 4.7	< 0.99	< 5.6	NA	3.0
Fluoranthene	500	500	520	--	NA	3.1	3.0	4.1	2.8	9.5	5.5	1.9	NA	14 J
Fluorene	360	360	360	--	NA	< 0.2	< 0.21	0.48	< 0.52	< 0.48	0.36	< 0.57	NA	1.5 J
Indeno(1,2,3-cd)pyrene	5.0	31	130	--	NA	7.9	1.4	2.2	1.6	2.5	2.3	1.6	NA	3.6 J
Naphthalene	100	100	100	--	NA	< 0.2	< 0.21	0.42	< 0.52	< 0.48	0.2	< 0.57	NA	0.47
Phenanthrene	110	110	110	--	NA	1.1	1.6	3.2	1.9	4.1	3.6	1.1	NA	13 J
Phenol	400	400	400	--	NA	< 0.39	< 0.41	2.2	1.6	< 0.95	< 0.2	< 1.1	NA	0.7

Table 1: Summary of Surface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non-Residential RRS ^(c)	Background Threshold Value ^(d)	SBO-01 0-2 SBO-01-0-2 DUP-022616 2/26/2016 Duplicate	SBO-02 0-2 SBO-02-0-2-022616 2/26/2016 Sample	SBO-03 0-2 SBO-03-0-2-022616 2/29/2016 Sample	SBO-04 0-2 SBO-04-0-2-022516 2/25/2016 Sample	SBO-05 0-2 SBO-05-0-2-022616 2/29/2016 Sample	SBO-06 0-2 SBO-06-0-2-022616 2/29/2016 Sample	SBO-07 0-2 SBO-07-0-2-022316 2/24/2016 Sample	SBO-08 0-2 SBO-08-0-2-022316 2/23/2016 Sample	SBO-08 0-2 SBO-08-0-2 DUP-022316 2/23/2016 Duplicate	SBO-09 0-2 SBO-09-0-2-022616 2/26/2016 Sample
Pyrene	500	500	500	--	NA	2.7	2.4	3.3	2.8	10	5.2	1.9	NA	14 J
Volatile Organic Compounds - SW846 8260C, mg/kg														
1,1,1-Trichloroethane	20	20	20	--	NA	< 0.005	< 0.006	< 0.006	< 0.4	< 0.006	< 0.3	< 0.005	NA	< 0.005
1,1-Dichloroethane	400	400	400	--	NA	< 0.005	< 0.006	< 0.006	< 0.4	0.088	< 0.3	< 0.005	NA	< 0.005
2-Butanone (Methyl ethyl ketone)	200	200	200	--	NA	< 0.01	< 0.011	< 0.012	< 0.81	0.059	< 0.6	< 0.011	NA	0.018
Acetone	400	400	400	--	NA	0.052	0.054	0.083	< 1.6	0.37	< 1.2	0.05	NA	0.094
Benzene	0.5	0.5	0.5	--	NA	< 0.005	< 0.006	< 0.006	< 0.4	< 0.006	< 0.3	< 0.005	NA	< 0.005
Chloroethane	0.17	1.71	9.6	--	NA	< 0.005	< 0.006	< 0.006	< 0.4	0.35	< 0.3	< 0.005	NA	< 0.005
cis-1,2-Dichloroethane	7.0	7.0	7.0	--	NA	< 0.005	< 0.006	< 0.006	< 0.4	< 0.006	< 0.3	< 0.005	NA	< 0.005
Cyclohexane	20	20	20	--	NA	< 0.005	< 0.006	< 0.006	< 0.4	< 0.006	< 0.3	< 0.005	NA	< 0.005
Ethylbenzene	70	70	70	--	NA	< 0.005	< 0.006	< 0.006	3.1	0.007 JH	< 0.3	< 0.005	NA	0.02
Methylene chloride (Dichloromethane)	0.5	0.5	0.5	--	NA	< 0.005	0.006	< 0.006	< 0.4	< 0.006	< 0.3	< 0.005	NA	< 0.005
Styrene	14	14	14	--	NA	< 0.005	< 0.006	< 0.006	0.51	0.036 JH	4.4	< 0.005	NA	< 0.005
Tetrachloroethene (PCE)	0.5	0.5	0.5	--	NA	< 0.005	< 0.006	< 0.006	< 0.4	< 0.006	< 0.3	< 0.005	NA	< 0.005
Toluene	100	100	100	--	NA	< 0.005	< 0.006	< 0.006	< 0.4	0.009	< 0.3	< 0.005	NA	< 0.005
Trichloroethene (TCE)	0.5	0.5	0.5	--	NA	< 0.005	< 0.006	< 0.006	< 0.4	< 0.006	< 0.3	< 0.005	NA	< 0.005
Trichlorofluoromethane (Freon 11)	200	200	200	--	NA	< 0.005	< 0.006	< 0.006	2.0	0.2	< 0.3	< 0.005	NA	< 0.005
Xylenes, Total	1000	1000	1000	--	NA	0.022	< 0.006	< 0.006	8.5	0.013 JH	< 0.3	< 0.005	NA	0.022

Notes:

- mg/kg = milligrams per kilogram
- DAF = Dilution Attenuation Factor
- = No regulatory standard applicable
- RRS = Risk Reduction Standard
- ^(a) = Type 1 residential risk reduction standards, background threshold values (BTVs), or HSRA Notification Concentrations were used as the Delineation Value
- ^(b) = Higher of Type 1 and Type 2 Residential Risk Reduction Standards for Soil DAF = 1
- ^(c) = Higher of Type 3 and Type 4 surface soil Non-Residential Risk Reduction Standards for Soil DAF = 1
- ^(d) = Background Threshold Value
- HSRA regulated compounds shown

Data Qualifiers:

- J = Value listed is estimated based on associated QC data
- JH = Value listed is estimated, possibly biased high
- JL = Value listed is estimated, possibly biased low
- NA = Not Analyzed
- UJ = Constituent was not detected, estimated based on associated QC data
- Bold** = Detected Above the Laboratory Reporting Detection Limit

EXCEEDS DELINEATION VALUE^(a)

EXCEEDS SELECTED RESIDENTIAL RRS^(b)

EXCEEDS SELECTED NON-RESIDENTIAL RRS^(c)

Table 1: Summary of Surface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non-Residential RRS ^(c)	Background Threshold Value ^(d)	SBO-09 0-2 SBO-DUP-4-022616FD 2/26/2016 Duplicate	SBO-10 0-2 SBO-10-0-2-022316 2/23/2016 Sample	SBO-11 0-2 SBO-11-0-2-101816 10/18/2016 Sample	SBO-12 0-2 SBO-12-0-2-101916 10/19/2016 Sample	SBO-12 0-2 DUP-02-101916FD 10/19/2016 Duplicate	SBO-13 0-2 SBO-13-0-2-101916 10/19/2016 Sample	SBO-14 0-2 SBO-14-0-2-102016 10/20/2016 Sample	SBO-15 0-2 SBO-15-0-2-101916 10/19/2016 Sample	SBO-16/21 0-2 SBO-16/21-0-2-102016 10/20/2016 Sample	SBO-17 0-2 SBO-17-0-2-102016 10/20/2016 Sample	SBO-18 0-2 SBO-18-0-2-102016 10/20/2016 Sample
Explosives - SW846 8330B, mg/kg															
4-Nitrotoluene	1.12	1.12	1.12	--	< 0.13	< 0.14	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury, Total - SW846 7471B, mg/kg															
Mercury	0.5	0.5	17	0.167	0.981	0.764	NA	0.302 JH	NA	0.811	< 0.0958	< 0.112	< 0.101	NA	< 0.099
Metals, Total - SW846 6010C, mg/kg															
Barium	1000	1000	1000	--	259	185	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	100	100	1500	58.5	459	240	544	263	NA	467 J	NA	NA	72	43.4	34.6
Lead	125	75	400	125	603	325	1460	260	NA	752 J	NA	NA	245	71.5	88.1
Nickel	50	50	420	16.3	155	78.6	NA	35.4	NA	96.4 JL	NA	NA	12.4	NA	5.87
Zinc	126	370	2800	126	1860	1000	2910	732	NA	1410 J	NA	NA	239	41.6	94.6
Metals, Total - SW846 6020A, mg/kg															
Antimony	4.0	4.0	10	3.96	15.2	6.74	NA	2.43	NA	7.86 J	NA	NA	6.49	NA	0.981
Arsenic	20	20	38.12	9.41	11.6	9.25	NA	NA	NA	146	31.4	14.7	NA	NA	NA
Beryllium	2.0	32	180	--	0.411	0.722	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.0	2.0	39	0.454	10.8	2.68	NA	3.08	NA	4.88	NA	NA	1.58	NA	0.256
Chromium	100	100	1200	43.9	320	166	NA	122	NA	147	NA	NA	27.8	NA	17.4
Lead	125	75	400	125.00	NA	NA	NA	NA	NA	NA	105	176	NA	NA	NA
Selenium	2.0	2.0	36	0.957	12.9	< 0.913	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2.0	2.0	10	--	0.706	0.272	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	2.0	2.0	10	--	< 0.219	< 0.228	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexavalent Chromium - SW846 7199, mg/kg															
Hexavalent Chromium	0.05	0.05	0.13	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oxidation Reduction Potential mV	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH std units	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated Biphenyls - SW846 8082A, mg/kg															
PCB-1242	1.55	1.55	1.55	--	< 0.95	< 0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1248	1.55	1.55	1.55	--	7.3 J	3.0	< 0.92	< 0.19	NA	< 0.91	NA	NA	NA	NA	NA
PCB-1254	1.55	1.55	1.55	--	4.7 J	1.5	8.9	1.6	NA	5.0	NA	NA	NA	NA	NA
PCB-1260	1.55	1.55	1.55	--	< 0.95	< 0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semi-Volatile Organic Compounds - SW846 8270D, mg/kg															
2,4-Dimethylphenol	70	70	70	--	< 0.37	< 0.19	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	1.0	1.0	2.11	--	0.23	0.15	NA	NA	NA	NA	NA	NA	NA	NA	NA
3+4-Methylphenol (m,p-Cresol)	3.8	3.8	4.2	--	< 0.37	< 0.19	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	10	10	10	--	< 0.74	< 0.38	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	300	300	300	--	0.22 J	0.22	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	130	130	130	--	< 0.19	< 0.097	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	400	400	400	--	< 0.37	1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	500	500	1200	--	0.77 J	0.62	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	5.0	5.0	5.0	--	1.6 J	2.1	NA	4.1 J	4.6 J	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	1.64	1.64	3.8	--	1.8 J	2.2	NA	2.3 J	2.4 J	5.2	NA	NA	26	NA	0.13
Benzo(b)fluoranthene	5.0	9.3	39	--	3.0 J	3.0	NA	4.8 J	5.1 J	NA	NA	NA	54	NA	0.29
Benzo(g,h,i)perylene	500	500	500	--	1.8 J	1.8	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	5.0	91	380	--	1.1 J	1.2	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	50	50	56	--	19 J	3.5	NA	< 1.9	< 0.94	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate	50	50	50	--	< 1.9	< 0.95	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	5.0	280	1200	--	1.6 J	2.1	NA	5.0 J	5.5 J	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	5.0	5.0	13	--	0.46 J	0.58	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethyl phthalate	500	500	500	--	< 1.9	< 0.95	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethyl phthalate	40000	40000	40000	--	4.8	< 0.95	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	500	500	520	--	3.1 J	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	360	360	360	--	0.25 J	0.22	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	5.0	31	130	--	1.5 J	1.7	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	100	100	100	--	0.28	0.14	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	110	110	110	--	2.2 J	2.2	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	400	400	400	--	< 0.37	< 0.19	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 1: Summary of Surface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non-Residential RRS ^(c)	Background Threshold Value ^(d)	SBO-09 0-2 SBO-DUP-4-022616FD 2/26/2016 Duplicate	SBO-10 0-2 SBO-10-0-2-022316 2/23/2016 Sample	SBO-11 0-2 SBO-11-0-2-101816 10/18/2016 Sample	SBO-12 0-2 SBO-12-0-2-101916 10/19/2016 Sample	SBO-12 0-2 DUP-02-101916FD 10/19/2016 Duplicate	SBO-13 0-2 SBO-13-0-2-101916 10/19/2016 Sample	SBO-14 0-2 SBO-14-0-2-102016 10/20/2016 Sample	SBO-15 0-2 SBO-15-0-2-101916 10/19/2016 Sample	SBO-16/21 0-2 SBO-16/21-0-2-102016 10/20/2016 Sample	SBO-17 0-2 SBO-17-0-2-102016 10/20/2016 Sample	SBO-18 0-2 SBO-18-0-2-102016 10/20/2016 Sample
Pyrene	500	500	500	--	3.3 J	4.1	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds - SW846 8260C, mg/kg															
1,1,1-Trichloroethane	20	20	20	--	< 0.005	< 0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	400	400	400	--	< 0.005	< 0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone (Methyl ethyl ketone)	200	200	200	--	< 0.01	0.014	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	400	400	400	--	0.057	0.099	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.5	0.5	0.5	--	< 0.005	< 0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	0.17	1.71	9.6	--	< 0.005	< 0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	7.0	7.0	7.0	--	< 0.005	< 0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	20	20	20	--	< 0.005	< 0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	70	70	70	--	< 0.005	0.012	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride (Dichloromethane)	0.5	0.5	0.5	--	< 0.005	< 0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	14	14	14	--	< 0.005	< 0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene (PCE)	0.5	0.5	0.5	--	< 0.005	< 0.005	NA	NA	NA	NA	NA	NA	NA	NA	< 0.005
Toluene	100	100	100	--	< 0.005	< 0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene (TCE)	0.5	0.5	0.5	--	< 0.005	< 0.005	NA	NA	NA	NA	NA	NA	NA	NA	< 0.005
Trichlorofluoromethane (Freon 11)	200	200	200	--	< 0.005	< 0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	1000	1000	1000	--	< 0.005	< 0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

mg/kg = milligrams per kilogram
 DAF = Dilution Attenuation Factor
 -- = No regulatory standard applicable
 RRS = Risk Reduction Standard
^(a) = Type 1 residential risk reduction standards, background threshold values (BTVs), or HSRA Notification Concentrations were used as the Delineation Value
^(b) = Higher of Type 1 and Type 2 Residential Risk Reduction Standards for Soil DAF = 1
^(c) = Higher of Type 3 and Type 4 surface soil Non-Residential Risk Reduction Standards for Soil DAF = 1
^(d) = Background Threshold Value
 HSRA regulated compounds shown

Data Qualifiers:

J = Value listed is estimated based on associated QC data
 JH = Value listed is estimated, possibly biased high
 JL = Value listed is estimated, possibly biased low
 NA = Not Analyzed
 UJ = Constituent was not detected, estimated based on associated QC data
Bold = Detected Above the Laboratory Reporting Detection Limit

EXCEEDS DELINEATION VALUE^(a)

EXCEEDS SELECTED RESIDENTIAL RRS^(b)

EXCEEDS SELECTED NON-RESIDENTIAL RRS^(c)

Table 1: Summary of Surface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non-Residential RRS ^(c)	Background Threshold Value ^(d)	SBO-19 0-2 SBO-19-0-2-101816 10/18/2016 Sample	SBO-20 0-2 SBO-20-0-2-101916 10/19/2016 Sample	SBO-20 0-2 DUP-03-101916FD 10/19/2016 Duplicate	SBO-22 0-2 SBO-22-0-2-102016 10/20/2016 Sample	SBO-23 0-2 SBO-23-0-2-101916 10/19/2016 Sample	SBO-24 0-2 SBO-24-0-2-102016 10/20/2016 Sample	SBO-25 0-2 SBO-25-0-2-101816 10/18/2016 Sample	SBO-26 0-2 SBO-26-0-2-101816 10/18/2016 Sample	SBO-27 0-2 SBO-27-0-2-101916 10/19/2016 Sample	SBO-28 0-2 SBO-28-0-2-102016 10/20/2016 Sample
Explosives - SW846 8330B, mg/kg														
4-Nitrotoluene	1.12	1.12	1.12	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury, Total - SW846 7471B, mg/kg														
Mercury	0.5	0.5	17	0.167	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, Total - SW846 6010C, mg/kg														
Barium	1000	1000	1000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	100	100	1500	58.5	8.79	NA	NA	NA	NA	NA	64.8	NA	NA	NA
Lead	125	75	400	125	NA	33	NA	102	246	74.6	NA	NA	NA	NA
Nickel	50	50	420	16.3	NA	NA	NA	NA	52.3	NA	NA	NA	NA	NA
Zinc	126	370	2800	126	39.5	NA	NA	136	473	NA	102	79.5	NA	57.5
Metals, Total - SW846 6020A, mg/kg														
Antimony	4.0	4.0	10	3.96	NA	NA	NA	1.0	5.39	NA	NA	NA	NA	NA
Arsenic	20	20	38.12	9.41	NA	NA	NA	NA	NA	21.5	NA	NA	2.67	NA
Beryllium	2.0	32	180	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.0	2.0	39	0.454	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	100	100	1200	43.9	NA	22	NA	NA	NA	NA	NA	NA	NA	NA
Lead	125	75	400	125.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	2.0	2.0	36	0.957	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2.0	2.0	10	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	2.0	2.0	10	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexavalent Chromium - SW846 7199, mg/kg														
Hexavalent Chromium	0.05	0.05	0.13	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oxidation Reduction Potential mV	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH std units	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated Biphenyls - SW846 8082A, mg/kg														
PCB-1242	1.55	1.55	1.55	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1248	1.55	1.55	1.55	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1254	1.55	1.55	1.55	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1260	1.55	1.55	1.55	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semi-Volatile Organic Compounds - SW846 8270D, mg/kg														
2,4-Dimethylphenol	70	70	70	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	1.0	1.0	2.11	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3+4-Methylphenol (m,p-Cresol)	3.8	3.8	4.2	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	10	10	10	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	300	300	300	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	130	130	130	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	500	500	1200	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	5.0	5.0	5.0	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	1.64	1.64	3.8	--	NA	NA	NA	0.99	NA	0.12	NA	NA	NA	NA
Benzo(b)fluoranthene	5.0	9.3	39	--	NA	NA	NA	1.8	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	500	500	500	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	5.0	91	380	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	50	50	56	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate	50	50	50	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	5.0	280	1200	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	5.0	5.0	13	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethyl phthalate	500	500	500	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethyl phthalate	40000	40000	40000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	500	500	520	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	360	360	360	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	5.0	31	130	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	100	100	100	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	110	110	110	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 1: Summary of Surface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non-Residential RRS ^(c)	Background Threshold Value ^(d)	SBO-19 0-2 SBO-19-0-2-101816 10/18/2016 Sample	SBO-20 0-2 SBO-20-0-2-101916 10/19/2016 Sample	SBO-20 0-2 DUP-03-101916FD 10/19/2016 Duplicate	SBO-22 0-2 SBO-22-0-2-102016 10/20/2016 Sample	SBO-23 0-2 SBO-23-0-2-101916 10/19/2016 Sample	SBO-24 0-2 SBO-24-0-2-102016 10/20/2016 Sample	SBO-25 0-2 SBO-25-0-2-101816 10/18/2016 Sample	SBO-26 0-2 SBO-26-0-2-101816 10/18/2016 Sample	SBO-27 0-2 SBO-27-0-2-101916 10/19/2016 Sample	SBO-28 0-2 SBO-28-0-2-102016 10/20/2016 Sample
Pyrene	500	500	500	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatiles Organic Compounds - SW846 8260C, mg/kg														
1,1,1-Trichloroethane	20	20	20	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone (Methyl ethyl ketone)	200	200	200	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.5	0.5	0.5	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	0.17	1.71	9.6	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	7.0	7.0	7.0	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	20	20	20	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	70	70	70	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride (Dichloromethane)	0.5	0.5	0.5	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	14	14	14	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene (PCE)	0.5	0.5	0.5	--	NA	0.087 J	19 J	NA	NA	NA	NA	NA	NA	< 0.006
Toluene	100	100	100	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene (TCE)	0.5	0.5	0.5	--	NA	< 0.005	0.54	NA	NA	NA	NA	NA	NA	< 0.006
Trichlorofluoromethane (Freon 11)	200	200	200	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	1000	1000	1000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
 mg/kg = milligrams per kilogram
 DAF = Dilution Attenuation Factor
 -- = No regulatory standard applicable
 RRS = Risk Reduction Standard
^(a) = Type 1 residential risk reduction standards, background threshold values (BTVs), or HSRA Notification Concentrations were used as the Delineation Value
^(b) = Higher of Type 1 and Type 2 Residential Risk Reduction Standards for Soil DAF = 1
^(c) = Higher of Type 3 and Type 4 surface soil Non-Residential Risk Reduction Standards for Soil DAF = 1
^(d) = Background Threshold Value
 HSRA regulated compounds shown

Data Qualifiers:
 J = Value listed is estimated based on associated QC data
 JH = Value listed is estimated, possibly biased high
 JL = Value listed is estimated, possibly biased low
 NA = Not Analyzed
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 Bold = Detected Above the Laboratory Reporting Detection Limit

EXCEEDS DELINEATION VALUE^(a)

EXCEEDS SELECTED RESIDENTIAL RRS^(b)

EXCEEDS SELECTED NON-RESIDENTIAL RRS^(c)

Table 1: Summary of Surface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non-Residential RRS ^(c)	Background Threshold Value ^(d)	SBO-29 0-2 SBO-29-0-2-101816 10/18/2016 Sample	SBO-30 0-2 SBO-30-0-2-0318 3/8/2018 Sample	SBO-31 0-2 SBO-31-0-2-0318 3/14/2018 Sample	SBO-32 0-2 SBO-32-0-2-0318 3/7/2018 Sample	SBO-33 0-2 SBO-33-0-2-0318 3/8/2018 Sample	SBO-34 0-2 SBO-34-0-2-0318 3/9/2018 Sample	SBO-34 0-2 SBO-DUP01-0318 3/9/2018 Duplicate	SBO-35 0-2 SBO-35-0-2-0318 3/9/2018 Sample	SBO-36 0-2 SBO-36-0-2-0318 3/9/2018 Sample	SBO-37 0-2 SBO-37-0-2-0318 3/9/2018 Sample	SBO-38 0-2 SBO-38-0-2-0318 3/6/2018 Sample
Explosives - SW846 8330B, mg/kg															
4-Nitrotoluene	1.12	1.12	1.12	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury, Total - SW846 7471B, mg/kg															
Mercury	0.5	0.5	17	0.167	NA	NA	NA	NA	< 0.111	NA	NA	NA	NA	NA	NA
Metals, Total - SW846 6010C, mg/kg															
Barium	1000	1000	1000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	100	100	1500	58.5	NA	NA	NA	NA	36.6 J	39.6 J	NA	33.4	130	52.4	NA
Lead	125	75	400	125	NA	66.5	NA	NA	50.5 J	44.2 J	NA	38	138	206	NA
Nickel	50	50	420	16.3	NA	NA	NA	NA	9.59	NA	NA	NA	NA	NA	NA
Zinc	126	370	2800	126	NA	NA	NA	NA	100 J	80.5 J	NA	75.8	77.3	120	61.6
Metals, Total - SW846 6020A, mg/kg															
Antimony	4.0	4.0	10	3.96	NA	NA	NA	NA	0.469	NA	NA	NA	NA	NA	NA
Arsenic	20	20	38.12	9.41	NA	NA	41.3	9.68	14.6	NA	NA	NA	NA	NA	NA
Beryllium	2.0	32	180	--	0.966	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.0	2.0	39	0.454	NA	NA	NA	NA	0.33	0.169	NA	NA	NA	NA	NA
Chromium	100	100	1200	43.9	NA	NA	NA	NA	23.3	21.1	NA	NA	NA	NA	NA
Lead	125	75	400	125.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	2.0	2.0	36	0.957	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2.0	2.0	10	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	2.0	2.0	10	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexavalent Chromium - SW846 7199, mg/kg															
Hexavalent Chromium	0.05	0.05	0.13	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oxidation Reduction Potential mV	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH std units	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated Biphenyls - SW846 8082A, mg/kg															
PCB-1242	1.55	1.55	1.55	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1248	1.55	1.55	1.55	--	NA	NA	NA	NA	< 0.019	NA	NA	< 0.020	< 0.019	NA	NA
PCB-1254	1.55	1.55	1.55	--	NA	NA	NA	NA	< 0.019	NA	NA	< 0.020	< 0.019	NA	NA
PCB-1260	1.55	1.55	1.55	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semi-Volatile Organic Compounds - SW846 8270D, mg/kg															
2,4-Dimethylphenol	70	70	70	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	1.0	1.0	2.11	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3+4-Methylphenol (m,p-Cresol)	3.8	3.8	4.2	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	10	10	10	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	300	300	300	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	130	130	130	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	500	500	1200	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	5.0	5.0	5.0	--	NA	NA	NA	NA	NA	0.043	0.048	NA	NA	NA	NA
Benzo(a)pyrene	1.64	1.64	3.8	--	NA	NA	NA	NA	0.650	0.056	0.057	NA	NA	NA	NA
Benzo(b)fluoranthene	5.0	9.3	39	--	NA	NA	NA	NA	NA	0.092	0.083	NA	NA	NA	NA
Benzo(g,h,i)perylene	500	500	500	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	5.0	91	380	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	50	50	56	--	< 0.18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate	50	50	50	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	5.0	280	1200	--	NA	NA	NA	NA	NA	0.053	52	NA	NA	NA	NA
Dibenzo(a,h)anthracene	5.0	5.0	13	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethyl phthalate	500	500	500	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethyl phthalate	40000	40000	40000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	500	500	520	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	360	360	360	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	5.0	31	130	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	100	100	100	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	110	110	110	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 1: Summary of Surface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non-Residential RRS ^(c)	Background Threshold Value ^(d)	SBO-29 0-2 SBO-29-0-2-101816 10/18/2016 Sample	SBO-30 0-2 SBO-30-0-2-0318 3/8/2018 Sample	SBO-31 0-2 SBO-31-0-2-0318 3/14/2018 Sample	SBO-32 0-2 SBO-32-0-2-0318 3/7/2018 Sample	SBO-33 0-2 SBO-33-0-2-0318 3/8/2018 Sample	SBO-34 0-2 SBO-34-0-2-0318 3/9/2018 Sample	SBO-34 0-2 SBO-DUP01-0318 3/9/2018 Duplicate	SBO-35 0-2 SBO-35-0-2-0318 3/9/2018 Sample	SBO-36 0-2 SBO-36-0-2-0318 3/9/2018 Sample	SBO-37 0-2 SBO-37-0-2-0318 3/9/2018 Sample	SBO-38 0-2 SBO-38-0-2-0318 3/6/2018 Sample
Pyrene	500	500	500	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds - SW846 8260C, mg/kg															
1,1,1-Trichloroethane	20	20	20	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone (Methyl ethyl ketone)	200	200	200	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.5	0.5	0.5	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	0.17	1.71	9.6	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	7.0	7.0	7.0	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	20	20	20	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	70	70	70	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride (Dichloromethane)	0.5	0.5	0.5	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	14	14	14	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene (PCE)	0.5	0.5	0.5	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	100	100	100	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene (TCE)	0.5	0.5	0.5	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane (Freon 11)	200	200	200	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	1000	1000	1000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

mg/kg = milligrams per kilogram

DAF = Dilution Attenuation Factor

-- = No regulatory standard applicable

RRS = Risk Reduction Standard

^(a) = Type 1 residential risk reduction standards, background threshold values (BTVs), or HSRA Notification Concentrations were used as the Delineation Value

^(b) = Higher of Type 1 and Type 2 Residential Risk Reduction Standards for Soil DAF = 1

^(c) = Higher of Type 3 and Type 4 surface soil Non-Residential Risk Reduction Standards for Soil DAF = 1

^(d) = Background Threshold Value

HSRA regulated compounds shown

Data Qualifiers:

J = Value listed is estimated based on associated QC data

JH = Value listed is estimated, possibly biased high

JL = Value listed is estimated, possibly biased low

NA = Not Analyzed

UJ = Constituent was not detected, estimated based on associated QC data

Bold = Detected Above the Laboratory Reporting Detection Limit

EXCEEDS DELINEATION VALUE^(a)

EXCEEDS SELECTED RESIDENTIAL RRS^(b)

EXCEEDS SELECTED NON-RESIDENTIAL RRS^(c)

Table 1: Summary of Surface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non- Residential RRS ^(c)	Background Threshold Value ^(d)	SBO-39 0-2 SBO-39-0-2-0318 3/8/2018 Sample	SBO-40 0-2 SBO-40-0-2-0318 3/8/2018 Sample	SBO-41 0-2 SBO-41-0-2-0318 3/6/2018 Sample	SBO-42 0-2 SBO-42-0-2-0318 3/5/2018 Sample	SBO-43 0-2 SBO-43-0-2-0318 3/16/2018 Sample	SBO-44 0-2 SBO-44-0-2-0318 3/16/2018 Sample	SBO-45 0-2 SBO-45-0-1.5-0318 3/16/2018 Sample	SS-01 0-2 SS-01-0-2-022516 2/25/2016 Sample	SS-01 0-2 SS-DUP-2-022516FD 2/25/2016 Duplicate	SS-02 0-2 SS-02-0-2-022516 2/25/2016 Sample	SS-03 0-2 SS-03-0-2-022516 2/25/2016 Sample
Explosives - SW846 8330B, mg/kg															
4-Nitrotoluene	1.12	1.12	1.12	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury, Total - SW846 7471B, mg/kg															
Mercury	0.5	0.5	17	0.167	NA	NA	NA	NA	1.45	NA	NA	0.58	0.418	< 0.235	< 0.215
Metals, Total - SW846 6010C, mg/kg															
Barium	1000	1000	1000	--	NA	NA	NA	NA	NA	NA	NA	241	229	176	148 J
Copper	100	100	1500	58.5	NA	NA	NA	41.2	242	NA	NA	107	118	151	55.1
Lead	125	75	400	125	390	569	NA	123	366	NA	NA	378	522	207	159
Nickel	50	50	420	16.3	NA	NA	NA	NA	81.4	NA	NA	15.4	14.6	31.7	9.36
Zinc	126	370	2800	126	234	157	NA	NA	681	NA	NA	45.9	44.2	191	101 JL
Metals, Total - SW846 6020A, mg/kg															
Antimony	4.0	4.0	10	3.96	15	4.84	NA	NA	6.53	NA	NA	12.3	25.7	4.65	1.65 JL
Arsenic	20	20	38.12	9.41	NA	NA	NA	NA	NA	NA	NA	33.7	26.9	50	8.77
Beryllium	2.0	32	180	--	NA	NA	NA	NA	NA	NA	NA	0.818	0.853	0.898	1.18 JL
Cadmium	2.0	2.0	39	0.454	NA	NA	NA	NA	6.93	NA	NA	0.662	0.684	1.31	0.26
Chromium	100	100	1200	43.9	NA	NA	NA	NA	123	NA	NA	17.6	18.2	57.5	23.6
Lead	125	75	400	125.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	2.0	2.0	36	0.957	NA	NA	NA	NA	NA	NA	NA	1.8	1.61	< 0.837	< 0.79
Silver	2.0	2.0	10	--	NA	NA	NA	NA	NA	NA	NA	0.248	0.296	0.306	< 0.197
Thallium	2.0	2.0	10	--	NA	NA	NA	NA	NA	NA	NA	< 0.211	< 0.231	0.233	0.329
Hexavalent Chromium - SW846 7199, mg/kg															
Hexavalent Chromium	0.05	0.05	0.13	--	NA	NA	NA	NA	<0.47	<0.47	1.5	NA	NA	NA	NA
Oxidation Reduction Potential mV	--	--	--	--	NA	NA	NA	NA	390	340	327	NA	NA	NA	NA
pH std units	--	--	--	--	NA	NA	NA	NA	8.14	8.36	8.41	NA	NA	NA	NA
Polychlorinated Biphenyls - SW846 8082A, mg/kg															
PCB-1242	1.55	1.55	1.55	--	NA	NA	NA	NA	NA	NA	NA	< 0.021	< 0.02	< 0.21	< 0.019
PCB-1248	1.55	1.55	1.55	--	NA	NA	NA	NA	NA	NA	NA	< 0.021	< 0.02	0.41	< 0.019
PCB-1254	1.55	1.55	1.55	--	NA	NA	NA	NA	NA	NA	NA	< 0.021	< 0.02	0.4	0.038
PCB-1260	1.55	1.55	1.55	--	NA	NA	NA	NA	NA	NA	NA	< 0.021	< 0.02	< 0.21	< 0.019
Semi-Volatile Organic Compounds - SW846 8270D, mg/kg															
2,4-Dimethylphenol	70	70	70	--	NA	NA	NA	NA	NA	NA	NA	< 0.041	< 0.2	< 0.04	< 0.037 UL
2-Methylnaphthalene	1.0	1.0	2.11	--	NA	NA	NA	NA	NA	NA	NA	0.96	0.97	0.48	0.071
3+4-Methylphenol (m,p-Cresol)	3.8	3.8	4.2	--	NA	NA	NA	NA	NA	NA	NA	< 0.041	< 0.2	< 0.04	< 0.037
4-Chloroaniline	10	10	10	--	NA	NA	NA	NA	NA	NA	NA	< 0.082	< 0.4	< 0.08	< 0.075
Acenaphthene	300	300	300	--	NA	NA	NA	NA	NA	NA	NA	< 0.021	< 0.1	0.047	< 0.019
Acenaphthylene	130	130	130	--	NA	NA	NA	NA	NA	NA	NA	0.045	< 0.1	0.14	< 0.019
Acetophenone	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	0.082	< 0.2	0.068	< 0.037
Anthracene	500	500	1200	--	NA	NA	NA	NA	NA	NA	NA	0.065	< 0.1	0.22	< 0.019
Benzo(a)anthracene	5.0	5.0	5.0	--	NA	NA	NA	NA	NA	NA	NA	0.2	0.17	0.74	0.048
Benzo(a)pyrene	1.64	1.64	3.8	--	NA	0.900	NA	NA	NA	NA	NA	0.16	< 0.1	0.76	0.044
Benzo(b)fluoranthene	5.0	9.3	39	--	NA	1.600	NA	NA	NA	NA	NA	0.23	0.18	1.2	0.068
Benzo(g,h,i)perylene	500	500	500	--	NA	NA	NA	NA	NA	NA	NA	0.18	0.15	0.64	0.045
Benzo(k)fluoranthene	5.0	91	380	--	NA	NA	NA	NA	NA	NA	NA	0.085	< 0.1	0.48	0.027
bis(2-Ethylhexyl)phthalate	50	50	56	--	NA	NA	NA	NA	NA	NA	NA	< 0.21	< 1.0	0.35	< 0.19
Butyl benzyl phthalate	50	50	50	--	NA	NA	NA	NA	NA	NA	NA	< 0.21	< 1.0	< 0.2	< 0.19
Chrysene	5.0	280	1200	--	NA	NA	NA	NA	NA	NA	NA	0.36	0.3	0.84	0.082
Dibenzo(a,h)anthracene	5.0	5.0	13	--	NA	NA	NA	NA	NA	NA	NA	0.05	< 0.1	0.19	< 0.019
Diethyl phthalate	500	500	500	--	NA	NA	NA	NA	NA	NA	NA	< 0.21	< 1.0	< 0.2	< 0.19
Dimethyl phthalate	40000	40000	40000	--	NA	NA	NA	NA	NA	NA	NA	< 0.21	< 1.0	< 0.2	< 0.19
Fluoranthene	500	500	520	--	NA	NA	NA	NA	NA	NA	NA	0.2	0.17	0.97	0.065
Fluorene	360	360	360	--	NA	NA	NA	NA	NA	NA	NA	0.028	< 0.1	0.03	< 0.019
Indeno(1,2,3-cd)pyrene	5.0	31	130	--	NA	NA	NA	NA	NA	NA	NA	0.086	< 0.1	0.56	0.033
Naphthalene	100	100	100	--	NA	NA	NA	NA	NA	NA	NA	0.59	0.58	0.34	0.048
Phenanthrene	110	110	110	--	NA	NA	NA	NA	NA	NA	NA	0.89	0.73	0.7	0.089
Phenol	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	< 0.041	< 0.2	< 0.04	< 0.037

Table 1: Summary of Surface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non-Residential RRS ^(c)	Background Threshold Value ^(d)	SBO-39 0-2 SBO-39-0-2-0318 3/8/2018 Sample	SBO-40 0-2 SBO-40-0-2-0318 3/8/2018 Sample	SBO-41 0-2 SBO-41-0-2-0318 3/6/2018 Sample	SBO-42 0-2 SBO-42-0-2-0318 3/5/2018 Sample	SBO-43 0-2 SBO-43-0-2-0318 3/16/2018 Sample	SBO-44 0-2 SBO-44-0-2-0318 3/16/2018 Sample	SBO-45 0-2 SBO-45-0-1.5-0318 3/16/2018 Sample	SS-01 0-2 SS-01-0-2-022516 2/25/2016 Sample	SS-01 0-2 SS-DUP-2-022516FD 2/25/2016 Duplicate	SS-02 0-2 SS-02-0-2-022516 2/25/2016 Sample	SS-03 0-2 SS-03-0-2-022516 2/25/2016 Sample
Pyrene	500	500	500	--	NA	NA	NA	NA	NA	NA	NA	0.27	0.22	0.99	0.065
Volatile Organic Compounds - SW846 8260C, mg/kg															
1,1,1-Trichloroethane	20	20	20	--	NA	NA	NA	NA	NA	NA	NA	< 0.007	< 0.006	0.007 JH	1.1 JL
1,1-Dichloroethane	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	< 0.007	< 0.006	< 0.006	< 0.27
2-Butanone (Methyl ethyl ketone)	200	200	200	--	NA	NA	NA	NA	NA	NA	NA	< 0.014	< 0.011	< 0.013	< 0.55
Acetone	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	< 0.028	< 0.023	0.055 JH	< 1.1
Benzene	0.5	0.5	0.5	--	NA	NA	NA	NA	NA	NA	NA	< 0.007	< 0.006	< 0.006	< 0.27
Chloroethane	0.17	1.71	9.6	--	NA	NA	NA	NA	NA	NA	NA	< 0.007	< 0.006	< 0.006	< 0.27
cis-1,2-Dichloroethene	7.0	7.0	7.0	--	NA	NA	NA	NA	NA	NA	NA	< 0.007	< 0.006	< 0.006	< 0.27
Cyclohexane	20	20	20	--	NA	NA	NA	NA	NA	NA	NA	< 0.007	< 0.006	< 0.006	< 0.27
Ethylbenzene	70	70	70	--	NA	NA	NA	NA	NA	NA	NA	< 0.007	< 0.006	< 0.006	< 0.27
Methylene chloride (Dichloromethane)	0.5	0.5	0.5	--	NA	NA	NA	NA	NA	NA	NA	< 0.007	< 0.006	< 0.006	< 0.27
Styrene	14	14	14	--	NA	NA	NA	NA	NA	NA	NA	< 0.007	< 0.006	< 0.006	< 0.27
Tetrachloroethene (PCE)	0.5	0.5	0.5	--	NA	NA	2.8	8.6	< 0.005	NA	NA	0.021 JH	0.006 JH	0.35 JH	33 J
Toluene	100	100	100	--	NA	NA	NA	NA	NA	NA	NA	< 0.007	< 0.006	< 0.006	< 0.27
Trichloroethene (TCE)	0.5	0.5	0.5	--	NA	NA	NA	NA	NA	NA	NA	< 0.007	< 0.006	0.009 JH	0.77 JL
Trichlorofluoromethane (Freon 11)	200	200	200	--	NA	NA	NA	NA	NA	NA	NA	< 0.007	< 0.006	< 0.006	< 0.27
Xylenes, Total	1000	1000	1000	--	NA	NA	NA	NA	NA	NA	NA	< 0.007	< 0.006	< 0.006	< 0.27

Notes:
 mg/kg = milligrams per kilogram
 DAF = Dilution Attenuation Factor
 -- = No regulatory standard applicable
 RRS = Risk Reduction Standard
^(a) = Type 1 residential risk reduction standards, background threshold values (BTVs), or HSRA Notification Concentrations were used as the Delineation Value
^(b) = Higher of Type 1 and Type 2 Residential Risk Reduction Standards for Soil DAF = 1
^(c) = Higher of Type 3 and Type 4 surface soil Non-Residential Risk Reduction Standards for Soil DAF = 1
^(d) = Background Threshold Value
 HSRA regulated compounds shown

Data Qualifiers:
 J = Value listed is estimated based on associated QC data
 JH = Value listed is estimated, possibly biased high
 JL = Value listed is estimated, possibly biased low
 NA = Not Analyzed
 UJ = Constituent was not detected, estimated based on associated QC data
 Bold = Detected Above the Laboratory Reporting Detection Limit

EXCEEDS DELINEATION VALUE^(a)

EXCEEDS SELECTED RESIDENTIAL RRS^(b)

EXCEEDS SELECTED NON-RESIDENTIAL RRS^(c)

Table 1: Summary of Surface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non- Residential RRS ^(c)	Background Threshold Value ^(d)	SS-04 0-2 SS-04-0-2-022516 2/25/2016 Sample	SS-05 0-2 SS-05-0-2-022516 2/25/2016 Sample	SS-06 0-2 SS-06-0-2-022516 2/25/2016 Sample	SS-07 0-2 SS-07-0-2-022416 2/24/2016 Sample	SS-08 0-2 SS-08-0-2-022416 2/24/2016 Sample	SS-09 0-2 SS-09-0-2-022416 2/24/2016 Sample	SS-09 0-2 SS-09-0-2 DUP-022416 2/24/2016 Duplicate	SS-10 0-2 SS-10-0-2-022416 2/24/2016 Sample	SS-11 0-2 SS-11-0-2-022416 2/24/2016 Sample	SS-12 0-2 SS-12-0-2-022416 2/24/2016 Sample	SS-12 0-2 SS-DUP-01-022416FD 2/24/2016 Duplicate
Explosives - SW846 8330B, mg/kg															
4-Nitrotoluene	1.12	1.12	1.12	--	NA	NA	NA	NA	NA						
Mercury, Total - SW846 7471B, mg/kg															
Mercury	0.5	0.5	17	0.167	< 0.221	< 0.22	< 0.214	< 0.218	< 0.214	< 0.23	NA	< 0.214	< 0.222	< 0.226	< 0.225
Metals, Total - SW846 6010C, mg/kg															
Barium	1000	1000	1000	--	140	98.4	91.2	153	61.4	137	NA	112	146	185	181
Copper	100	100	1500	58.5	62.5	117	156	99	39.1	50.7	NA	97.5	81.3	80.4	66.4
Lead	125	75	400	125	129	328	72.4	177	37.8	61	NA	146	152	107	134
Nickel	50	50	420	16.3	11.3	5.81	27.8	13.6	6.07	8.47	NA	47.4	14.8	9.66	9.52
Zinc	126	370	2800	126	111	192	80.8	132	58.7	77.6	NA	309	270	155	190
Metals, Total - SW846 6020A, mg/kg															
Antimony	4.0	4.0	10	3.96	1.08	1.96	1.34	1.9	< 0.448	1.4	NA	3.3	2.04	1.49	1.7
Arsenic	20	20	38.12	9.41	11.9	11.7	10.6	9.85	2.6	92.2	NA	16.6	7.19	14.8	10.4
Beryllium	2.0	32	180	--	0.726	0.554	0.464	0.681	0.398	0.607	NA	0.573	0.819	0.789	0.74
Cadmium	2.0	2.0	39	0.454	0.522	0.542	< 0.21	0.443	< 0.224	0.278	NA	1.43	1.0	0.727	0.814
Chromium	100	100	1200	43.9	20.4	16	27.1	29.7	12.8	19.3	NA	46.8	22.2	19	19
Lead	125	75	400	125.00	NA	NA	NA	NA	NA						
Selenium	2.0	2.0	36	0.957	0.796	< 0.869	< 0.841	< 0.705	< 0.895	< 0.899	NA	< 0.873	< 0.909	< 0.882	< 0.921
Silver	2.0	2.0	10	--	< 0.186	0.647	< 0.21	0.258	< 0.224	< 0.225	NA	< 0.218	< 0.227	< 0.221	< 0.23
Thallium	2.0	2.0	10	--	< 0.186	0.241	0.215	0.299	< 0.224	0.249	NA	< 0.218	< 0.227	0.226	< 0.23
Hexavalent Chromium - SW846 7199, mg/kg															
Hexavalent Chromium	0.05	0.05	0.13	--	NA	NA	NA	NA	NA						
Oxidation Reduction Potential mV	--	--	--	--	NA	NA	NA	NA	NA						
pH std units	--	--	--	--	NA	NA	NA	NA	NA						
Polychlorinated Biphenyls - SW846 8082A, mg/kg															
PCB-1242	1.55	1.55	1.55	--	< 0.02	< 0.02	< 0.95	< 0.094	< 0.019	< 0.2	NA	< 1.9	< 0.2	< 0.097	< 0.02
PCB-1248	1.55	1.55	1.55	--	< 0.02	< 0.02	< 0.95	< 0.094	< 0.019	< 0.2	NA	< 1.9	1.4	< 0.097	< 0.02
PCB-1254	1.55	1.55	1.55	--	0.049	< 0.02	< 0.95	0.97	0.035	< 0.2	NA	< 1.9	0.71	< 0.097	0.028 J
PCB-1260	1.55	1.55	1.55	--	0.031	< 0.02	< 0.95	< 0.094	< 0.019	< 0.2	NA	< 1.9	< 0.2	< 0.097	0.033
Semi-Volatile Organic Compounds - SW846 8270D, mg/kg															
2,4-Dimethylphenol	70	70	70	--	< 0.39	< 0.039	< 0.038	< 0.037	< 0.038	< 0.038	NA	< 0.037	< 0.038	< 0.95	< 0.98
2-Methylnaphthalene	1.0	1.0	2.11	--	1.0	0.1	0.044	0.31	< 0.019	0.78	NA	0.7	0.23	< 0.48	< 0.5
3+4-Methylphenol (m,p-Cresol)	3.8	3.8	4.2	--	< 0.39	< 0.039	< 0.038	< 0.037	< 0.038	< 0.038	NA	< 0.037	< 0.038	< 0.95	< 0.98
4-Chloroaniline	10	10	10	--	< 0.77	< 0.078	< 0.075	< 0.073	< 0.075	< 0.077	NA	< 0.074	< 0.077	< 1.9	< 2.0
Acenaphthene	300	300	300	--	< 0.2	< 0.02	< 0.019	< 0.019	< 0.019	< 0.02	NA	0.11	< 0.02	< 0.48	< 0.5
Acenaphthylene	130	130	130	--	< 0.2	< 0.02	< 0.019	< 0.019	< 0.019	< 0.02	NA	0.029	< 0.02	< 0.48	< 0.5
Acetophenone	400	400	400	--	< 0.39	< 0.039	< 0.038	< 0.037	< 0.038	0.068	NA	< 0.037	< 0.038	< 0.95	< 0.98
Anthracene	500	500	1200	--	< 0.2	< 0.02	< 0.019	0.028	< 0.019	0.036	NA	0.12	0.053	< 0.48	< 0.5
Benzo(a)anthracene	5.0	5.0	5.0	--	0.28	0.043	0.063	0.11	0.093	0.13	NA	1.3	0.2	< 0.48	< 0.5
Benzo(a)pyrene	1.64	1.64	3.8	--	0.25	0.037	0.047	0.16	0.092	0.11	NA	3.1	0.28	< 0.48	< 0.5
Benzo(b)fluoranthene	5.0	9.3	39	--	0.41	0.06	0.13	0.24	0.14	0.18	NA	3.5	0.34	0.52	< 0.5
Benzo(g,h,i)perylene	500	500	500	--	0.26	0.041	0.07	0.17	0.076	0.14	NA	3.8	0.3	0.5	< 0.5
Benzo(k)fluoranthene	5.0	91	380	--	< 0.2	< 0.02	0.028	0.098	0.05	0.065	NA	1.4	0.13	< 0.48	< 0.5
bis(2-Ethylhexyl)phthalate	50	50	56	--	< 2.0	< 0.2	< 0.19	< 0.19	< 0.19	< 0.2	NA	< 0.19	< 0.2	< 4.8	< 5.0
Butyl benzyl phthalate	50	50	50	--	< 1.9	< 0.2	< 0.19	< 0.18	< 0.19	< 0.19	NA	< 0.18	< 0.19	< 4.7	< 4.9
Chrysene	5.0	280	1200	--	0.51	0.061	0.12	0.2	0.079	0.17	NA	1.4	0.22	< 0.48	< 0.5
Dibenzo(a,h)anthracene	5.0	5.0	13	--	< 0.2	< 0.02	0.021	0.079	< 0.019	0.05	NA	0.79	0.027	< 0.48	< 0.5
Diethyl phthalate	500	500	500	--	< 1.9	< 0.2	< 0.19	< 0.18	< 0.19	< 0.19	NA	< 0.18	< 0.19	< 4.7	< 4.9
Dimethyl phthalate	40000	40000	40000	--	< 1.9	< 0.2	< 0.19	< 0.18	< 0.19	< 0.19	NA	< 0.18	< 0.19	< 4.7	< 4.9
Fluoranthene	500	500	520	--	0.39	0.061	0.13	0.13	0.13	0.17	NA	1.2	0.31	< 0.48	< 0.5
Fluorene	360	360	360	--	< 0.2	< 0.02	< 0.019	< 0.019	< 0.019	< 0.02	NA	0.035	< 0.02	< 0.48	< 0.5
Indeno(1,2,3-cd)pyrene	5.0	31	130	--	< 0.2	0.033	0.047	0.11	0.067	0.1	NA	3.0	0.24	< 0.48	< 0.5
Naphthalene	100	100	100	--	0.66	0.08	0.029	0.25	< 0.019	0.63	NA	0.59	0.21	< 0.48	< 0.5
Phenanthrene	110	110	110	--	1.0	0.089	0.1	0.24	0.05	0.44	NA	0.67	0.25	< 0.48	< 0.5
Phenol	400	400	400	--	< 0.39	< 0.039	< 0.038	< 0.037	< 0.038	< 0.038	NA	< 0.037	< 0.038	< 0.95	< 0.98

Table 1: Summary of Surface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non-Residential RRS ^(c)	Background Threshold Value ^(d)	SS-04 0-2 SS-04-0-2-022516 2/25/2016 Sample	SS-05 0-2 SS-05-0-2-022516 2/25/2016 Sample	SS-06 0-2 SS-06-0-2-022516 2/25/2016 Sample	SS-07 0-2 SS-07-0-2-022416 2/24/2016 Sample	SS-08 0-2 SS-08-0-2-022416 2/24/2016 Sample	SS-09 0-2 SS-09-0-2-022416 2/24/2016 Sample	SS-09 0-2 SS-09-0-2 DUP-022416 2/24/2016 Duplicate	SS-10 0-2 SS-10-0-2-022416 2/24/2016 Sample	SS-11 0-2 SS-11-0-2-022416 2/24/2016 Sample	SS-12 0-2 SS-12-0-2-022416 2/24/2016 Sample	SS-12 0-2 SS-DUP-01-022416FD 2/24/2016 Duplicate
Pyrene	500	500	500	--	0.43	0.064	0.09	0.16	0.15	0.18	NA	1.4	0.33	< 0.48	< 0.5
Volatiles Organic Compounds - SW846 8260C, mg/kg															
1,1,1-Trichloroethane	20	20	20	--	< 0.009	< 0.005	< 0.27	0.013	< 0.004	< 0.005	NA	< 0.005	< 0.005	< 0.3	< 0.28
1,1-Dichloroethane	400	400	400	--	< 0.009	< 0.005	< 0.27	< 0.005	< 0.004	< 0.005	NA	< 0.005	< 0.005	< 0.3	< 0.28
2-Butanone (Methyl ethyl ketone)	200	200	200	--	< 0.018	< 0.009	< 0.55	< 0.01	< 0.008	< 0.01	NA	< 0.009	< 0.009	< 0.6	< 0.55
Acetone	400	400	400	--	< 0.035	< 0.019	< 1.1	< 0.019	0.037	0.029	NA	< 0.019	0.05	< 1.2	< 1.1
Benzene	0.5	0.5	0.5	--	< 0.009	< 0.005	< 0.27	< 0.005	< 0.004	< 0.005	NA	< 0.005	< 0.005	< 0.3	< 0.28
Chloroethane	0.17	1.71	9.6	--	< 0.009	< 0.005	< 0.27	< 0.005	< 0.004	< 0.005	NA	< 0.005	< 0.005	< 0.3	< 0.28
cis-1,2-Dichloroethane	7.0	7.0	7.0	--	< 0.009	< 0.005	< 0.27	< 0.005	< 0.004	< 0.005	NA	< 0.005	< 0.005	< 0.3	< 0.28
Cyclohexane	20	20	20	--	< 0.009	< 0.005	< 0.27	< 0.005	< 0.004	< 0.005	NA	< 0.005	< 0.005	< 0.3	< 0.28
Ethylbenzene	70	70	70	--	< 0.009	< 0.005	< 0.27	< 0.005	< 0.004	< 0.005	NA	< 0.005	< 0.005	< 0.3	< 0.28
Methylene chloride (Dichloromethane)	0.5	0.5	0.5	--	< 0.009	< 0.005	< 0.27	< 0.005	< 0.004	< 0.005	NA	< 0.005	< 0.005	< 0.3	< 0.28
Styrene	14	14	14	--	< 0.009	< 0.005	< 0.27	< 0.005	< 0.004	< 0.005	NA	< 0.005	< 0.005	< 0.3	< 0.28
Tetrachloroethene (PCE)	0.5	0.5	0.5	--	0.08	0.11	21	38	0.009 J	0.018 J	NA	0.023 J	0.047 J	1.7 J	3.0 J
Toluene	100	100	100	--	< 0.009	< 0.005	< 0.27	< 0.005	< 0.004	< 0.005	NA	< 0.005	< 0.005	1.2 J	< 0.28 UJ
Trichloroethene (TCE)	0.5	0.5	0.5	--	< 0.009	< 0.005	< 0.27	0.03	< 0.004	< 0.005	NA	0.01 J	< 0.005 UJ	< 0.3	< 0.28
Trichlorofluoromethane (Freon 11)	200	200	200	--	< 0.009	< 0.005	< 0.27	< 0.005	< 0.004	< 0.005	NA	< 0.005	< 0.005	< 0.3	< 0.28
Xylenes, Total	1000	1000	1000	--	< 0.009	< 0.005	< 0.27	< 0.005	< 0.004	< 0.005	NA	< 0.005	< 0.005	1.3	< 0.28

Notes:
 mg/kg = milligrams per kilogram
 DAF = Dilution Attenuation Factor
 -- = No regulatory standard applicable
 RRS = Risk Reduction Standard
^(a) = Type 1 residential risk reduction standards, background threshold values (BTVs), or HSRA Notification Concentrations were used as the Delineation Value
^(b) = Higher of Type 1 and Type 2 Residential Risk Reduction Standards for Soil DAF = 1
^(c) = Higher of Type 3 and Type 4 surface soil Non-Residential Risk Reduction Standards for Soil DAF = 1
^(d) = Background Threshold Value
 HSRA regulated compounds shown

Data Qualifiers:
 J = Value listed is estimated based on associated QC data
 JH = Value listed is estimated, possibly biased high
 JL = Value listed is estimated, possibly biased low
 NA = Not Analyzed
 UJ = Constituent was not detected, estimated based on associated QC data
 Bold = Detected Above the Laboratory Reporting Detection Limit

EXCEEDS DELINEATION VALUE^(a)

EXCEEDS SELECTED RESIDENTIAL RRS^(b)

EXCEEDS SELECTED NON-RESIDENTIAL RRS^(c)

Table 1: Summary of Surface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non-Residential RRS ^(c)	Background Threshold Value ^(d)	SS-13 0-2 SS-13-0-2-022416 2/24/2016 Sample	SS-14 0-2 SS-14-0-2-022516 2/26/2016 Sample	SS-15 0-2 SS-15-0-2-022316 2/23/2016 Sample	SS-16 0-2 SS-16-0-2-022516 2/26/2016 Sample	SS-17 0-2 SS-17-0-2-022516 2/26/2016 Sample	SS-18 0-2 SS-18-0-2-022516 2/26/2016 Sample	SS-19 0-2 SS-19-0-2-022516 2/26/2016 Sample	SS-20 0-2 SS-20-0-2-022516 2/26/2016 Sample
Explosives - SW846 8330B, mg/kg												
4-Nitrotoluene	1.12	1.12	1.12	--	NA	NA	< 0.13	NA	NA	NA	NA	NA
Mercury, Total - SW846 7471B, mg/kg												
Mercury	0.5	0.5	17	0.167	0.669	2.46	1.11	0.409	< 0.215	0.279	< 0.21	< 0.209
Metals, Total - SW846 6010C, mg/kg												
Barium	1000	1000	1000	--	160	970	193	232	60.7	478	79.9	103
Copper	100	100	1500	58.5	1370	3780	660	986	10.9	32	98.4	106
Lead	125	75	400	125	357	847	846	568	10.2	84.7	131	114
Nickel	50	50	420	16.3	215	247	170	55.5	3.08	4.83	19.8	20.4
Zinc	126	370	2800	126	571	2480	1320	1940	20.4	108	178	140
Metals, Total - SW846 6020A, mg/kg												
Antimony	4.0	4.0	10	3.96	5.05	44.2	32.7	4.48	< 0.425	0.862	1.6	1.41
Arsenic	20	20	38.12	9.41	10.1	23.6	11.6	15.4	2.38	7.12	2.36	5.28
Beryllium	2.0	32	180	--	0.484	0.309	0.354	1.37	0.473	4.38	< 0.216	0.458
Cadmium	2.0	2.0	39	0.454	4.19	5.92	4.94	4.31	< 0.212	0.834	0.699	0.808
Chromium	100	100	1200	43.9	483	510	248	88.4	6.49	8.98	23.1	29.8
Lead	125	75	400	125.00	NA							
Selenium	2.0	2.0	36	0.957	< 0.936	< 0.66	< 0.924	< 0.722	< 0.85	< 0.965	< 0.862	< 0.682
Silver	2.0	2.0	10	--	0.319	1.13	0.98	0.379	< 0.212	< 0.241	< 0.216	< 0.171
Thallium	2.0	2.0	10	--	< 0.234	< 0.825	< 1.15	< 0.18	< 0.212	0.483	< 0.216	< 0.853
Hexavalent Chromium - SW846 7199, mg/kg												
Hexavalent Chromium	0.05	0.05	0.13	--	NA							
Oxidation Reduction Potential mV	--	--	--	--	NA							
pH std units	--	--	--	--	NA							
Polychlorinated Biphenyls - SW846 8082A, mg/kg												
PCB-1242	1.55	1.55	1.55	--	< 9.9	< 1.9	< 0.4	< 0.4	< 0.019	< 0.11	< 0.094	< 0.93
PCB-1248	1.55	1.55	1.55	--	< 9.9	14	4.4	< 0.4	< 0.019	< 0.11	0.48	< 0.93
PCB-1254	1.55	1.55	1.55	--	< 9.9	8.0	4.9	2.9	< 0.019	0.52	0.85	< 0.93
PCB-1260	1.55	1.55	1.55	--	< 9.9	< 1.9	< 0.4	1.4	< 0.019	0.22	< 0.094	< 0.93
Semi-Volatile Organic Compounds - SW846 8270D, mg/kg												
2,4-Dimethylphenol	70	70	70	--	< 0.96	< 0.19	< 0.98	< 0.19	< 0.037	< 0.042	< 0.037	< 0.036
2-Methylnaphthalene	1.0	1.0	2.11	--	< 0.49	0.11	< 0.5	0.1	< 0.019	0.046	0.024	0.32
3+4-Methylphenol (m,p-Cresol)	3.8	3.8	4.2	--	< 0.96	< 0.19	< 0.98	< 0.19	< 0.037	< 0.042	< 0.037	< 0.036
4-Chloroaniline	10	10	10	--	< 1.9	< 0.39	< 2.0	< 0.39	< 0.075	< 0.084	< 0.074	< 0.072
Acenaphthene	300	300	300	--	< 0.49	0.21	< 0.5	< 0.099	< 0.019	< 0.021	< 0.019	< 0.018
Acenaphthylene	130	130	130	--	1.1	0.12	< 0.5	< 0.099	< 0.019	< 0.021	0.02	0.043
Acetophenone	400	400	400	--	< 0.96	< 0.19	< 0.98	< 0.19	< 0.037	< 0.042	< 0.037	< 0.036
Anthracene	500	500	1200	--	1.0	0.67	1.2	0.16	< 0.019	0.026	0.046	0.078
Benzo(a)anthracene	5.0	5.0	5.0	--	3.9	2.0	3.9	0.31	< 0.019	0.041	0.081 JH	0.12
Benzo(a)pyrene	1.64	1.64	3.8	--	5.7	2.2	3.7	0.48	< 0.019	0.061 JH	0.11 JH	0.24
Benzo(b)fluoranthene	5.0	9.3	39	--	8.8	3.1	5.3	0.66	< 0.019	0.1 JH	0.23 JH	0.58
Benzo(g,h,i)perylene	500	500	500	--	4.8	1.8	2.5	0.51	< 0.019	0.076 JH	0.14 JH	0.26
Benzo(k)fluoranthene	5.0	91	380	--	3.7	1.1	2.2	0.32	< 0.019	< 0.021	0.061 JH	0.17
bis(2-Ethylhexyl)phthalate	50	50	56	--	< 4.9	5.0	< 5.0	< 0.99	< 0.19	58	0.23 JH	0.2
Butyl benzyl phthalate	50	50	50	--	< 4.8	< 0.97	< 4.9	< 0.97	< 0.19	< 0.21	< 0.19	< 0.18
Chrysene	5.0	280	1200	--	4.2	1.9	3.9	0.34	< 0.019	0.061	0.09 JH	0.23
Dibenzo(a,h)anthracene	5.0	5.0	13	--	1.8	0.41	0.94	0.12	< 0.019	0.026 JH	< 0.019	0.056
Diethyl phthalate	500	500	500	--	< 4.8	< 0.97	< 4.9	< 0.97	< 0.19	< 0.21	< 0.19	< 0.18
Dimethyl phthalate	40000	40000	40000	--	< 4.8	2.4	< 4.9	< 0.97	< 0.19	< 0.21	< 0.19	< 0.18
Fluoranthene	500	500	520	--	3.6	3.3	9.6	0.57	< 0.019	0.064	0.11	0.17
Fluorene	360	360	360	--	< 0.49	0.2	0.75	< 0.099	< 0.019	< 0.021	< 0.019	< 0.018
Indeno(1,2,3-cd)pyrene	5.0	31	130	--	4.4	1.7	2.5	0.45	< 0.019	0.099 JH	0.16 JH	0.23
Naphthalene	100	100	100	--	< 0.49	0.11	< 0.5	0.11	< 0.019	0.031	0.02	0.3
Phenanthrene	110	110	110	--	0.65	2.1	8.1	0.42	< 0.019	0.063	0.068	0.1
Phenol	400	400	400	--	< 0.96	< 0.19	1.6	< 0.19	< 0.037	< 0.042	< 0.037	< 0.036

Table 1: Summary of Surface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non-Residential RRS ^(c)	Background Threshold Value ^(d)	SS-13 0-2 SS-13-0-2-022416 2/24/2016 Sample	SS-14 0-2 SS-14-0-2-022516 2/26/2016 Sample	SS-15 0-2 SS-15-0-2-022316 2/23/2016 Sample	SS-16 0-2 SS-16-0-2-022516 2/26/2016 Sample	SS-17 0-2 SS-17-0-2-022516 2/26/2016 Sample	SS-18 0-2 SS-18-0-2-022516 2/26/2016 Sample	SS-19 0-2 SS-19-0-2-022516 2/26/2016 Sample	SS-20 0-2 SS-20-0-2-022516 2/26/2016 Sample
Pyrene	500	500	500	--	5.3	3.2	7.6	0.59	< 0.019	0.074	0.13 JH	0.28
Volatile Organic Compounds - SW846 8260C, mg/kg												
1,1,1-Trichloroethane	20	20	20	--	< 0.34	< 0.007	< 0.005	< 0.005	< 0.004	< 0.006	< 0.005	< 0.005
1,1-Dichloroethane	400	400	400	--	< 0.34	< 0.007	< 0.005	< 0.005	< 0.004	< 0.006	< 0.005	< 0.005
2-Butanone (Methyl ethyl ketone)	200	200	200	--	< 0.69	< 0.013	0.024	< 0.009	0.01	< 0.012	< 0.011	< 0.009
Acetone	400	400	400	--	< 1.4	0.04	0.18	0.033 JH	< 0.017	< 0.023	< 0.022	0.055
Benzene	0.5	0.5	0.5	--	< 0.34	< 0.007	< 0.005	< 0.005	< 0.004	< 0.006	0.006 JH	< 0.005
Chloroethane	0.17	1.71	9.6	--	< 0.34	< 0.007	< 0.005	< 0.005	< 0.004	< 0.006	< 0.005	< 0.005
cis-1,2-Dichloroethane	7.0	7.0	7.0	--	< 0.34	< 0.007	< 0.005	< 0.005	< 0.004	< 0.006	< 0.005	< 0.005
Cyclohexane	20	20	20	--	0.37	< 0.007	< 0.005	< 0.005	< 0.004	< 0.006	< 0.005	< 0.005
Ethylbenzene	70	70	70	--	< 0.34	< 0.007	< 0.005	< 0.005	< 0.004	< 0.006	< 0.005	< 0.005
Methylene chloride (Dichloromethane)	0.5	0.5	0.5	--	< 0.34	< 0.007	< 0.005	< 0.005	< 0.004	< 0.006	< 0.005	< 0.005
Styrene	14	14	14	--	< 0.34	< 0.007	< 0.005	< 0.005	< 0.004	< 0.006	< 0.005	< 0.005
Tetrachloroethene (PCE)	0.5	0.5	0.5	--	< 0.34	< 0.007	< 0.005	< 0.005	< 0.004	< 0.006	< 0.005	< 0.005
Toluene	100	100	100	--	1.2	< 0.007	< 0.005	< 0.005	< 0.004	< 0.006	< 0.005	< 0.005
Trichloroethene (TCE)	0.5	0.5	0.5	--	< 0.34	< 0.007	< 0.005	< 0.005	< 0.004	< 0.006	< 0.005	< 0.005
Trichlorofluoromethane (Freon 11)	200	200	200	--	< 0.34	< 0.007	< 0.005	< 0.005	< 0.004	< 0.006	< 0.005	< 0.005
Xylenes, Total	1000	1000	1000	--	1.3	< 0.007	< 0.005	< 0.005	< 0.004	< 0.006	< 0.005	< 0.005

Notes:

mg/kg = milligrams per kilogram
 DAF = Dilution Attenuation Factor
 -- = No regulatory standard applicable
 RRS = Risk Reduction Standard
^(a) = Type 1 residential risk reduction standards, background threshold values (BTVs), or HSRA Notification Concentrations were used as the Delineation Value
^(b) = Higher of Type 1 and Type 2 Residential Risk Reduction Standards for Soil DAF = 1
^(c) = Higher of Type 3 and Type 4 surface soil Non-Residential Risk Reduction Standards for Soil DAF = 1
^(d) = Background Threshold Value
 HSRA regulated compounds shown

Data Qualifiers:

J = Value listed is estimated based on associated QC data
 JH = Value listed is estimated, possibly biased high
 JL = Value listed is estimated, possibly biased low
 NA = Not Analyzed
 UJ = Constituent was not detected, estimated based on associated QC data
Bold = Detected Above the Laboratory Reporting Detection Limit

EXCEEDS DELINEATION VALUE^(a)

EXCEEDS SELECTED RESIDENTIAL RRS^(b)

EXCEEDS SELECTED NON-RESIDENTIAL RRS^(c)

Table 2: Summary of Subsurface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non- Residential RRS ^(c)	Background Threshold Value ^(d)	BK-01 2-4 BK-1-2-4-062316 6/23/2016 Sample	BK-02 2-4 BK-2-2-4-062316 6/23/2016 Sample	BK-03 2-4 BK-3-2-4-062316 6/23/2016 Sample	BK-03 2-4 BK-DUP2-062316 6/23/2016 Duplicate	BK-04 2-4 BK-4-2-4-062316 6/23/2016 Sample	BK-07 2-4 BK-7-2-4-062316 6/23/2016 Sample	BK-08 2-4 BK-8-2-4-062316 6/23/2016 Sample	BK-09 2-4 BK-9-2-4-062316 6/23/2016 Sample	BK-10 2-4 BK-10-2-4-062316 6/23/2016 Sample	BK-10 2-4 BK-DUP4-062316 6/23/2016 Duplicate
Explosives - SW846 8330B, mg/kg														
4-Nitrotoluene	1.12	1.12	1.12	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury, Total - SW846 7471B, mg/kg														
Mercury	0.5	0.5	17	0.167	0.119	< 0.113	< 0.123	< 0.118	< 0.111	< 0.105	0.167	< 0.106	< 0.103	< 0.11
Metals, Total - SW846 6010C, mg/kg														
Barium	1000	1000	1000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	100	100	1500	58.5	30.7	35.9	20.8	19.2	36.3	4.84	21.5	32.3	32.4	28.7
Lead	125	75	400	125	25.8	14.7	18.6	17.1	72.2	5.9	44.3	8.75	9.66	8.96
Nickel	50	50	420	16.3	11.9	13.7	15.7	15.7	5.82	10.8	17	9.72	12.6	10.7
Zinc	126	370	2800	126	54.8	57.9	63.8	59.6	81	31.2	97	41.7	47.7	42.4
Metals, Total - SW846 6020A, mg/kg														
Antimony	4.0	4.0	10	3.96	< 0.333 UJ	< 0.337	< 0.478	< 0.472	0.758	< 0.316	< 0.427	< 0.399	< 0.431	< 0.347
Arsenic	20	20	41	9.41	2.73	3.01	2.84	2.87	4.83	1.26	5.46	2.4	2.97	1.79
Beryllium	2.0	32	180	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.0	2.0	39	0.454	< 0.166	< 0.168	< 0.239	< 0.236	< 0.203	< 0.158	< 0.213	< 0.2	< 0.215	< 0.173
Chromium	100	100	1200	43.9	28.1 JL	37.2	36.9	36.2	10.8	10.7	36.1	19.5	38.4	24.1
Lead	125	75	400	125	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	2.0	2.0	36	0.957	< 0.665	< 0.674	< 0.957	< 0.944	< 0.814	< 0.632	< 0.853	< 0.798	< 0.861	< 0.694
Silver	2.0	2.0	10	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	2.0	2.0	10	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexavalent Chromium - SW7199, mg/kg														
Hexavalent Chromium	0.05	0.05	0.13	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oxidation Reduction Potential mV														
Oxidation Reduction Potential mV	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH std units														
pH std units	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated Biphenyls - SW846 8082A, mg/kg														
PCB-1242	1.55	1.55	1.55	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1248	1.55	1.55	1.55	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1254	1.55	1.55	1.55	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1260	1.55	1.55	1.55	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semi-Volatile Organic Compounds - SW846 8270D, mg/kg														
2,4-Dimethylphenol	70	70	70	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	1.0	1.0	2.11	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3+4-Methylphenol (m,p-Cresol)	3.8	3.8	3.8	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	10	10	10	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	300	300	300	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	130	130	130	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	500	500	1000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	5.0	5.0	5.0	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	1.64	1.64	3.8	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	5.0	9.3	39	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	500	500	500	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	5.0	91	380	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	50	50	56	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate	50	50	50	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	5.0	280	1200	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	5.0	5.0	13	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethyl phthalate	500	500	500	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethyl phthalate	40000	40000	40000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	500	500	500	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	360	360	360	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	5.0	31	130	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	100	100	100	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	110	110	110	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	500	500	500	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 2: Summary of Subsurface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non-Residential RRS ^(c)	Background Threshold Value ^(d)	BK-01 2-4 BK-1-2-4-062316 6/23/2016 Sample	BK-02 2-4 BK-2-2-4-062316 6/23/2016 Sample	BK-03 2-4 BK-3-2-4-062316 6/23/2016 Sample	BK-03 2-4 BK-DUP2-062316 6/23/2016 Duplicate	BK-04 2-4 BK-4-2-4-062316 6/23/2016 Sample	BK-07 2-4 BK-7-2-4-062316 6/23/2016 Sample	BK-08 2-4 BK-8-2-4-062316 6/23/2016 Sample	BK-09 2-4 BK-9-2-4-062316 6/23/2016 Sample	BK-10 2-4 BK-10-2-4-062316 6/23/2016 Sample	BK-10 2-4 BK-DUP4-062316 6/23/2016 Duplicate
Volatile Organic Compounds - SW846 8260C, mg/kg														
1,1,1-Trichloroethane	20	20	20	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone (Methyl ethyl ketone)	200	200	200	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.5	0.5	0.5	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	0.17	1.71	9.6	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	7.0	7.0	7.0	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	20	20	20	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	70	70	70	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride (Dichloromethane)	0.5	0.5	0.5	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	14	14	14	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene (PCE)	0.5	0.5	0.5	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	100	100	100	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene (TCE)	0.5	0.5	0.5	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane (Freon 11)	200	200	200	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	1000	1000	1000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

mg/kg = milligrams per kilogram
 DAF = Dilution Attenuation Factor
 -- = No regulatory standard applicable
 RRS = Risk Reduction Standard
^(a) = Type 1 residential risk reduction standards, background threshold values (BTVs), or HSRA Notification Concentrations were used as the Delineation Value
^(b) = Higher of Type 1 and Type 2 Residential Risk Reduction Standards for Soil DAF = 1
^(c) = Higher of Type 3 and Type 4 subsurface soil Non-Residential Risk Reduction Standards for Soil DAF = 1
^(d) = Background Threshold Value
 HSRA regulated compounds shown

Data Qualifiers:

J = Value listed is estimated based on associated QC data
 JH = Value listed is estimated, possibly biased high
 JL = Value listed is estimated, possibly biased low
 NA = Not Analyzed
 UJ = Constituent was not detected, estimated based on associated QC data
Bold = Detected Above the Laboratory Reporting Detection Limit

EXCEEDS DELINEATION VALUE^(a)

EXCEEDS SELECTED RESIDENTIAL RRS^(b)

EXCEEDS SELECTED NON-RESIDENTIAL RRS^(c)

Table 2: Summary of Subsurface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non-Residential RRS ^(c)	Background Threshold Value ^(d)	DT-02-120 2-3 DT-2-120-2-3-062316 6/23/2016 Sample	DT-03-40 2-4 DT-3-40-2-4-062316 6/23/2016 Sample	DT-04-50 2-4 DT-4-50-2-4-062216 6/22/2016 Sample	DT-05-50 2-4 DT-5-50-2-4-062216 6/22/2016 Sample	DT-06-35 2-4 DT-6-35-2-4-062116 6/21/2016 Sample	DT-08-Offset 2-4 DT-8-2-4-062316_OFFSET 6/23/2016 Sample	DT-09-105 2-4 DT-9-105-2-4-062316 6/23/2016 Sample	DT-10B 2-3.5 DT-10B-2-3.5-062216 6/22/2016 Sample	DT-11B 2-4 DT-11B-2-4-062216 6/22/2016 Sample	DT-12B 2-4 DT-12B-2-4-062216 6/22/2016 Sample
Explosives - SW846 8330B, mg/kg														
4-Nitrotoluene	1.12	1.12	1.12	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury, Total - SW846 7471B, mg/kg														
Mercury	0.5	0.5	17	0.167	NA	NA	NA	NA	NA	0.124	NA	0.144	NA	NA
Metals, Total - SW846 6010C, mg/kg														
Barium	1000	1000	1000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	100	100	1500	58.5	NA	NA	23.3	NA	30.3	NA	NA	42.8	NA	24.4
Lead	125	75	400	125	85	33.1	21.7	25.3	52	NA	NA	64.9	11.5	17.3
Nickel	50	50	420	16.3	7.37	18	NA	NA	10.7	NA	NA	9.88	NA	19.9
Zinc	126	370	2800	126	NA	NA	76.4	NA	NA	NA	80.7	109	NA	NA
Metals, Total - SW846 6020A, mg/kg														
Antimony	4.0	4.0	10	3.96	4.56	1.17	< 0.465	< 0.317	NA	NA	NA	< 0.4	NA	< 0.436
Arsenic	20	20	41	9.41	NA	NA	5.36	NA	NA	NA	4.88	5.56	NA	NA
Beryllium	2.0	32	180	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.0	2.0	39	0.454	< 0.2	< 0.238	< 0.232	< 0.159	NA	NA	< 0.217	0.218	NA	< 0.218
Chromium	100	100	1200	43.9	19.5	121	42.1	NA	16.5	NA	NA	26.5	NA	37
Lead	125	75	400	125	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	2.0	2.0	36	0.957	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2.0	2.0	10	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	2.0	2.0	10	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexavalent Chromium - SW7199, mg/kg														
Hexavalent Chromium	0.05	0.05	0.13	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oxidation Reduction Potential mV	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH std units	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated Biphenyls - SW846 8082A, mg/kg														
PCB-1242	1.55	1.55	1.55	--	< 0.018	< 0.02	< 0.02	NA	< 0.019	NA	< 0.019	< 0.019	< 0.018	NA
PCB-1248	1.55	1.55	1.55	--	< 0.018	< 0.02	< 0.02	NA	< 0.019	NA	< 0.019	< 0.019	< 0.018	NA
PCB-1254	1.55	1.55	1.55	--	< 0.018	< 0.02	< 0.02	NA	0.062 JH	NA	< 0.019	< 0.019	< 0.018	NA
PCB-1260	1.55	1.55	1.55	--	< 0.018	< 0.02	< 0.02	NA	< 0.019	NA	< 0.019	< 0.019	< 0.018	NA
Semi-Volatile Organic Compounds - SW846 8270D, mg/kg														
2,4-Dimethylphenol	70	70	70	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	1.0	1.0	2.11	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3+4-Methylphenol (m,p-Cresol)	3.8	3.8	3.8	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	10	10	10	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	300	300	300	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	130	130	130	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	500	500	1000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	5.0	5.0	5.0	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	1.64	1.64	3.8	--	0.024	NA	< 0.02	NA	0.25	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	5.0	9.3	39	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	500	500	500	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	5.0	91	380	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	50	50	56	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate	50	50	50	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	5.0	280	1200	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	5.0	5.0	13	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethyl phthalate	500	500	500	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethyl phthalate	40000	40000	40000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	500	500	500	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	360	360	360	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	5.0	31	130	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	100	100	100	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	110	110	110	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	500	500	500	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 2: Summary of Subsurface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non-Residential RRS ^(c)	Background Threshold Value ^(d)	DT-02-120 2-3 DT-2-120-2-3-062316 6/23/2016 Sample	DT-03-40 2-4 DT-3-40-2-4-062316 6/23/2016 Sample	DT-04-50 2-4 DT-4-50-2-4-062216 6/22/2016 Sample	DT-05-50 2-4 DT-5-50-2-4-062216 6/22/2016 Sample	DT-06-35 2-4 DT-6-35-2-4-062116 6/21/2016 Sample	DT-08-Offset 2-4 DT-8-2-4-062316_OFFSET 6/23/2016 Sample	DT-09-105 2-4 DT-9-105-2-4-062316 6/23/2016 Sample	DT-10B 2-3.5 DT-10B-2-3.5-062216 6/22/2016 Sample	DT-11B 2-4 DT-11B-2-4-062216 6/22/2016 Sample	DT-12B 2-4 DT-12B-2-4-062216 6/22/2016 Sample
Volatile Organic Compounds - SW846 8260C, mg/kg														
1,1,1-Trichloroethane	20	20	20	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone (Methyl ethyl ketone)	200	200	200	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.5	0.5	0.5	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	0.17	1.71	9.6	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	7.0	7.0	7.0	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	20	20	20	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	70	70	70	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride (Dichloromethane)	0.5	0.5	0.5	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	14	14	14	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene (PCE)	0.5	0.5	0.5	--	NA	NA	NA	NA	0.009	NA	NA	NA	NA	NA
Toluene	100	100	100	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene (TCE)	0.5	0.5	0.5	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane (Freon 11)	200	200	200	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	1000	1000	1000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

mg/kg = milligrams per kilogram
 DAF = Dilution Attenuation Factor
 -- = No regulatory standard applicable
 RRS = Risk Reduction Standard
^(a) = Type 1 residential risk reduction standards, background threshold values (BTVs), or HSRA Notification Concentrations were used as the Delineation Value
^(b) = Higher of Type 1 and Type 2 Residential Risk Reduction Standards for Soil DAF = 1
^(c) = Higher of Type 3 and Type 4 subsurface soil Non-Residential Risk Reduction Standards for Soil DAF = 1
^(d) = Background Threshold Value
 HSRA regulated compounds shown

Data Qualifiers:

J = Value listed is estimated based on associated QC data
 JH = Value listed is estimated, possibly biased high
 JL = Value listed is estimated, possibly biased low
 NA = Not Analyzed
 UJ = Constituent was not detected, estimated based on associated QC data
Bold = Detected Above the Laboratory Reporting Detection Limit

EXCEEDS DELINEATION VALUE ^(a)
EXCEEDS SELECTED RESIDENTIAL RRS ^(b)
EXCEEDS SELECTED NON-RESIDENTIAL RRS ^(c)

Table 2: Summary of Subsurface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non-Residential RRS ^(c)	Background Threshold Value ^(d)	MW-01	MW-01	MW-02	MW-02	MW-02	MW-03	MW-03	MW-03	MW-04	MW-04	
					6-8	12-14	2-4	6-8	12-14	2-4	6-8	12-14	2-4	6-8	12-14
					MW-1-6-8-022516	MW-1-12-14-022516	MW-2-2-4-022516	MW-2-6-8-022516	MW-2-12-14-022516	MW-3-2-4-022416	MW-3-6-8-022416	MW-3-12-14-022416	MW-4-2-4-022316	MW-4-12-14-022316	
2/25/2016	2/25/2016	2/25/2016	2/25/2016	2/25/2016	2/24/2016	2/24/2016	2/24/2016	2/25/2016	2/23/2016						
Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample						
Explosives - SW846 8330B, mg/kg															
4-Nitrotoluene	1.12	1.12	1.12	--	< 0.13	< 0.12	< 0.13	< 0.13	< 0.12	< 0.13	< 0.13	< 0.12	0.19	< 0.12	
Mercury, Total - SW846 7471B, mg/kg															
Mercury	0.5	0.5	17	0.167	< 0.221	< 0.197	< 0.219	< 0.219	< 0.205	1.96	< 0.208	< 0.211	0.422	< 0.2	
Metals, Total - SW846 6010C, mg/kg															
Barium	1000	1000	1000	--	69	10.5	383	57.6	17.2	505	105	35.8	217	16.2	
Copper	100	100	1500	58.5	17.3	2.47	258	23.6	5.77	655	114	11.5	227	8.47	
Lead	125	75	400	125	5.65	< 2.35	1170	7.03	< 2.98	2450	152	4.0	531	< 3.01	
Nickel	50	50	420	16.3	5.89	< 1.57	92	7.33	< 1.98	191	23.6	3.5	153	3.31	
Zinc	126	370	2800	126	28.1	3.58	2820	34.1	7.33	8680	650	15.8	1430	9.22	
Metals, Total - SW846 6020A, mg/kg															
Antimony	4.0	4.0	10	3.96	< 0.376	< 0.313	3.6	< 0.402	< 0.397	29.3	1.22	< 0.368	9.68	< 0.402	
Arsenic	20	20	41	9.41	1.73	< 0.627	16.8	1.85	< 0.794	29.4	2.66	1.24	10.5	< 0.804	
Beryllium	2.0	32	180	--	0.587	< 0.157	1.02	0.602	< 0.198	0.569	0.514	0.298	0.317	< 0.201	
Cadmium	2.0	2.0	39	0.454	< 0.188	< 0.157	18.2	< 0.201	< 0.198	61.4	1.56	< 0.184	3.24	< 0.201	
Chromium	100	100	1200	43.9	14.5	4.56	76.7	20	5.75	203	32.7	9.35	72.6	9.06	
Lead	125	75	400	125	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Selenium	2.0	2.0	36	0.957	< 0.751	< 0.627	0.888	< 0.804	< 0.794	0.752	< 0.674	< 0.735	< 0.865	< 0.804	
Silver	2.0	2.0	10	--	< 0.188	< 0.157	0.355	< 0.201	< 0.198	1.39	< 0.168	< 0.184	< 0.216	< 0.201	
Thallium	2.0	2.0	10	--	< 0.188	< 0.157	0.282	0.253	< 0.198	< 0.185	0.194	< 0.184	0.237	< 0.201	
Hexavalent Chromium - SW7199, mg/kg															
Hexavalent Chromium	0.05	0.05	0.13	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Oxidation Reduction Potential mV															
Oxidation Reduction Potential mV	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
pH std units															
pH std units	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Polychlorinated Biphenyls - SW846 8082A, mg/kg															
PCB-1242	1.55	1.55	1.55	--	< 0.019	< 0.017	< 0.94	< 0.019	< 0.018	< 1.9	< 1.9	< 0.018	< 0.18	< 0.017	
PCB-1248	1.55	1.55	1.55	--	< 0.019	< 0.017	< 0.94	< 0.019	< 0.018	22	< 1.9	< 0.018	1.4	< 0.017	
PCB-1254	1.55	1.55	1.55	--	< 0.019	< 0.017	3.6	< 0.019	< 0.018	20	15	< 0.018	1.3	< 0.017	
PCB-1260	1.55	1.55	1.55	--	< 0.019	< 0.017	1.5	< 0.019	< 0.018	< 1.9	< 1.9	< 0.018	0.28	< 0.017	
Semi-Volatile Organic Compounds - SW846 8270D, mg/kg															
2,4-Dimethylphenol	70	70	70	--	< 0.037	< 0.034	< 0.19	< 0.038	< 0.035	< 1.9	< 0.037	< 0.036	< 0.18	< 0.034	
2-Methylnaphthalene	1.0	1.0	2.11	--	< 0.019	< 0.017	0.27	< 0.019	< 0.018	< 0.96	0.04	< 0.018	0.35	< 0.017	
3+4-Methylphenol (m,p-Cresol)	3.8	3.8	3.8	--	< 0.037	< 0.034	< 0.19	< 0.038	< 0.035	< 1.9	< 0.037	< 0.036	< 0.18	< 0.034	
4-Chloroaniline	10	10	10	--	< 0.075	< 0.068	< 0.37	< 0.076	< 0.069	< 3.8	< 0.074	< 0.071	< 0.36	< 0.068	
Acenaphthene	300	300	300	--	< 0.019	< 0.017	< 0.094	< 0.019	< 0.018	< 0.96	< 0.019	< 0.018	< 0.092	< 0.017	
Acenaphthylene	130	130	130	--	< 0.019	< 0.017	< 0.094	< 0.019	< 0.018	< 0.96	< 0.019	< 0.018	< 0.092	< 0.017	
Acetophenone	400	400	400	--	< 0.037	< 0.034	< 0.19	< 0.038	< 0.035	< 1.9	< 0.037	< 0.036	0.57	< 0.034	
Anthracene	500	500	1000	--	< 0.019	< 0.017	0.2	< 0.019	< 0.018	< 0.96	0.026	< 0.018	0.17	< 0.017	
Benzo(a)anthracene	5.0	5.0	5.0	--	< 0.019	< 0.017	0.46	< 0.019	< 0.018	1.2	0.088	< 0.018	0.31	< 0.017	
Benzo(a)pyrene	1.64	1.64	3.8	--	< 0.019	< 0.017	0.53	< 0.019	< 0.018	1.4	0.11	< 0.018	0.44	< 0.017	
Benzo(b)fluoranthene	5.0	9.3	39	--	< 0.019	< 0.017	0.61	< 0.019	< 0.018	2.2	0.16	< 0.018	< 0.092	< 0.017	
Benzo(g,h,i)perylene	500	500	500	--	< 0.019	< 0.017	0.4	< 0.019	< 0.018	1.6	0.12	< 0.018	0.52	< 0.017	
Benzo(k)fluoranthene	5.0	91	380	--	< 0.019	< 0.017	0.32	< 0.019	< 0.018	< 0.96	0.065	< 0.018	0.81	< 0.017	
bis(2-Ethylhexyl)phthalate	50	50	56	--	< 0.19	< 0.17	2.2	< 0.19	< 0.18	< 9.6	0.23	< 0.18	4.5	< 0.17	
Butyl benzyl phthalate	50	50	50	--	< 0.19	< 0.17	< 0.93	< 0.19	< 0.17	< 9.4	< 0.18	< 0.18	2.6	< 0.17	
Chrysene	5.0	280	1200	--	< 0.019	< 0.017	0.59	< 0.019	< 0.018	1.3	0.098	< 0.018	0.4	< 0.017	
Dibenzo(a,h)anthracene	5.0	5.0	13	--	< 0.019	< 0.017	< 0.094	< 0.019	< 0.018	< 0.96	0.031	< 0.018	< 0.092	< 0.017	
Diethyl phthalate	500	500	500	--	< 0.19	< 0.17	< 0.93	< 0.19	< 0.17	< 9.4	< 0.18	< 0.18	1.1	< 0.17	
Dimethyl phthalate	40000	40000	40000	--	< 0.19	< 0.17	< 0.93	< 0.19	< 0.17	< 9.4	< 0.18	< 0.18	< 0.9	< 0.17	
Fluoranthene	500	500	500	--	< 0.019	< 0.017	0.82	< 0.019	< 0.018	2.2	0.15	< 0.018	0.55	< 0.017	
Fluorene	360	360	360	--	< 0.019	< 0.017	< 0.094	< 0.019	< 0.018	< 0.96	< 0.019	< 0.018	< 0.092	< 0.017	
Indeno(1,2,3-cd)pyrene	5.0	31	130	--	< 0.019	< 0.017	0.3	< 0.019	< 0.018	1.8	0.097	< 0.018	0.38	< 0.017	
Naphthalene	100	100	100	--	< 0.019	< 0.017	0.23	< 0.019	< 0.018	< 0.96	0.039	< 0.018	0.31	< 0.017	
Phenanthrene	110	110	110	--	< 0.019	< 0.017	0.74	< 0.019	< 0.018	1.6	0.11	< 0.018	0.45	< 0.017	
Phenol	400	400	400	--	< 0.037	< 0.034	< 0.19	< 0.038	< 0.035	< 1.9	< 0.037	< 0.036	0.92	< 0.034	
Pyrene	500	500	500	--	< 0.019	< 0.017	0.97	< 0.019	< 0.018	2.4	0.13	< 0.018	0.68	< 0.017	

Table 2: Summary of Subsurface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non-Residential RRS ^(c)	Background Threshold Value ^(d)	MW-01 6-8 MW-1-6-8-022516 2/25/2016 Sample	MW-01 12-14 MW-1-12-14-022516 2/25/2016 Sample	MW-02 2-4 MW-2-2-4-022516 2/25/2016 Sample	MW-02 6-8 MW-2-6-8-022516 2/25/2016 Sample	MW-02 12-14 MW-2-12-14-022516 2/25/2016 Sample	MW-03 2-4 MW-3-2-4-022416 2/24/2016 Sample	MW-03 6-8 MW-3-6-8-022416 2/24/2016 Sample	MW-03 12-14 MW-3-12-14-022416 2/24/2016 Sample	MW-04 2-4 MW-4-2-4-022316 2/23/2016 Sample	MW-04 12-14 MW-4-12-14-022316 2/23/2016 Sample
Volatile Organic Compounds - SW846 8260C, mg/kg														
1,1,1-Trichloroethane	20	20	20	--	< 0.005	< 0.005	< 0.006	< 0.005	< 0.005	< 0.005	< 0.25	< 0.005	< 0.004	< 0.005
1,1-Dichloroethane	400	400	400	--	< 0.005	< 0.005	< 0.006	< 0.005	< 0.005	< 0.005	< 0.25	< 0.005	< 0.004	< 0.005
2-Butanone (Methyl ethyl ketone)	200	200	200	--	< 0.011	< 0.01	< 0.012	< 0.01	< 0.011	0.016	< 0.5	< 0.011	0.018	< 0.011
Acetone	400	400	400	--	< 0.021	< 0.021	0.062	< 0.02	< 0.022	0.14	< 1.0	< 0.022	0.15	< 0.021
Benzene	0.5	0.5	0.5	--	< 0.005	< 0.005	< 0.006	< 0.005	< 0.005	< 0.005	< 0.25	< 0.005	< 0.004	< 0.005
Chloroethane	0.17	1.71	9.6	--	< 0.005	< 0.005	< 0.006	< 0.005	< 0.005	< 0.005	< 0.25	< 0.005	< 0.004	< 0.005
cis-1,2-Dichloroethene	7.0	7.0	7.0	--	< 0.005	< 0.005	< 0.006	< 0.005	< 0.005	< 0.005	< 0.25	< 0.005	0.005	< 0.005
Cyclohexane	20	20	20	--	< 0.005	< 0.005	< 0.006	< 0.005	< 0.005	< 0.005	< 0.25	< 0.005	< 0.004	< 0.005
Ethylbenzene	70	70	70	--	< 0.005	< 0.005	< 0.006	< 0.005	< 0.005	< 0.005	< 0.25	< 0.005	< 0.004	< 0.005
Methylene chloride (Dichloromethane)	0.5	0.5	0.5	--	< 0.005	< 0.005	< 0.006	< 0.005	< 0.005	< 0.005	< 0.25	< 0.005	< 0.004	< 0.005
Styrene	14	14	14	--	< 0.005	< 0.005	< 0.006	< 0.005	< 0.005	< 0.005	< 0.25	< 0.005	< 0.004	< 0.005
Tetrachloroethene (PCE)	0.5	0.5	0.5	--	< 0.005	< 0.005	< 0.006	< 0.005	< 0.005	< 0.005	< 0.25	< 0.005	< 0.004	< 0.005
Toluene	100	100	100	--	< 0.005	< 0.005	< 0.006	< 0.005	< 0.005	< 0.005	< 0.25	< 0.005	< 0.004	< 0.005
Trichloroethene (TCE)	0.5	0.5	0.5	--	< 0.005	< 0.005	< 0.006	< 0.005	< 0.005	< 0.005	< 0.25	< 0.005	< 0.004	< 0.005
Trichlorofluoromethane (Freon 11)	200	200	200	--	< 0.005	< 0.005	< 0.006	< 0.005	< 0.005	< 0.005	< 0.25	< 0.005	< 0.004	< 0.005
Xylenes, Total	1000	1000	1000	--	< 0.005	< 0.005	< 0.006	< 0.005	< 0.005	< 0.005	< 0.25	< 0.005	< 0.004	< 0.005

Notes:

mg/kg = milligrams per kilogram
 DAF = Dilution Attenuation Factor
 -- = No regulatory standard applicable
 RRS = Risk Reduction Standard
^(a) = Type 1 residential risk reduction standards, background threshold values (BTVs), or HSRA Notification Concentrations were used as the Delineation Value
^(b) = Higher of Type 1 and Type 2 Residential Risk Reduction Standards for Soil DAF = 1
^(c) = Higher of Type 3 and Type 4 subsurface soil Non-Residential Risk Reduction Standards for Soil DAF = 1
^(d) = Background Threshold Value
 HSRA regulated compounds shown

Data Qualifiers:

J = Value listed is estimated based on associated QC data
 JH = Value listed is estimated, possibly biased high
 JL = Value listed is estimated, possibly biased low
 NA = Not Analyzed
 UJ = Constituent was not detected, estimated based on associated QC data
Bold = Detected Above the Laboratory Reporting Detection Limit

EXCEEDS DELINEATION VALUE^(a)

EXCEEDS SELECTED RESIDENTIAL RRS^(b)

EXCEEDS SELECTED NON-RESIDENTIAL RRS^(c)

Table 2: Summary of Subsurface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non- Residential RRS ^(c)	Background Threshold Value ^(d)	SBO-01 2-4 SBO-01-2-4-022616 2/26/2016 Sample	SBO-01 6-8 SBO-01-6-8-022616 2/26/2016 Sample	SBO-01 12-14 SBO-01-12-14-022616 2/26/2016 Sample	SBO-01 12-14 SBO-DUP-6-022616FD 2/26/2016 Duplicate	SBO-02 2-4 SBO-02-2-4-022616 2/26/2016 Sample	SBO-02 6-8 SBO-02-6-8-022616 2/26/2016 Sample	SBO-02 12-14 SBO-02-12-14-022616 2/26/2016 Sample	SBO-03 2-4 SBO-03-2-4-022616 2/29/2016 Sample	SBO-03 6-8 SBO-03-6-8-022616 2/29/2016 Sample	SBO-03 6-8 SBO-DUP-7-022616FD 2/26/2016 Duplicate
Explosives - SW846 8330B, mg/kg														
4-Nitrotoluene	1.12	1.12	1.12	--	< 0.14	< 0.14	< 0.13	< 0.12	< 0.13	< 0.13	< 0.12	< 0.15	< 0.14	< 0.13
Mercury, Total - SW846 7471B, mg/kg														
Mercury	0.5	0.5	17	0.167	0.48	< 0.219	< 0.204	< 0.203	0.631	< 0.225	< 0.196	3.69	< 0.224	< 0.226
Metals, Total - SW846 6010C, mg/kg														
Barium	1000	1000	1000	--	213	94.4	17.9	19	232	86.4	24.7	233	85.5	71.6
Copper	100	100	1500	58.5	572	10.1	< 1.93	< 1.65	387	31.1	9.36	1950	32.1	28.9
Lead	125	75	400	125	648	9.06	< 2.89	< 2.48	609	8.15	< 3.12	909	8.8	7.7
Nickel	50	50	420	16.3	137	9.42	< 1.93	< 1.65	828	9.83	2.18	15100	11.7	8.91
Zinc	126	370	2800	126	2160	44.3	7.94	7.48	1320	41.6	10.1	3070	45.2	39.6
Metals, Total - SW846 6020A, mg/kg														
Antimony	4.0	4.0	10	3.96	5.41	< 0.368	< 0.385	< 0.331	32.4	< 0.447	< 0.416	11.7	< 0.454	< 0.46
Arsenic	20	20	41	9.41	17.5	2.28	< 0.77	< 0.661	195	7.21	< 0.831	18.3	1.57	1.34
Beryllium	2.0	32	180	--	0.562	0.858	< 0.193	0.182	0.575	0.865	0.226	0.58	0.721	0.634
Cadmium	2.0	2.0	39	0.454	12.2	< 0.184	< 0.193	< 0.165	4.39	< 0.223	< 0.208	8.08	< 0.227	< 0.2
Chromium	100	100	1200	43.9	176	25.7	5.22	4.52	150	22.6	6.01	11100	23.3	22
Lead	125	75	400	125	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	2.0	2.0	36	0.957	< 0.897	< 0.735	< 0.77	< 0.661	< 0.885	< 0.893	< 0.831	< 0.964	< 0.907	< 0.92
Silver	2.0	2.0	10	--	0.449	< 0.184	< 0.193	< 0.165	0.727	< 0.223	< 0.208	1.55	< 0.227	< 0.23
Thallium	2.0	2.0	10	--	< 0.224	0.31	< 0.193	< 0.165	0.657	0.283	< 0.208	< 0.241	0.325	0.248
Hexavalent Chromium - SW7199, mg/kg														
Hexavalent Chromium	0.05	0.05	0.13	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oxidation Reduction Potential mV														
Oxidation Reduction Potential mV	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH std units														
pH std units	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated Biphenyls - SW846 8082A, mg/kg														
PCB-1242	1.55	1.55	1.55	--	< 1.9	< 0.02	< 0.018	< 0.017	< 0.96	< 0.019	< 0.018	< 1.1	< 0.019	< 0.019
PCB-1248	1.55	1.55	1.55	--	20	0.12	< 0.018	< 0.017	12	< 0.019	< 0.018	8.9	< 0.019	< 0.019
PCB-1254	1.55	1.55	1.55	--	5.5	0.024	< 0.018	< 0.017	9.6	< 0.019	< 0.018	3.8	< 0.019	< 0.019
PCB-1260	1.55	1.55	1.55	--	< 1.9	< 0.02	< 0.018	< 0.017	< 0.96	< 0.019	< 0.018	< 1.1	< 0.019	< 0.019
Semi-Volatile Organic Compounds - SW846 8270D, mg/kg														
2,4-Dimethylphenol	70	70	70	--	< 0.19	< 0.038	< 0.035	< 0.034	< 0.38	< 0.038	< 0.035	< 0.42	< 0.038	< 0.038
2-Methylnaphthalene	1.0	1.0	2.11	--	0.83	< 0.02	< 0.018	< 0.018	0.3	< 0.019	< 0.018	0.27	< 0.019	< 0.019
3+4-Methylphenol (m,p-Cresol)	3.8	3.8	3.8	--	< 0.19	< 0.038	< 0.035	< 0.034	< 0.38	< 0.038	< 0.035	< 0.42	< 0.038	< 0.038
4-Chloroaniline	10	10	10	--	0.43	< 0.077	< 0.069	< 0.075	< 0.75	< 0.075	< 0.069	< 0.83	< 0.076	< 0.076
Acenaphthene	300	300	300	--	0.13	< 0.02	< 0.018	< 0.018	< 0.19	< 0.019	< 0.018	< 0.21	< 0.019	< 0.019
Acenaphthylene	130	130	130	--	< 0.098	< 0.02	< 0.018	< 0.018	< 0.19	< 0.019	< 0.018	< 0.21	< 0.019	< 0.019
Acetophenone	400	400	400	--	< 0.19	< 0.038	< 0.035	< 0.034	< 0.38	< 0.038	< 0.035	< 0.42	< 0.038	< 0.038
Anthracene	500	500	1000	--	0.21	< 0.02	< 0.018	< 0.018	0.52	< 0.019	< 0.018	0.33	< 0.019	< 0.019
Benzo(a)anthracene	5.0	5.0	5.0	--	1.0	< 0.02	< 0.018	< 0.018	1.8	< 0.019	< 0.018	0.83	< 0.019	< 0.019
Benzo(a)pyrene	1.64	1.64	3.8	--	2.0	< 0.02	< 0.018	< 0.018	1.7	< 0.019	< 0.018	0.84	< 0.019	< 0.019
Benzo(b)fluoranthene	5.0	9.3	39	--	2.5	< 0.02	< 0.018	< 0.018	2.5	< 0.019	< 0.018	1.3	< 0.019	< 0.019
Benzo(g,h,i)perylene	500	500	500	--	2.6	< 0.02	< 0.018	< 0.018	1.3	< 0.019	< 0.018	0.7	< 0.019	< 0.019
Benzo(k)fluoranthene	5.0	91	380	--	1.1	< 0.02	< 0.018	< 0.018	1.1	< 0.019	< 0.018	0.54	< 0.019	< 0.019
bis(2-Ethylhexyl)phthalate	50	50	56	--	1.2	< 0.2	< 0.18	< 0.18	73	< 0.19	< 0.18	< 2.1	< 0.19	< 0.19
Butyl benzyl phthalate	50	50	50	--	7.9	< 0.19	< 0.17	< 0.17	< 1.9	< 0.19	< 0.17	< 2.1	< 0.19	< 0.19
Chrysene	5.0	280	1200	--	1.4	< 0.02	< 0.018	< 0.018	2.0	< 0.019	< 0.018	0.84	< 0.019	< 0.019
Dibenzo(a,h)anthracene	5.0	5.0	13	--	0.58	< 0.02	< 0.018	< 0.018	0.36	< 0.019	< 0.018	< 0.21	< 0.019	< 0.019
Diethyl phthalate	500	500	500	--	< 0.96	< 0.19	< 0.17	< 0.17	< 1.9	< 0.19	< 0.17	< 2.1	< 0.19	< 0.19
Dimethyl phthalate	40000	40000	40000	--	< 0.96	< 0.19	< 0.17	< 0.17	< 1.9	< 0.19	< 0.17	< 2.1	< 0.19	< 0.19
Fluoranthene	500	500	500	--	1.3	< 0.02	< 0.018	< 0.018	3.5	< 0.019	< 0.018	1.6	< 0.019	< 0.019
Fluorene	360	360	360	--	< 0.098	< 0.02	< 0.018	< 0.018	< 0.19	< 0.019	< 0.018	< 0.21	< 0.019	< 0.019
Indeno(1,2,3-cd)pyrene	5.0	31	130	--	2.1	< 0.02	< 0.018	< 0.018	1.2	< 0.019	< 0.018	0.6	< 0.019	< 0.019
Naphthalene	100	100	100	--	0.61	< 0.02	< 0.018	< 0.018	0.22	< 0.019	< 0.018	< 0.21	< 0.019	< 0.019
Phenanthrene	110	110	110	--	0.94	< 0.02	< 0.018	< 0.018	1.7	< 0.019	< 0.018	0.81	< 0.019	< 0.019
Phenol	400	400	400	--	< 0.19	< 0.038	< 0.035	< 0.034	0.89	< 0.038	< 0.035	< 0.42	< 0.038	< 0.038
Pyrene	500	500	500	--	1.6	< 0.02	< 0.018	< 0.018	3.0	< 0.019	< 0.018	1.3	< 0.019	< 0.019

Table 2: Summary of Subsurface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non-Residential RRS ^(c)	Background Threshold Value ^(d)	SBO-01 2-4 SBO-01-2-4-022616 2/26/2016 Sample	SBO-01 6-8 SBO-01-6-8-022616 2/26/2016 Sample	SBO-01 12-14 SBO-01-12-14-022616 2/26/2016 Sample	SBO-01 12-14 SBO-DUP-6-022616FD 2/26/2016 Duplicate	SBO-02 2-4 SBO-02-2-4-022616 2/26/2016 Sample	SBO-02 6-8 SBO-02-6-8-022616 2/26/2016 Sample	SBO-02 12-14 SBO-02-12-14-022616 2/26/2016 Sample	SBO-03 2-4 SBO-03-2-4-022616 2/29/2016 Sample	SBO-03 6-8 SBO-03-6-8-022616 2/29/2016 Sample	SBO-03 6-8 SBO-DUP-7-022616FD 2/26/2016 Duplicate
Volatile Organic Compounds - SW846 8260C, mg/kg														
1,1,1-Trichloroethane	20	20	20	--	< 0.4	< 0.005	< 0.005	< 0.006	< 0.35	< 0.004	< 0.005	< 0.006	< 0.005	< 0.005
1,1-Dichloroethane	400	400	400	--	< 0.4	< 0.005	< 0.005	< 0.006	< 0.35	< 0.004	< 0.005	< 0.006	< 0.005	< 0.005
2-Butanone (Methyl ethyl ketone)	200	200	200	--	< 0.8	< 0.009	< 0.01	< 0.012	< 0.7	< 0.009	< 0.01	< 0.012	< 0.01	< 0.009
Acetone	400	400	400	--	< 1.6	< 0.018	< 0.02	< 0.024	< 1.4	< 0.017	< 0.02	0.056	0.031	0.028
Benzene	0.5	0.5	0.5	--	< 0.4	< 0.005	< 0.005	< 0.006	< 0.35	< 0.004	< 0.005	< 0.006	< 0.005	< 0.005
Chloroethane	0.17	1.71	9.6	--	< 0.4	< 0.005	< 0.005	< 0.006	< 0.35	< 0.004	< 0.005	< 0.006	< 0.005	< 0.005
cis-1,2-Dichloroethene	7.0	7.0	7.0	--	< 0.4	< 0.005	< 0.005	< 0.006	< 0.35	< 0.004	< 0.005	< 0.006	< 0.005	< 0.005
Cyclohexane	20	20	20	--	< 0.4	< 0.005	< 0.005	< 0.006	0.37	< 0.004	< 0.005	< 0.006	< 0.005	< 0.005
Ethylbenzene	70	70	70	--	< 0.4	< 0.005	< 0.005	< 0.006	< 0.35	< 0.004	< 0.005	< 0.006	< 0.005	< 0.005
Methylene chloride (Dichloromethane)	0.5	0.5	0.5	--	< 0.4	< 0.005	< 0.005	< 0.006	< 0.35	< 0.004	< 0.005	< 0.006	< 0.005	< 0.005
Styrene	14	14	14	--	< 0.4	< 0.005	< 0.005	< 0.006	< 0.35	< 0.004	< 0.005	< 0.006	< 0.005	< 0.005
Tetrachloroethene (PCE)	0.5	0.5	0.5	--	2.2	< 0.005	< 0.005	< 0.006	< 0.35	< 0.004	< 0.005	< 0.006	< 0.005	< 0.005
Toluene	100	100	100	--	3.3	< 0.005	< 0.005	< 0.006	0.97	< 0.004	< 0.005	< 0.006	< 0.005	< 0.005
Trichloroethene (TCE)	0.5	0.5	0.5	--	< 0.4	< 0.005	< 0.005	< 0.006	< 0.35	< 0.004	< 0.005	< 0.006	< 0.005	< 0.005
Trichlorofluoromethane (Freon 11)	200	200	200	--	< 0.4	< 0.005	< 0.005	< 0.006	< 0.35	< 0.004	< 0.005	< 0.006	< 0.005	< 0.005
Xylenes, Total	1000	1000	1000	--	3.0	< 0.005	< 0.005	< 0.006	1.1	< 0.004	< 0.005	< 0.006	< 0.005	< 0.005

Notes:

- mg/kg = milligrams per kilogram
- DAF = Dilution Attenuation Factor
- = No regulatory standard applicable
- RRS = Risk Reduction Standard
- ^(a) = Type 1 residential risk reduction standards, background threshold values (BTVs), or HSRA Notification Concentrations were used as the Delineation Value
- ^(b) = Higher of Type 1 and Type 2 Residential Risk Reduction Standards for Soil DAF = 1
- ^(c) = Higher of Type 3 and Type 4 subsurface soil Non-Residential Risk Reduction Standards for Soil DAF = 1
- ^(d) = Background Threshold Value
- HSRA regulated compounds shown

Data Qualifiers:

- J = Value listed is estimated based on associated QC data
- JH = Value listed is estimated, possibly biased high
- JL = Value listed is estimated, possibly biased low
- NA = Not Analyzed
- UJ = Constituent was not detected, estimated based on associated QC data
- Bold** = Detected Above the Laboratory Reporting Detection Limit

EXCEEDS DELINEATION VALUE^(a)

EXCEEDS SELECTED RESIDENTIAL RRS^(b)

EXCEEDS SELECTED NON-RESIDENTIAL RRS^(c)

Table 2: Summary of Subsurface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non-Residential RRS ^(c)	Background Threshold Value ^(d)	SBO-03 12-14 SBO-03-12-14-022616 2/29/2016 Sample	SBO-04 6-8 SBO-04-6-8-022516 2/25/2016 Sample	SBO-04 12-14 SBO-04-12-14-022516 2/25/2016 Sample	SBO-05 6-8 SBO-05-6-8-022616 2/29/2016 Sample	SBO-05 12-14 SBO-05-12-14-022616 2/29/2016 Sample	SBO-06 2-4 SBO-06-2-4-022616 2/29/2016 Sample	SBO-06 6-8 SBO-06-6-8-022616 2/29/2016 Sample	SBO-06 12-14 SBO-06-12-14-022616 2/29/2016 Sample	SBO-07 6-8 SBO-07-6-8-022316 2/24/2016 Sample	SBO-07 12-14 SBO-07-12-14-022316 2/24/2016 Sample
Explosives - SW846 8330B, mg/kg														
4-Nitrotoluene	1.12	1.12	1.12	--	< 0.12	< 0.13	< 0.12	< 0.13	< 0.12	< 0.14	< 0.12	< 0.12	< 0.15	< 0.13
Mercury, Total - SW846 7471B, mg/kg														
Mercury	0.5	0.5	17	0.167	< 0.192	< 0.225	< 0.202	< 0.203	< 0.208	1.78	< 0.203	< 0.195	< 0.239	< 0.209
Metals, Total - SW846 6010C, mg/kg														
Barium	1000	1000	1000	--	14.5	33.3	15.7	52.7	29.1	293	45	18.9 J	147	27.6
Copper	100	100	1500	58.5	56.4 JL	13.8	5.07	3.18	9.46	786	3.64	3.53	60.3	12.4
Lead	125	75	400	125	< 3.0	4.27	< 3.16	4.2	19.1	926	4.58	< 2.51	18.6	< 3.11
Nickel	50	50	420	16.3	< 2.0	4.09	< 2.11	4.62	3.86	163	4.7	1.84	18.1	3.22
Zinc	126	370	2800	126	8.2	17.4	6.49	21	85.9	2450	22	10.9	82.7	13.3
Metals, Total - SW846 6020A, mg/kg														
Antimony	4.0	4.0	10	3.96	< 0.401	< 0.45	< 0.422	< 0.368	0.308	11.6	< 0.342	< 0.335 UJ	< 0.478	< 0.414
Arsenic	20	20	41	9.41	< 0.801	< 0.899	< 0.844	1.44	1.22	18.4	1.3	0.677 J	4.15	1.3
Beryllium	2.0	32	180	--	< 0.2	0.402	< 0.211	0.486	0.171	0.37	0.48	0.176	1.3	0.309
Cadmium	2.0	2.0	39	0.454	< 0.2	< 0.225	< 0.211	< 0.184	0.252	7.06	< 0.171	< 0.167	< 0.239	< 0.207
Chromium	100	100	1200	43.9	5.29	10.1	4.79	10.6	10.5	284	11.8	5.76 J	34.7	8.48
Lead	125	75	400	125	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	2.0	2.0	36	0.957	< 0.801	< 0.899	< 0.844	< 0.737	< 0.567	1.64	< 0.685	< 0.67	< 0.956	< 0.829
Silver	2.0	2.0	10	--	< 0.2	< 0.225	< 0.211	< 0.184	< 0.142	0.941	< 0.171	< 0.167	< 0.239	< 0.207
Thallium	2.0	2.0	10	--	< 0.2	< 0.225	< 0.211	< 0.184	< 0.142	< 0.197	< 0.171	< 0.167	0.545	< 0.207
Hexavalent Chromium - SW7199, mg/kg														
Hexavalent Chromium	0.05	0.05	0.13	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oxidation Reduction Potential mV	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH std units	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated Biphenyls - SW846 8082A, mg/kg														
PCB-1242	1.55	1.55	1.55	--	< 0.017	< 0.019	< 0.018	< 0.018	< 0.018	< 0.99	< 0.018	< 0.017	< 0.021	< 0.018
PCB-1248	1.55	1.55	1.55	--	0.018	< 0.019	< 0.018	< 0.018	0.027	23	< 0.018	< 0.017	0.049	< 0.018
PCB-1254	1.55	1.55	1.55	--	< 0.017	< 0.019	< 0.018	< 0.018	0.022	11	< 0.018	< 0.017	0.022	< 0.018
PCB-1260	1.55	1.55	1.55	--	< 0.017	< 0.019	< 0.018	< 0.018	< 0.018	< 0.99	< 0.018	< 0.017	< 0.021	< 0.018
Semi-Volatile Organic Compounds - SW846 8270D, mg/kg														
2,4-Dimethylphenol	70	70	70	--	< 0.034	< 0.037	< 0.035	< 0.036	< 0.035	< 0.97	< 0.035	< 0.034	< 0.04	< 0.036
2-Methylnaphthalene	1.0	1.0	2.11	--	< 0.017	< 0.019	< 0.018	< 0.018	< 0.018	1.7	< 0.018	< 0.017	< 0.021	< 0.018
3+4-Methylphenol (m,p-Cresol)	3.8	3.8	3.8	--	< 0.034	< 0.037	< 0.035	< 0.036	< 0.035	< 0.97	< 0.035	< 0.034	< 0.04	< 0.036
4-Chloroaniline	10	10	10	--	< 0.067	< 0.075	< 0.071	< 0.071	< 0.07	< 1.9	< 0.07	< 0.067 UJ	< 0.081	< 0.071
Acenaphthene	300	300	300	--	< 0.017	< 0.019	< 0.018	< 0.018	< 0.018	< 0.5	< 0.018	< 0.017	< 0.021	< 0.018
Acenaphthylene	130	130	130	--	< 0.017	< 0.019	< 0.018	< 0.018	< 0.018	< 0.5	< 0.018	< 0.017	< 0.021	< 0.018
Acetophenone	400	400	400	--	< 0.034	< 0.037	< 0.035	< 0.036	< 0.035	< 0.97	< 0.035	< 0.034	< 0.04	< 0.036
Anthracene	500	500	1000	--	< 0.017	< 0.019	< 0.018	< 0.018	< 0.018	0.55	< 0.018	< 0.017	< 0.021	< 0.018
Benzo(a)anthracene	5.0	5.0	5.0	--	< 0.017	< 0.019	< 0.018	< 0.018	< 0.018	1.0	< 0.018	< 0.017	< 0.021	< 0.018
Benzo(a)pyrene	1.64	1.64	3.8	--	< 0.017	< 0.019	< 0.018	< 0.018	< 0.018	1.5	< 0.018	< 0.017	< 0.021	< 0.018
Benzo(b)fluoranthene	5.0	9.3	39	--	< 0.017	< 0.019	< 0.018	< 0.018	< 0.018	1.8	< 0.018	< 0.017	< 0.021	< 0.018
Benzo(g,h,i)perylene	500	500	500	--	< 0.017	< 0.019	< 0.018	< 0.018	< 0.018	1.5	< 0.018	< 0.017	< 0.021	< 0.018
Benzo(k)fluoranthene	5.0	91	380	--	< 0.017	< 0.019	< 0.018	< 0.018	< 0.018	1.1	< 0.018	< 0.017	< 0.021	< 0.018
bis(2-Ethylhexyl)phthalate	50	50	56	--	< 0.17	< 0.19	< 0.18	< 0.18	< 0.18	27	< 0.18	< 0.17	< 0.21	< 0.18
Butyl benzyl phthalate	50	50	50	--	< 0.17	< 0.19	< 0.18	< 0.18	< 0.17	< 4.9	< 0.18	< 0.17	< 0.2	< 0.18
Chrysene	5.0	280	1200	--	< 0.017	< 0.019	< 0.018	< 0.018	< 0.018	1.6	< 0.018	< 0.017	< 0.021	< 0.018
Dibenzo(a,h)anthracene	5.0	5.0	13	--	< 0.017	< 0.019	< 0.018	< 0.018	< 0.018	< 0.5	< 0.018	< 0.017	< 0.021	< 0.018
Diethyl phthalate	500	500	500	--	< 0.17	< 0.19	< 0.18	< 0.18	< 0.17	< 4.9	< 0.18	< 0.17	< 0.2	< 0.18
Dimethyl phthalate	40000	40000	40000	--	< 0.17	< 0.19	< 0.18	< 0.18	< 0.17	< 4.9	< 0.18	< 0.17	< 0.2	< 0.18
Fluoranthene	500	500	500	--	< 0.017	< 0.019	< 0.018	< 0.018	< 0.018	2.3	< 0.018	< 0.017	< 0.021	< 0.018
Fluorene	360	360	360	--	< 0.017	< 0.019	< 0.018	< 0.018	< 0.018	< 0.5	< 0.018	< 0.017	< 0.021	< 0.018
Indeno(1,2,3-cd)pyrene	5.0	31	130	--	< 0.017	< 0.019	< 0.018	< 0.018	< 0.018	1.4	< 0.018	< 0.017	< 0.021	< 0.018
Naphthalene	100	100	100	--	< 0.017	< 0.019	< 0.018	< 0.018	< 0.018	1.3	< 0.018	< 0.017	< 0.021	< 0.018
Phenanthrene	110	110	110	--	< 0.017	< 0.019	< 0.018	< 0.018	< 0.018	1.5	< 0.018	< 0.017	< 0.021	< 0.018
Phenol	400	400	400	--	< 0.034	< 0.037	< 0.035	< 0.036	< 0.035	< 0.97	< 0.035	< 0.034	0.7	< 0.036
Pyrene	500	500	500	--	< 0.017	< 0.019	< 0.018	< 0.018	< 0.018	2.5	< 0.018	< 0.017	< 0.021	< 0.018

Table 2: Summary of Subsurface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non-Residential RRS ^(c)	Background Threshold Value ^(d)	SBO-03 12-14 SBO-03-12-14-022616 2/29/2016 Sample	SBO-04 6-8 SBO-04-6-8-022516 2/25/2016 Sample	SBO-04 12-14 SBO-04-12-14-022516 2/25/2016 Sample	SBO-05 6-8 SBO-05-6-8-022616 2/29/2016 Sample	SBO-05 12-14 SBO-05-12-14-022616 2/29/2016 Sample	SBO-06 2-4 SBO-06-2-4-022616 2/29/2016 Sample	SBO-06 6-8 SBO-06-6-8-022616 2/29/2016 Sample	SBO-06 12-14 SBO-06-12-14-022616 2/29/2016 Sample	SBO-07 6-8 SBO-07-6-8-022316 2/24/2016 Sample	SBO-07 12-14 SBO-07-12-14-022316 2/24/2016 Sample
Volatile Organic Compounds - SW846 8260C, mg/kg														
1,1,1-Trichloroethane	20	20	20	--	< 0.007	< 0.005	< 0.006	< 0.005	< 0.006	< 0.37	< 0.005	< 0.005	< 0.005	< 0.005
1,1-Dichloroethane	400	400	400	--	< 0.007	< 0.005	< 0.006	< 0.005	< 0.006	< 0.37	< 0.005	< 0.005	< 0.005	< 0.005
2-Butanone (Methyl ethyl ketone)	200	200	200	--	< 0.013	< 0.01	< 0.012	< 0.01	< 0.011	< 0.74	< 0.01	< 0.011	< 0.01	< 0.011
Acetone	400	400	400	--	< 0.027	0.02	< 0.024	0.021 JH	< 0.023	< 1.5	0.025	< 0.021	0.037	< 0.022
Benzene	0.5	0.5	0.5	--	< 0.007	< 0.005	< 0.006	< 0.005	< 0.006	< 0.37	< 0.005	< 0.005	< 0.005	< 0.005
Chloroethane	0.17	1.71	9.6	--	< 0.007	< 0.005	< 0.006	< 0.005	< 0.006	0.64	< 0.005	< 0.005	< 0.005	< 0.005
cis-1,2-Dichloroethene	7.0	7.0	7.0	--	< 0.007	< 0.005	< 0.006	< 0.005	< 0.006	< 0.37	< 0.005	< 0.005	< 0.005	< 0.005
Cyclohexane	20	20	20	--	< 0.007	< 0.005	< 0.006	< 0.005	< 0.006	< 0.37	< 0.005	< 0.005	< 0.005	< 0.005
Ethylbenzene	70	70	70	--	< 0.007	< 0.005	< 0.006	< 0.005	< 0.006	< 0.37	< 0.005	< 0.005	< 0.005	< 0.005
Methylene chloride (Dichloromethane)	0.5	0.5	0.5	--	< 0.007	< 0.005	< 0.006	< 0.005	< 0.006	< 0.37	< 0.005	< 0.005	< 0.005	< 0.005
Styrene	14	14	14	--	< 0.007	< 0.005	< 0.006	< 0.005	< 0.006	< 0.37	< 0.005	< 0.005	< 0.005	< 0.005
Tetrachloroethene (PCE)	0.5	0.5	0.5	--	< 0.007	< 0.005	< 0.006	< 0.005	< 0.006	< 0.37	< 0.005	< 0.005	< 0.005	< 0.005
Toluene	100	100	100	--	< 0.007	< 0.005	< 0.006	< 0.005	< 0.006	< 0.37	< 0.005	< 0.005	< 0.005	< 0.005
Trichloroethene (TCE)	0.5	0.5	0.5	--	< 0.007	< 0.005	< 0.006	< 0.005	< 0.006	< 0.37	< 0.005	< 0.005	< 0.005	< 0.005
Trichlorofluoromethane (Freon 11)	200	200	200	--	< 0.007	< 0.005	< 0.006	< 0.005	< 0.006	< 0.37	< 0.005	< 0.005	< 0.005	< 0.005
Xylenes, Total	1000	1000	1000	--	< 0.007	< 0.005	< 0.006	< 0.005	< 0.006	< 0.37	< 0.005	< 0.005	< 0.005	< 0.005

Notes:

mg/kg = milligrams per kilogram
 DAF = Dilution Attenuation Factor
 -- = No regulatory standard applicable
 RRS = Risk Reduction Standard
^(a) = Type 1 residential risk reduction standards, background threshold values (BTVs), or HSRA Notification Concentrations were used as the Delineation Value
^(b) = Higher of Type 1 and Type 2 Residential Risk Reduction Standards for Soil DAF = 1
^(c) = Higher of Type 3 and Type 4 subsurface soil Non-Residential Risk Reduction Standards for Soil DAF = 1
^(d) = Background Threshold Value
 HSRA regulated compounds shown

Data Qualifiers:

J = Value listed is estimated based on associated QC data
 JH = Value listed is estimated, possibly biased high
 JL = Value listed is estimated, possibly biased low
 NA = Not Analyzed
 UJ = Constituent was not detected, estimated based on associated QC data
Bold = Detected Above the Laboratory Reporting Detection Limit

EXCEEDS DELINEATION VALUE^(a)

EXCEEDS SELECTED RESIDENTIAL RRS^(b)

EXCEEDS SELECTED NON-RESIDENTIAL RRS^(c)

Table 2: Summary of Subsurface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non-Residential RRS ^(c)	Background Threshold Value ^(d)	SBO-08 6-8 SBO-08-6-8-022316 2/24/2016 Sample	SBO-08 12-14 SBO-08-12-14-022316 2/24/2016 Sample	SBO-09 2-4 SBO-09-2-4-022616 2/26/2016 Sample	SBO-09 2-4 SBO-DUP-5-022616FD 2/26/2016 Duplicate	SBO-09 6-8 SBO-09-6-8-022616 2/26/2016 Sample	SBO-09 12-14 SBO-09-12-14-022616 2/26/2016 Sample	SBO-10 6-8 SBO-10-6-8-022316 2/23/2016 Sample	SBO-10 12-14 SBO-10-12-14-022316 2/23/2016 Sample	SBO-11 2-4 SBO-11-2-4-101816 10/18/2016 Sample	SBO-11 2-4 DUP-01-101816FD 10/18/2016 Duplicate
Explosives - SW846 8330B, mg/kg														
4-Nitrotoluene	1.12	1.12	1.12	--	< 0.14	< 0.12	< 0.13	< 0.13	< 0.13	< 0.12	< 0.14	< 0.12	NA	NA
Mercury, Total - SW846 7471B, mg/kg														
Mercury	0.5	0.5	17	0.167	< 0.231	< 0.205	0.473	0.498	< 0.219	< 0.193	< 0.228	< 0.201	0.388	0.746
Metals, Total - SW846 6010C, mg/kg														
Barium	1000	1000	1000	--	128	19.8	285	244	70.8	21.2	138	19.4	NA	NA
Copper	100	100	1500	58.5	49.2	7.95	480 J	1630 J	28.5	7.1	45.1	7.7	820 J	474 J
Lead	125	75	400	125	14.3	< 3.04	627	662	7.08	< 2.94	16.4	< 3.01	2330	1870
Nickel	50	50	420	16.3	15.1	2.04	137	93.5	8.37	2.15	15	2.08	126	167
Zinc	126	370	2800	126	64.8	7.98	2510	2930	36.9	10.5	67.3	28.9	4680	4400
Metals, Total - SW846 6020A, mg/kg														
Antimony	4.0	4.0	10	3.96	< 0.479	< 0.405	10	7.54	< 0.443	< 0.392	< 0.459	< 0.401	18.1	15.1
Arsenic	20	20	41	9.41	3.89	1.01	26.1	19.5	1.09	< 0.785	3.09	< 0.803	31.9	29.1
Beryllium	2.0	32	180	--	1.24	0.218	1.25	0.375	0.582	< 0.196	1.09	< 0.201	NA	NA
Cadmium	2.0	2.0	39	0.454	< 0.239	< 0.203	6.22	5.34	< 0.221	< 0.196	< 0.229	< 0.201	95.4	139
Chromium	100	100	1200	43.9	34.4	6.27	113	187	20.9	5.49	37.5	6.21	179	260
Lead	125	75	400	125	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	2.0	2.0	36	0.957	< 0.958	< 0.811	< 0.894	< 0.717	< 0.886	< 0.785	< 0.917	< 0.803	NA	NA
Silver	2.0	2.0	10	--	< 0.239	< 0.203	0.356	0.332	< 0.221	< 0.196	< 0.229	< 0.201	NA	NA
Thallium	2.0	2.0	10	--	0.505	< 0.203	< 0.223	0.202	0.264	< 0.196	0.432	< 0.201	NA	NA
Hexavalent Chromium - SW7199, mg/kg														
Hexavalent Chromium	0.05	0.05	0.13	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oxidation Reduction Potential mV	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH std units	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated Biphenyls - SW846 8082A, mg/kg														
PCB-1242	1.55	1.55	1.55	--	< 0.021	< 0.018	< 0.38	< 1.9	< 0.019	< 0.017	< 0.02	< 0.017	NA	NA
PCB-1248	1.55	1.55	1.55	--	< 0.021	< 0.018	4.4 J	8.0 J	< 0.019	< 0.017	0.032	< 0.017	< 0.93	< 0.93
PCB-1254	1.55	1.55	1.55	--	0.063	< 0.018	3.9 J	7.0 J	< 0.019	< 0.017	< 0.02	< 0.017	7.5	7.8
PCB-1260	1.55	1.55	1.55	--	< 0.021	< 0.018	< 0.38	< 1.9	< 0.019	< 0.017	< 0.02	< 0.017	NA	NA
Semi-Volatile Organic Compounds - SW846 8270D, mg/kg														
2,4-Dimethylphenol	70	70	70	--	< 0.04	< 0.034	< 0.19	< 0.18	< 0.037	< 0.034	< 0.039	< 0.034	NA	NA
2-Methylnaphthalene	1.0	1.0	2.11	--	< 0.02	< 0.018	0.17	0.13	< 0.019	< 0.017	< 0.02	< 0.017	NA	NA
3+4-Methylphenol (m,p-Cresol)	3.8	3.8	3.8	--	< 0.04	< 0.034	< 0.19	< 0.18	< 0.037	< 0.034	< 0.039	< 0.034	NA	NA
4-Chloroaniline	10	10	10	--	< 0.08	< 0.069	< 0.37	< 0.37	< 0.074	< 0.068	< 0.077	< 0.068	NA	NA
Acenaphthene	300	300	300	--	< 0.02	< 0.018	0.43	0.25	< 0.019	< 0.017	< 0.02	< 0.017	NA	NA
Acenaphthylene	130	130	130	--	< 0.02	< 0.018	< 0.095	< 0.094	< 0.019	< 0.017	< 0.02	< 0.017	NA	NA
Acetophenone	400	400	400	--	< 0.04	< 0.034	< 0.19	< 0.18	< 0.037	< 0.034	< 0.039	< 0.034	NA	NA
Anthracene	500	500	1000	--	< 0.02	< 0.018	0.61	0.42	< 0.019	< 0.017	< 0.02	< 0.017	NA	NA
Benzo(a)anthracene	5.0	5.0	5.0	--	< 0.02	< 0.018	1.1	0.7	< 0.019	< 0.017	0.02	< 0.017	NA	NA
Benzo(a)pyrene	1.64	1.64	3.8	--	< 0.02	< 0.018	1.2	0.84	< 0.019	< 0.017	0.027	< 0.017	NA	NA
Benzo(b)fluoranthene	5.0	9.3	39	--	< 0.02	< 0.018	1.8	1.1	< 0.019	< 0.017	0.035	< 0.017	NA	NA
Benzo(g,h,i)perylene	500	500	500	--	< 0.02	< 0.018	1.1	0.96	< 0.019	< 0.017	0.036	< 0.017	NA	NA
Benzo(k)fluoranthene	5.0	91	380	--	< 0.02	< 0.018	0.75	0.6	< 0.019	< 0.017	< 0.02	< 0.017	NA	NA
bis(2-Ethylhexyl)phthalate	50	50	56	--	< 0.2	< 0.18	1.1	2.6	< 0.19	< 0.17	< 0.2	< 0.17	NA	NA
Butyl benzyl phthalate	50	50	50	--	< 0.2	< 0.17	1.5	3.3	< 0.18	< 0.17	< 0.19	< 0.17	NA	NA
Chrysene	5.0	280	1200	--	< 0.02	< 0.018	1.3	0.96	< 0.019	< 0.017	< 0.02	< 0.017	NA	NA
Dibenzo(a,h)anthracene	5.0	5.0	13	--	< 0.02	< 0.018	0.29	0.25	< 0.019	< 0.017	< 0.02	< 0.017	NA	NA
Diethyl phthalate	500	500	500	--	< 0.2	< 0.17	< 0.93	< 0.92	< 0.18	< 0.17	< 0.19	< 0.17	NA	NA
Dimethyl phthalate	40000	40000	40000	--	< 0.2	< 0.17	< 0.93	< 0.92	< 0.18	< 0.17	< 0.19	< 0.17	NA	NA
Fluoranthene	500	500	500	--	< 0.02	< 0.018	1.9	1.3	< 0.019	< 0.017	0.029	< 0.017	NA	NA
Fluorene	360	360	360	--	< 0.02	< 0.018	0.36	0.22	< 0.019	< 0.017	< 0.02	< 0.017	NA	NA
Indeno(1,2,3-cd)pyrene	5.0	31	130	--	< 0.02	< 0.018	0.96	0.88	< 0.019	< 0.017	0.028	< 0.017	NA	NA
Naphthalene	100	100	100	--	< 0.02	< 0.018	0.36	0.22	< 0.019	< 0.017	< 0.02	< 0.017	NA	NA
Phenanthrene	110	110	110	--	< 0.02	< 0.018	2.2 J	1.3 J	< 0.019	< 0.017	0.027	< 0.017	NA	NA
Phenol	400	400	400	--	< 0.04	< 0.034	< 0.19	< 0.18	< 0.037	< 0.034	< 0.039	< 0.034	NA	NA
Pyrene	500	500	500	--	< 0.02	< 0.018	2.2	1.6	< 0.019	< 0.017	0.03	< 0.017	NA	NA

Table 2: Summary of Subsurface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non-Residential RRS ^(c)	Background Threshold Value ^(d)	SBO-08 6-8 SBO-08-6-8-022316 2/24/2016 Sample	SBO-08 12-14 SBO-08-12-14-022316 2/24/2016 Sample	SBO-09 2-4 SBO-09-2-4-022616 2/26/2016 Sample	SBO-09 2-4 SBO-DUP-5-022616FD 2/26/2016 Duplicate	SBO-09 6-8 SBO-09-6-8-022616 2/26/2016 Sample	SBO-09 12-14 SBO-09-12-14-022616 2/26/2016 Sample	SBO-10 6-8 SBO-10-6-8-022316 2/23/2016 Sample	SBO-10 12-14 SBO-10-12-14-022316 2/23/2016 Sample	SBO-11 2-4 SBO-11-2-4-101816 10/18/2016 Sample	SBO-11 2-4 DUP-01-101816FD 10/18/2016 Duplicate
Volatile Organic Compounds - SW846 8260C, mg/kg														
1,1,1-Trichloroethane	20	20	20	--	< 0.005	< 0.005	< 0.004	< 0.004	< 0.006	< 0.006	< 0.004	< 0.005	NA	NA
1,1-Dichloroethane	400	400	400	--	< 0.005	< 0.005	< 0.004	< 0.004	< 0.006	< 0.006	< 0.004	< 0.005	NA	NA
2-Butanone (Methyl ethyl ketone)	200	200	200	--	< 0.009	< 0.01	0.021	0.014	< 0.012	< 0.011	< 0.008	< 0.011	NA	NA
Acetone	400	400	400	--	< 0.018	0.022	0.11	0.071	< 0.024	< 0.023	< 0.016	< 0.022	NA	NA
Benzene	0.5	0.5	0.5	--	< 0.005	< 0.005	0.005	< 0.004	< 0.006	< 0.006	< 0.004	< 0.005	NA	NA
Chloroethane	0.17	1.71	9.6	--	< 0.005	< 0.005	< 0.004	< 0.004	< 0.006	< 0.006	< 0.004	< 0.005	NA	NA
cis-1,2-Dichloroethene	7.0	7.0	7.0	--	< 0.005	< 0.005	< 0.004	< 0.004	< 0.006	< 0.006	< 0.004	< 0.005	NA	NA
Cyclohexane	20	20	20	--	< 0.005	< 0.005	< 0.004	< 0.004	< 0.006	< 0.006	< 0.004	< 0.005	NA	NA
Ethylbenzene	70	70	70	--	< 0.005	< 0.005	0.021	< 0.004	< 0.006	< 0.006	< 0.004	< 0.005	NA	NA
Methylene chloride (Dichloromethane)	0.5	0.5	0.5	--	< 0.005	< 0.005	< 0.004	< 0.004	< 0.006	0.008	< 0.004	< 0.005	NA	NA
Styrene	14	14	14	--	< 0.005	< 0.005	< 0.004	< 0.004	< 0.006	< 0.006	< 0.004	< 0.005	NA	NA
Tetrachloroethene (PCE)	0.5	0.5	0.5	--	< 0.005	< 0.005	< 0.004	< 0.004	< 0.006	< 0.006	< 0.004	< 0.005	NA	NA
Toluene	100	100	100	--	< 0.005	< 0.005	< 0.004	< 0.004	< 0.006	< 0.006	< 0.004	< 0.005	NA	NA
Trichloroethene (TCE)	0.5	0.5	0.5	--	< 0.005	< 0.005	< 0.004	< 0.004	< 0.006	< 0.006	< 0.004	< 0.005	NA	NA
Trichlorofluoromethane (Freon 11)	200	200	200	--	< 0.005	< 0.005	< 0.004	< 0.004	< 0.006	< 0.006	< 0.004	< 0.005	NA	NA
Xylenes, Total	1000	1000	1000	--	< 0.005	< 0.005	0.009	< 0.004	< 0.006	< 0.006	< 0.004	< 0.005	NA	NA

Notes:

mg/kg = milligrams per kilogram
 DAF = Dilution Attenuation Factor
 -- = No regulatory standard applicable
 RRS = Risk Reduction Standard
^(a) = Type 1 residential risk reduction standards, background threshold values (BTVs), or HSRA Notification Concentrations were used as the Delineation Value
^(b) = Higher of Type 1 and Type 2 Residential Risk Reduction Standards for Soil DAF = 1
^(c) = Higher of Type 3 and Type 4 subsurface soil Non-Residential Risk Reduction Standards for Soil DAF = 1
^(d) = Background Threshold Value
 HSRA regulated compounds shown

Data Qualifiers:

J = Value listed is estimated based on associated QC data
 JH = Value listed is estimated, possibly biased high
 JL = Value listed is estimated, possibly biased low
 NA = Not Analyzed
 UJ = Constituent was not detected, estimated based on associated QC data
Bold = Detected Above the Laboratory Reporting Detection Limit

EXCEEDS DELINEATION VALUE^(a)

EXCEEDS SELECTED RESIDENTIAL RRS^(b)

EXCEEDS SELECTED NON-RESIDENTIAL RRS^(c)

Table 2: Summary of Subsurface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non- Residential RRS ^(c)	Background Threshold Value ^(d)	SBO-11 6-8 SBO-11-6-8-101916 10/19/2016 Sample	SBO-12 2-4 SBO-12-2-4-101916 10/19/2016 Sample	SBO-13 2-4 SBO-13-2-4-101916 10/19/2016 Sample	SBO-14 2-4 SBO-14-2-4-102016 10/20/2016 Sample	SBO-15 2-4 SBO-15-2-4-101916 10/19/2016 Sample	SBO-16/21 2-4 SBO-16-21-2-4-102016 10/20/2016 Sample	SBO-17 2-4 SBO-17-2-4-102016 10/20/2016 Sample	SBO-18 2-4 SBO-18-2-4-102016 10/20/2016 Sample	SBO-23 2-4 SBO-23-2-4-101916 10/19/2016 Sample	SBO-30 2-4 SBO-30-2-4-0318 3/8/2018 Sample	SBO-30 6-8 SBO-30-6-8-0318 3/8/2018 Sample
Explosives - SW846 8330B, mg/kg															
4-Nitrotoluene	1.12	1.12	1.12	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury, Total - SW846 7471B, mg/kg															
Mercury	0.5	0.5	17	0.167	NA	NA	NA	< 0.0997	< 0.118	NA	NA	NA	NA	NA	NA
Metals, Total - SW846 6010C, mg/kg															
Barium	1000	1000	1000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	100	100	1500	58.5	35.5	16.6	13	NA	NA	NA	11.7	28.6	NA	NA	NA
Lead	125	75	400	125	58.4	130	< 2.95	NA	NA	NA	NA	NA	166	NA	NA
Nickel	50	50	420	16.3	NA	13.4	12	NA	NA	NA	NA	NA	27.8	NA	NA
Zinc	126	370	2800	126	479	60	52.6	NA	NA	NA	NA	NA	292	NA	NA
Metals, Total - SW846 6020A, mg/kg															
Antimony	4.0	4.0	10	3.96	NA	< 0.402	< 0.393	NA	NA	0.657	< 0.345	NA	3.4	< 0.41	< 0.426
Arsenic	20	20	41	9.41	NA	3.48	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	2.0	32	180	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.0	2.0	39	0.454	NA	< 0.201	< 0.196	NA	NA	NA	NA	NA	2.02	NA	NA
Chromium	100	100	1200	43.9	NA	39.7	34.3	NA	NA	NA	NA	NA	NA	NA	NA
Lead	125	75	400	125	NA	NA	NA	18.8	23.5	NA	NA	NA	NA	NA	NA
Selenium	2.0	2.0	36	0.957	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2.0	2.0	10	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	2.0	2.0	10	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexavalent Chromium - SW7199, mg/kg															
Hexavalent Chromium	0.05	0.05	0.13	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oxidation Reduction Potential mV															
Oxidation Reduction Potential mV	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH std units															
pH std units	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated Biphenyls - SW846 8082A, mg/kg															
PCB-1242	1.55	1.55	1.55	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1248	1.55	1.55	1.55	--	< 0.092	< 0.019	< 0.39	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1254	1.55	1.55	1.55	--	0.94	< 0.019	< 0.39	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1260	1.55	1.55	1.55	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semi-Volatile Organic Compounds - SW846 8270D, mg/kg															
2,4-Dimethylphenol	70	70	70	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	1.0	1.0	2.11	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3+4-Methylphenol (m,p-Cresol)	3.8	3.8	3.8	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	10	10	10	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	300	300	300	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	130	130	130	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	500	500	1000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	5.0	5.0	5.0	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	1.64	1.64	3.8	--	NA	NA	< 0.019	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	5.0	9.3	39	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	500	500	500	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	5.0	91	380	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	50	50	56	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate	50	50	50	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	5.0	280	1200	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	5.0	5.0	13	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethyl phthalate	500	500	500	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethyl phthalate	40000	40000	40000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	500	500	500	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	360	360	360	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	5.0	31	130	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	100	100	100	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	110	110	110	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	500	500	500	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 2: Summary of Subsurface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non-Residential RRS ^(c)	Background Threshold Value ^(d)	SBO-11 6-8 SBO-11-6-8-101916 10/19/2016 Sample	SBO-12 2-4 SBO-12-2-4-101916 10/19/2016 Sample	SBO-13 2-4 SBO-13-2-4-101916 10/19/2016 Sample	SBO-14 2-4 SBO-14-2-4-102016 10/20/2016 Sample	SBO-15 2-4 SBO-15-2-4-101916 10/19/2016 Sample	SBO-16/21 2-4 SBO-16-21-2-4-102016 10/20/2016 Sample	SBO-17 2-4 SBO-17-2-4-102016 10/20/2016 Sample	SBO-18 2-4 SBO-18-2-4-102016 10/20/2016 Sample	SBO-23 2-4 SBO-23-2-4-101916 10/19/2016 Sample	SBO-30 2-4 SBO-30-2-4-0318 3/8/2018 Sample	SBO-30 6-8 SBO-30-6-8-0318 3/8/2018 Sample
Volatile Organic Compounds - SW846 8260C, mg/kg															
1,1,1-Trichloroethane	20	20	20	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone (Methyl ethyl ketone)	200	200	200	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.5	0.5	0.5	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	0.17	1.71	9.6	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	7.0	7.0	7.0	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	20	20	20	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	70	70	70	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride (Dichloromethane)	0.5	0.5	0.5	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	14	14	14	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene (PCE)	0.5	0.5	0.5	--	NA	NA	< 0.004	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	100	100	100	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene (TCE)	0.5	0.5	0.5	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane (Freon 11)	200	200	200	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	1000	1000	1000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

mg/kg = milligrams per kilogram
 DAF = Dilution Attenuation Factor
 -- = No regulatory standard applicable
 RRS = Risk Reduction Standard
^(a) = Type 1 residential risk reduction standards, background threshold values (BTVs), or HSRA Notification Concentrations were used as the Delineation Value
^(b) = Higher of Type 1 and Type 2 Residential Risk Reduction Standards for Soil DAF = 1
^(c) = Higher of Type 3 and Type 4 subsurface soil Non-Residential Risk Reduction Standards for Soil DAF = 1
^(d) = Background Threshold Value
 HSRA regulated compounds shown

Data Qualifiers:

J = Value listed is estimated based on associated QC data
 JH = Value listed is estimated, possibly biased high
 JL = Value listed is estimated, possibly biased low
 NA = Not Analyzed
 UJ = Constituent was not detected, estimated based on associated QC data
Bold = Detected Above the Laboratory Reporting Detection Limit

EXCEEDS DELINEATION VALUE^(a)

EXCEEDS SELECTED RESIDENTIAL RRS^(b)

EXCEEDS SELECTED NON-RESIDENTIAL RRS^(c)

Table 2: Summary of Subsurface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non- Residential RRS ^(c)	Background Threshold Value ^(d)	SBO-34 2-4 SBO-34-2-4-0318 3/9/2018 Sample	SBO-34 6-8 SBO-34-6-8-0318 3/9/2018 Sample	SBO-35 2-4 SBO-35-2-4-0318 3/9/2018 Sample	SBO-35 2-4 SBO-DUP02-0318 3/9/2018 Duplicate	SBO-35 6-8 SBO-35-6-8-0318 3/9/2018 Sample	SBO-35 8-10 SBO-35-8-10-0318 3/9/2018 Sample	SBO-36 2-4 SBO-36-2-4-0318 3/9/2018 Sample	SBO-36 6-8 SBO-36-6-8-0318 3/9/2018 Sample	SBO-36 8-10 SBO-36-8-10-0318 3/9/2018 Sample	SBO-37 2-4 SBO-37-2-4-0318 3/9/2018 Sample	SBO-37 6-8 SBO-37-6-8-0318 3/9/2018 Sample	SBO-41 2-4 SBO-41-2-4-0318 3/6/2018 Sample	
Explosives - SW846 8330B, mg/kg																	
4-Nitrotoluene	1.12	1.12	1.12	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Mercury, Total - SW846 7471B, mg/kg																	
Mercury	0.5	0.5	17	0.167	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Metals, Total - SW846 6010C, mg/kg																	
Barium	1000	1000	1000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Copper	100	100	1500	58.5	NA	NA	18.5	NA	8.22	NA	21.1	9.98	NA	3.59	NA	NA	
Lead	125	75	400	125	4.97	3.47	11.8	NA	5.21	NA	15.8	7.58	NA	3.89	< 2.8	NA	
Nickel	50	50	420	16.3	NA	NA	16	NA	7.95	NA	16.9	8.81	NA	NA	NA	NA	
Zinc	126	370	2800	126	NA	NA	62.1	NA	30.6	20.9	64.8	34.5	22.8	15.7	6.5	NA	
Metals, Total - SW846 6020A, mg/kg																	
Antimony	4.0	4.0	10	3.96	NA	NA	< 0.436	NA	< 0.359	NA	< 0.356	< 0.304	NA	NA	NA	NA	
Arsenic	20	20	41	9.41	NA	NA	2.86	NA	1.58	NA	3.01	1.65	NA	NA	NA	NA	
Beryllium	2.0	32	180	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Cadmium	2.0	2.0	39	0.454	NA	NA	< 0.218	NA	< 0.179	NA	< 0.178	< 0.152	NA	< 0.209	< 0.187	NA	
Chromium	100	100	1200	43.9	NA	NA	40.3	NA	20.6	NA	45.6	23.3	NA	NA	NA	27.8	
Lead	125	75	400	125	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Selenium	2.0	2.0	36	0.957	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Silver	2.0	2.0	10	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Thallium	2.0	2.0	10	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Hexavalent Chromium - SW7199, mg/kg																	
Hexavalent Chromium	0.05	0.05	0.13	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Oxidation Reduction Potential mV	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
pH std units	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Polychlorinated Biphenyls - SW846 8082A, mg/kg																	
PCB-1242	1.55	1.55	1.55	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
PCB-1248	1.55	1.55	1.55	--	NA	NA	< 0.020	< 0.020	< 0.019	NA	< 0.020	< 0.019	NA	NA	NA	NA	
PCB-1254	1.55	1.55	1.55	--	NA	NA	< 0.020	< 0.020	< 0.019	NA	< 0.020	< 0.019	NA	NA	NA	NA	
PCB-1260	1.55	1.55	1.55	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Semi-Volatile Organic Compounds - SW846 8270D, mg/kg																	
2,4-Dimethylphenol	70	70	70	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2-Methylnaphthalene	1.0	1.0	2.11	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
3+4-Methylphenol (m,p-Cresol)	3.8	3.8	3.8	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4-Chloroaniline	10	10	10	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Acenaphthene	300	300	300	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Acenaphthylene	130	130	130	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Acetophenone	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Anthracene	500	500	1000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo(a)anthracene	5.0	5.0	5.0	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo(a)pyrene	1.64	1.64	3.8	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo(b)fluoranthene	5.0	9.3	39	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo(g,h,i)perylene	500	500	500	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo(k)fluoranthene	5.0	91	380	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
bis(2-Ethylhexyl)phthalate	50	50	56	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Butyl benzyl phthalate	50	50	50	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chrysene	5.0	280	1200	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Dibenzo(a,h)anthracene	5.0	5.0	13	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Diethyl phthalate	500	500	500	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Dimethyl phthalate	40000	40000	40000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Fluoranthene	500	500	500	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Fluorene	360	360	360	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Indeno(1,2,3-cd)pyrene	5.0	31	130	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Naphthalene	100	100	100	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Phenanthrene	110	110	110	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Phenol	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Pyrene	500	500	500	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

Table 2: Summary of Subsurface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non-Residential RRS ^(c)	Background Threshold Value ^(d)	SBO-34 2-4 SBO-34-2-4-0318 3/9/2018 Sample	SBO-34 6-8 SBO-34-6-8-0318 3/9/2018 Sample	SBO-35 2-4 SBO-35-2-4-0318 3/9/2018 Sample	SBO-35 2-4 SBO-DUP02-0318 3/9/2018 Duplicate	SBO-35 6-8 SBO-35-6-8-0318 3/9/2018 Sample	SBO-35 8-10 SBO-35-8-10-0318 3/9/2018 Sample	SBO-36 2-4 SBO-36-2-4-0318 3/9/2018 Sample	SBO-36 6-8 SBO-36-6-8-0318 3/9/2018 Sample	SBO-36 8-10 SBO-36-8-10-0318 3/9/2018 Sample	SBO-37 2-4 SBO-37-2-4-0318 3/9/2018 Sample	SBO-37 6-8 SBO-37-6-8-0318 3/9/2018 Sample	SBO-41 2-4 SBO-41-2-4-0318 3/6/2018 Sample
Volatile Organic Compounds - SW846 8260C, mg/kg																
1,1,1-Trichloroethane	20	20	20	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone (Methyl ethyl ketone)	200	200	200	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.5	0.5	0.5	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	0.17	1.71	9.6	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	7.0	7.0	7.0	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	20	20	20	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	70	70	70	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride (Dichloromethane)	0.5	0.5	0.5	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	14	14	14	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene (PCE)	0.5	0.5	0.5	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.006
Toluene	100	100	100	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene (TCE)	0.5	0.5	0.5	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane (Freon 11)	200	200	200	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	1000	1000	1000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

mg/kg = milligrams per kilogram
 DAF = Dilution Attenuation Factor
 -- = No regulatory standard applicable
 RRS = Risk Reduction Standard
^(a) = Type 1 residential risk reduction standards, background threshold values (BTVs), or HSRA Notification Concentrations were used as the Delineation Value
^(b) = Higher of Type 1 and Type 2 Residential Risk Reduction Standards for Soil DAF = 1
^(c) = Higher of Type 3 and Type 4 subsurface soil Non-Residential Risk Reduction Standards for Soil DAF = 1
^(d) = Background Threshold Value
 HSRA regulated compounds shown

Data Qualifiers:

J = Value listed is estimated based on associated QC data
 JH = Value listed is estimated, possibly biased high
 JL = Value listed is estimated, possibly biased low
 NA = Not Analyzed
 UJ = Constituent was not detected, estimated based on associated QC data
Bold = Detected Above the Laboratory Reporting Detection Limit

EXCEEDS DELINEATION VALUE ^(a)
EXCEEDS SELECTED RESIDENTIAL RRS ^(b)
EXCEEDS SELECTED NON-RESIDENTIAL RRS ^(c)

Table 2: Summary of Subsurface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non-Residential RRS ^(c)	Background Threshold Value ^(d)	SBO-41 6-8 SBO-41-6-8-0318 3/6/2018 Sample	SBO-41 12-14 SBO-41-12-14-0318 3/6/2018 Sample	SBO-41 18-20 SBO-41-18-20-0318 3/6/2018 Sample	SBO-42 2-4 SBO-42-2-4-0318 3/5/2018 Sample	SBO-42 2-4 SBO-DUP03-0318 3/5/2018 Duplicate	SBO-42 6-8 SBO-42-6-8-0318 3/5/2018 Sample	SBO-42 12-14 SBO-42-12-14-0318 3/5/2018 Sample	SBO-42 18-20 SBO-42-18-20-0318 3/5/2018 Sample	SBO-43 2-4 SBO-43-2-4-0318 3/16/2018 Sample	SBO-43 2-4 SBO-DUP04-0318 3/16/2018 Duplicate	SBO-43 6-8 SBO-43-6-8-0318 3/9/2018 Sample	SBO-43 12-14 SBO-43-12-14-0318 3/9/2018 Sample
Explosives - SW846 8330B, mg/kg																
4-Nitrotoluene	1.12	1.12	1.12	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury, Total - SW846 7471B, mg/kg																
Mercury	0.5	0.5	17	0.167	NA	NA	NA	NA	NA	NA	NA	NA	< 0.108	< 0.112	< 0.102	< 0.0939
Metals, Total - SW846 6010C, mg/kg																
Barium	1000	1000	1000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	100	100	1500	58.5	NA	NA	NA	20.2 J	NA	6.91	< 1.41	< 1.53	16.7	15.1	9.02	< 1.49
Lead	125	75	400	125	NA	NA	NA	14	NA	6.01	< 2.11	< 2.29	15.6	16.6	6.48	< 2.23
Nickel	50	50	420	16.3	NA	NA	NA	NA	NA	NA	NA	NA	13.7	12.1	7.99	1.6
Zinc	126	370	2800	126	NA	NA	NA	NA	NA	NA	NA	NA	49.4	45.4	29.3	6.95
Metals, Total - SW846 6020A, mg/kg																
Antimony	4.0	4.0	10	3.96	NA	NA	NA	NA	NA	NA	NA	NA	< 0.442	< 0.434	< 0.396	< 0.297
Arsenic	20	20	41	9.41	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	2.0	32	180	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.0	2.0	39	0.454	NA	NA	NA	NA	NA	NA	NA	NA	< 0.221	< 0.217	< 0.198	< 0.149
Chromium	100	100	1200	43.9	34.6	NA	NA	NA	NA	NA	NA	NA	35.4	33.2	20.2	9.02
Lead	125	75	400	125	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	2.0	2.0	36	0.957	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2.0	2.0	10	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	2.0	2.0	10	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexavalent Chromium - SW7199, mg/kg																
Hexavalent Chromium	0.05	0.05	0.13	--	NA	NA	NA	NA	NA	NA	NA	NA	1.9	2.4	NA	NA
Oxidation Reduction Potential mV	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	389	358	NA	NA
pH std units	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	8.10	8.24	NA	NA
Polychlorinated Biphenyls - SW846 8082A, mg/kg																
PCB-1242	1.55	1.55	1.55	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1248	1.55	1.55	1.55	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1254	1.55	1.55	1.55	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1260	1.55	1.55	1.55	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semi-Volatile Organic Compounds - SW846 8270D, mg/kg																
2,4-Dimethylphenol	70	70	70	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	1.0	1.0	2.11	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3+4-Methylphenol (m,p-Cresol)	3.8	3.8	3.8	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	10	10	10	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	300	300	300	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	130	130	130	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	500	500	1000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	5.0	5.0	5.0	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	1.64	1.64	3.8	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	5.0	9.3	39	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	500	500	500	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	5.0	91	380	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	50	50	56	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate	50	50	50	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	5.0	280	1200	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	5.0	5.0	13	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethyl phthalate	500	500	500	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethyl phthalate	40000	40000	40000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	500	500	500	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	360	360	360	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	5.0	31	130	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	100	100	100	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	110	110	110	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	500	500	500	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 2: Summary of Subsurface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non-Residential RRS ^(c)	Background Threshold Value ^(d)	SBO-41 6-8 SBO-41-6-8-0318 3/6/2018 Sample	SBO-41 12-14 SBO-41-12-14-0318 3/6/2018 Sample	SBO-41 18-20 SBO-41-18-20-0318 3/6/2018 Sample	SBO-42 2-4 SBO-42-2-4-0318 3/5/2018 Sample	SBO-42 2-4 SBO-DUP03-0318 3/5/2018 Duplicate	SBO-42 6-8 SBO-42-6-8-0318 3/5/2018 Sample	SBO-42 12-14 SBO-42-12-14-0318 3/5/2018 Sample	SBO-42 18-20 SBO-42-18-20-0318 3/5/2018 Sample	SBO-43 2-4 SBO-43-2-4-0318 3/16/2018 Sample	SBO-43 2-4 SBO-DUP04-0318 3/16/2018 Duplicate	SBO-43 6-8 SBO-43-6-8-0318 3/9/2018 Sample	SBO-43 12-14 SBO-43-12-14-0318 3/9/2018 Sample
Volatile Organic Compounds - SW846 8260C, mg/kg																
1,1,1-Trichloroethane	20	20	20	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone (Methyl ethyl ketone)	200	200	200	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	400	400	400	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.5	0.5	0.5	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	0.17	1.71	9.6	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	7.0	7.0	7.0	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	20	20	20	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	70	70	70	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride (Dichloromethane)	0.5	0.5	0.5	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	14	14	14	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene (PCE)	0.5	0.5	0.5	--	< 0.005	< 0.004	< 0.005	0.014 J	0.022 J	< 0.005	< 0.004	< 0.004	< 0.004	NA	< 0.004	< 0.004
Toluene	100	100	100	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene (TCE)	0.5	0.5	0.5	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane (Freon 11)	200	200	200	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	1000	1000	1000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

mg/kg = milligrams per kilogram
 DAF = Dilution Attenuation Factor
 -- = No regulatory standard applicable
 RRS = Risk Reduction Standard
^(a) = Type 1 residential risk reduction standards, background threshold values (BTVs), or HSRA Notification Concentrations were used as the Delineation Value
^(b) = Higher of Type 1 and Type 2 Residential Risk Reduction Standards for Soil DAF = 1
^(c) = Higher of Type 3 and Type 4 subsurface soil Non-Residential Risk Reduction Standards for Soil DAF = 1
^(d) = Background Threshold Value
 HSRA regulated compounds shown

Data Qualifiers:

J = Value listed is estimated based on associated QC data
 JH = Value listed is estimated, possibly biased high
 JL = Value listed is estimated, possibly biased low
 NA = Not Analyzed
 UJ = Constituent was not detected, estimated based on associated QC data
Bold = Detected Above the Laboratory Reporting Detection Limit

EXCEEDS DELINEATION VALUE ^(a)
EXCEEDS SELECTED RESIDENTIAL RRS ^(b)
EXCEEDS SELECTED NON-RESIDENTIAL RRS ^(c)

Table 2: Summary of Subsurface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non- Residential RRS ^(c)	Background Threshold Value ^(d)	SBO-43 18-20 SBO-43-18-20-0318 3/9/2018 Sample
Explosives - SW846 8330B, mg/kg					
4-Nitrotoluene	1.12	1.12	1.12	--	NA
Mercury, Total - SW846 7471B, mg/kg					
Mercury	0.5	0.5	17	0.167	< 0.096
Metals, Total - SW846 6010C, mg/kg					
Barium	1000	1000	1000	--	NA
Copper	100	100	1500	58.5	< 1.6
Lead	125	75	400	125	< 2.4
Nickel	50	50	420	16.3	< 1.6
Zinc	126	370	2800	126	6.11
Metals, Total - SW846 6020A, mg/kg					
Antimony	4.0	4.0	10	3.96	< 0.32
Arsenic	20	20	41	9.41	NA
Beryllium	2.0	32	180	--	NA
Cadmium	2.0	2.0	39	0.454	< 0.16
Chromium	100	100	1200	43.9	10.7
Lead	125	75	400	125	NA
Selenium	2.0	2.0	36	0.957	NA
Silver	2.0	2.0	10	--	NA
Thallium	2.0	2.0	10	--	NA
Hexavalent Chromium - SW7199, mg/kg					
Hexavalent Chromium	0.05	0.05	0.13	--	NA
Oxidation Reduction Potential mV	--	--	--	--	NA
pH std units	--	--	--	--	NA
Polychlorinated Biphenyls - SW846 8082A, mg/kg					
PCB-1242	1.55	1.55	1.55	--	NA
PCB-1248	1.55	1.55	1.55	--	NA
PCB-1254	1.55	1.55	1.55	--	NA
PCB-1260	1.55	1.55	1.55	--	NA
Semi-Volatile Organic Compounds - SW846 8270D, mg/kg					
2,4-Dimethylphenol	70	70	70	--	NA
2-Methylnaphthalene	1.0	1.0	2.11	--	NA
3+4-Methylphenol (m,p-Cresol)	3.8	3.8	3.8	--	NA
4-Chloroaniline	10	10	10	--	NA
Acenaphthene	300	300	300	--	NA
Acenaphthylene	130	130	130	--	NA
Acetophenone	400	400	400	--	NA
Anthracene	500	500	1000	--	NA
Benzo(a)anthracene	5.0	5.0	5.0	--	NA
Benzo(a)pyrene	1.64	1.64	3.8	--	NA
Benzo(b)fluoranthene	5.0	9.3	39	--	NA
Benzo(g,h,i)perylene	500	500	500	--	NA
Benzo(k)fluoranthene	5.0	91	380	--	NA
bis(2-Ethylhexyl)phthalate	50	50	56	--	NA
Butyl benzyl phthalate	50	50	50	--	NA
Chrysene	5.0	280	1200	--	NA
Dibenzo(a,h)anthracene	5.0	5.0	13	--	NA
Diethyl phthalate	500	500	500	--	NA
Dimethyl phthalate	40000	40000	40000	--	NA
Fluoranthene	500	500	500	--	NA
Fluorene	360	360	360	--	NA
Indeno(1,2,3-cd)pyrene	5.0	31	130	--	NA
Naphthalene	100	100	100	--	NA
Phenanthrene	110	110	110	--	NA
Phenol	400	400	400	--	NA
Pyrene	500	500	500	--	NA

Table 2: Summary of Subsurface Soil Analytical Results

Location ID: Sample Depth (ft.): Sample ID: Sample Date: Sample Type:	Delineation Value ^(a)	Selected Residential RRS ^(b)	Selected Non-Residential RRS ^(c)	Background Threshold Value ^(d)	SBO-43 18-20 SBO-43-18-20-0318 3/9/2018 Sample
Volatiles Organic Compounds - SW846 8260C, mg/kg					
1,1,1-Trichloroethane	20	20	20	--	NA
1,1-Dichloroethane	400	400	400	--	NA
2-Butanone (Methyl ethyl ketone)	200	200	200	--	NA
Acetone	400	400	400	--	NA
Benzene	0.5	0.5	0.5	--	NA
Chloroethane	0.17	1.71	9.6	--	NA
cis-1,2-Dichloroethene	7.0	7.0	7.0	--	NA
Cyclohexane	20	20	20	--	NA
Ethylbenzene	70	70	70	--	NA
Methylene chloride (Dichloromethane)	0.5	0.5	0.5	--	NA
Styrene	14	14	14	--	NA
Tetrachloroethene (PCE)	0.5	0.5	0.5	--	< 0.004
Toluene	100	100	100	--	NA
Trichloroethene (TCE)	0.5	0.5	0.5	--	NA
Trichlorofluoromethane (Freon 11)	200	200	200	--	NA
Xylenes, Total	1000	1000	1000	--	NA

Notes:

mg/kg = milligrams per kilogram

DAF = Dilution Attenuation Factor

-- = No regulatory standard applicable

RRS = Risk Reduction Standard

^(a) = Type 1 residential risk reduction standards, background threshold values (BTVs), or HSRA Notification Concentrations were used as the Delineation Value

^(b) = Higher of Type 1 and Type 2 Residential Risk Reduction Standards for Soil DAF = 1

^(c) = Higher of Type 3 and Type 4 subsurface soil Non-Residential Risk Reduction Standards for Soil DAF = 1

^(d) = Background Threshold Value

HSRA regulated compounds shown

Data Qualifiers:

J = Value listed is estimated based on associated QC data

JH = Value listed is estimated, possibly biased high

JL = Value listed is estimated, possibly biased low

NA = Not Analyzed

UJ = Constituent was not detected, estimated based on associated QC data

Bold = Detected Above the Laboratory Reporting Detection Limit

EXCEEDS DELINEATION VALUE^(a)

EXCEEDS SELECTED RESIDENTIAL RRS^(b)

EXCEEDS SELECTED NON-RESIDENTIAL RRS^(c)

Table 3: Summary of Groundwater Analytical Results

Location ID: Sample ID: Sample Date: Sample Type:	Selected Groundwater RRS ^(a)	MW-01 MW-1-031518 3/15/2018 Sample	MW-01 MW-1-041116 4/11/2016 Sample	MW-02 MW-2-031618 3/16/2018 Sample	MW-02 MW-2-041116 4/11/2016 Sample	MW-02 DUP-1-041116FD 4/11/2016 Duplicate	MW-03 MW-3-031618 3/16/2018 Sample	MW-03 MW-3-041116 4/11/2016 Sample	MW-04 MW-4-031618 3/16/2018 Sample	MW-04 MW-4-041116 4/11/2016 Sample
Explosives - SW846 8330, mg/L										
4-Nitrotoluene	0.0002	< 0.0007	NA	< 0.0007	< 0.0006	< 0.0006	Well was dry and was not sampled	< 0.0006	< 0.0007	< 0.0006
Mercury, Dissolved - SW846 7470A, mg/L										
Mercury	0.002	NA	NA	NA	< 0.0002	NA		NA	NA	NA
Mercury, Total - SW846 7470A, mg/L										
Mercury	0.002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002		< 0.0002	< 0.0002	< 0.0002
Metals, Dissolved - SW846 6020A, mg/L										
Antimony	0.006	NA	NA	NA	< 0.002	NA		NA	NA	NA
Arsenic	0.01	NA	NA	NA	< 0.004	NA		NA	NA	NA
Barium	2.0	NA	NA	NA	0.133	NA		NA	NA	NA
Beryllium	0.004	NA	NA	NA	< 0.001	NA		NA	NA	NA
Cadmium	0.005	NA	NA	NA	< 0.001	NA		NA	NA	NA
Chromium	0.10	NA	NA	NA	< 0.004	NA		NA	NA	NA
Copper	1.30	NA	NA	NA	< 0.004	NA		NA	NA	NA
Lead	0.015	NA	NA	NA	< 0.002	NA		NA	NA	NA
Nickel	0.10	NA	NA	NA	0.0058	NA		NA	NA	NA
Selenium	0.05	NA	NA	NA	< 0.004	NA		NA	NA	NA
Silver	0.10	NA	NA	NA	< 0.001	NA		NA	NA	NA
Thallium	0.002	NA	NA	NA	< 0.001	NA		NA	NA	NA
Zinc	2.0	NA	NA	NA	0.155	NA		NA	NA	NA
Metals, Total - SW846 6020A, mg/L										
Antimony	0.006	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002		< 0.002	< 0.002	< 0.002
Arsenic	0.01	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004		< 0.004	< 0.004	< 0.004
Barium	2.0	0.107	0.0821	0.107	0.129	0.115		0.0873	0.0588	0.069
Beryllium	0.004	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001		< 0.001	< 0.001	< 0.001
Cadmium	0.005	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001		< 0.001	< 0.001	< 0.001
Chromium	0.10	< 0.004	0.0065	0.008	< 0.004	< 0.004		< 0.004	< 0.004	< 0.004
Copper	1.30	< 0.004	< 0.004	0.0114	< 0.004	< 0.004		< 0.004	< 0.004	< 0.004
Lead	0.015	< 0.002	0.0031	0.004	0.0034	< 0.002		< 0.002	< 0.002	< 0.002
Nickel	0.10	< 0.004	< 0.004	0.0079	0.0062	0.0046		< 0.004	< 0.004	< 0.004
Selenium	0.05	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004		< 0.004	< 0.004	< 0.004
Silver	0.10	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001		< 0.001	< 0.001	< 0.001
Thallium	0.002	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001		< 0.001	< 0.001	< 0.001
Zinc	2.0	0.0302	< 0.03	0.0627	0.144	0.122		0.0589	0.0459	0.0898
Polychlorinated Biphenyls - SW846 8082A, mg/L										
PCB-1242	0.001	< 0.00041	< 0.0004	< 0.00041	< 0.00043	< 0.00041		< 0.00041	< 0.00041	< 0.00043
PCB-1248	0.001	< 0.00041	< 0.0004	< 0.00041	< 0.00043	< 0.00041		< 0.00041	< 0.00041	< 0.00043
PCB-1254	0.001	< 0.00041	< 0.0004	< 0.00041	< 0.00043	< 0.00041		< 0.00041	< 0.00041	< 0.00043
PCB-1260	0.001	< 0.00041	< 0.0004	< 0.00041	< 0.00043	< 0.00041		< 0.00041	< 0.00041	< 0.00043
Semi-Volatile Organic Compounds - SW846 8270D, mg/L										
2,4-Dimethylphenol	0.70	< 0.001	< 0.001	< 0.001	< 0.001	UJ	< 0.001	< 0.001	< 0.001	< 0.001
4-Chloroaniline	0.10	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004		< 0.004	< 0.004	< 0.004
Acetophenone	4.0	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001		< 0.001	< 0.001	< 0.001
bis(2-Ethylhexyl)phthalate	0.002	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		< 0.005	< 0.005	< 0.005
Butyl benzyl phthalate	0.10	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		< 0.005	< 0.005	< 0.005
Diethyl phthalate	5.0	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		< 0.005	< 0.005	< 0.005
Dimethyl phthalate	400	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		< 0.005	< 0.005	< 0.005
Phenol	4.0	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001		< 0.001	< 0.001	< 0.001
Semi-Volatile Organic Compounds - SW846 8270D-SIM, mg/L										
2-Methylnaphthalene	0.01	< 0.00005	< 0.000052	< 0.00005	< 0.000051	< 0.000053		< 0.000052	< 0.00005	< 0.000051
Acenaphthene	2.0	< 0.00005	< 0.000052	< 0.00005	< 0.000051	< 0.000053		< 0.000052	< 0.00005	< 0.000051
Acenaphthylene	0.01	< 0.00005	< 0.000052	< 0.00005	< 0.000051	< 0.000053		< 0.000052	< 0.00005	< 0.000051
Anthracene	0.01	< 0.00005	< 0.000052	< 0.00005	< 0.000051	< 0.000053		< 0.000052	< 0.00005	< 0.000051
Benzo(a)anthracene	0.0001	< 0.00005	< 0.000052	< 0.00005	< 0.000051	< 0.000053		< 0.000052	< 0.00005	< 0.000051
Benzo(a)pyrene	0.0002	< 0.00005	< 0.000052	< 0.00005	< 0.000051	UJ	< 0.000053	< 0.000052	< 0.00005	< 0.000051
Benzo(b)fluoranthene	0.0002	< 0.00005	< 0.000052	< 0.00005	< 0.000051	< 0.000053		< 0.000052	< 0.00005	< 0.000051
Benzo(g,h,i)perylene	0.01	< 0.00005	< 0.000052	< 0.00005	< 0.000051	UJ	< 0.000053	< 0.000052	< 0.00005	< 0.000051
Benzo(k)fluoranthene	0.0001	< 0.00005	< 0.000052	< 0.00005	< 0.000051	< 0.000053		< 0.000052	< 0.00005	< 0.000051
Chrysene	0.01	< 0.00005	< 0.000052	< 0.00005	< 0.000051	< 0.000053		< 0.000052	< 0.00005	< 0.000051
Dibenzo(a,h)anthracene	0.0003	< 0.00005	< 0.000052	< 0.00005	< 0.000051	< 0.000053		< 0.000052	< 0.00005	< 0.000051
Fluoranthene	1.0	< 0.00005	< 0.000052	< 0.00005	< 0.000051	< 0.000053		< 0.000052	< 0.00005	< 0.000051
Fluorene	1.0	< 0.00005	< 0.000052	< 0.00005	< 0.000051	< 0.000053		< 0.000052	< 0.00005	< 0.000051
Indeno(1,2,3-cd)pyrene	0.0004	< 0.00005	< 0.000052	< 0.00005	< 0.000051	< 0.000053		< 0.000052	< 0.00005	< 0.000051
Naphthalene	0.02	< 0.00006	< 0.000062	< 0.00006	< 0.000061	< 0.000063		< 0.000063	< 0.00006	< 0.000061
Phenanthrene	0.01	< 0.00006	< 0.000062	< 0.00006	< 0.000061	< 0.000063		< 0.000063	< 0.00006	< 0.000061
Pyrene	1.0	< 0.00005	< 0.000052	< 0.00005	< 0.000051	< 0.000053		< 0.000052	< 0.00005	< 0.000051

Table 3: Summary of Groundwater Analytical Results

Location ID: Sample ID: Sample Date: Sample Type:	Selected Groundwater RRS ^(a)	MW-01 MW-1-031518 3/15/2018 Sample	MW-01 MW-1-041116 4/11/2016 Sample	MW-02 MW-2-031618 3/16/2018 Sample	MW-02 MW-2-041116 4/11/2016 Sample	MW-02 DUP-1-041116FD 4/11/2016 Duplicate	MW-03 MW-3-031618 3/16/2018 Sample	MW-03 MW-3-041116 4/11/2016 Sample	MW-04 MW-4-031618 3/16/2018 Sample	MW-04 MW-4-041116 4/11/2016 Sample
Volatile Organic Compounds - SW846 8260C, mg/L										
1,1,1-Trichloroethane	0.20	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001		< 0.001	< 0.001	< 0.001
1,1-Dichloroethane	4.0	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001		< 0.001	< 0.001	< 0.001
2-Butanone (Methyl ethyl ketone)	2.0	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01		< 0.01	< 0.01	< 0.01
Acetone	4.0	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02		< 0.02	< 0.02	< 0.02
Benzene	0.005	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001		< 0.001	< 0.001	< 0.001
Chloroethane	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001		< 0.001	< 0.001	< 0.001
cis-1,2-Dichloroethene	0.07	0.003	< 0.001	0.027	0.007 J	0.007		< 0.001	0.024	0.028
Cyclohexane	0.001	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		< 0.005	< 0.005	< 0.005
Ethylbenzene	0.70	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001		< 0.001	< 0.001	< 0.001
Methylene chloride (Dichloromethane)	0.005	< 0.001	< 0.004	< 0.001	< 0.004	< 0.004		< 0.004	< 0.001	< 0.004
Styrene	0.10	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		< 0.005	< 0.005	< 0.005
Tetrachloroethene (PCE)	0.005	0.008	0.015	0.005	0.004	0.004		0.012	0.007	0.004
Toluene	1.0	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001		< 0.001	< 0.001	< 0.001
Trichloroethene (TCE)	0.005	< 0.001	< 0.001	0.002	< 0.001	< 0.001		< 0.001	0.002	0.002
Trichlorofluoromethane (Freon 11)	2.0	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001		< 0.001	< 0.001	< 0.001
Xylenes, Total	10	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001		< 0.001	< 0.001	< 0.001

Notes:

mg/L = milligrams per liter

RRS = Risk Reduction Standard

(a) Type 1 / Type 3 Risk Reduction Standards for Groundwater

HSRA Regulated Compounds shown

Data Qualifiers:

J = Value listed is estimated based on associated QC data

NA = Not Analyzed

UJ = Constituent was not detected, estimated based on associated QC data

< = Not Detected at or above the associated Reporting Limit (RL)

**EXCEEDS Type 1/Type 3 RRS for
Groundwater**

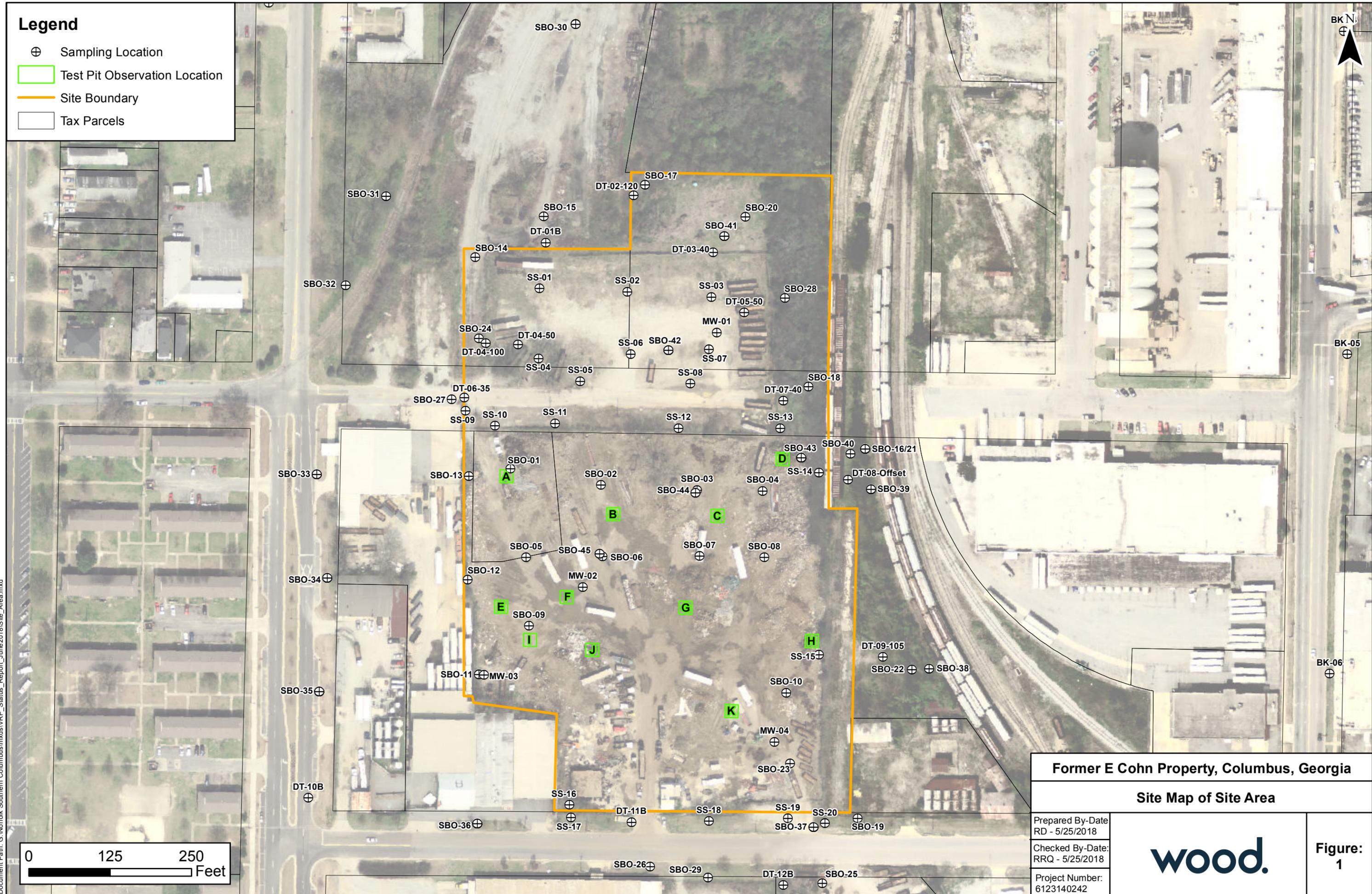
FIGURES

Legend

- ⊕ Sampling Location
- Test Pit Observation Location
- Site Boundary
- ▭ Tax Parcels



Document Path: G:\Norfolk Southern Columbus\mxd\VRP_Status_Report_June2018\Site_Area.mxd



Former E Cohn Property, Columbus, Georgia	
Site Map of Site Area	
Prepared By-Date: RD - 5/25/2018	
Checked By-Date: RRQ - 5/25/2018	
Project Number: 6123140242	
Figure: 1	



Legend

Mercury 0-2 ft

- ▲ ND - 0.5
- ▲ > 0.5

Mercury 2-4 ft

- ND - 0.5
- > 0.5

Mercury 6-8 ft

- ND - 0.5
- > 0.5

Mercury 12-14 ft

- ⬡ ND - 0.5
- ⬡ > 0.5

Mercury 18-20 ft

- ⬠ ND - 0.5
- ⬠ > 0.5

— Maximum Extent of Constituent in Surface Soil 0-2 ft

— Maximum Extent of Constituent in Subsurface Soil 2ft and Deeper

— Site Boundary

□ Tax Parcels

Notes:

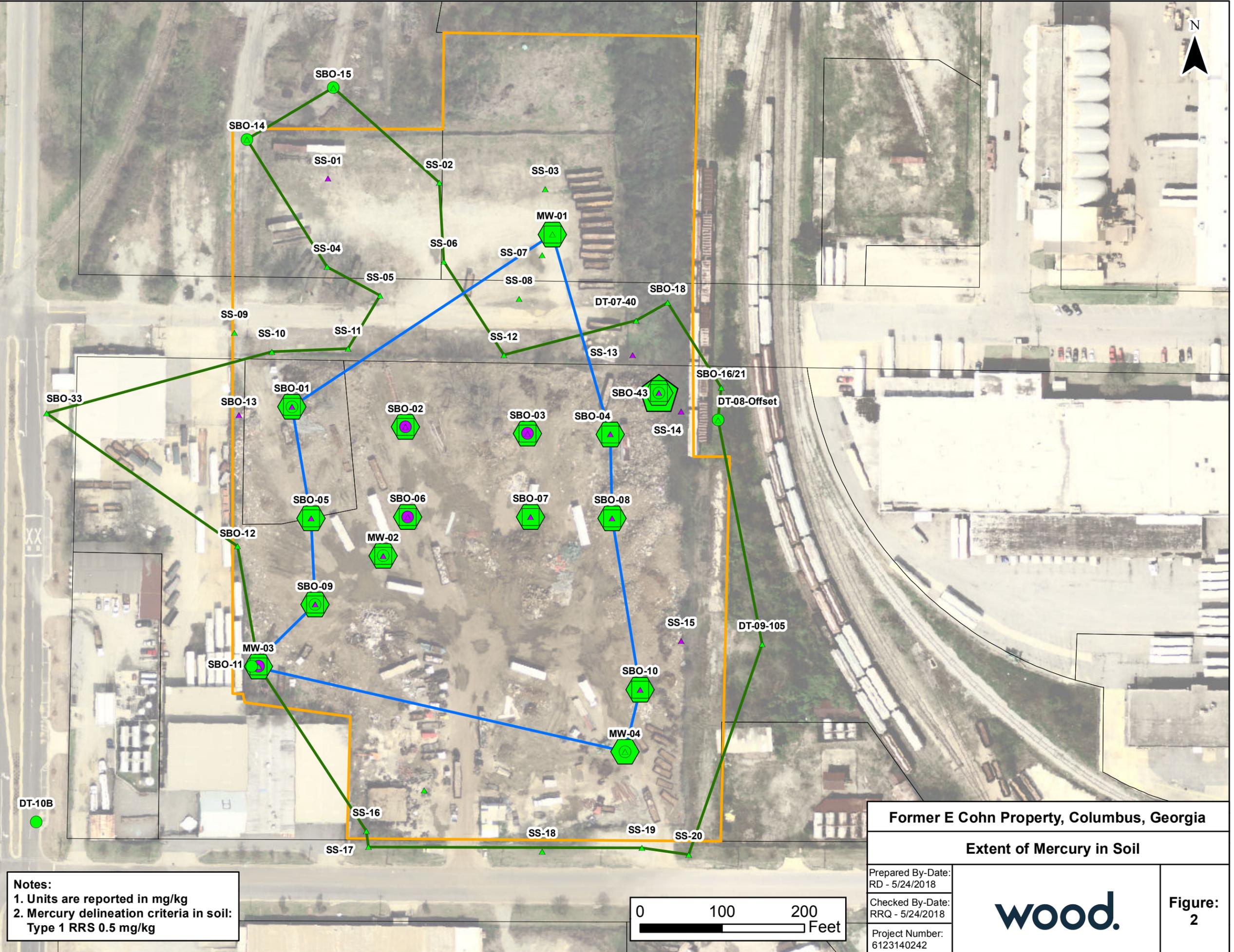
- Units are reported in mg/kg
- Mercury delineation criteria in soil:
Type 1 RRS 0.5 mg/kg



Former E Cohn Property, Columbus, Georgia

Extent of Mercury in Soil

Prepared By-Date: RD - 5/24/2018		Figure: 2
Checked By-Date: RRQ - 5/24/2018		
Project Number: 6123140242		



Legend

Copper 0-2 ft

- ▲ ND - 100
- ▲ > 100

Copper 2-4 ft

- ND - 100
- > 100

Copper 6-8 ft

- ND - 100
- > 100

Copper 12-14 ft

- ⬡ ND - 100
- ⬡ > 100

Copper 18-20 ft

- ⬢ ND - 100
- ⬢ > 100

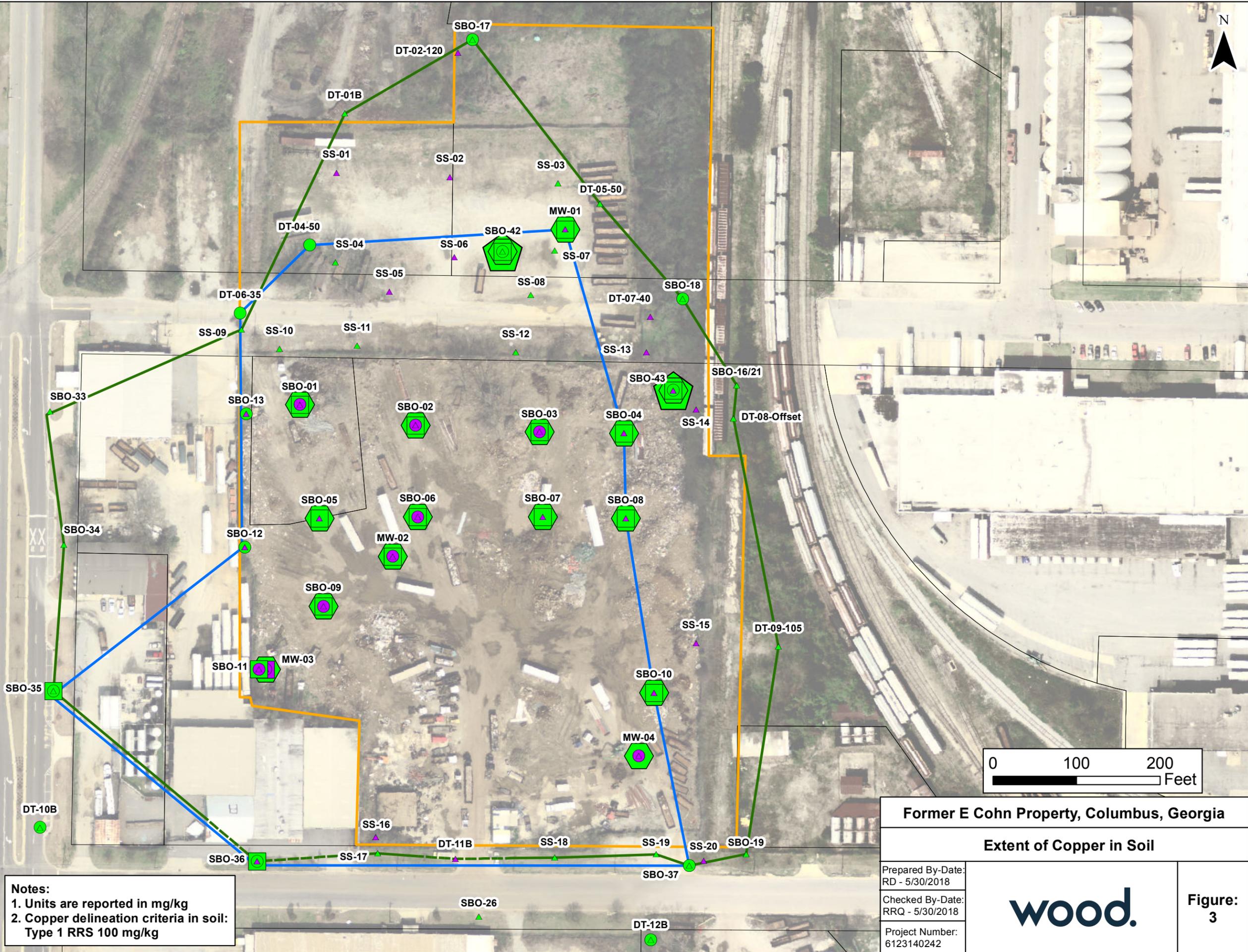
Estimated Extent of Constituent in Surface Soil 0-2 ft

Maximum Extent of Constituent in Surface Soil 0-2 ft

Maximum Extent of Constituent in Subsurface Soil 2ft and Deeper

Site Boundary

Tax Parcels



Notes:
 1. Units are reported in mg/kg
 2. Copper delineation criteria in soil:
 Type 1 RRS 100 mg/kg

Former E Cohn Property, Columbus, Georgia

Extent of Copper in Soil

Prepared By-Date: RD - 5/30/2018		Figure: 3
Checked By-Date: RRQ - 5/30/2018		
Project Number: 6123140242		

Legend

Lead 0-2 ft

- ▲ ND - 125
- ▲ > 125

Lead 2-4 ft

- ND - 125
- > 125

Lead 6-8 ft

- ND - 125
- > 125

Lead 12-14 ft

- ⬡ ND - 125
- ⬡ > 125

Lead 18-20 ft

- ⬠ ND - 125
- ⬠ > 125

Estimated Extent of Constituent in Surface Soil 0-2 ft

Maximum Extent of Constituent in Surface Soil 0-2 ft

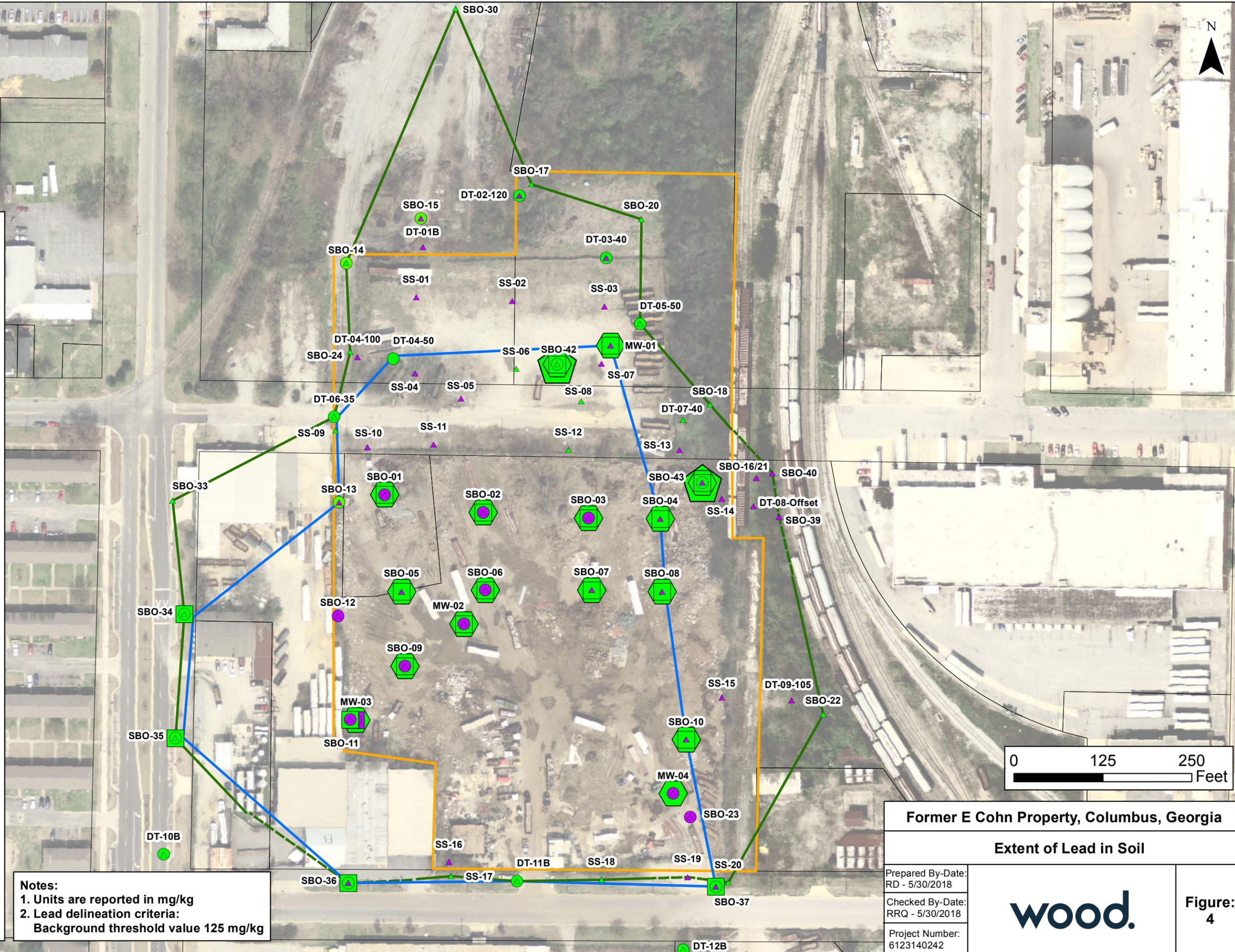
Maximum Extent of Constituent in Subsurface Soil 2ft and Deeper

Site Boundary

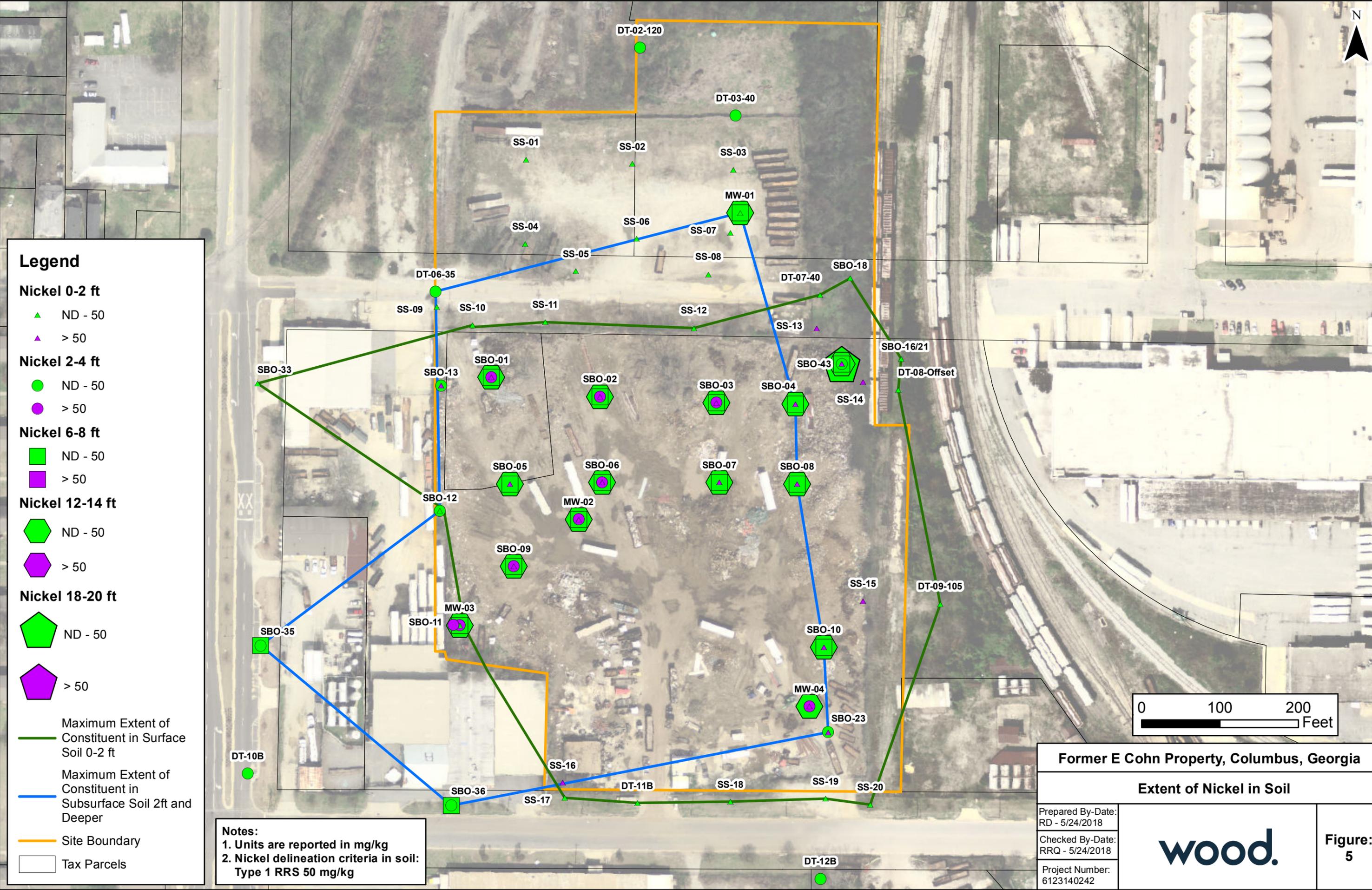
Tax Parcels

Notes:

1. Units are reported in mg/kg
2. Lead delineation criteria:
Background threshold value 125 mg/kg



Former E Cohn Property, Columbus, Georgia		
Extent of Lead in Soil		
Prepared By-Date: RD - 5/30/2018		Figure: 4
Checked By-Date: RRQ - 5/30/2018		
Project Number: 6123140242		



Legend

Nickel 0-2 ft

- ▲ ND - 50
- ▲ > 50

Nickel 2-4 ft

- ND - 50
- > 50

Nickel 6-8 ft

- ND - 50
- > 50

Nickel 12-14 ft

- ⬡ ND - 50
- ⬡ > 50

Nickel 18-20 ft

- ⬠ ND - 50
- ⬠ > 50

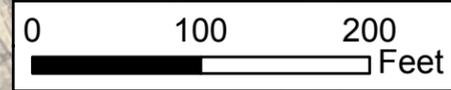
— Maximum Extent of Constituent in Surface Soil 0-2 ft

— Maximum Extent of Constituent in Subsurface Soil 2ft and Deeper

— Site Boundary

□ Tax Parcels

Notes:
 1. Units are reported in mg/kg
 2. Nickel delineation criteria in soil:
 Type 1 RRS 50 mg/kg



Former E Cohn Property, Columbus, Georgia

Extent of Nickel in Soil

Prepared By-Date:
RD - 5/24/2018
 Checked By-Date:
RRQ - 5/24/2018
 Project Number:
6123140242



Figure:
5

Legend

Zinc 0-2 ft

- ▲ ND - 126
- ▲ > 126

Zinc 2-4 ft

- ND - 126
- > 126

Zinc 6-8 ft

- ND - 126
- > 126

Zinc 8-10 ft

- ⬡ ND - 126
- ⬡ > 126

Zinc 12-14 ft

- ⬡ ND - 126
- ⬡ > 126

Zinc 18-20 ft

- ⬡ ND - 126
- ⬡ > 126

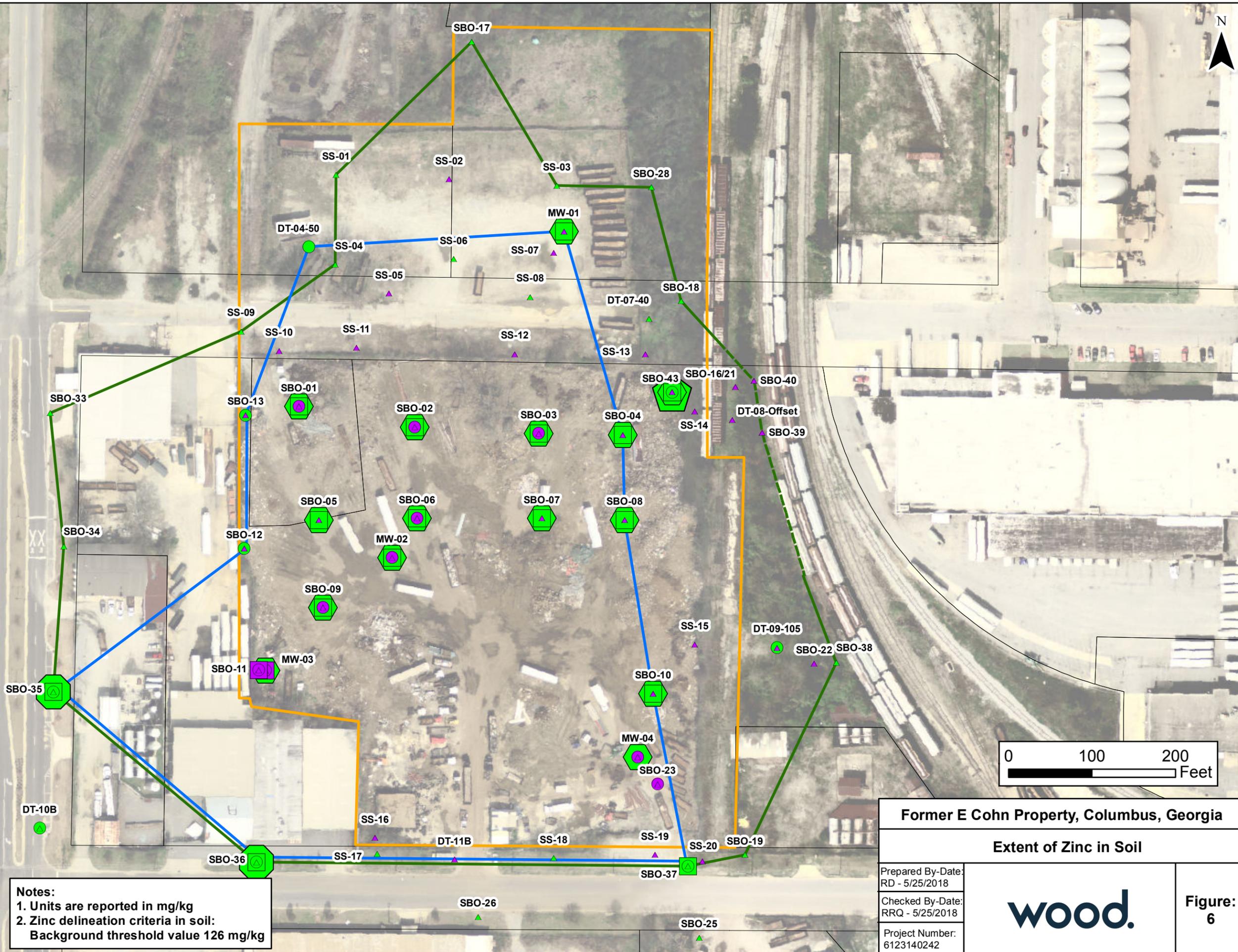
Estimated Extent of Constituent in Surface Soil 0-2 ft

Maximum Extent of Constituent in Surface Soil 0-2 ft

Maximum Extent of Constituent in Subsurface Soil 2ft and Deeper

Site Boundary

Tax Parcels



Notes:
 1. Units are reported in mg/kg
 2. Zinc delineation criteria in soil:
 Background threshold value 126 mg/kg

Former E Cohn Property, Columbus, Georgia

Extent of Zinc in Soil

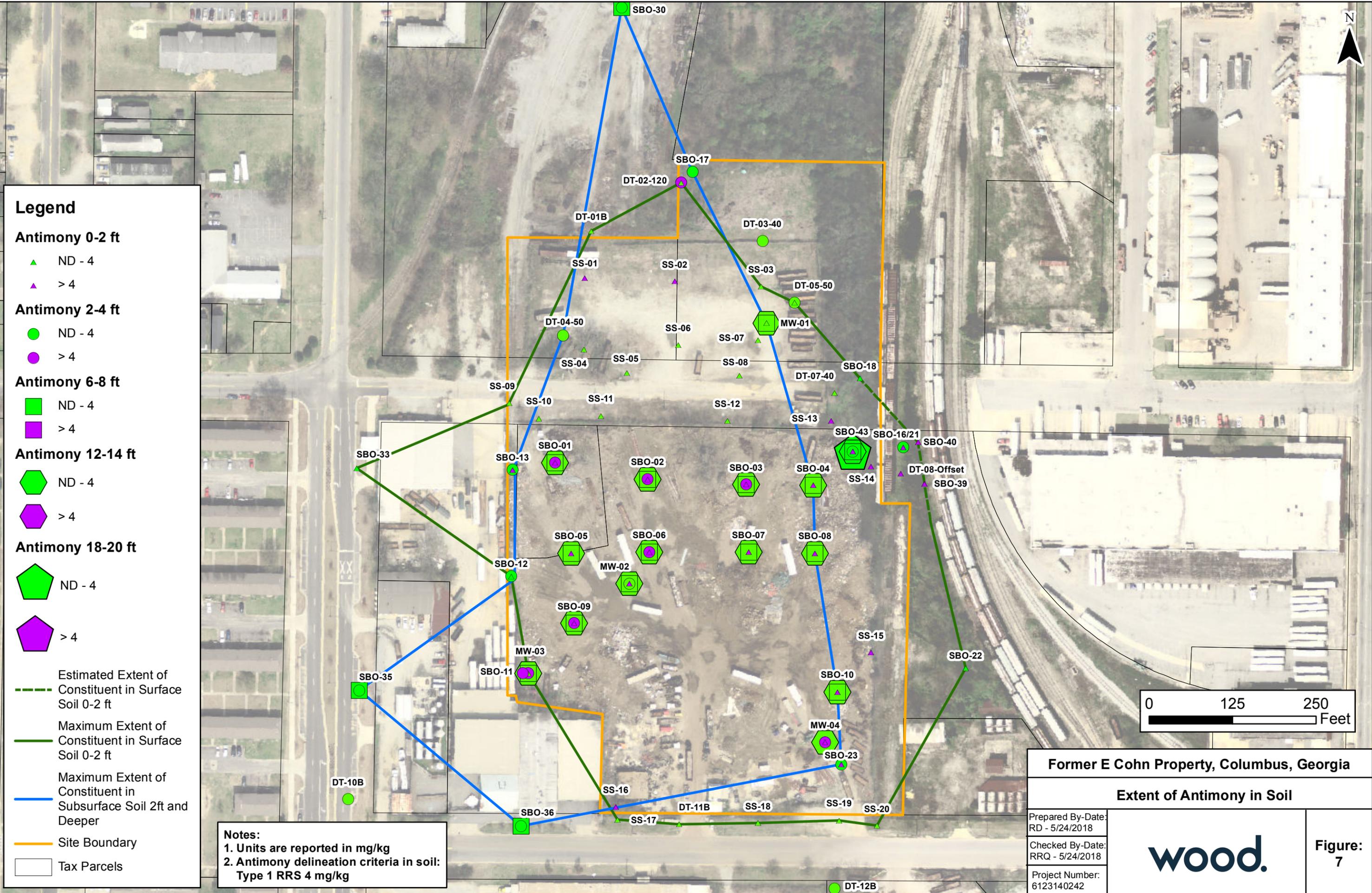
Prepared By-Date:
RD - 5/25/2018

Checked By-Date:
RRQ - 5/25/2018

Project Number:
6123140242



Figure:
6



Legend

Antimony 0-2 ft

- ▲ ND - 4
- ▲ > 4

Antimony 2-4 ft

- ND - 4
- > 4

Antimony 6-8 ft

- ND - 4
- > 4

Antimony 12-14 ft

- ⬡ ND - 4
- ⬡ > 4

Antimony 18-20 ft

- ⬠ ND - 4
- ⬠ > 4

Estimated Extent of
Constituent in Surface
Soil 0-2 ft

Maximum Extent of
Constituent in Surface
Soil 0-2 ft

Maximum Extent of
Constituent in
Subsurface Soil 2ft and
Deeper

Site Boundary

Tax Parcels

Notes:
 1. Units are reported in mg/kg
 2. Antimony delineation criteria in soil:
 Type 1 RRS 4 mg/kg

Former E Cohn Property, Columbus, Georgia

Extent of Antimony in Soil

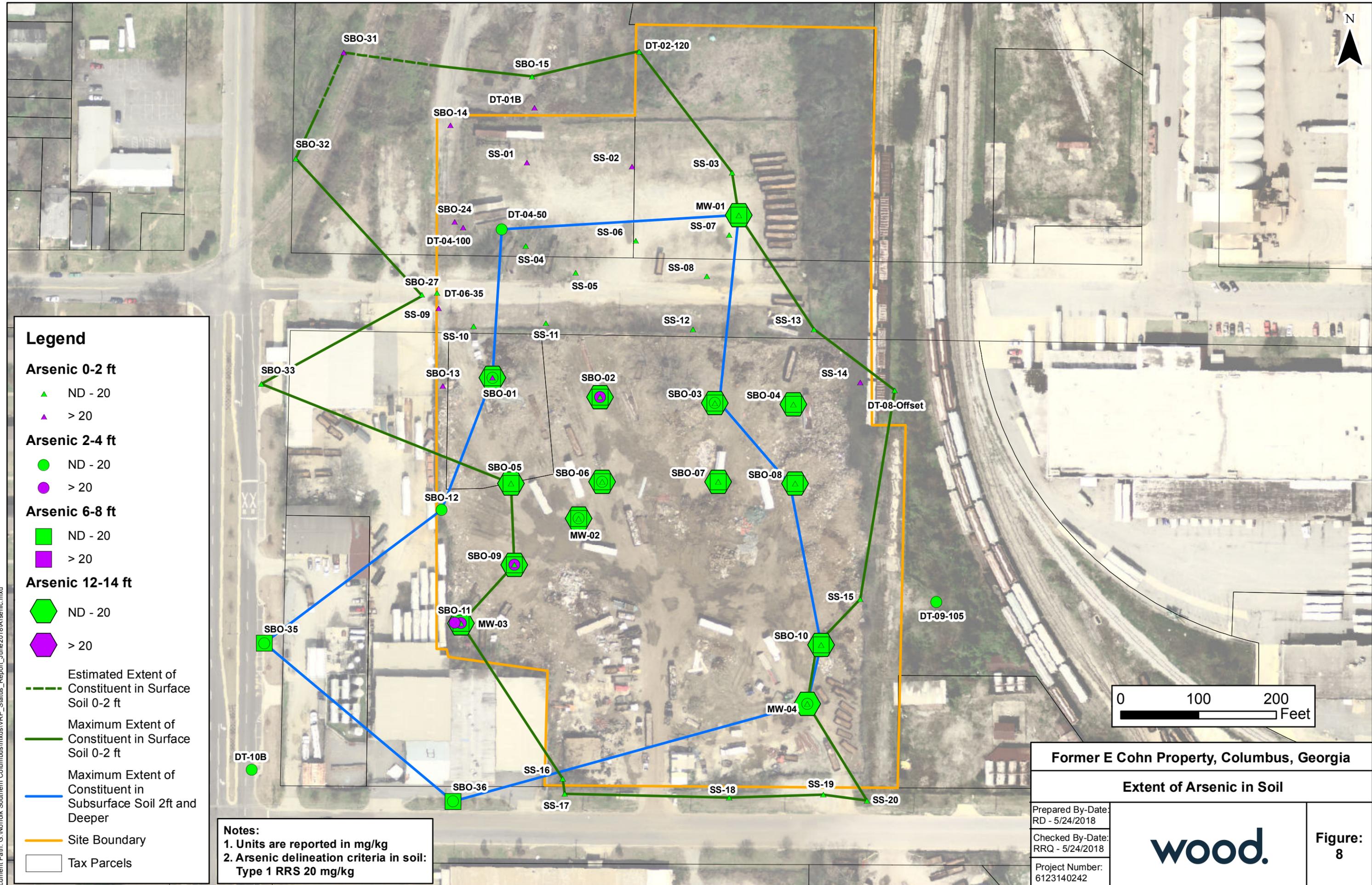
Prepared By-Date:
RD - 5/24/2018

Checked By-Date:
RRQ - 5/24/2018

Project Number:
6123140242



Figure:
7



Legend

Arsenic 0-2 ft

- ▲ ND - 20
- ▲ > 20

Arsenic 2-4 ft

- ND - 20
- > 20

Arsenic 6-8 ft

- ND - 20
- > 20

Arsenic 12-14 ft

- ⬡ ND - 20
- ⬡ > 20

Estimated Extent of Constituent in Surface Soil 0-2 ft

Maximum Extent of Constituent in Surface Soil 0-2 ft

Maximum Extent of Constituent in Subsurface Soil 2ft and Deeper

Site Boundary

Tax Parcels

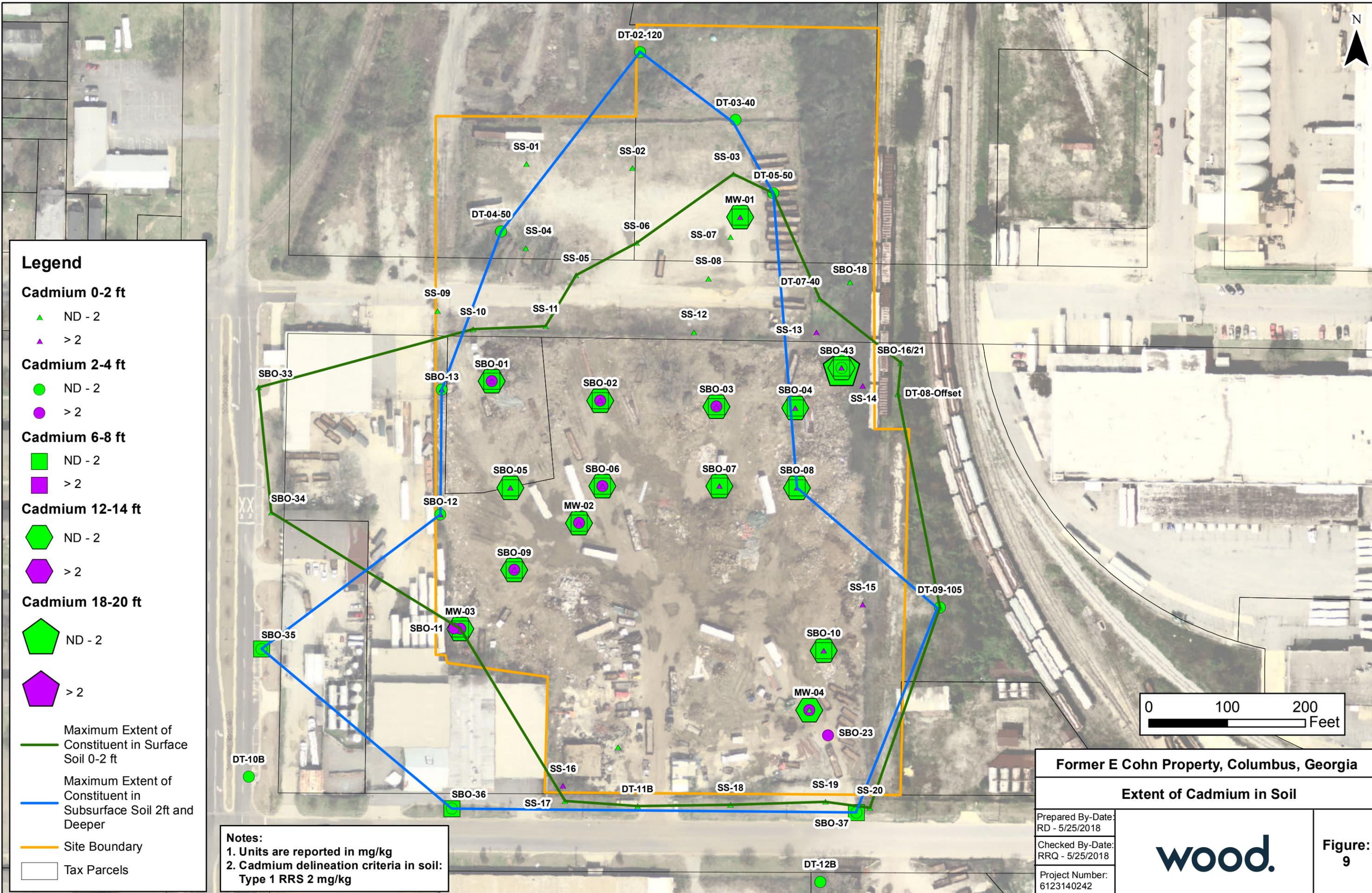
Notes:

- Units are reported in mg/kg
- Arsenic delineation criteria in soil: Type 1 RRS 20 mg/kg

Former E Cohn Property, Columbus, Georgia

Extent of Arsenic in Soil

Prepared By-Date: RD - 5/24/2018		Figure: 8
Checked By-Date: RRQ - 5/24/2018		
Project Number: 6123140242		

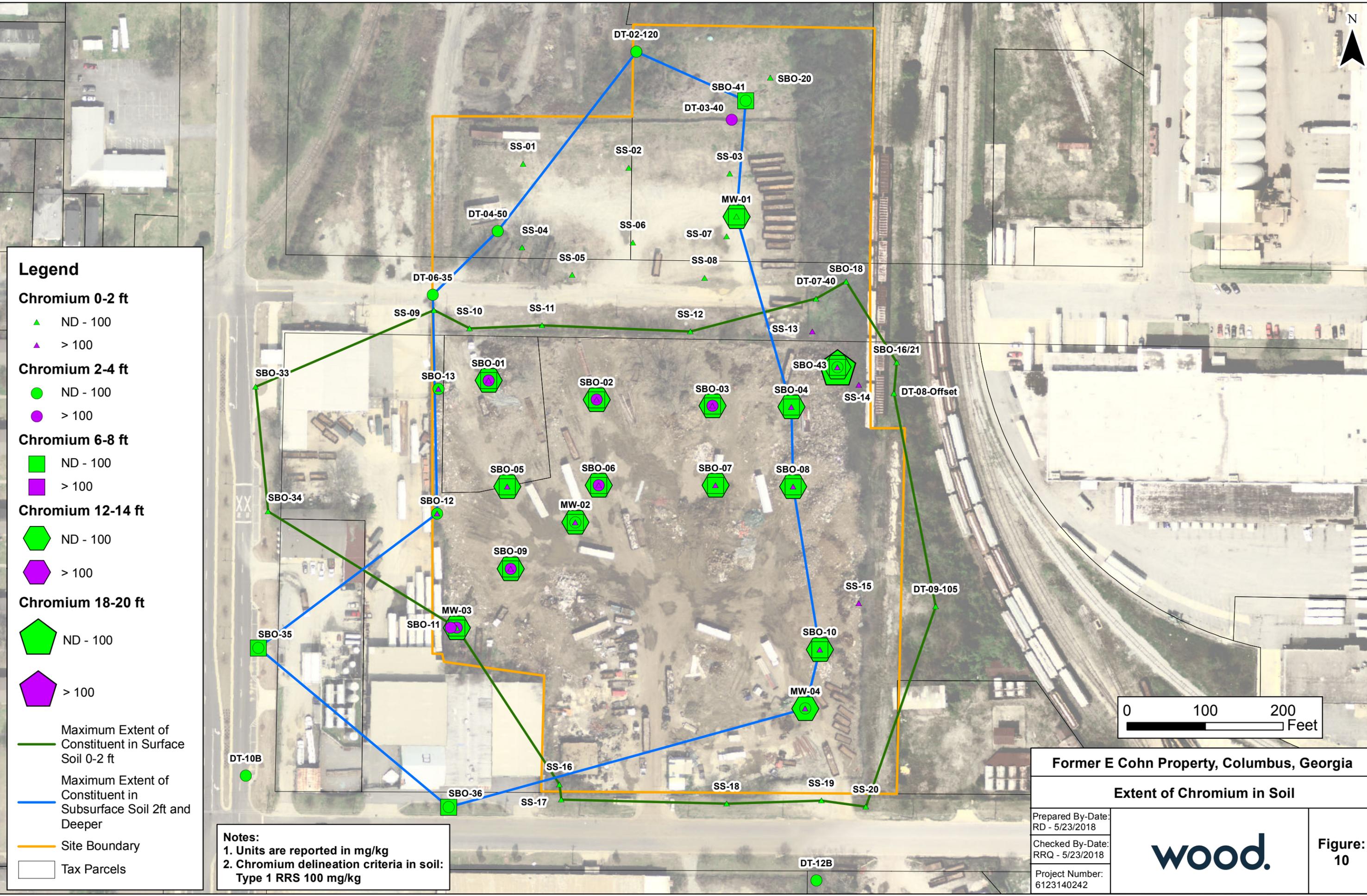


Legend

- Cadmium 0-2 ft**
 - ▲ ND - 2
 - ▲ > 2
- Cadmium 2-4 ft**
 - ND - 2
 - > 2
- Cadmium 6-8 ft**
 - ND - 2
 - > 2
- Cadmium 12-14 ft**
 - ⬡ ND - 2
 - ⬡ > 2
- Cadmium 18-20 ft**
 - ⬠ ND - 2
 - ⬠ > 2
- Maximum Extent of Constituent in Surface Soil 0-2 ft
- Maximum Extent of Constituent in Subsurface Soil 2ft and Deeper
- Site Boundary
- Tax Parcels

Notes:
 1. Units are reported in mg/kg
 2. Cadmium delineation criteria in soil:
 Type 1 RRS 2 mg/kg

Former E Cohn Property, Columbus, Georgia	
Extent of Cadmium in Soil	
Prepared By-Date: RD - 5/25/2018	
Checked By-Date: RRQ - 5/25/2018	
Project Number: 6123140242	
Figure: 9	



Legend

Chromium 0-2 ft

- ▲ ND - 100
- ▲ > 100

Chromium 2-4 ft

- ND - 100
- > 100

Chromium 6-8 ft

- ND - 100
- > 100

Chromium 12-14 ft

- ⬡ ND - 100
- ⬡ > 100

Chromium 18-20 ft

- ⬠ ND - 100
- ⬠ > 100

— Maximum Extent of Constituent in Surface Soil 0-2 ft

— Maximum Extent of Constituent in Subsurface Soil 2ft and Deeper

— Site Boundary

□ Tax Parcels

Notes:
 1. Units are reported in mg/kg
 2. Chromium delineation criteria in soil:
 Type 1 RRS 100 mg/kg

Former E Cohn Property, Columbus, Georgia

Extent of Chromium in Soil

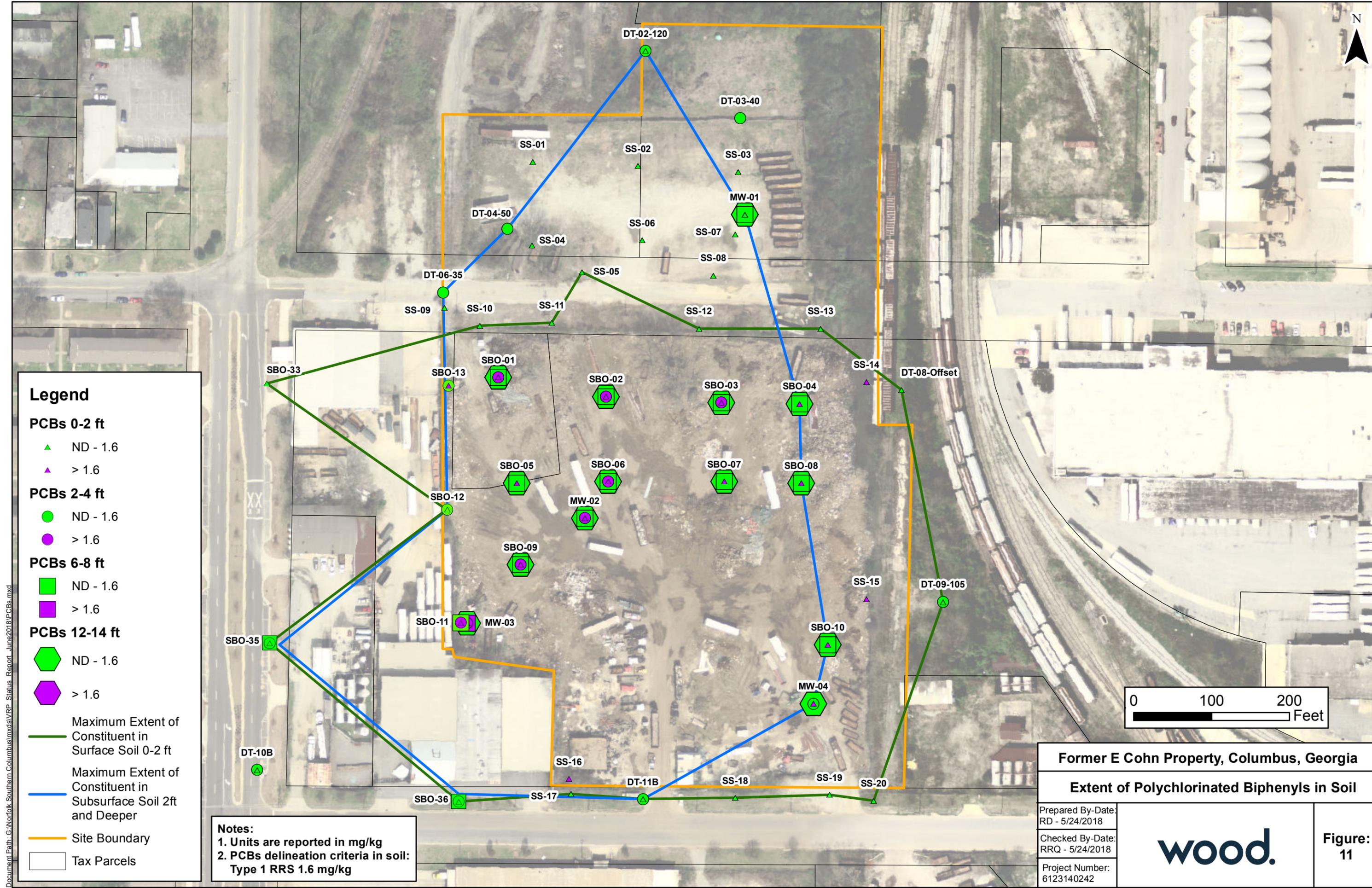
Prepared By-Date:
RD - 5/23/2018

Checked By-Date:
RRQ - 5/23/2018

Project Number:
6123140242



**Figure:
10**



Legend

PCBs 0-2 ft

- ▲ ND - 1.6
- ▲ > 1.6

PCBs 2-4 ft

- ND - 1.6
- > 1.6

PCBs 6-8 ft

- ND - 1.6
- > 1.6

PCBs 12-14 ft

- ⬡ ND - 1.6
- ⬡ > 1.6

— Maximum Extent of Constituent in Surface Soil 0-2 ft

— Maximum Extent of Constituent in Subsurface Soil 2ft and Deeper

— Site Boundary

□ Tax Parcels

Notes:
 1. Units are reported in mg/kg
 2. PCBs delineation criteria in soil:
 Type 1 RRS 1.6 mg/kg

Former E Cohn Property, Columbus, Georgia

Extent of Polychlorinated Biphenyls in Soil

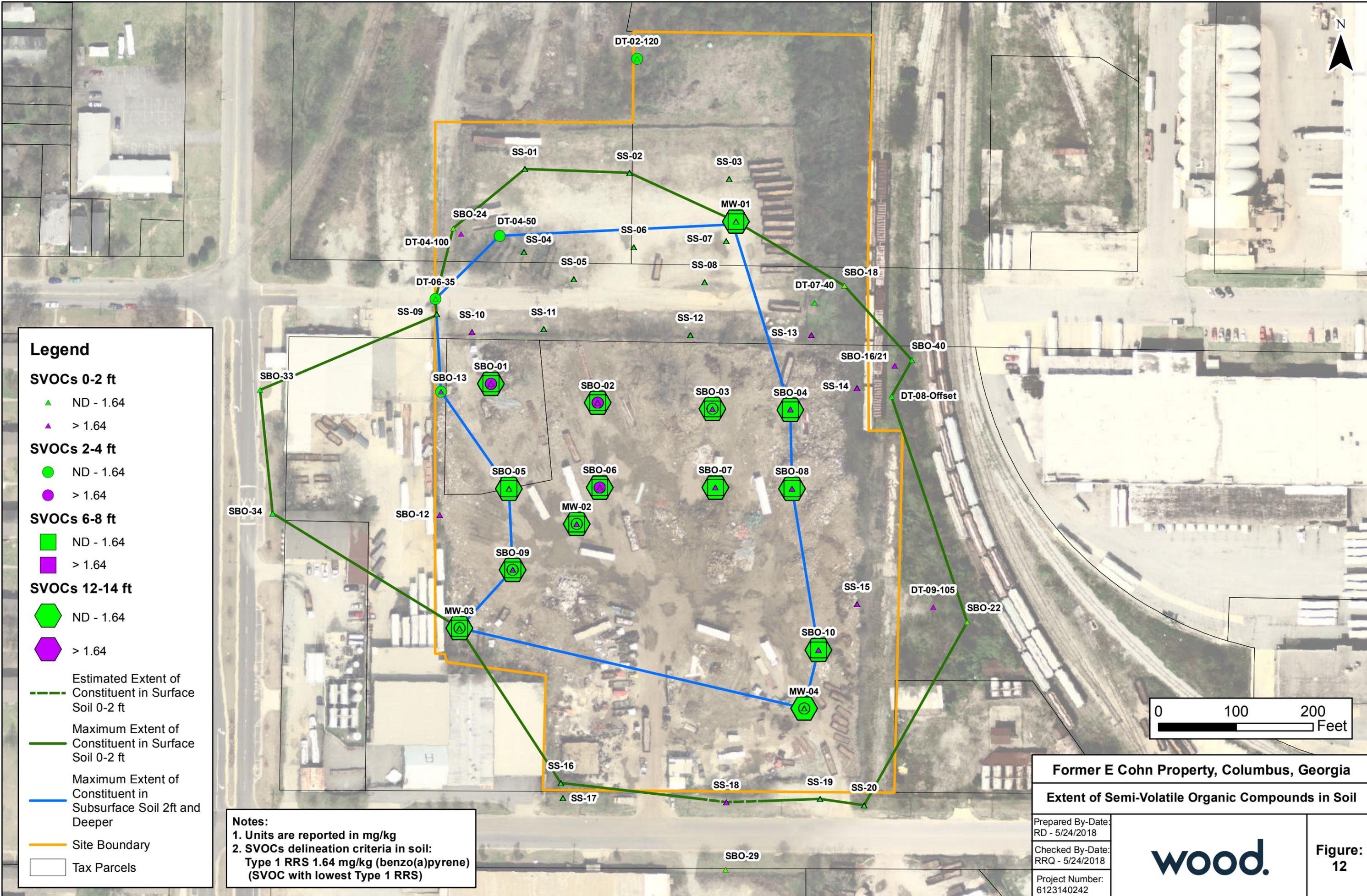
Prepared By-Date:
RD - 5/24/2018

Checked By-Date:
RRQ - 5/24/2018

Project Number:
6123140242



Figure:
11



Legend

- SVOCs 0-2 ft**
- ▲ ND - 1.64
 - ▲ > 1.64
- SVOCs 2-4 ft**
- ND - 1.64
 - > 1.64
- SVOCs 6-8 ft**
- ND - 1.64
 - > 1.64
- SVOCs 12-14 ft**
- ⬡ ND - 1.64
 - ⬡ > 1.64
- Estimated Extent of Constituent in Surface Soil 0-2 ft
- Maximum Extent of Constituent in Surface Soil 0-2 ft
- Maximum Extent of Constituent in Subsurface Soil 2ft and Deeper
- Site Boundary
- Tax Parcels

Notes:
 1. Units are reported in mg/kg
 2. SVOCs delineation criteria in soil:
 Type 1 RRS 1.64 mg/kg (benzo(a)pyrene)
 (SVOC with lowest Type 1 RRS)

Former E Cohn Property, Columbus, Georgia		
Extent of Semi-Volatile Organic Compounds in Soil		
Prepared By-Date: RD - 5/24/2018		Figure: 12
Checked By-Date: RRQ - 5/24/2018		
Project Number: 6123140242		



Legend

VOCs 0-2 ft

- ▲ ND - 0.5
- ▲ > 0.5

VOCs 2-4 ft

- ND - 0.5
- > 0.5

VOCs 6-8 ft

- ND - 0.5
- > 0.5

VOCs 12-14 ft

- ⬡ ND - 0.5
- ⬡ > 0.5

VOCs 18-20 ft

- ⬠ ND - 0.5
- ⬠ > 0.5

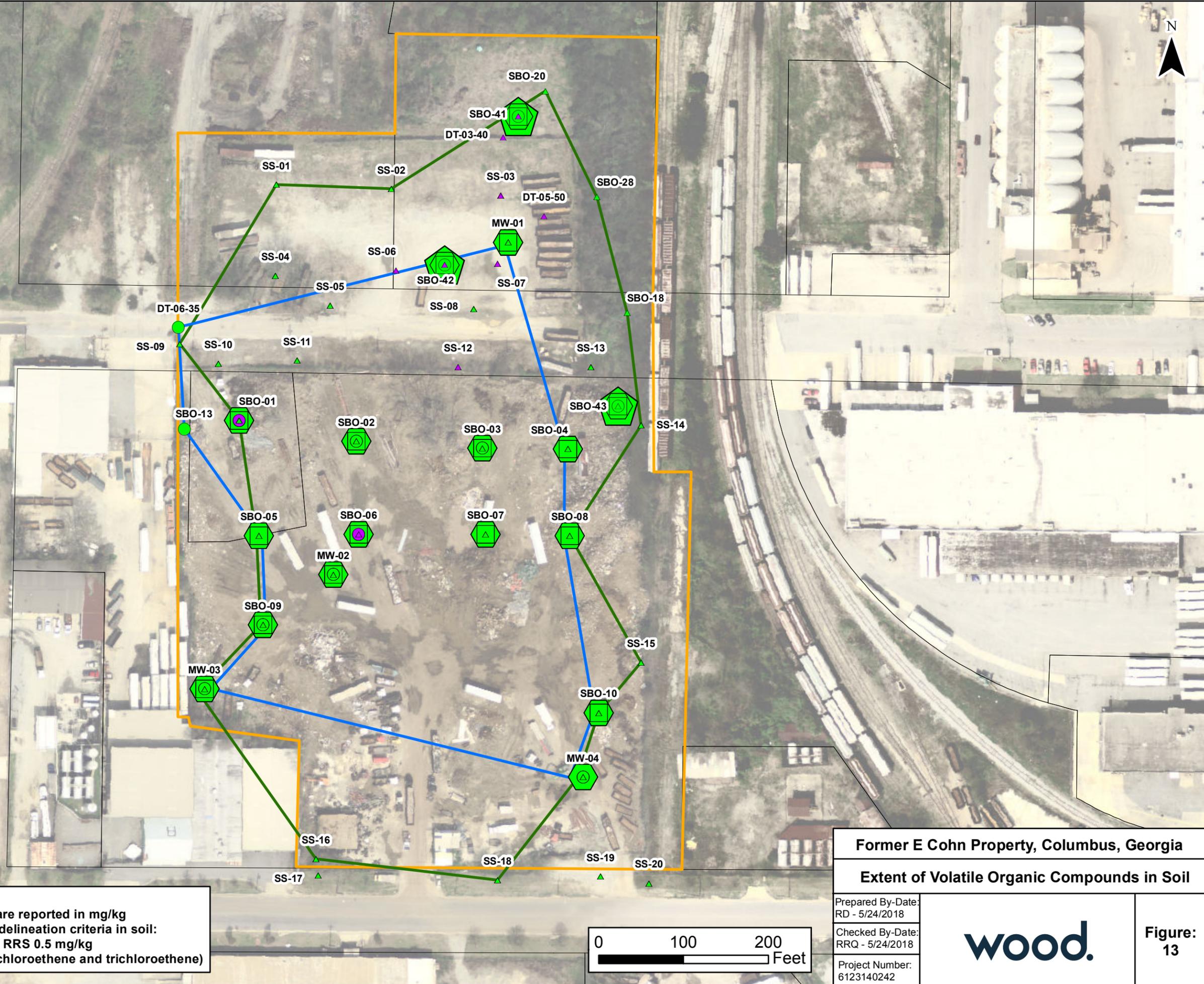
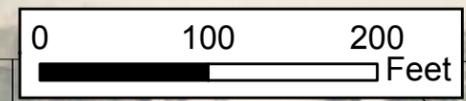
— Maximum Extent of Constituent in Surface Soil 0-2 ft

— Maximum Extent of Constituent in Subsurface Soil 2ft and Deeper

— Site Boundary

□ Tax Parcels

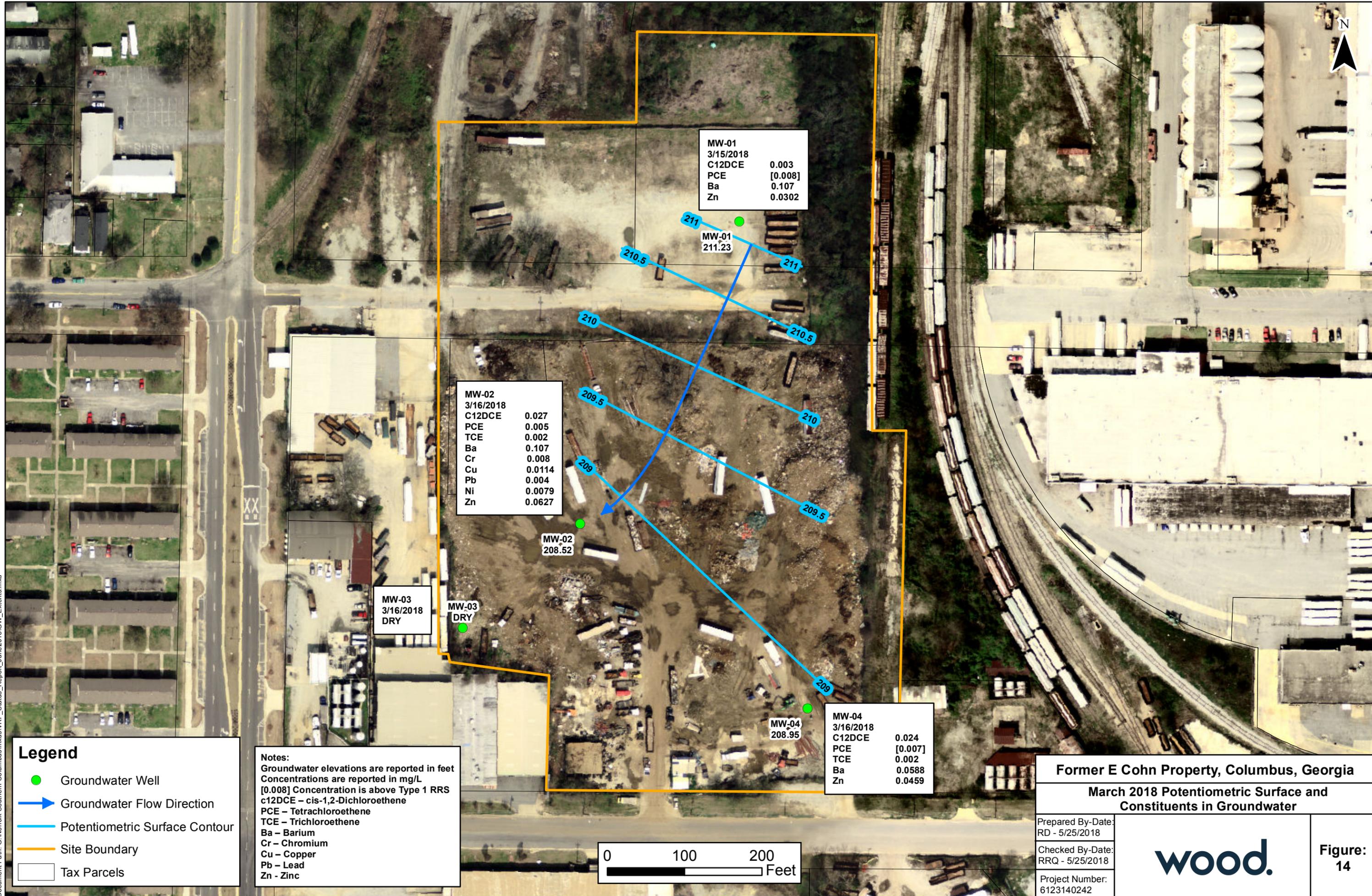
Notes:
 1. Units are reported in mg/kg
 2. VOCs delineation criteria in soil:
 Type 1 RRS 0.5 mg/kg
 (tetrachloroethene and trichloroethene)



Former E Cohn Property, Columbus, Georgia

Extent of Volatile Organic Compounds in Soil

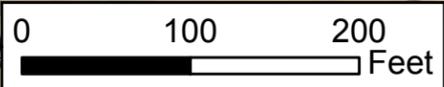
Prepared By-Date: RD - 5/24/2018		Figure: 13
Checked By-Date: RRQ - 5/24/2018		
Project Number: 6123140242		



Legend

- Groundwater Well
- ➔ Groundwater Flow Direction
- Potentiometric Surface Contour
- Site Boundary
- Tax Parcels

Notes:
 Groundwater elevations are reported in feet
 Concentrations are reported in mg/L
 [0.008] Concentration is above Type 1 RRS
 c12DCE – cis-1,2-Dichloroethene
 PCE – Tetrachloroethene
 TCE – Trichloroethene
 Ba – Barium
 Cr – Chromium
 Cu – Copper
 Pb – Lead
 Zn – Zinc



MW-01	
3/15/2018	
C12DCE	0.003
PCE	[0.008]
Ba	0.107
Zn	0.0302

MW-01
211.23

MW-02	
3/16/2018	
C12DCE	0.027
PCE	0.005
TCE	0.002
Ba	0.107
Cr	0.008
Cu	0.0114
Pb	0.004
Ni	0.0079
Zn	0.0627

MW-02
208.52

MW-03
3/16/2018
DRY

MW-03
DRY

MW-04	
3/16/2018	
C12DCE	0.024
PCE	[0.007]
TCE	0.002
Ba	0.0588
Zn	0.0459

MW-04
208.95

Former E Cohn Property, Columbus, Georgia

**March 2018 Potentiometric Surface and
Constituents in Groundwater**

Prepared By-Date: RD - 5/25/2018		Figure: 14
Checked By-Date: RRQ - 5/25/2018		
Project Number: 6123140242		

APPENDICES

APPENDIX A

**LABORATORY REPORTS FOR MARCH 2018 SOIL AND
GROUNDWATER SAMPLING**



ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Norfolk Southern Railway Co.
1200 Peachtree Street, NE
Box 13
Atlanta GA 30309

Report Date: April 20, 2018 10:49

Project: Former Cohn Property/Columbus, GA

Account #: 10302
Group Number: 1918726
PO Number: SA14.127-001
Release Number: 1440001625
State of Sample Origin: GA

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at <http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/> . To request copies of prior scopes of accreditation, contact your project manager.

Electronic Copy To Amec Foster Wheeler
Electronic Copy To Amec Foster Wheeler
Electronic Copy To Amec Foster Wheeler

Attn: Rhonda Quinn
Attn: Michelle Barker
Attn: Judy Hartness

Respectfully Submitted,



Katherine A. Klinefelter
Principal Specialist

(717) 556-7256



SAMPLE INFORMATION

<u>Client Sample Description</u>	<u>Sample Collection Date/Time</u>	<u>ELLE#</u>
SBO-30-0-2-0318 Grab Soil	03/08/2018 15:50	9501665
SBO-30-2-4-0318 Grab Soil	03/08/2018 16:45	9501666
SBO-30-6-8-0318 Grab Soil	03/08/2018 16:50	9501667
SBO-32-0-2-0318 Grab Soil	03/07/2018 18:40	9501668
SBO-33-0-2-0318 Grab Soil	03/08/2018 17:40	9501669
SBO-33-0-2-0318MS Grab Soil	03/08/2018 17:40	9501670
SBO-33-0-2-0318MSD Grab Soil	03/08/2018 17:40	9501671
SBO-33-0-2-0318DUP Grab Soil	03/09/2018 17:40	9501672
SBO-34-0-2-0318 Grab Soil	03/09/2018 08:55	9501673
SBO-34-0-2-0318MS Grab Soil	03/09/2018 08:55	9501674
SBO-34-0-2-0318MSD Grab Soil	03/09/2018 08:55	9501675
SBO-34-2-4-0318 Grab Soil	03/09/2018 09:00	9501676
SBO-34-6-8-0318 Grab Soil	03/09/2018 09:05	9501677
SBO-35-0-2-0318 Grab Soil	03/09/2018 09:20	9501678
SBO-35-2-4-0318 Grab Soil	03/09/2018 09:25	9501679
SBO-35-6-8-0318 Grab Soil	03/09/2018 09:30	9501680
SBO-35-8-10-0318 Grab Soil	03/09/2018 09:35	9501681
SBO-36-0-2-0318 Grab Soil	03/09/2018 09:52	9501682
SBO-36-2-4-0318 Grab Soil	03/09/2018 09:56	9501683
SBO-36-2-4-0318MS Grab Soil	03/09/2018 09:56	9501684
SBO-36-2-4-0318MSD Grab Soil	03/09/2018 09:56	9501685
SBO-36-6-8-0318 Grab Soil	03/09/2018 09:58	9501686
SBO-36-8-10-0318 Grab Soil	03/09/2018 10:02	9501687
SBO-37-0-2-0318 Grab Soil	03/09/2018 10:11	9501688
SBO-37-2-4-0318 Grab Soil	03/09/2018 10:14	9501689
SBO-37-6-8-0318 Grab Soil	03/09/2018 10:19	9501690
SBO-38-0-2-0318 Grab Soil	03/06/2018 16:50	9501691
SBO-39-0-2-0318 Grab Soil	03/08/2018 09:10	9501692
SBO-40-0-2-0318 Grab Soil	03/08/2018 08:55	9501693
SBO-41-0-2-0318 Grab Soil	03/06/2018 14:20	9501694
SBO-41-2-4-0318 Grab Soil	03/06/2018 14:35	9501695
SBO-41-6-8-0318 Grab Soil	03/06/2018 14:55	9501696
SBO-41-12-14-0318 Grab Soil	03/06/2018 14:56	9501697
SBO-41-18-20-0318 Grab Soil	03/06/2018 15:08	9501698
SBO-42-0-2-0318 Grab Soil	03/05/2018 16:50	9501699
SBO-42-2-4-0318 Grab Soil	03/05/2018 17:05	9501700
SBO-42-6-8-0318 Grab Soil	03/05/2018 17:18	9501701
SBO-42-12-14-0318 Grab Soil	03/05/2018 17:33	9501702
SBO-42-18-20-0318 Grab Soil	03/05/2018 17:39	9501703
SBO-43-0-2-0318 Grab Soil	03/09/2018 15:25	9501704
SBO-43-2-4-0318 Grab Soil	03/09/2018 15:30	9501705
SBO-43-6-8-0318 Grab Soil	03/09/2018 15:35	9501706
SBO-43-6-8-0318MS Grab Soil	03/09/2018 15:35	9501707
SBO-43-6-8-0318MSD Grab Soil	03/09/2018 15:35	9501708
SBO-43-12-14-0318 Grab Soil	03/09/2018 15:40	9501709



<u>Client Sample Description</u>	<u>Sample Collection Date/Time</u>	<u>ELLE#</u>
SBO-43-18-20-0318 Grab Soil	03/09/2018 15:45	9501710
SBO-DUP01-0318 Grab Soil	03/09/2018 12:00	9501711
SBO-DUP02-0318 Grab Soil	03/09/2018 12:00	9501712
SBO-DUP03-0318 Grab Soil	03/05/2018 12:00	9501713
SBO-DUP04-0318 Grab Soil	03/09/2018 12:00	9501714
TRIP BLANK (COOLER 1) Sodium Bisulfate	NA	9501715
TRIP BLANK (COOLER 2) Sodium Bisulfate	NA	9501716
TRIP BLANK (COOLER 3) Sodium Bisulfate	NA	9501717

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Project Name: Former Cohn Property/Columbus, GA
ELLE Group #: 1918726

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below.

Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are included in this data set.

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

SW-846 8082A Feb 2007 Rev 1, PCBs

Sample #s: 9501712

Z=The response for a target analyte(s) in the continuing calibration verification standard is outside the QC acceptance limits. Since the response is high indicating increased sensitivity, and the target analyte(s) is not detected in the sample, the data is reported.

PCB 1016/1260 are used for the LCS/MS/MSD.

Batch #: 180810037A (Sample number(s): 9501669, 9501678-9501680, 9501682-9501686 UNSPK: 9501683)

The relative percent difference(s) for the following analyte(s) in the MS/MSD were outside acceptance windows: PCB-1254

SW-846 6010C, Metals

Batch #: 180731063702 (Sample number(s): 9501665, 9501669-9501672, 9501676-9501680, 9501683, 9501686, 9501705-9501706, 9501709-9501710, 9501714 UNSPK: 9501669 BKG: 9501669)

The recovery(ies) for the following analyte(s) in the MS and/or MSD exceeded the acceptance window indicating a positive bias: Copper, Lead, Zinc

The recovery(ies) for the following analyte(s) in the MS and/or MSD were below the acceptance window: Lead

The relative percent difference(s) for the following analyte(s) in the MS/MSD were outside acceptance windows: Copper, Lead, Zinc

Batch #: 180731063703 (Sample number(s): 9501673, 9501681-9501682, 9501687-9501693, 9501699, 9501704 UNSPK: 9501673 BKG: 9501673)

The recovery(ies) for the following analyte(s) in the MS and/or MSD exceeded the acceptance window indicating a positive bias: Copper, Lead, Zinc

The relative percent difference(s) for the following analyte(s) in the MS/MSD were outside acceptance

windows: Copper, Lead, Zinc

The duplicate RPD for the following analyte(s) exceeded the acceptance window: Lead

Batch #: 180781063701 (Sample number(s): 9501700 UNSPK: 9501700 BKG: 9501700)

The recovery(ies) for the following analyte(s) in the MS and/or MSD exceeded the acceptance window indicating a positive bias: Copper

The recovery(ies) for the following analyte(s) in the MS and/or MSD were below the acceptance window: Lead

SW-846 6020A, Metals

Batch #: 180731063702A (Sample number(s): 9501666-9501672, 9501679-9501680, 9501683, 9501686, 9501705-9501706, 9501709-9501710, 9501714 UNSPK: 9501669 BKG: 9501669)

The recovery(ies) for the following analyte(s) in the MS and/or MSD were below the acceptance window: Antimony, Chromium, Arsenic

Batch #: 180731063703A (Sample number(s): 9501673, 9501689-9501690, 9501692-9501693, 9501695-9501696, 9501704 UNSPK: 9501673 BKG: 9501673)

The recovery(ies) for the following analyte(s) in the MS and/or MSD were below the acceptance window: Antimony

The duplicate RPD for the following analyte(s) exceeded the acceptance window: Antimony

SM 2540 G-1997 %Moisture Calc. Wet Chemistry

Batch #: 18073820006A (Sample number(s): 9501665-9501668 BKG: P501669)

The duplicate RPD for the following analyte(s) exceeded the acceptance window: Moisture

Sample Description: SBO-30-0-2-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501665
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/08/2018 15:50

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Metals						
		SW-846 6010C	mg/kg	mg/kg	mg/kg	
06955	Lead	7439-92-1	66.5	3.05	0.609	1
Wet Chemistry						
		SM 2540 G-1997	%	%	%	
		%Moisture Calc				
00111	Moisture	n.a.	17.9	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06955	Lead	SW-846 6010C	1	180731063702	03/20/2018 18:19	Elaine F Stoltzfus	1
10637	SW SW846 (IV)ICP/ICPMS Digest	SW-846 3050B	1	180731063702	03/14/2018 23:45	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820006A	03/14/2018 21:01	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-30-2-4-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501666
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/08/2018 16:45

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Metals						
		SW-846 6020A	mg/kg	mg/kg	mg/kg	
06124	Antimony	7440-36-0	< 0.410	0.410	0.0955	2
Wet Chemistry						
		SM 2540 G-1997	%	%	%	
		%Moisture Calc				
00111	Moisture	n.a.	16.6	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06124	Antimony	SW-846 6020A	1	180731063702A	03/19/2018 20:45	Bradley M Berlot	2
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180731063702	03/14/2018 23:45	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820006A	03/14/2018 21:01	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-30-6-8-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501667
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/08/2018 16:50

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Metals						
		SW-846 6020A	mg/kg	mg/kg	mg/kg	
06124	Antimony	7440-36-0	< 0.426	0.426	0.0993	2
Wet Chemistry						
		SM 2540 G-1997	%	%	%	
		%Moisture Calc				
00111	Moisture	n.a.	11.5	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06124	Antimony	SW-846 6020A	1	180731063702A	03/19/2018 20:47	Bradley M Berlot	2
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180731063702	03/14/2018 23:45	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820006A	03/14/2018 21:01	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-32-0-2-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501668
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/07/2018 18:40

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Metals						
		SW-846 6020A	mg/kg	mg/kg	mg/kg	
06125	Arsenic	7440-38-2	9.68	0.860	0.138	2
Wet Chemistry						
		SM 2540 G-1997	%	%	%	
		%Moisture Calc				
00111	Moisture	n.a.	31.6	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06125	Arsenic	SW-846 6020A	1	180731063702A	03/19/2018 20:52	Bradley M Berlot	2
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180731063702	03/14/2018 23:45	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820006A	03/14/2018 21:01	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-33-0-2-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501669
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/08/2018 17:40

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles						
10726	Benzo(a)pyrene	SW-846 8270D 50-32-8	ug/kg 650	ug/kg 19	ug/kg 4	1
PCBs						
SW-846 8082A Feb 2007 Rev 1						
10885	PCB-1248	12672-29-6	< 19 D1	19	2.2	1
10885	PCB-1254	11097-69-1	< 19 D1	19	2.9	1
Metals						
SW-846 6010C						
06953	Copper	7440-50-8	36.6	1.67	0.200	1
06955	Lead	7439-92-1	50.5	2.50	0.500	1
06961	Nickel	7440-02-0	9.59	1.67	0.125	1
06972	Zinc	7440-66-6	100	3.33	0.200	1
SW-846 6020A						
06124	Antimony	7440-36-0	0.469	0.333	0.0776	2
06125	Arsenic	7440-38-2	14.6	0.666	0.107	2
06128	Cadmium	7440-43-9	0.330	0.167	0.0286	2
06131	Chromium	7440-47-3	23.3	0.666	0.145	2
SW-846 7471B						
00159	Mercury	7439-97-6	< 0.111	0.111	0.0111	1
Wet Chemistry						
SM 2540 G-1997 %Moisture Calc						
00111	Moisture	n.a.	11.7	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	SVOA 8270D (microwave)	SW-846 8270D	1	18078SLF026	03/21/2018 04:02	Brandon K Cordova	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18078SLF026	03/20/2018 08:00	Kayla A Yuditsky	1
10885	PCBs 8082A	SW-846 8082A Feb 2007 Rev 1	1	180810037A	03/26/2018 01:48	Kirby B Turner	1
10497	PCB Microwave Soil Extraction	SW-846 3546	3	180810037A	03/22/2018 19:30	Sally L Appleyard	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-33-0-2-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501669
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/08/2018 17:40

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06953	Copper	SW-846 6010C	1	180731063702	03/20/2018 17:55	Elaine F Stoltzfus	1
06955	Lead	SW-846 6010C	1	180731063702	03/20/2018 17:55	Elaine F Stoltzfus	1
06961	Nickel	SW-846 6010C	1	180731063702	03/20/2018 17:55	Elaine F Stoltzfus	1
06972	Zinc	SW-846 6010C	1	180731063702	03/20/2018 17:55	Elaine F Stoltzfus	1
06124	Antimony	SW-846 6020A	1	180731063702A	03/19/2018 20:34	Bradley M Berlot	2
06125	Arsenic	SW-846 6020A	1	180731063702A	03/19/2018 20:34	Bradley M Berlot	2
06128	Cadmium	SW-846 6020A	1	180731063702A	03/19/2018 20:34	Bradley M Berlot	2
06131	Chromium	SW-846 6020A	1	180731063702A	03/19/2018 20:34	Bradley M Berlot	2
00159	Mercury	SW-846 7471B	1	180751063801	03/19/2018 07:56	Damary Valentin	1
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180731063702	03/14/2018 23:45	Denise L Trimby	1
10638	Hg - SW, 7471B - U4	SW-846 7471B	1	180731063801	03/15/2018 01:55	Denise L Trimby	1
10638	Hg - SW, 7471B - U4	SW-846 7471B	2	180751063801	03/19/2018 03:15	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	2	18074820003A	03/15/2018 22:11	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-33-0-2-0318MS Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501670
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/08/2018 17:40

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Metals			SW-846 6010C	mg/kg	mg/kg	
06953	Copper	7440-50-8	56.4	1.99	0.238	1
06955	Lead	7439-92-1	55.4	2.98	0.596	1
06961	Nickel	7440-02-0	57.3	1.99	0.149	1
06972	Zinc	7440-66-6	140	3.97	0.238	1
			SW-846 6020A	mg/kg	mg/kg	
06124	Antimony	7440-36-0	1.01	0.397	0.0926	2
06125	Arsenic	7440-38-2	13.8	0.795	0.127	2
06128	Cadmium	7440-43-9	1.17	0.199	0.0342	2
06131	Chromium	7440-47-3	31.0	0.795	0.173	2
			SW-846 7471B	mg/kg	mg/kg	
00159	Mercury	7439-97-6	0.210	0.113	0.0113	1
Wet Chemistry			SM 2540 G-1997	%	%	
			%Moisture Calc			
00118	Moisture	n.a.	11.7	0.50	0.50	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06953	Copper	SW-846 6010C	1	180731063702	03/20/2018 18:07	Elaine F Stoltzfus	1
06955	Lead	SW-846 6010C	1	180731063702	03/20/2018 18:07	Elaine F Stoltzfus	1
06961	Nickel	SW-846 6010C	1	180731063702	03/20/2018 18:07	Elaine F Stoltzfus	1
06972	Zinc	SW-846 6010C	1	180731063702	03/20/2018 18:07	Elaine F Stoltzfus	1
06124	Antimony	SW-846 6020A	1	180731063702A	03/19/2018 20:39	Bradley M Berlot	2
06125	Arsenic	SW-846 6020A	1	180731063702A	03/19/2018 20:39	Bradley M Berlot	2
06128	Cadmium	SW-846 6020A	1	180731063702A	03/19/2018 20:39	Bradley M Berlot	2
06131	Chromium	SW-846 6020A	1	180731063702A	03/19/2018 20:39	Bradley M Berlot	2
00159	Mercury	SW-846 7471B	1	180751063801	03/19/2018 08:02	Damary Valentin	1
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180731063702	03/14/2018 23:45	Denise L Trimby	1
10638	Hg - SW, 7471B - U4	SW-846 7471B	1	180731063801	03/15/2018 01:55	Denise L Trimby	1
10638	Hg - SW, 7471B - U4	SW-846 7471B	2	180751063801	03/19/2018 03:15	Denise L Trimby	1
00118	Moisture	SM 2540 G-1997 %Moisture Calc	2	18074820003A	03/15/2018 22:11	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-33-0-2-0318MSD Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501671
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/08/2018 17:40

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Metals			SW-846 6010C	mg/kg	mg/kg	
06953	Copper	7440-50-8	91.7	2.02	0.243	1
06955	Lead	7439-92-1	322	3.03	0.607	1
06961	Nickel	7440-02-0	59.0	2.02	0.152	1
06972	Zinc	7440-66-6	172	4.04	0.243	1
			SW-846 6020A	mg/kg	mg/kg	
06124	Antimony	7440-36-0	1.07	0.404	0.0942	2
06125	Arsenic	7440-38-2	16.2	0.809	0.129	2
06128	Cadmium	7440-43-9	1.30	0.202	0.0348	2
06131	Chromium	7440-47-3	30.6	0.809	0.176	2
			SW-846 7471B	mg/kg	mg/kg	
00159	Mercury	7439-97-6	0.207	0.113	0.0113	1
Wet Chemistry			SM 2540 G-1997	%	%	
			%Moisture Calc			
00118	Moisture	n.a.	11.7	0.50	0.50	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06953	Copper	SW-846 6010C	1	180731063702	03/20/2018 18:11	Elaine F Stoltzfus	1
06955	Lead	SW-846 6010C	1	180731063702	03/20/2018 18:11	Elaine F Stoltzfus	1
06961	Nickel	SW-846 6010C	1	180731063702	03/20/2018 18:11	Elaine F Stoltzfus	1
06972	Zinc	SW-846 6010C	1	180731063702	03/20/2018 18:11	Elaine F Stoltzfus	1
06124	Antimony	SW-846 6020A	1	180731063702A	03/19/2018 20:41	Bradley M Berlot	2
06125	Arsenic	SW-846 6020A	1	180731063702A	03/19/2018 20:41	Bradley M Berlot	2
06128	Cadmium	SW-846 6020A	1	180731063702A	03/19/2018 20:41	Bradley M Berlot	2
06131	Chromium	SW-846 6020A	1	180731063702A	03/19/2018 20:41	Bradley M Berlot	2
00159	Mercury	SW-846 7471B	1	180751063801	03/19/2018 08:04	Damary Valentin	1
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180731063702	03/14/2018 23:45	Denise L Trimby	1
10638	Hg - SW, 7471B - U4	SW-846 7471B	1	180731063801	03/15/2018 01:55	Denise L Trimby	1
10638	Hg - SW, 7471B - U4	SW-846 7471B	2	180751063801	03/19/2018 03:15	Denise L Trimby	1
00118	Moisture	SM 2540 G-1997 %Moisture Calc	2	18074820003A	03/15/2018 22:11	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-33-0-2-0318DUP Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501672
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 17:40

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Metals			SW-846 6010C	mg/kg	mg/kg	
06953	Copper	7440-50-8	30.6	1.94	0.232	1
06955	Lead	7439-92-1	46.7	2.90	0.581	1
06961	Nickel	7440-02-0	10.6	1.94	0.145	1
06972	Zinc	7440-66-6	102	3.87	0.232	1
			SW-846 6020A	mg/kg	mg/kg	
06124	Antimony	7440-36-0	0.402	0.387	0.0902	2
06125	Arsenic	7440-38-2	17.0	0.774	0.124	2
06128	Cadmium	7440-43-9	0.288	0.194	0.0333	2
06131	Chromium	7440-47-3	21.9	0.774	0.168	2
			SW-846 7471B	mg/kg	mg/kg	
00159	Mercury	7439-97-6	< 0.108	0.108	0.0108	1
Wet Chemistry			SM 2540 G-1997	%	%	
			%Moisture Calc			
00118	Moisture	n.a.	11.7	0.50	0.50	1
00121	Moisture Duplicate	n.a.	12.0	0.50	0.50	1

The duplicate moisture value is provided to assess the precision of the moisture test. For comparability purposes, the initial moisture determination is the value used to perform dry weight calculations.

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06953	Copper	SW-846 6010C	1	180731063702	03/20/2018 18:03	Elaine F Stoltzfus	1
06955	Lead	SW-846 6010C	1	180731063702	03/20/2018 18:03	Elaine F Stoltzfus	1
06961	Nickel	SW-846 6010C	1	180731063702	03/20/2018 18:03	Elaine F Stoltzfus	1
06972	Zinc	SW-846 6010C	1	180731063702	03/20/2018 18:03	Elaine F Stoltzfus	1
06124	Antimony	SW-846 6020A	1	180731063702A	03/19/2018 20:37	Bradley M Berlot	2
06125	Arsenic	SW-846 6020A	1	180731063702A	03/19/2018 20:37	Bradley M Berlot	2
06128	Cadmium	SW-846 6020A	1	180731063702A	03/19/2018 20:37	Bradley M Berlot	2
06131	Chromium	SW-846 6020A	1	180731063702A	03/19/2018 20:37	Bradley M Berlot	2
00159	Mercury	SW-846 7471B	1	180751063801	03/19/2018 08:00	Damary Valentin	1
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180731063702	03/14/2018 23:45	Denise L Trimby	1
10638	Hg - SW, 7471B - U4	SW-846 7471B	1	180731063801	03/15/2018 01:55	Denise L Trimby	1
10638	Hg - SW, 7471B - U4	SW-846 7471B	2	180751063801	03/19/2018 03:15	Denise L Trimby	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-33-0-2-0318DUP Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501672
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 17:40

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00118	Moisture	SM 2540 G-1997 %Moisture Calc	2	18074820003A	03/15/2018 22:11	Scott W Freisher	1
00121	Moisture Duplicate	SM 2540 G-1997 %Moisture Calc	2	18074820003A	03/15/2018 22:11	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-34-0-2-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501673
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 08:55

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles			SW-846 8270D	ug/kg	ug/kg	
10726	Benzo(a)anthracene	56-55-3	43	19	4	1
10726	Benzo(a)pyrene	50-32-8	56	19	4	1
10726	Benzo(b)fluoranthene	205-99-2	92	19	4	1
10726	Chrysene	218-01-9	53	19	4	1
Metals			SW-846 6010C	mg/kg	mg/kg	
06953	Copper	7440-50-8	39.6	1.61	0.193	1
06955	Lead	7439-92-1	44.2	2.42	0.483	1
06972	Zinc	7440-66-6	80.5	3.22	0.193	1
			SW-846 6020A	mg/kg	mg/kg	
06128	Cadmium	7440-43-9	0.169	0.161	0.0277	2
06131	Chromium	7440-47-3	21.1	0.645	0.140	2
Wet Chemistry			SM 2540 G-1997	%	%	
00111	Moisture	n.a.	13.2	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	SVOA 8270D (microwave)	SW-846 8270D	1	18078SLF026	03/21/2018 04:26	Brandon K Cordova	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18078SLF026	03/20/2018 08:00	Kayla A Yuditsky	1
06953	Copper	SW-846 6010C	1	180731063703	03/15/2018 10:56	Eric L Eby	1
06955	Lead	SW-846 6010C	1	180731063703	03/15/2018 10:56	Eric L Eby	1
06972	Zinc	SW-846 6010C	1	180731063703	03/15/2018 10:56	Eric L Eby	1
06128	Cadmium	SW-846 6020A	1	180731063703A	03/19/2018 18:50	Bradley M Berlot	2
06131	Chromium	SW-846 6020A	1	180731063703A	03/19/2018 18:50	Bradley M Berlot	2
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180731063703	03/14/2018 22:55	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820006B	03/14/2018 21:01	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-34-0-2-0318MS Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501674
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 08:55

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles						
		SW-846 8270D	ug/kg	ug/kg	ug/kg	
10726	Benzo(a)anthracene	56-55-3	1,700	19	4	1
10726	Benzo(a)pyrene	50-32-8	1,800	19	4	1
10726	Benzo(b)fluoranthene	205-99-2	1,800	19	4	1
10726	Chrysene	218-01-9	1,600	19	4	1
Wet Chemistry						
		SM 2540 G-1997	%	%	%	
		%Moisture Calc				
00118	Moisture	n.a.	13.2	0.50	0.50	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	SVOA 8270D (microwave)	SW-846 8270D	1	18078SLF026	03/21/2018 04:49	Brandon K Cordova	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18078SLF026	03/20/2018 08:00	Kayla A Yuditsky	1
00118	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820006B	03/14/2018 21:01	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-34-0-2-0318MSD Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501675
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 08:55

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles		SW-846 8270D	ug/kg	ug/kg	ug/kg	
10726	Benzo(a)anthracene	56-55-3	1,700	19	4	1
10726	Benzo(a)pyrene	50-32-8	1,900	19	4	1
10726	Benzo(b)fluoranthene	205-99-2	1,800	19	4	1
10726	Chrysene	218-01-9	1,600	19	4	1
Wet Chemistry		SM 2540 G-1997	%	%	%	
		%Moisture Calc				
00118	Moisture	n.a.	13.2	0.50	0.50	1
00121	Moisture Duplicate	n.a.	13.4	0.50	0.50	1

The duplicate moisture value is provided to assess the precision of the moisture test. For comparability purposes, the initial moisture determination is the value used to perform dry weight calculations.

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	SVOA 8270D (microwave)	SW-846 8270D	1	18078SLF026	03/21/2018 05:13	Brandon K Cordova	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18078SLF026	03/20/2018 08:00	Kayla A Yuditsky	1
00118	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820006B	03/14/2018 21:01	Scott W Freisher	1
00121	Moisture Duplicate	SM 2540 G-1997 %Moisture Calc	1	18073820006B	03/14/2018 21:01	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-34-2-4-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501676
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 09:00

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Metals						
		SW-846 6010C	mg/kg	mg/kg	mg/kg	
06955	Lead	7439-92-1	4.97	2.20	0.439	1
Wet Chemistry						
		SM 2540 G-1997	%	%	%	
		%Moisture Calc				
00111	Moisture	n.a.	8.3	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06955	Lead	SW-846 6010C	1	180731063702	03/20/2018 18:23	Elaine F Stoltzfus	1
10637	SW SW846 (IV)ICP/ICPMS Digest	SW-846 3050B	1	180731063702	03/14/2018 23:45	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820006B	03/14/2018 21:01	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-34-6-8-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501677
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 09:05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Metals						
		SW-846 6010C	mg/kg	mg/kg	mg/kg	
06955	Lead	7439-92-1	3.47	2.36	0.472	1
Wet Chemistry						
		SM 2540 G-1997	%	%	%	
		%Moisture Calc				
00111	Moisture	n.a.	6.6	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06955	Lead	SW-846 6010C	1	180731063702	03/20/2018 18:35	Elaine F Stoltzfus	1
10637	SW SW846 (IV)ICP/ICPMS Digest	SW-846 3050B	1	180731063702	03/14/2018 23:45	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820006B	03/14/2018 21:01	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-35-0-2-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501678
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 09:20

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
PCBs		SW-846 8082A Feb 2007 Rev 1		ug/kg	ug/kg	
10885	PCB-1248	12672-29-6	< 20 D1	20	2.3	1
10885	PCB-1254	11097-69-1	< 20 D1	20	3.0	1
Metals		SW-846 6010C		mg/kg	mg/kg	
06953	Copper	7440-50-8	33.4	2.10	0.252	1
06955	Lead	7439-92-1	38.0	3.15	0.631	1
06972	Zinc	7440-66-6	75.8	4.21	0.252	1
Wet Chemistry		SM 2540 G-1997 %Moisture Calc		%	%	
00111	Moisture	n.a.	15.1	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10885	PCBs 8082A	SW-846 8082A Feb 2007 Rev 1	1	180810037A	03/26/2018 02:00	Kirby B Turner	1
10497	PCB Microwave Soil Extraction	SW-846 3546	3	180810037A	03/22/2018 19:30	Sally L Appleyard	1
06953	Copper	SW-846 6010C	1	180731063702	03/20/2018 18:38	Elaine F Stoltzfus	1
06955	Lead	SW-846 6010C	1	180731063702	03/20/2018 18:38	Elaine F Stoltzfus	1
06972	Zinc	SW-846 6010C	1	180731063702	03/20/2018 18:38	Elaine F Stoltzfus	1
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180731063702	03/14/2018 23:45	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820006B	03/14/2018 21:01	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-35-2-4-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501679
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 09:25

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
PCBs		SW-846 8082A Feb 2007 Rev 1	ug/kg	ug/kg	ug/kg	
10885	PCB-1248	12672-29-6	< 20 D1	20	2.4	1
10885	PCB-1254	11097-69-1	< 20 D1	20	3.1	1
Metals		SW-846 6010C	mg/kg	mg/kg	mg/kg	
06953	Copper	7440-50-8	18.5	2.18	0.262	1
06955	Lead	7439-92-1	11.8	3.27	0.654	1
06961	Nickel	7440-02-0	16.0	2.18	0.164	1
06972	Zinc	7440-66-6	62.1	4.36	0.262	1
		SW-846 6020A	mg/kg	mg/kg	mg/kg	
06124	Antimony	7440-36-0	< 0.436	0.436	0.102	2
06125	Arsenic	7440-38-2	2.86	0.873	0.140	2
06128	Cadmium	7440-43-9	< 0.218	0.218	0.0375	2
06131	Chromium	7440-47-3	40.3	0.873	0.190	2
Wet Chemistry		SM 2540 G-1997 %Moisture Calc	%	%	%	
00111	Moisture	n.a.	17.4	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10885	PCBs 8082A	SW-846 8082A Feb 2007 Rev 1	1	180810037A	03/26/2018 02:11	Kirby B Turner	1
10497	PCB Microwave Soil Extraction	SW-846 3546	3	180810037A	03/22/2018 19:30	Sally L Appleyard	1
06953	Copper	SW-846 6010C	1	180731063702	03/20/2018 18:42	Elaine F Stoltzfus	1
06955	Lead	SW-846 6010C	1	180731063702	03/20/2018 18:42	Elaine F Stoltzfus	1
06961	Nickel	SW-846 6010C	1	180731063702	03/20/2018 18:42	Elaine F Stoltzfus	1
06972	Zinc	SW-846 6010C	1	180731063702	03/20/2018 18:42	Elaine F Stoltzfus	1
06124	Antimony	SW-846 6020A	1	180731063702A	03/19/2018 20:54	Bradley M Berlot	2
06125	Arsenic	SW-846 6020A	1	180731063702A	03/19/2018 20:54	Bradley M Berlot	2
06128	Cadmium	SW-846 6020A	1	180731063702A	03/19/2018 20:54	Bradley M Berlot	2
06131	Chromium	SW-846 6020A	1	180731063702A	03/19/2018 20:54	Bradley M Berlot	2
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180731063702	03/14/2018 23:45	Denise L Trimby	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-35-2-4-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501679
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 09:25

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820006B	03/14/2018 21:01	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-35-6-8-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501680
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 09:30

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
PCBs		SW-846 8082A Feb 2007 Rev 1		ug/kg	ug/kg	
10885	PCB-1248	12672-29-6	< 19 D1	19	2.2	1
10885	PCB-1254	11097-69-1	< 19 D1	19	2.9	1
Metals		SW-846 6010C		mg/kg	mg/kg	
06953	Copper	7440-50-8	8.22	1.79	0.215	1
06955	Lead	7439-92-1	5.21	2.69	0.538	1
06961	Nickel	7440-02-0	7.95	1.79	0.135	1
06972	Zinc	7440-66-6	30.6	3.59	0.215	1
		SW-846 6020A		mg/kg	mg/kg	
06124	Antimony	7440-36-0	< 0.359	0.359	0.0836	2
06125	Arsenic	7440-38-2	1.58	0.717	0.115	2
06128	Cadmium	7440-43-9	< 0.179	0.179	0.0309	2
06131	Chromium	7440-47-3	20.6	0.717	0.156	2
Wet Chemistry		SM 2540 G-1997 %Moisture Calc		%	%	
00111	Moisture	n.a.	10.8	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10885	PCBs 8082A	SW-846 8082A Feb 2007 Rev 1	1	180810037A	03/26/2018 02:22	Kirby B Turner	1
10497	PCB Microwave Soil Extraction	SW-846 3546	3	180810037A	03/22/2018 19:30	Sally L Appleyard	1
06953	Copper	SW-846 6010C	1	180731063702	03/20/2018 18:46	Elaine F Stoltzfus	1
06955	Lead	SW-846 6010C	1	180731063702	03/20/2018 18:46	Elaine F Stoltzfus	1
06961	Nickel	SW-846 6010C	1	180731063702	03/20/2018 18:46	Elaine F Stoltzfus	1
06972	Zinc	SW-846 6010C	1	180731063702	03/20/2018 18:46	Elaine F Stoltzfus	1
06124	Antimony	SW-846 6020A	1	180731063702A	03/19/2018 20:56	Bradley M Berlot	2
06125	Arsenic	SW-846 6020A	1	180731063702A	03/19/2018 20:56	Bradley M Berlot	2
06128	Cadmium	SW-846 6020A	1	180731063702A	03/19/2018 20:56	Bradley M Berlot	2
06131	Chromium	SW-846 6020A	1	180731063702A	03/19/2018 20:56	Bradley M Berlot	2
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180731063702	03/14/2018 23:45	Denise L Trimby	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-35-6-8-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501680
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 09:30

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820006B	03/14/2018 21:01	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-35-8-10-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501681
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 09:35

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Metals						
		SW-846 6010C	mg/kg	mg/kg	mg/kg	
06972	Zinc	7440-66-6	20.9	3.00	0.180	1
Wet Chemistry						
		SM 2540 G-1997	%	%	%	
		%Moisture Calc				
00111	Moisture	n.a.	7.5	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06972	Zinc	SW-846 6010C	1	180731063703	03/15/2018 11:29	Eric L Eby	1
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180731063703	03/14/2018 22:55	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820006B	03/14/2018 21:01	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-36-0-2-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501682
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 09:52

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
PCBs		SW-846 8082A Feb 2007 Rev 1		ug/kg	ug/kg	
10885	PCB-1248	12672-29-6	< 19 D1	19	2.2	1
10885	PCB-1254	11097-69-1	< 19 D1	19	2.9	1
Metals		SW-846 6010C		mg/kg	mg/kg	
06953	Copper	7440-50-8	130	2.10	0.251	1
06955	Lead	7439-92-1	138	3.14	0.629	1
06972	Zinc	7440-66-6	77.3	4.19	0.251	1
Wet Chemistry		SM 2540 G-1997 %Moisture Calc		%	%	
00111	Moisture	n.a.	10.8	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10885	PCBs 8082A	SW-846 8082A Feb 2007 Rev 1	1	180810037A	03/26/2018 02:33	Kirby B Turner	1
10497	PCB Microwave Soil Extraction	SW-846 3546	3	180810037A	03/22/2018 19:30	Sally L Appleyard	1
06953	Copper	SW-846 6010C	1	180731063703	03/15/2018 11:32	Eric L Eby	1
06955	Lead	SW-846 6010C	1	180731063703	03/15/2018 11:32	Eric L Eby	1
06972	Zinc	SW-846 6010C	1	180731063703	03/15/2018 11:32	Eric L Eby	1
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180731063703	03/14/2018 22:55	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820006B	03/14/2018 21:01	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-36-2-4-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501683
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 09:56

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
PCBs		SW-846 8082A Feb 2007 Rev 1		ug/kg	ug/kg	ug/kg
10885	PCB-1248	12672-29-6	< 20 D1	20	2.4	1
10885	PCB-1254	11097-69-1	< 20 D1	20	3.1	1
Metals		SW-846 6010C		mg/kg	mg/kg	mg/kg
06953	Copper	7440-50-8	21.1	1.78	0.213	1
06955	Lead	7439-92-1	15.8	2.67	0.534	1
06961	Nickel	7440-02-0	16.9	1.78	0.133	1
06972	Zinc	7440-66-6	64.8	3.56	0.213	1
		SW-846 6020A		mg/kg	mg/kg	mg/kg
06124	Antimony	7440-36-0	< 0.356	0.356	0.0829	2
06125	Arsenic	7440-38-2	3.01	0.711	0.114	2
06128	Cadmium	7440-43-9	< 0.178	0.178	0.0306	2
06131	Chromium	7440-47-3	45.6	0.711	0.155	2
Wet Chemistry		SM 2540 G-1997 %Moisture Calc		%	%	%
00111	Moisture	n.a.	16.7	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10885	PCBs 8082A	SW-846 8082A Feb 2007 Rev 1	1	180810037A	03/26/2018 02:45	Kirby B Turner	1
10497	PCB Microwave Soil Extraction	SW-846 3546	3	180810037A	03/22/2018 19:30	Sally L Appleyard	1
06953	Copper	SW-846 6010C	1	180731063702	03/20/2018 18:50	Elaine F Stoltzfus	1
06955	Lead	SW-846 6010C	1	180731063702	03/20/2018 18:50	Elaine F Stoltzfus	1
06961	Nickel	SW-846 6010C	1	180731063702	03/20/2018 18:50	Elaine F Stoltzfus	1
06972	Zinc	SW-846 6010C	1	180731063702	03/20/2018 18:50	Elaine F Stoltzfus	1
06124	Antimony	SW-846 6020A	1	180731063702A	03/19/2018 20:58	Bradley M Berlot	2
06125	Arsenic	SW-846 6020A	1	180731063702A	03/19/2018 20:58	Bradley M Berlot	2
06128	Cadmium	SW-846 6020A	1	180731063702A	03/19/2018 20:58	Bradley M Berlot	2
06131	Chromium	SW-846 6020A	1	180731063702A	03/19/2018 20:58	Bradley M Berlot	2
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180731063702	03/14/2018 23:45	Denise L Trimby	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-36-2-4-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501683
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 09:56

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820009A	03/14/2018 18:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-36-2-4-0318MS Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501684
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 09:56

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
PCBs		SW-846 8082A Feb 2007 Rev 1	ug/kg	ug/kg	ug/kg	
10885	PCB-1248	12672-29-6	< 20 D1	20	2.4	1
10885	PCB-1254	11097-69-1	130 D1	20	3.1	1
Wet Chemistry		SM 2540 G-1997 %Moisture Calc	%	%	%	
00118	Moisture	n.a.	16.7	0.50	0.50	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10885	PCBs 8082A	SW-846 8082A Feb 2007 Rev 1	1	180810037A	03/26/2018 02:56	Kirby B Turner	1
10497	PCB Microwave Soil Extraction	SW-846 3546	3	180810037A	03/22/2018 19:30	Sally L Appleyard	1
00118	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820009A	03/14/2018 18:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-36-2-4-0318MSD Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501685
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 09:56

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
PCBs		SW-846 8082A Feb 2007 Rev 1	ug/kg	ug/kg	ug/kg	
10885	PCB-1248	12672-29-6	< 20 D1	20	2.4	1
10885	PCB-1254	11097-69-1	240 D1	20	3.1	1
Wet Chemistry		SM 2540 G-1997 %Moisture Calc	%	%	%	
00118	Moisture	n.a.	16.7	0.50	0.50	1
00121	Moisture Duplicate	n.a.	17.0	0.50	0.50	1

The duplicate moisture value is provided to assess the precision of the moisture test. For comparability purposes, the initial moisture determination is the value used to perform dry weight calculations.

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10885	PCBs 8082A	SW-846 8082A Feb 2007 Rev 1	1	180810037A	03/26/2018 03:30	Kirby B Turner	1
10497	PCB Microwave Soil Extraction	SW-846 3546	3	180810037A	03/22/2018 19:30	Sally L Appleyard	1
00118	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820009A	03/14/2018 18:40	Scott W Freisher	1
00121	Moisture Duplicate	SM 2540 G-1997 %Moisture Calc	1	18073820009A	03/14/2018 18:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-36-6-8-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501686
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 09:58

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
PCBs		SW-846 8082A Feb 2007 Rev 1		ug/kg	ug/kg	
10885	PCB-1248	12672-29-6	< 19 D1	19	2.2	1
10885	PCB-1254	11097-69-1	< 19 D1	19	2.9	1
Metals		SW-846 6010C		mg/kg	mg/kg	
06953	Copper	7440-50-8	9.98	1.52	0.182	1
06955	Lead	7439-92-1	7.58	2.28	0.456	1
06961	Nickel	7440-02-0	8.81	1.52	0.114	1
06972	Zinc	7440-66-6	34.5	3.04	0.182	1
		SW-846 6020A		mg/kg	mg/kg	
06124	Antimony	7440-36-0	< 0.304	0.304	0.0708	2
06125	Arsenic	7440-38-2	1.65	0.608	0.0973	2
06128	Cadmium	7440-43-9	< 0.152	0.152	0.0261	2
06131	Chromium	7440-47-3	23.3	0.608	0.132	2
Wet Chemistry		SM 2540 G-1997 %Moisture Calc		%	%	
00111	Moisture	n.a.	11.1	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10885	PCBs 8082A	SW-846 8082A Feb 2007 Rev 1	1	180810037A	03/26/2018 03:41	Kirby B Turner	1
10497	PCB Microwave Soil Extraction	SW-846 3546	3	180810037A	03/22/2018 19:30	Sally L Appleyard	1
06953	Copper	SW-846 6010C	1	180731063702	03/20/2018 18:54	Elaine F Stoltzfus	1
06955	Lead	SW-846 6010C	1	180731063702	03/20/2018 18:54	Elaine F Stoltzfus	1
06961	Nickel	SW-846 6010C	1	180731063702	03/20/2018 18:54	Elaine F Stoltzfus	1
06972	Zinc	SW-846 6010C	1	180731063702	03/20/2018 18:54	Elaine F Stoltzfus	1
06124	Antimony	SW-846 6020A	1	180731063702A	03/19/2018 20:59	Bradley M Berlot	2
06125	Arsenic	SW-846 6020A	1	180731063702A	03/19/2018 20:59	Bradley M Berlot	2
06128	Cadmium	SW-846 6020A	1	180731063702A	03/19/2018 20:59	Bradley M Berlot	2
06131	Chromium	SW-846 6020A	1	180731063702A	03/19/2018 20:59	Bradley M Berlot	2
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180731063702	03/14/2018 23:45	Denise L Trimby	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-36-6-8-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501686
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 09:58

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820009A	03/14/2018 18:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-36-8-10-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501687
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 10:02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Metals						
06972	Zinc	SW-846 6010C 7440-66-6	mg/kg 22.8	mg/kg 4.04	mg/kg 0.243	1
Wet Chemistry						
00111	Moisture	SM 2540 G-1997 %Moisture Calc n.a.	% 10.1	% 0.50	% 0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06972	Zinc	SW-846 6010C	1	180731063703	03/15/2018 11:36	Eric L Eby	1
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180731063703	03/14/2018 22:55	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820009A	03/14/2018 18:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-37-0-2-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501688
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 10:11

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Metals			SW-846 6010C	mg/kg	mg/kg	
06953	Copper	7440-50-8	52.4	1.88	0.225	1
06955	Lead	7439-92-1	206	2.81	0.563	1
06972	Zinc	7440-66-6	120	3.75	0.225	1
Wet Chemistry			SM 2540 G-1997	%	%	
00111	Moisture	n.a.	7.3	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06953	Copper	SW-846 6010C	1	180731063703	03/15/2018 11:39	Eric L Eby	1
06955	Lead	SW-846 6010C	1	180731063703	03/15/2018 11:39	Eric L Eby	1
06972	Zinc	SW-846 6010C	1	180731063703	03/15/2018 11:39	Eric L Eby	1
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180731063703	03/14/2018 22:55	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820009A	03/14/2018 18:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-37-2-4-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501689
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 10:14

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Metals			SW-846 6010C	mg/kg	mg/kg	
06953	Copper	7440-50-8	3.59	2.09	0.251	1
06955	Lead	7439-92-1	3.89	3.14	0.628	1
06972	Zinc	7440-66-6	15.7	4.19	0.251	1
			SW-846 6020A	mg/kg	mg/kg	
06128	Cadmium	7440-43-9	< 0.209	0.209	0.0360	2
Wet Chemistry			SM 2540 G-1997	%	%	
			%Moisture Calc			
00111	Moisture	n.a.	6.4	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06953	Copper	SW-846 6010C	1	180731063703	03/15/2018 11:42	Eric L Eby	1
06955	Lead	SW-846 6010C	1	180731063703	03/15/2018 11:42	Eric L Eby	1
06972	Zinc	SW-846 6010C	1	180731063703	03/15/2018 11:42	Eric L Eby	1
06128	Cadmium	SW-846 6020A	1	180731063703A	03/19/2018 19:01	Bradley M Berlot	2
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180731063703	03/14/2018 22:55	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820009A	03/14/2018 18:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-37-6-8-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501690
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 10:19

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Metals						
		SW-846 6010C	mg/kg	mg/kg	mg/kg	
06955	Lead	7439-92-1	< 2.80	2.80	0.560	1
06972	Zinc	7440-66-6	6.50	3.74	0.224	1
		SW-846 6020A	mg/kg	mg/kg	mg/kg	
06128	Cadmium	7440-43-9	< 0.187	0.187	0.0321	2
Wet Chemistry						
		SM 2540 G-1997	%	%	%	
		%Moisture Calc				
00111	Moisture	n.a.	4.4	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06955	Lead	SW-846 6010C	1	180731063703	03/15/2018 11:45	Eric L Eby	1
06972	Zinc	SW-846 6010C	1	180731063703	03/15/2018 11:45	Eric L Eby	1
06128	Cadmium	SW-846 6020A	1	180731063703A	03/19/2018 19:02	Bradley M Berlot	2
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180731063703	03/14/2018 22:55	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820009A	03/14/2018 18:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-38-0-2-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501691
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/06/2018 16:50

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Metals						
		SW-846 6010C	mg/kg	mg/kg	mg/kg	
06972	Zinc	7440-66-6	61.6	3.41	0.205	1
Wet Chemistry						
		SM 2540 G-1997	%	%	%	
		%Moisture Calc				
00111	Moisture	n.a.	18.6	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06972	Zinc	SW-846 6010C	1	180731063703	03/15/2018 11:48	Eric L Eby	1
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180731063703	03/14/2018 22:55	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820009A	03/14/2018 18:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-39-0-2-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501692
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/08/2018 09:10

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Metals						
		SW-846 6010C	mg/kg	mg/kg	mg/kg	
06955	Lead	7439-92-1	390	2.75	0.550	1
06972	Zinc	7440-66-6	234	3.66	0.220	1
SW-846 6020A						
			mg/kg	mg/kg	mg/kg	
06124	Antimony	7440-36-0	15.0	0.366	0.0854	2
Wet Chemistry						
		SM 2540 G-1997	%	%	%	
		%Moisture Calc				
00111	Moisture	n.a.	14.7	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06955	Lead	SW-846 6010C	1	180731063703	03/15/2018 11:51	Eric L Eby	1
06972	Zinc	SW-846 6010C	1	180731063703	03/15/2018 11:51	Eric L Eby	1
06124	Antimony	SW-846 6020A	1	180731063703A	03/19/2018 19:08	Bradley M Berlot	2
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180731063703	03/14/2018 22:55	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820009A	03/14/2018 18:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-40-0-2-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501693
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/08/2018 08:55

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles		SW-846 8270D	ug/kg	ug/kg	ug/kg	
10726	Benzo(a)pyrene	50-32-8	900	20	4	1
10726	Benzo(b)fluoranthene	205-99-2	1,600	20	4	1
Metals		SW-846 6010C	mg/kg	mg/kg	mg/kg	
06955	Lead	7439-92-1	569	2.66	0.532	1
06972	Zinc	7440-66-6	157	3.55	0.213	1
		SW-846 6020A	mg/kg	mg/kg	mg/kg	
06124	Antimony	7440-36-0	4.84	0.355	0.0827	2
Wet Chemistry		SM 2540 G-1997	%	%	%	
		%Moisture Calc				
00111	Moisture	n.a.	15.9	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	SVOA 8270D (microwave)	SW-846 8270D	1	18078SLF026	03/21/2018 05:36	Brandon K Cordova	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18078SLF026	03/20/2018 08:00	Kayla A Yuditsky	1
06955	Lead	SW-846 6010C	1	180731063703	03/15/2018 11:54	Eric L Eby	1
06972	Zinc	SW-846 6010C	1	180731063703	03/15/2018 11:54	Eric L Eby	1
06124	Antimony	SW-846 6020A	1	180731063703A	03/19/2018 19:10	Bradley M Berlot	2
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180731063703	03/14/2018 22:55	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820005A	03/14/2018 22:32	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-41-0-2-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501694
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/06/2018 14:20

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles						
	SW-846 8260C		ug/kg	ug/kg	ug/kg	
11995	Tetrachloroethene	127-18-4	2,800	220	43	36.18
Wet Chemistry						
	SM 2540 G-1997		%	%	%	
	%Moisture Calc					
00111	Moisture	n.a.	16.5	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	8260C Soil Master	SW-846 8260C	1	R180771AA	03/18/2018 13:49	Jeremy C Giffin	36.18
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201807349209	03/06/2018 14:20	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201807349209	03/06/2018 14:20	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201807349209	03/06/2018 14:20	Client Supplied	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820005A	03/14/2018 22:32	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-41-2-4-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501695
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/06/2018 14:35

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles						
11995	Tetrachloroethene	127-18-4	6 ug/kg	5 ug/kg	0.9 ug/kg	0.77
Metals						
06131	Chromium	7440-47-3	27.8 mg/kg	0.906 mg/kg	0.197 mg/kg	2
Wet Chemistry						
00111	Moisture	n.a.	15.1 %	0.50 %	0.50 %	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	8260C Soil Master	SW-846 8260C	1	X180751AA	03/16/2018 12:49	Stephen C Nolte	0.77
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201807349209	03/06/2018 14:35	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201807349209	03/06/2018 14:35	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201807349209	03/06/2018 14:35	Client Supplied	1
06131	Chromium	SW-846 6020A	1	180731063703A	03/19/2018 19:12	Bradley M Berlot	2
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180731063703	03/14/2018 22:55	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820005A	03/14/2018 22:32	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-41-6-8-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501696
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/06/2018 14:55

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles						
11995	Tetrachloroethene	127-18-4	ug/kg	ug/kg	ug/kg	0.83
			< 5	5	1	
Metals						
06131	Chromium	7440-47-3	mg/kg	mg/kg	mg/kg	2
			34.6	0.874	0.190	
Wet Chemistry						
00111	Moisture	n.a.	%	%	%	1
			14.5	0.50	0.50	
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	8260C Soil Master	SW-846 8260C	1	X180751AA	03/16/2018 13:12	Stephen C Nolte	0.83
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201807349209	03/06/2018 14:55	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201807349209	03/06/2018 14:55	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201807349209	03/06/2018 14:55	Client Supplied	1
06131	Chromium	SW-846 6020A	1	180731063703A	03/23/2018 10:36	Choon Y Tian	2
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180731063703	03/14/2018 22:55	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820005A	03/14/2018 22:32	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-41-12-14-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501697
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/06/2018 14:56

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles						
	SW-846 8260C		ug/kg	ug/kg	ug/kg	
11995	Tetrachloroethene	127-18-4	< 4	4	0.8	0.82
Wet Chemistry						
	SM 2540 G-1997		%	%	%	
	%Moisture Calc					
00111	Moisture	n.a.	3.4	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	8260C Soil Master	SW-846 8260C	1	X180751AA	03/16/2018 13:35	Stephen C Nolte	0.82
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201807349209	03/06/2018 14:56	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201807349209	03/06/2018 14:56	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201807349209	03/06/2018 14:56	Client Supplied	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820005A	03/14/2018 22:32	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-41-18-20-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501698
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/06/2018 15:08

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles						
11995	Tetrachloroethene	127-18-4	ug/kg	ug/kg	ug/kg	0.9
			< 5	5	0.9	
Wet Chemistry						
00111	Moisture	n.a.	%	%	%	1
			3.6	0.50	0.50	
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	8260C Soil Master	SW-846 8260C	1	X180751AA	03/16/2018 13:58	Stephen C Nolte	0.9
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201807349209	03/06/2018 15:08	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201807349209	03/06/2018 15:08	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201807349209	03/06/2018 15:08	Client Supplied	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820005A	03/14/2018 22:32	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-42-0-2-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501699
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/05/2018 16:50

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles						
SW-846 8260C			ug/kg	ug/kg	ug/kg	
11995	Tetrachloroethene	127-18-4	8,600	240	48	40.52
Metals						
SW-846 6010C			mg/kg	mg/kg	mg/kg	
06953	Copper	7440-50-8	41.2	2.01	0.241	1
06955	Lead	7439-92-1	123	3.01	0.602	1
Wet Chemistry						
SM 2540 G-1997			%	%	%	
%Moisture Calc						
00111	Moisture	n.a.	14.8	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	8260C Soil Master	SW-846 8260C	1	R180771AA	03/18/2018 14:13	Jeremy C Giffin	40.52
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201807349209	03/05/2018 16:50	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201807349209	03/05/2018 16:50	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201807349209	03/05/2018 16:50	Client Supplied	1
06953	Copper	SW-846 6010C	1	180731063703	03/15/2018 12:03	Eric L Eby	1
06955	Lead	SW-846 6010C	1	180731063703	03/15/2018 12:03	Eric L Eby	1
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180731063703	03/14/2018 22:55	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820005A	03/14/2018 22:32	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-42-2-4-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501700
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/05/2018 17:05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles						
SW-846 8260C			ug/kg	ug/kg	ug/kg	
11995	Tetrachloroethene	127-18-4	14	4	0.9	0.71
Metals						
SW-846 6010C			mg/kg	mg/kg	mg/kg	
06953	Copper	7440-50-8	20.2	2.39	0.287	1
06955	Lead	7439-92-1	14.0	3.59	0.717	1
Wet Chemistry						
SM 2540 G-1997			%	%	%	
%Moisture Calc						
00111	Moisture	n.a.	18.8	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	8260C Soil Master	SW-846 8260C	1	X180751AA	03/16/2018 14:21	Stephen C Nolte	0.71
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201807349209	03/05/2018 17:05	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201807349209	03/05/2018 17:05	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201807349209	03/05/2018 17:05	Client Supplied	1
06953	Copper	SW-846 6010C	1	180781063701	03/22/2018 09:58	Suzanne M Will	1
06955	Lead	SW-846 6010C	1	180781063701	03/21/2018 11:34	Eric L Eby	1
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180781063701	03/19/2018 15:15	JoElla L Rice	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820005A	03/14/2018 22:32	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-42-6-8-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501701
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/05/2018 17:18

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles						
SW-846 8260C			ug/kg	ug/kg	ug/kg	
11995	Tetrachloroethene	127-18-4	< 5	5	0.9	0.8
Metals						
SW-846 6010C			mg/kg	mg/kg	mg/kg	
06953	Copper	7440-50-8	6.91	2.00	0.240	1
06955	Lead	7439-92-1	6.01	3.00	0.600	1
Wet Chemistry						
SM 2540 G-1997			%	%	%	
%Moisture Calc						
00111	Moisture	n.a.	11.5	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	8260C Soil Master	SW-846 8260C	1	X180751AA	03/16/2018 19:45	Stephen C Nolte	0.8
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201807349209	03/05/2018 17:18	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201807349209	03/05/2018 17:18	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201807349209	03/05/2018 17:18	Client Supplied	1
06953	Copper	SW-846 6010C	1	180741063702	03/21/2018 12:53	Cindy M Gehman	1
06955	Lead	SW-846 6010C	1	180741063702	03/21/2018 12:53	Cindy M Gehman	1
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180741063702	03/16/2018 16:15	Barbara A Kane	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820005A	03/14/2018 22:32	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-42-12-14-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501702
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/05/2018 17:33

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles						
SW-846 8260C			ug/kg	ug/kg	ug/kg	
11995	Tetrachloroethene	127-18-4	< 4	4	0.8	0.83
Metals						
SW-846 6010C			mg/kg	mg/kg	mg/kg	
06953	Copper	7440-50-8	< 1.41	1.41	0.169	1
06955	Lead	7439-92-1	< 2.11	2.11	0.422	1
Wet Chemistry						
SM 2540 G-1997			%	%	%	
%Moisture Calc						
00111	Moisture	n.a.	1.9	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	8260C Soil Master	SW-846 8260C	1	X180751AA	03/16/2018 14:45	Stephen C Nolte	0.83
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201807349209	03/05/2018 17:33	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201807349209	03/05/2018 17:33	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201807349209	03/05/2018 17:33	Client Supplied	1
06953	Copper	SW-846 6010C	1	180741063702	03/21/2018 13:11	Cindy M Gehman	1
06955	Lead	SW-846 6010C	1	180741063702	03/21/2018 13:11	Cindy M Gehman	1
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180741063702	03/16/2018 16:15	Barbara A Kane	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820005A	03/14/2018 22:32	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-42-18-20-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501703
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/05/2018 17:39

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles						
SW-846 8260C			ug/kg	ug/kg	ug/kg	
11995	Tetrachloroethene	127-18-4	< 4	4	0.7	0.73
Metals						
SW-846 6010C			mg/kg	mg/kg	mg/kg	
06953	Copper	7440-50-8	< 1.53	1.53	0.183	1
06955	Lead	7439-92-1	< 2.29	2.29	0.458	1
Wet Chemistry						
SM 2540 G-1997			%	%	%	
%Moisture Calc						
00111	Moisture	n.a.	1.6	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	8260C Soil Master	SW-846 8260C	1	X180751AA	03/16/2018 15:08	Stephen C Nolte	0.73
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201807349209	03/05/2018 17:39	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201807349209	03/05/2018 17:39	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201807349209	03/05/2018 17:39	Client Supplied	1
06953	Copper	SW-846 6010C	1	180741063702	03/21/2018 13:14	Cindy M Gehman	1
06955	Lead	SW-846 6010C	1	180741063702	03/21/2018 13:14	Cindy M Gehman	1
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180741063702	03/16/2018 16:15	Barbara A Kane	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820005B	03/14/2018 22:32	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-43-0-2-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501704
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 15:25

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles						
SW-846 8260C			ug/kg	ug/kg	ug/kg	
11995	Tetrachloroethene	127-18-4	< 5	5	0.9	0.79
Metals						
SW-846 6010C			mg/kg	mg/kg	mg/kg	
06953	Copper	7440-50-8	242	1.90	0.227	1
06955	Lead	7439-92-1	366	2.84	0.569	1
06961	Nickel	7440-02-0	81.4	1.90	0.142	1
06972	Zinc	7440-66-6	681	3.79	0.227	1
SW-846 6020A			mg/kg	mg/kg	mg/kg	
06124	Antimony	7440-36-0	6.53	0.379	0.0883	2
06128	Cadmium	7440-43-9	6.93	0.190	0.0326	2
06131	Chromium	7440-47-3	123	0.758	0.165	2
SW-846 7471B			mg/kg	mg/kg	mg/kg	
00159	Mercury	7439-97-6	1.45	0.583	0.0583	5
Wet Chemistry						
SM 2540 G-1997			%	%	%	
%Moisture Calc						
00111	Moisture	n.a.	14.2	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	8260C Soil Master	SW-846 8260C	1	X180751AA	03/16/2018 20:08	Stephen C Nolte	0.79
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201807349209	03/09/2018 15:25	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201807349209	03/09/2018 15:25	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201807349209	03/09/2018 15:25	Client Supplied	1
06953	Copper	SW-846 6010C	1	180731063703	03/15/2018 12:07	Eric L Eby	1
06955	Lead	SW-846 6010C	1	180731063703	03/15/2018 12:07	Eric L Eby	1
06961	Nickel	SW-846 6010C	1	180731063703	03/15/2018 12:07	Eric L Eby	1
06972	Zinc	SW-846 6010C	1	180731063703	03/15/2018 12:07	Eric L Eby	1
06124	Antimony	SW-846 6020A	1	180731063703A	03/19/2018 19:15	Bradley M Berlot	2

*=This limit was used in the evaluation of the final result

Sample Description: SBO-43-0-2-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501704
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 15:25

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06128	Cadmium	SW-846 6020A	1	180731063703A	03/19/2018 19:15	Bradley M Berlot	2
06131	Chromium	SW-846 6020A	1	180731063703A	03/19/2018 19:15	Bradley M Berlot	2
00159	Mercury	SW-846 7471B	1	180751063801	03/19/2018 08:26	Damary Valentin	5
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180731063703	03/14/2018 22:55	Denise L Trimby	1
10638	Hg - SW, 7471B - U4	SW-846 7471B	1	180731063801	03/15/2018 01:55	Denise L Trimby	1
10638	Hg - SW, 7471B - U4	SW-846 7471B	2	180751063801	03/19/2018 03:15	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820005B	03/14/2018 22:32	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-43-2-4-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501705
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 15:30

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles						
SW-846 8260C			ug/kg	ug/kg	ug/kg	
11995	Tetrachloroethene	127-18-4	< 4	4	0.8	0.68
Metals						
SW-846 6010C			mg/kg	mg/kg	mg/kg	
06953	Copper	7440-50-8	16.7	2.21	0.265	1
06955	Lead	7439-92-1	15.6	3.31	0.663	1
06961	Nickel	7440-02-0	13.7	2.21	0.166	1
06972	Zinc	7440-66-6	49.4	4.42	0.265	1
SW-846 6020A			mg/kg	mg/kg	mg/kg	
06124	Antimony	7440-36-0	< 0.442	0.442	0.103	2
06128	Cadmium	7440-43-9	< 0.221	0.221	0.0380	2
06131	Chromium	7440-47-3	35.4	0.884	0.192	2
SW-846 7471B			mg/kg	mg/kg	mg/kg	
00159	Mercury	7439-97-6	< 0.108	0.108	0.0108	1
Wet Chemistry						
SM 2540 G-1997			%	%	%	
%Moisture Calc						
00111	Moisture	n.a.	12.1	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	8260C Soil Master	SW-846 8260C	1	X180751AA	03/16/2018 15:31	Stephen C Nolte	0.68
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201807349209	03/09/2018 15:30	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201807349209	03/09/2018 15:30	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201807349209	03/09/2018 15:30	Client Supplied	1
06953	Copper	SW-846 6010C	1	180731063702	03/20/2018 18:58	Elaine F Stoltzfus	1
06955	Lead	SW-846 6010C	1	180731063702	03/20/2018 18:58	Elaine F Stoltzfus	1
06961	Nickel	SW-846 6010C	1	180731063702	03/20/2018 18:58	Elaine F Stoltzfus	1
06972	Zinc	SW-846 6010C	1	180731063702	03/20/2018 18:58	Elaine F Stoltzfus	1
06124	Antimony	SW-846 6020A	1	180731063702A	03/19/2018 21:01	Bradley M Berlot	2

*=This limit was used in the evaluation of the final result

Sample Description: SBO-43-2-4-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501705
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 15:30

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06128	Cadmium	SW-846 6020A	1	180731063702A	03/19/2018 21:01	Bradley M Berlot	2
06131	Chromium	SW-846 6020A	1	180731063702A	03/19/2018 21:01	Bradley M Berlot	2
00159	Mercury	SW-846 7471B	1	180751063801	03/19/2018 08:20	Damary Valentin	1
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180731063702	03/14/2018 23:45	Denise L Trimby	1
10638	Hg - SW, 7471B - U4	SW-846 7471B	1	180731063801	03/15/2018 01:55	Denise L Trimby	1
10638	Hg - SW, 7471B - U4	SW-846 7471B	2	180751063801	03/19/2018 03:15	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997	1	18073820005B	03/14/2018 22:32	Scott W Freisher	1
		%Moisture Calc					

*=This limit was used in the evaluation of the final result

Sample Description: SBO-43-6-8-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501706
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 15:35

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles						
SW-846 8260C			ug/kg	ug/kg	ug/kg	
11995	Tetrachloroethene	127-18-4	< 4	4	0.8	0.73
Metals						
SW-846 6010C			mg/kg	mg/kg	mg/kg	
06953	Copper	7440-50-8	9.02	1.98	0.238	1
06955	Lead	7439-92-1	6.48	2.97	0.595	1
06961	Nickel	7440-02-0	7.99	1.98	0.149	1
06972	Zinc	7440-66-6	29.3	3.96	0.238	1
SW-846 6020A			mg/kg	mg/kg	mg/kg	
06124	Antimony	7440-36-0	< 0.396	0.396	0.0924	2
06128	Cadmium	7440-43-9	< 0.198	0.198	0.0341	2
06131	Chromium	7440-47-3	20.2	0.793	0.172	2
SW-846 7471B			mg/kg	mg/kg	mg/kg	
00159	Mercury	7439-97-6	< 0.102	0.102	0.0102	1
Wet Chemistry						
SM 2540 G-1997			%	%	%	
%Moisture Calc						
00111	Moisture	n.a.	9.9	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	8260C Soil Master	SW-846 8260C	1	X180751AA	03/16/2018 15:54	Stephen C Nolte	0.73
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201807349209	03/09/2018 15:35	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201807349209	03/09/2018 15:35	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201807349209	03/09/2018 15:35	Client Supplied	1
06953	Copper	SW-846 6010C	1	180731063702	03/20/2018 19:02	Elaine F Stoltzfus	1
06955	Lead	SW-846 6010C	1	180731063702	03/20/2018 19:02	Elaine F Stoltzfus	1
06961	Nickel	SW-846 6010C	1	180731063702	03/20/2018 19:02	Elaine F Stoltzfus	1
06972	Zinc	SW-846 6010C	1	180731063702	03/20/2018 19:02	Elaine F Stoltzfus	1
06124	Antimony	SW-846 6020A	1	180731063702A	03/19/2018 21:03	Bradley M Berlot	2

*=This limit was used in the evaluation of the final result

Sample Description: SBO-43-6-8-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501706
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 15:35

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06128	Cadmium	SW-846 6020A	1	180731063702A	03/19/2018 21:03	Bradley M Berlot	2
06131	Chromium	SW-846 6020A	1	180731063702A	03/19/2018 21:03	Bradley M Berlot	2
00159	Mercury	SW-846 7471B	1	180741063801	03/16/2018 08:20	Damary Valentin	1
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180731063702	03/14/2018 23:45	Denise L Trimby	1
10638	Hg - SW, 7471B - U4	SW-846 7471B	1	180741063801	03/15/2018 18:10	Barbara A Kane	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820005B	03/14/2018 22:32	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-43-6-8-0318MS Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501707
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 15:35

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles						
11995	Tetrachloroethene	127-18-4	20	4	0.9	0.79
Wet Chemistry						
00118	Moisture	n.a.	9.9	0.50	0.50	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	8260C Soil Master	SW-846 8260C	1	X180751AA	03/16/2018 16:17	Stephen C Nolte	0.79
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201807349209	03/09/2018 15:35	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201807349209	03/09/2018 15:35	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201807349209	03/09/2018 15:35	Client Supplied	1
00118	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820005B	03/14/2018 22:32	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-43-6-8-0318MSD Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501708
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 15:35

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles						
		SW-846 8260C	ug/kg	ug/kg	ug/kg	
11995	Tetrachloroethene	127-18-4	20	5	0.9	0.84
Wet Chemistry						
		SM 2540 G-1997	%	%	%	
		%Moisture Calc				
00118	Moisture	n.a.	9.9	0.50	0.50	1
00121	Moisture Duplicate	n.a.	10.2	0.50	0.50	1
The duplicate moisture value is provided to assess the precision of the moisture test. For comparability purposes, the initial moisture determination is the value used to perform dry weight calculations.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	8260C Soil Master	SW-846 8260C	1	X180751AA	03/16/2018 16:40	Stephen C Nolte	0.84
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201807349209	03/09/2018 15:35	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201807349209	03/09/2018 15:35	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201807349209	03/09/2018 15:35	Client Supplied	1
00118	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820005B	03/14/2018 22:32	Scott W Freisher	1
00121	Moisture Duplicate	SM 2540 G-1997 %Moisture Calc	1	18073820005B	03/14/2018 22:32	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-43-12-14-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501709
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 15:40

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles						
SW-846 8260C			ug/kg	ug/kg	ug/kg	
11995	Tetrachloroethene	127-18-4	< 4	4	0.8	0.81
Metals						
SW-846 6010C			mg/kg	mg/kg	mg/kg	
06953	Copper	7440-50-8	< 1.49	1.49	0.178	1
06955	Lead	7439-92-1	< 2.23	2.23	0.446	1
06961	Nickel	7440-02-0	1.60	1.49	0.111	1
06972	Zinc	7440-66-6	6.95	2.97	0.178	1
SW-846 6020A			mg/kg	mg/kg	mg/kg	
06124	Antimony	7440-36-0	< 0.297	0.297	0.0692	2
06128	Cadmium	7440-43-9	< 0.149	0.149	0.0255	2
06131	Chromium	7440-47-3	9.02	0.594	0.129	2
SW-846 7471B			mg/kg	mg/kg	mg/kg	
00159	Mercury	7439-97-6	< 0.0939	0.0939	0.0094	1
Wet Chemistry						
SM 2540 G-1997			%	%	%	
%Moisture Calc						
00111	Moisture	n.a.	1.7	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	8260C Soil Master	SW-846 8260C	1	X180751AA	03/16/2018 17:03	Stephen C Nolte	0.81
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201807349209	03/09/2018 15:40	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201807349209	03/09/2018 15:40	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201807349209	03/09/2018 15:40	Client Supplied	1
06953	Copper	SW-846 6010C	1	180731063702	03/20/2018 19:06	Elaine F Stoltzfus	1
06955	Lead	SW-846 6010C	1	180731063702	03/20/2018 19:06	Elaine F Stoltzfus	1
06961	Nickel	SW-846 6010C	1	180731063702	03/20/2018 19:06	Elaine F Stoltzfus	1
06972	Zinc	SW-846 6010C	1	180731063702	03/20/2018 19:06	Elaine F Stoltzfus	1
06124	Antimony	SW-846 6020A	1	180731063702A	03/19/2018 21:05	Bradley M Berlot	2

*=This limit was used in the evaluation of the final result

Sample Description: SBO-43-12-14-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501709
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 15:40

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06128	Cadmium	SW-846 6020A	1	180731063702A	03/19/2018 21:05	Bradley M Berlot	2
06131	Chromium	SW-846 6020A	1	180731063702A	03/19/2018 21:05	Bradley M Berlot	2
00159	Mercury	SW-846 7471B	1	180781063801	03/20/2018 08:00	Damary Valentin	1
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180731063702	03/14/2018 23:45	Denise L Trimby	1
10638	Hg - SW, 7471B - U4	SW-846 7471B	1	180781063801	03/19/2018 16:35	JoElla L Rice	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820005B	03/14/2018 22:32	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-43-18-20-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501710
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 15:45

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles						
SW-846 8260C			ug/kg	ug/kg	ug/kg	
11995	Tetrachloroethene	127-18-4	< 4	4	0.9	0.86
Metals						
SW-846 6010C			mg/kg	mg/kg	mg/kg	
06953	Copper	7440-50-8	< 1.60	1.60	0.192	1
06955	Lead	7439-92-1	< 2.40	2.40	0.480	1
06961	Nickel	7440-02-0	< 1.60	1.60	0.120	1
06972	Zinc	7440-66-6	6.11	3.20	0.192	1
SW-846 6020A			mg/kg	mg/kg	mg/kg	
06124	Antimony	7440-36-0	< 0.320	0.320	0.0746	2
06128	Cadmium	7440-43-9	< 0.160	0.160	0.0275	2
06131	Chromium	7440-47-3	10.7	0.640	0.139	2
SW-846 7471B			mg/kg	mg/kg	mg/kg	
00159	Mercury	7439-97-6	< 0.0960	0.0960	0.0096	1
Wet Chemistry						
SM 2540 G-1997			%	%	%	
%Moisture Calc						
00111	Moisture	n.a.	0.80	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	8260C Soil Master	SW-846 8260C	1	X180751AA	03/16/2018 17:26	Stephen C Nolte	0.86
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201807349209	03/09/2018 15:45	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201807349209	03/09/2018 15:45	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201807349209	03/09/2018 15:45	Client Supplied	1
06953	Copper	SW-846 6010C	1	180731063702	03/20/2018 19:10	Elaine F Stoltzfus	1
06955	Lead	SW-846 6010C	1	180731063702	03/20/2018 19:10	Elaine F Stoltzfus	1
06961	Nickel	SW-846 6010C	1	180731063702	03/20/2018 19:10	Elaine F Stoltzfus	1
06972	Zinc	SW-846 6010C	1	180731063702	03/20/2018 19:10	Elaine F Stoltzfus	1
06124	Antimony	SW-846 6020A	1	180731063702A	03/19/2018 21:07	Bradley M Berlot	2

*=This limit was used in the evaluation of the final result

Sample Description: SBO-43-18-20-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501710
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 15:45

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06128	Cadmium	SW-846 6020A	1	180731063702A	03/19/2018 21:07	Bradley M Berlot	2
06131	Chromium	SW-846 6020A	1	180731063702A	03/19/2018 21:07	Bradley M Berlot	2
00159	Mercury	SW-846 7471B	2	180751063801	03/19/2018 08:22	Damary Valentin	1
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180731063702	03/14/2018 23:45	Denise L Trimby	1
10638	Hg - SW, 7471B - U4	SW-846 7471B	1	180731063801	03/15/2018 01:55	Denise L Trimby	1
10638	Hg - SW, 7471B - U4	SW-846 7471B	2	180751063801	03/19/2018 03:15	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820005B	03/14/2018 22:32	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-DUP01-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501711
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 12:00

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles						
		SW-846 8270D	ug/kg	ug/kg	ug/kg	
10726	Benzo(a)anthracene	56-55-3	48	19	4	1
10726	Benzo(a)pyrene	50-32-8	57	19	4	1
10726	Benzo(b)fluoranthene	205-99-2	83	19	4	1
10726	Chrysene	218-01-9	52	19	4	1
Wet Chemistry						
		SM 2540 G-1997	%	%	%	
		%Moisture Calc				
00111	Moisture	n.a.	13.2	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	SVOA 8270D (microwave)	SW-846 8270D	1	18078SLF026	03/21/2018 05:59	Brandon K Cordova	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18078SLF026	03/20/2018 08:00	Kayla A Yuditsky	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820005B	03/14/2018 22:32	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-DUP02-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501712
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 12:00

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
PCBs		SW-846 8082A Feb 2007 Rev 1	ug/kg	ug/kg	ug/kg	
10885	PCB-1248	12672-29-6	< 20 D1	20	2.4	1
10885	PCB-1254	11097-69-1	< 20 ZD1	20	3.1	1

Z=The response for a target analyte(s) in the continuing calibration verification standard is outside the QC acceptance limits. Since the response is high indicating increased sensitivity, and the target analyte(s) is not detected in the sample, the data is reported.
PCB 1016/1260 are used for the LCS/MS/MSD.

Wet Chemistry		SM 2540 G-1997 %Moisture Calc	%	%	%	
00111	Moisture	n.a.	17.3	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10885	PCBs 8082A	SW-846 8082A Feb 2007 Rev 1	1	180720041A	03/20/2018 17:23	Kirby B Turner	1
10497	PCB Microwave Soil Extraction	SW-846 3546	1	180720041A	03/14/2018 07:00	Joshua S Ruth	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820005B	03/14/2018 22:32	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-DUP03-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501713
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/05/2018 12:00

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles						
11995	Tetrachloroethene	127-18-4	22	4	0.9	0.72
Wet Chemistry						
00111	Moisture	n.a.	19.3	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	8260C Soil Master	SW-846 8260C	1	X180751AA	03/16/2018 17:50	Stephen C Nolte	0.72
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201807349209	03/05/2018 12:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201807349209	03/05/2018 12:00	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201807349209	03/05/2018 12:00	Client Supplied	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820005B	03/14/2018 22:32	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-DUP04-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9501714
ELLE Group #: 1918726
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/13/2018 10:30
Collection Date/Time: 03/09/2018 12:00

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Metals		SW-846 6010C	mg/kg	mg/kg	mg/kg	
06953	Copper	7440-50-8	15.1	2.17	0.261	1
06955	Lead	7439-92-1	16.6	3.26	0.652	1
06961	Nickel	7440-02-0	12.1	2.17	0.163	1
06972	Zinc	7440-66-6	45.4	4.34	0.261	1
		SW-846 6020A	mg/kg	mg/kg	mg/kg	
06124	Antimony	7440-36-0	< 0.434	0.434	0.101	2
06128	Cadmium	7440-43-9	< 0.217	0.217	0.0374	2
06131	Chromium	7440-47-3	33.2	0.869	0.189	2
		SW-846 7471B	mg/kg	mg/kg	mg/kg	
00159	Mercury	7439-97-6	< 0.112	0.112	0.0112	1
Wet Chemistry		SM 2540 G-1997	%	%	%	
		%Moisture Calc				
00111	Moisture	n.a.	12.3	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06953	Copper	SW-846 6010C	1	180731063702	03/20/2018 19:21	Elaine F Stoltzfus	1
06955	Lead	SW-846 6010C	1	180731063702	03/20/2018 19:21	Elaine F Stoltzfus	1
06961	Nickel	SW-846 6010C	1	180731063702	03/20/2018 19:21	Elaine F Stoltzfus	1
06972	Zinc	SW-846 6010C	1	180731063702	03/20/2018 19:21	Elaine F Stoltzfus	1
06124	Antimony	SW-846 6020A	1	180731063702A	03/19/2018 21:09	Bradley M Berlot	2
06128	Cadmium	SW-846 6020A	1	180731063702A	03/19/2018 21:09	Bradley M Berlot	2
06131	Chromium	SW-846 6020A	1	180731063702A	03/19/2018 21:09	Bradley M Berlot	2
00159	Mercury	SW-846 7471B	1	180751063801	03/19/2018 08:24	Damary Valentin	1
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180731063702	03/14/2018 23:45	Denise L Trimby	1
10638	Hg - SW, 7471B - U4	SW-846 7471B	1	180731063801	03/15/2018 01:55	Denise L Trimby	1
10638	Hg - SW, 7471B - U4	SW-846 7471B	2	180751063801	03/19/2018 03:15	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18073820005B	03/14/2018 22:32	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: TRIP BLANK (COOLER 1) Sodium Bisulfate
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: G5 9501715
ELLE Group #: 1918726
Matrix: Sodium Bisulfate

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/13/2018 10:30
Collection Date/Time: n.a.

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles						
11995	Tetrachloroethene	127-18-4	ug/kg < 5	ug/kg 5	ug/kg 1	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	8260C Soil Master	SW-846 8260C	1	X180771AA	03/18/2018 23:59	Stephen C Nolte	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201807349209	03/12/2018 10:30	Client Supplied	1

*=This limit was used in the evaluation of the final result

Sample Description: TRIP BLANK (COOLER 2) Sodium Bisulfate
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: G5 9501716
ELLE Group #: 1918726
Matrix: Sodium Bisulfate

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/13/2018 10:30
Collection Date/Time: n.a.

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
11995	Tetrachloroethene	127-18-4	< 5	5	1	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	8260C Soil Master	SW-846 8260C	1	X180771AA	03/19/2018 00:22	Stephen C Nolte	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201807349209	03/12/2018 10:30	Client Supplied	1

*=This limit was used in the evaluation of the final result

Sample Description: TRIP BLANK (COOLER 3) Sodium Bisulfate
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: G5 9501717
ELLE Group #: 1918726
Matrix: Sodium Bisulfate

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/13/2018 10:30
Collection Date/Time: n.a.

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles						
11995	Tetrachloroethene	127-18-4	ug/kg	ug/kg	ug/kg	1
			< 5	5	1	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	8260C Soil Master	SW-846 8260C	1	X180771AA	03/19/2018 00:46	Stephen C Nolte	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201807349209	03/12/2018 10:30	Client Supplied	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/20/2018 10:49

Group Number: 1918726

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	LOQ**	MDL
	ug/kg	ug/kg	ug/kg
Batch number: R180771AA Tetrachloroethene	Sample number(s): 9501694,9501699 < 250	250	50
Batch number: X180751AA Tetrachloroethene	Sample number(s): 9501695-9501698,9501700-9501710,9501713 < 5	5	1
Batch number: X180771AA Tetrachloroethene	Sample number(s): 9501715-9501717 < 5	5	1
Batch number: 18078SLF026 Benzo(a)anthracene	Sample number(s): 9501669,9501673-9501675,9501693,9501711 < 17	17	3
Benzo(a)pyrene	< 17	17	3
Benzo(b)fluoranthene	< 17	17	3
Chrysene	< 17	17	3
Batch number: 180720041A PCB-1248	Sample number(s): 9501712 < 17	17	2.0
PCB-1254	< 17	17	2.6
Batch number: 180810037A PCB-1248	Sample number(s): 9501669,9501678-9501680,9501682-9501686 < 17	17	2.0
PCB-1254	< 17	17	2.6
	mg/kg	mg/kg	mg/kg
Batch number: 180731063702	Sample number(s): 9501665,9501669-9501672,9501676-9501680,9501683,9501686,9501705-9501706,9501709-9501710,9501714		
Copper	< 2.00	2.00	0.240
Lead	< 3.00	3.00	0.600
Nickel	< 2.00	2.00	0.150
Zinc	< 4.00	4.00	0.240
Batch number: 180731063702A	Sample number(s): 9501666-9501672,9501679-9501680,9501683,9501686,9501705-9501706,9501709-9501710,9501714		
Antimony	< 0.400	0.400	0.0932
Arsenic	< 0.800	0.800	0.128
Cadmium	< 0.200	0.200	0.0344
Chromium	< 0.800	0.800	0.174
Batch number: 180731063703	Sample number(s): 9501673,9501681-9501682,9501687-9501693,9501699,9501704		
Copper	< 2.00	2.00	0.240
Lead	< 3.00	3.00	0.600
Nickel	< 2.00	2.00	0.150

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/20/2018 10:49

Group Number: 1918726

Method Blank (continued)

Analysis Name	Result	LOQ**	MDL
	mg/kg	mg/kg	mg/kg
Zinc	< 4.00	4.00	0.240
Batch number: 180731063703A	Sample number(s): 9501673,9501689-9501690,9501692-9501693,9501695-9501696,9501704		
Antimony	< 0.400	0.400	0.0932
Cadmium	< 0.200	0.200	0.0344
Chromium	< 0.800	0.800	0.174
Batch number: 180741063702	Sample number(s): 9501701-9501703		
Copper	< 2.00	2.00	0.240
Lead	< 3.00	3.00	0.600
Batch number: 180741063801	Sample number(s): 9501706		
Mercury	< 0.100	0.100	0.0100
Batch number: 180751063801	Sample number(s): 9501669-9501672,9501704-9501705,9501710,9501714		
Mercury	< 0.100	0.100	0.0100
Batch number: 180781063701	Sample number(s): 9501700		
Copper	< 2.00	2.00	0.240
Lead	< 3.00	3.00	0.600
Batch number: 180781063801	Sample number(s): 9501709		
Mercury	< 0.100	0.100	0.0100

LCS/LCSD

Analysis Name	LCS Spike Added ug/kg	LCS Conc ug/kg	LCSD Spike Added ug/kg	LCSD Conc ug/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: R180771AA	Sample number(s): 9501694,9501699								
Tetrachloroethene	1000	956.59	1000	861.64	96	86	73-120	10	30
Batch number: X180751AA	Sample number(s): 9501695-9501698,9501700-9501710,9501713								
Tetrachloroethene	20	21.4	20	20.64	107	103	73-120	4	30
Batch number: X180771AA	Sample number(s): 9501715-9501717								
Tetrachloroethene	20	22.2	20	21.49	111	107	73-120	3	30
	ug/kg	ug/kg	ug/kg	ug/kg					
Batch number: 18078SLF026	Sample number(s): 9501669,9501673-9501675,9501693,9501711								
Benzo(a)anthracene	1666.67	1579.29			95		76-119		
Benzo(a)pyrene	1666.67	1660.44			100		77-112		
Benzo(b)fluoranthene	1666.67	1665.69			100		78-120		
Chrysene	1666.67	1530.53			92		78-115		

*- Outside of specification

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(2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/20/2018 10:49

Group Number: 1918726

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/kg	LCS Conc ug/kg	LCSD Spike Added ug/kg	LCSD Conc ug/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 180810037A PCB-1254	167	202.67			121		60-130		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 180731063702	Sample number(s): 9501665,9501669-9501672,9501676-9501680,9501683,9501686,9501705-9501706,9501709-9501710,9501714								
Copper	25	26.78			107		80-120		
Lead	15	15.55			104		80-120		
Nickel	50	53.32			107		80-120		
Zinc	50	52.51			105		80-120		
Batch number: 180731063702A	Sample number(s): 9501666-9501672,9501679-9501680,9501683,9501686,9501705-9501706,9501709-9501710,9501714								
Antimony	0.600	0.636			106		80-120		
Arsenic	1.00	1.04			104		80-120		
Cadmium	0.500	0.524			105		80-120		
Chromium	5.00	5.28			106		80-120		
Batch number: 180731063703	Sample number(s): 9501673,9501681-9501682,9501687-9501693,9501699,9501704								
Copper	25	25.41			102		80-120		
Lead	15	15.02			100		80-120		
Nickel	50	51.66			103		80-120		
Zinc	50	51.29			103		80-120		
Batch number: 180731063703A	Sample number(s): 9501673,9501689-9501690,9501692-9501693,9501695-9501696,9501704								
Antimony	0.600	0.621			104		80-120		
Cadmium	0.500	0.495			99		80-120		
Chromium	5.00	5.29			106		80-120		
Batch number: 180741063702	Sample number(s): 9501701-9501703								
Copper	25	26.03			104		80-120		
Lead	15	15.64			104		80-120		
Batch number: 180741063801	Sample number(s): 9501706								
Mercury	0.100	0.0852			85		80-120		
Batch number: 180751063801	Sample number(s): 9501669-9501672,9501704-9501705,9501710,9501714								
Mercury	0.100	0.0862			86		80-120		
Batch number: 180781063701	Sample number(s): 9501700								
Copper	25	26.33			105		80-120		
Lead	15	15.68			105		80-120		
Batch number: 180781063801	Sample number(s): 9501709								
Mercury	0.100	0.0872			87		80-120		

*- Outside of specification

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(2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/20/2018 10:49

Group Number: 1918726

LCS/LCSD (continued)

Analysis Name	LCS Spike Added %	LCS Conc %	LCSD Spike Added %	LCSD Conc %	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 18073820005A Moisture	Sample number(s): 9501693-9501702				100		99-101		
	89.5	89.36							
Batch number: 18073820005B Moisture	Sample number(s): 9501703-9501714				100		99-101		
	89.5	89.36							
Moisture	89.5	89.36			100		99-101		
Moisture Duplicate	89.5	89.36			100		99-101		
Batch number: 18073820006A Moisture	Sample number(s): 9501665-9501668				100		99-101		
	89.5	89.44							
Batch number: 18073820006B Moisture	Sample number(s): 9501673-9501682				100		99-101		
	89.5	89.44							
Moisture	89.5	89.44			100		99-101		
Moisture Duplicate	89.5	89.44			100		99-101		
Batch number: 18073820009A Moisture	Sample number(s): 9501683-9501692				100		99-101		
	89.5	89.38							
Moisture	89.5	89.38			100		99-101		
Moisture Duplicate	89.5	89.38			100		99-101		
Batch number: 18074820003A Moisture	Sample number(s): 9501669-9501672				100		99-101		
	89.5	89.38							
Moisture	89.5	89.38			100		99-101		
Moisture Duplicate	89.5	89.38			100		99-101		

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ug/kg	MS Spike Added ug/kg	MS Conc ug/kg	MSD Spike Added ug/kg	MSD Conc ug/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: X180751AA Tetrachloroethene	Sample number(s): 9501695-9501698,9501700-9501710,9501713 UNSPK: 9501706									
	< 4	15.77	17.85	16.84	18.42	113	109	73-120	3	30
Batch number: 18078SLF026 Benzo(a)anthracene	Sample number(s): 9501669,9501673-9501675,9501693,9501711 UNSPK: 9501673									
	37.7	1657.82	1474.49	1650.17	1482.19	87	88	76-119	1	30
Benzo(a)pyrene	48.39	1657.82	1586.56	1650.17	1617.2	93	95	77-112	2	30
Benzo(b)fluoranthene	80.13	1657.82	1600.79	1650.17	1590.14	92	92	78-120	1	30
Chrysene	46.31	1657.82	1395.02	1650.17	1416.89	81	83	78-115	2	30

*- Outside of specification

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(2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/20/2018 10:49

Group Number: 1918726

MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ug/kg	MS Spike Added ug/kg	MS Conc ug/kg	MSD Spike Added ug/kg	MSD Conc ug/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max	
Batch number: 180810037A PCB-1254	Sample number(s): 9501669,9501678-9501680,9501682-9501686 UNSPK: 9501683										
	< 17	167	112.13	166	199.78	67	120	50-130	56*	50	
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg						
Batch number: 180731063702	Sample number(s): 9501665,9501669-9501672,9501676-9501680,9501683,9501686,9501705-9501706,9501709-9501710,9501714 UNSPK: 9501669										
Copper	32.36	21.93	49.83	22.32	81.01	80	218*	75-125	48*	20	
Lead	44.61	13.16	48.91	13.39	284.51	33*	1791*	75-125	141*	20	
Nickel	8.47	43.86	50.59	44.64	52.08	96	98	75-125	3	20	
Zinc	88.46	43.86	123.58	44.64	151.85	80	142*	75-125	21*	20	
Batch number: 180731063702A	Sample number(s): 9501666-9501672,9501679-9501680,9501683,9501686,9501705-9501706,9501709-9501710,9501714 UNSPK: 9501669										
Antimony	0.414	1.05	0.891	1.07	0.947	45*	50*	75-125	6	20	
Arsenic	12.92	1.75	12.16	1.79	14.34	-43 (2)	79 (2)	75-125	16	20	
Cadmium	0.291	0.877	1.04	0.893	1.14	85	96	75-125	10	20	
Chromium	20.55	8.77	27.4	8.93	27.05	78	73*	75-125	1	20	
Batch number: 180731063703	Sample number(s): 9501673,9501681-9501682,9501687-9501693,9501699,9501704 UNSPK: 9501673, P501673										
Copper	34.4	19.69	1792.97	23.81	89.3	8934*	231*	75-125	181*	20	
Lead	38.34	11.81	471.98	14.29	89.15	3672*	356*	75-125	136*	20	
Nickel	8.40	39.37	47.24	47.62	55.26	99	98	75-125	16	20	
Zinc	69.83	39.37	3761.44	47.62	558.86	9377*	1027*	75-125	148*	20	
Batch number: 180731063703A	Sample number(s): 9501673,9501689-9501690,9501692-9501693,9501695-9501696,9501704 UNSPK: 9501673, P501673										
Antimony	0.402	0.945	0.753	1.14	0.796	37*	34*	75-125	6	20	
Cadmium	0.146	0.787	0.849	0.952	0.995	89	89	75-125	16	20	
Chromium	18.36	7.87	25.65	9.52	27.69	93	98	75-125	8	20	
Batch number: 180741063702	Sample number(s): 9501701-9501703 UNSPK: 9501701										
Copper	6.12	23.81	31.97	23.81	31.73	109	108	75-125	1	20	
Lead	5.32	14.29	19.7	14.29	18.94	101	95	75-125	4	20	
Batch number: 180741063801	Sample number(s): 9501706 UNSPK: 9501706										
Mercury	< 0.0923	0.161	0.168	0.167	0.164	104	98	80-120	3	20	
Batch number: 180751063801	Sample number(s): 9501669-9501672,9501704-9501705,9501710,9501714 UNSPK: 9501669										
Mercury	0.0277	0.167	0.185	0.167	0.183	94	93	80-120	1	20	
Batch number: 180781063701	Sample number(s): 9501700 UNSPK: 9501700										
Copper	16.38	20.49	46.04	17.99	43.84	145*	153*	75-125	5	20	

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/20/2018 10:49

Group Number: 1918726

MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/kg	MS Spike Added mg/kg	MS Conc mg/kg	MSD Spike Added mg/kg	MSD Conc mg/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Lead	11.35	12.3	21.02	10.79	19.15	79	72*	75-125	9	20
Batch number: 180781063801 Sample number(s): 9501709 UNSPK: 9501709										
Mercury	< 0.0923	0.164	0.156	0.164	0.153	95	94	80-120	1	20

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/kg	DUP Conc mg/kg	DUP RPD	DUP RPD Max
Batch number: 180731063702 Sample number(s): 9501665,9501669-9501672,9501676-9501680,9501683,9501686,9501705-9501706,9501709-9501710,9501714 BKG: 9501669				
Copper	32.36	26.98	18	20
Lead	44.61	41.24	8	20
Nickel	8.47	9.34	10	20
Zinc	88.46	90.32	2	20
Batch number: 180731063702A Sample number(s): 9501666-9501672,9501679-9501680,9501683,9501686,9501705-9501706,9501709-9501710,9501714 BKG: 9501669				
Antimony	0.414	0.355	15 (1)	20
Arsenic	12.92	15.05	15	20
Cadmium	0.291	0.254	14 (1)	20
Chromium	20.55	19.36	6	20
Batch number: 180731063703 Sample number(s): 9501673,9501681-9501682,9501687-9501693,9501699,9501704 BKG: 9501673, P501673				
Copper	34.4	40.27	16	20
Lead	38.34	52.11	30*	20
Nickel	8.40	7.93	6	20
Zinc	69.83	74.37	6	20
Batch number: 180731063703A Sample number(s): 9501673,9501689-9501690,9501692-9501693,9501695-9501696,9501704 BKG: 9501673, P501673				
Antimony	0.402	0.272	39* (1)	20
Cadmium	0.146	0.141	4 (1)	20
Chromium	18.36	18.37	0	20
Batch number: 180741063702 Sample number(s): 9501701-9501703 BKG: 9501701				
Copper	6.12	6.56	7 (1)	20
Lead	5.32	5.77	8 (1)	20

*- Outside of specification

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(2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/20/2018 10:49

Group Number: 1918726

Laboratory Duplicate (continued)

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/kg	DUP Conc mg/kg	DUP RPD	DUP RPD Max
Batch number: 180741063801 Mercury	Sample number(s): 9501706 BKG: 9501706 < 0.0923	< 0.0984	0 (1)	20
Batch number: 180751063801 Mercury	Sample number(s): 9501669-9501672,9501704-9501705,9501710,9501714 BKG: 9501669 0.0277	0.0236	16 (1)	20
Batch number: 180781063701 Copper	Sample number(s): 9501700 BKG: 9501700 16.38	15.38	6	20
Lead	11.35	10.43	9 (1)	20
Batch number: 180781063801 Mercury	Sample number(s): 9501709 BKG: 9501709 < 0.0923	< 0.0938	0 (1)	20
	%	%		
Batch number: 18073820005A Moisture	Sample number(s): 9501693-9501702 BKG: 9501698 3.56	3.66	3	5
Batch number: 18073820005B Moisture	Sample number(s): 9501703-9501714 BKG: 9501706, P501706 9.90	10.15	2	5
Moisture	9.90	10.15	2	5
Moisture Duplicate	9.90	10.15	2	5
Batch number: 18073820006A Moisture	Sample number(s): 9501665-9501668 BKG: P501669 13.3	15.81	17*	5
Batch number: 18073820006B Moisture	Sample number(s): 9501673-9501682 BKG: 9501673, P501673 13.24	13.43	1	5
Moisture	13.24	13.43	1	5
Moisture Duplicate	13.24	13.43	1	5
Batch number: 18073820009A Moisture	Sample number(s): 9501683-9501692 BKG: 9501683, P501683 16.75	16.99	1	5
Moisture	16.75	16.99	1	5
Moisture Duplicate	16.75	16.99	1	5
Batch number: 18074820003A Moisture	Sample number(s): 9501669-9501672 BKG: 9501669, P501669 11.7	12.05	3	5
Moisture	11.7	12.05	3	5
Moisture Duplicate	11.7	12.05	3	5

Surrogate Quality Control

*- Outside of specification

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(2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/20/2018 10:49

Group Number: 1918726

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260C Soil Master
Batch number: R180771AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
9501694	68	70	59	59
9501699	74	71	63	62
Blank	100	98	87	88
LCS	102	106	88	93
LCSD	92	92	79	82
Limits:	50-141	54-135	52-141	50-131

Analysis Name: 8260C Soil Master
Batch number: X180751AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
9501695	100	100	100	91
9501696	100	101	100	93
9501697	102	106	98	94
9501698	102	106	99	94
9501700	96	91	102	90
9501701	101	102	98	92
9501702	101	104	99	94
9501703	101	105	98	93
9501704	101	103	113	75
9501705	100	102	101	91
9501706	100	102	99	92
9501707	100	102	100	95
9501708	100	102	100	96
9501709	101	105	99	92
9501710	100	105	99	93
9501713	99	99	99	91
Blank	100	98	100	93
LCS	101	100	100	96
LCSD	99	97	100	96
MS	100	102	100	95
MSD	100	102	100	96
Limits:	50-141	54-135	52-141	50-131

Analysis Name: 8260C Soil Master
Batch number: X180771AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
9501715	103	105	98	92
9501716	102	104	98	91
9501717	102	104	98	91
Blank	100	99	99	92
LCS	101	99	100	96
LCSD	100	98	100	96

*- Outside of specification

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P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/20/2018 10:49

Group Number: 1918726

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260C Soil Master
Batch number: X180771AA

Limits: 50-141 54-135 52-141 50-131

Analysis Name: SVOA 8270D (microwave)
Batch number: 18078SLF026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
9501669	85	96	93
9501673	79	90	86
9501674	79	89	90
9501675	81	91	90
9501693	79	90	84
9501711	80	89	84
Blank	86	95	98
LCS	85	96	94
MS	79	89	90
MSD	81	91	90

Limits: 49-118 57-116 55-118

Analysis Name: PCBs 8082A
Batch number: 180720041A

	Tetrachloro-m-xylene-D1	Decachlorobiphenyl-D1	Tetrachloro-m-xylene-D2	Decachlorobiphenyl-D2
9501712	104	109	109	111
Blank	110	112	120	114

Limits: 53-140 45-143 53-140 45-143

Analysis Name: PCBs 8082A
Batch number: 180810037A

	Tetrachloro-m-xylene-D1	Decachlorobiphenyl-D1	Tetrachloro-m-xylene-D2	Decachlorobiphenyl-D2
9501669RE	92	95	94	100
9501678RE	98	111	97	98
9501679RE	95	104	95	100
9501680RE	93	103	95	99
9501682RE	93	103	94	94
9501683	91	94	88	88
9501683RE	91	94	88	88
9501684	77	59	77	58
9501684RE	77	59	77	58
9501685	98	107	96	100
9501685RE	98	107	96	100
9501686RE	90	83	88	77
Blank	102	110	103	107
LCS	106	112	104	109

*- Outside of specification

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(2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/20/2018 10:49

Group Number: 1918726

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: PCBs 8082A

Batch number: 180810037A

	Tetrachloro-m-xylene-D1	Decachlorobiphenyl-D1	Tetrachloro-m-xylene-D2	Decachlorobiphenyl-D2
MS	77	59	77	58
MSD	98	107	96	100
Limits:	53-140	45-143	53-140	45-143

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

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Environmental Analysis Request/Chain of Custody



Lancaster Laboratories
Environmental

Acct. # 10300 Group # 1918726 Sample # 8501668-21)

Client: Amec Foster Wheeler				Matrix			Analyses Requested						For Lab Use Only																					
Project Name/ #: Former Cohn Property		Site ID #:		<input type="checkbox"/> Tissue	<input type="checkbox"/> Ground	<input type="checkbox"/> Surface	Preservation and Filtration Codes						SF #: _____																					
Project Manager: John Jolly		P.O. #: SA14.127-001		<input type="checkbox"/> Potable	<input type="checkbox"/> NPDES	<input type="checkbox"/> Other:	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 12.5%;">O</td> <td style="width: 12.5%;"></td> <td style="width: 12.5%;"></td> <td style="width: 12.5%;"></td> <td style="width: 12.5%;"></td> </tr> <tr> <td style="font-size: 8px;">6010 - Select List (Analysis Plan attached)</td> <td style="font-size: 8px;">6020 - Select List (Analysis Plan attached)</td> <td style="font-size: 8px;">7471 - Mercury</td> <td style="font-size: 8px;">8082 - Select List (Analysis Plan attached)</td> <td style="font-size: 8px;">8270 - Select List (Analysis Plan attached)</td> <td style="font-size: 8px;">8260 - Select List (Analysis Plan attached)</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>						O	O	O	O	O	O					6010 - Select List (Analysis Plan attached)	6020 - Select List (Analysis Plan attached)	7471 - Mercury	8082 - Select List (Analysis Plan attached)	8270 - Select List (Analysis Plan attached)	8260 - Select List (Analysis Plan attached)					SCR #: _____	
O	O	O	O	O	O																													
6010 - Select List (Analysis Plan attached)	6020 - Select List (Analysis Plan attached)	7471 - Mercury	8082 - Select List (Analysis Plan attached)	8270 - Select List (Analysis Plan attached)	8260 - Select List (Analysis Plan attached)																													
Sampler: Ken Nye, Daniel Howard		PWSID #:		<input type="checkbox"/> Sediment	<input type="checkbox"/> Water		Total # of Containers							Preservation Codes																				
Phone #: 770-421-3400		Quote #:		<input type="checkbox"/> Soil										H = HCl T = Thiosulfate N = HNO ₃ B = NaOH S = H ₂ SO ₄ P = H ₃ PO ₄ F = Field Filtered O = Other																				
State where samples were collected: GA		For Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>		<input checked="" type="checkbox"/> Composite										Remarks																				
Collection			Grab	Composite																														
Sample Identification		Date			Time																													
SBO-30-0-2-0318		03/08/2018	1550	X	X			1	X																									
SBO-30-2-4-0318		03/08/2018	1645	X	X			1		X																								
SBO-30-6-8-0318		03/08/2018	1650	X	X			1		X																								
SBO-32-0-2-0318		03/07/2018	1840	X	X			1		X																								
SBO-33-0-2-0318		03/08/2018	1740	X	X			2	X	X	X	X					MS/MSD 6010/6020/7471																	
SBO-34-0-2-0318		03/09/2018	0855	X	X		2	X	X		X					MS/MSD 8270																		
SBO-34-2-4-0318		03/09/2018	0900	X	X		1	X																										
SBO-34-6-8-0318		03/09/2018	0905	X	X		1	X																										
SBO-35-0-2-0318		03/09/2018	0920	X	X		1	X		X																								
SBO-35-2-4-0318		03/09/2018	0925	X	X		1	X	X	X																								
Turnaround Time Requested (TAT) (please check): Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>				Relinquished by: <i>[Signature]</i>			Date	Time	Received by: <i>[Signature]</i>			Date	Time																					
(Rush TAT is subject to laboratory approval and surcharges.)							3/12/18	2030	FEDEX			3/12/18	2030																					
Date results are needed:				Relinquished by:			Date	Time	Received by:			Date	Time																					
Rush results requested by (please check): E-Mail <input checked="" type="checkbox"/> Phone <input type="checkbox"/>																																		
E-mail Address: per Analytical Request Form - Sheet 1 (attached)				Relinquished by:			Date	Time	Received by:			Date	Time																					
Phone:																																		
Data Package Options (please check if required)				Relinquished by:			Date	Time	Received by:			Date	Time																					
Type I (Validation/non-CLP) <input type="checkbox"/> MA MCP <input type="checkbox"/>																																		
Type III (Reduced non-CLP) <input type="checkbox"/> CT RCP <input type="checkbox"/>																																		
Type VI (Raw Data Only) <input type="checkbox"/> TX TRRP-13 <input type="checkbox"/>																																		
NJ DKQP <input type="checkbox"/> NYSDEC Category <input type="checkbox"/> A or <input type="checkbox"/> B				Relinquished by: <i>[Signature]</i>			Date	Time	Received by: <i>[Signature]</i>			Date	Time																					
EDD Required? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, format: EQUIS									Nicole Reiff (ELLE)			3/13/18	1030																					
				Relinquished by Commercial Carrier:						Temperature upon receipt 0.7 - 1.4 °C																								
				UPS _____ FedEx _____ Other _____																														

Environmental Analysis Request/Chain of Custody



Lancaster Laboratories
Environmental

Acct. # 10302 Group # 1918726 Sample # 95016605-717

Client: Amec Foster Wheeler				Matrix			Analyses Requested										For Lab Use Only			
Project Name/#: Former Cohn Property		Site ID #:					Preservation and Filtration Codes										SF #: _____			
Project Manager: John Jolly		P.O. #: SA14.127-001		Soil <input type="checkbox"/> Sediment <input type="checkbox"/> Tissue <input type="checkbox"/>	Potable <input type="checkbox"/> Ground <input type="checkbox"/>	Water <input type="checkbox"/> NPDES <input type="checkbox"/> Surface <input type="checkbox"/>	Other: _____	Total # of Containers	O	O	O	O	O	O	O	O	O	O	SCR #: _____	
Sampler: Ken Nye, Daniel Howard		PWSID #:							6010 - Select List (Analysis Plan attached)	6020 - Select List (Analysis Plan attached)	7471 - Mercury	8082 - Select List (Analysis Plan attached)	8270 - Select List (Analysis Plan attached)	8280 - Select List (Analysis Plan attached)	Preservation Codes		H = HCl		T = Thiosulfate	
Phone #: 770-421-3400		Quote #:																		
State where samples were collected: GA				For Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>																
Sample Identification		Collection		Grab	Composite											Remarks				
		Date	Time																	
SBO-35-6-8-0318		03/09/2018	0930	X		X		1	X	X		X								
SBO-35-8-10-0318		03/09/2018	0935	X		X		1	X											
SBO-36-0-2-0318		03/09/2018	0952	X		X		1	X			X								
SBO-36-2-4-0318		03/09/2018	0956	X		X		2	X	X		X							MS/MSD 8082	
SBO-36-6-8-0318		03/09/2018	0958	X		X		1	X	X		X								
SBO-36-8-10-0318		03/09/2018	1002	X		X		1	X											
SBO-37-0-2-0318		03/09/2018	1011	X		X		1	X											
SBO-37-2-4-0318		03/09/2018	1014	X		X		1	X	X										
SBO-37-6-8-0318		03/09/2018	1019	X		X		1	X	X										
SBO-38-0-2-0318		03/06/2018	1650	X		X		1	X											
Turnaround Time Requested (TAT) (please check): Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>				Relinquished by: <i>[Signature]</i>			Date	Time	Received by: <i>[Signature]</i>			Date	Time							
(Rush TAT is subject to laboratory approval and surcharges.)							3/12/18	2030				3/12/18	2030							
Date results are needed:				Relinquished by:			Date	Time	Received by:			Date	Time							
Rush results requested by (please check): E-Mail <input checked="" type="checkbox"/> Phone <input type="checkbox"/>							Date	Time				Date	Time							
E-mail Address: per Analytical Request Form - Sheet 1 (attached)							Date	Time				Date	Time							
Phone:							Date	Time				Date	Time							
Data Package Options (please check if required)				Relinquished by:			Date	Time	Received by:			Date	Time							
Type I (Validation/non-CLP) <input type="checkbox"/>		MA MCP <input type="checkbox"/>					Date	Time	Received by: <i>[Signature]</i>			Date	Time							
Type III (Reduced non-CLP) <input type="checkbox"/>		CT RCP <input type="checkbox"/>					Date	Time				3/13/18	1030							
Type VI (Raw Data Only) <input type="checkbox"/>		TX TRRP-13 <input type="checkbox"/>					Relinquished by Commercial Carrier:			Nicole Reiff (ELLE)										
NJ DKQP <input type="checkbox"/>		NYSDEC Category <input type="checkbox"/> A or <input type="checkbox"/> B					UPS _____ FedEx _____ Other _____			Temperature upon receipt <u>0.7 - 1.4</u> °C										
EDD Required? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, format: EQUIS																				

Environmental Analysis Request/Chain of Custody



Lancaster Laboratories
Environmental

Acct. # 10302 Group # 1918726 Sample # 9501665-717

Client: Amec Foster Wheeler				Matrix			Analyses Requested						For Lab Use Only	
Project Name/#: Former Cohn Property		Site ID #:		<input type="checkbox"/> Tissue <input type="checkbox"/> Ground <input type="checkbox"/> Surface <input type="checkbox"/> Sediment <input checked="" type="checkbox"/> Soil <input type="checkbox"/> Potable <input type="checkbox"/> Water <input type="checkbox"/> NPDES <input type="checkbox"/> Other:	Total # of Containers	Preservation and Filtration Codes						SF #: _____		
Project Manager: John Jolly		P.O. #: SA14.127-001				O	O	O	O	O	O	SCR #: _____		
Sampler: Ken Nye, Daniel Howard		PWSID #:				O	O	O	O	O	O	Preservation Codes H = HCl T = Thiosulfate N = HNO ₃ B = NaOH S = H ₂ SO ₄ P = H ₃ PO ₄ F = Field Filtered O = Other		
Phone #: 770-421-3400		Quote #:				O	O	O	O	O	O			
State where samples were collected: GA		For Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>				O	O	O	O	O	O			
Sample Identification		Collection		Grab	Composite	6010 - Select List (Analysis Plan attached)	6020 - Select List (Analysis Plan attached)	7471 - Mercury	8082 - Select List (Analysis Plan attached)	8270 - Select List (Analysis Plan attached)	8260 - Select List (Analysis Plan attached)	Remarks		
		Date	Time											
SBO-39-0-2-0318		03/08/2018	0910	X		X	X							
SBO-40-0-2-0318		03/08/2018	0855	X		X	X			X				
SBO-41-0-2-0318		03/06/2018	1420	X		X					X			
SBO-41-2-4-0318		03/06/2018	1435	X		X	X				X			
SBO-41-6-8-0318		03/06/2018	1455	X		X	X				X			
SBO-41-12-14-0318		03/06/2018	1456	X		X					X			
SBO-41-18-20-0318		03/06/2018	1508	X		X					X			
SBO-42-0-2-0318		03/05/2018	1650	X		X	X				X			
SBO-42-2-4-0318		03/05/2018	1705	X		X	X				X			
SBO-42-6-8-0318		03/05/2018	1718	X		X	X				X			
Turnaround Time Requested (TAT) (please check): Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> (Rush TAT is subject to laboratory approval and surcharges.)				Relinquished by: <i>[Signature]</i>		Date: 3/12/18	Time: 2030	Received by: <i>[Signature]</i>		Date: 3/12/18	Time: 2030			
Date results are needed:				Relinquished by:		Date:	Time:	Received by:		Date:	Time:			
Rush results requested by (please check): E-Mail <input checked="" type="checkbox"/> Phone <input type="checkbox"/>				Relinquished by:		Date:	Time:	Received by:		Date:	Time:			
E-mail Address: per Analytical Request Form - Sheet 1 (attached)				Relinquished by:		Date:	Time:	Received by:		Date:	Time:			
Phone:				Relinquished by:		Date:	Time:	Received by:		Date:	Time:			
Data Package Options (please check if required) Type I (Validation/non-CLP) <input type="checkbox"/> MA MCP <input type="checkbox"/> Type III (Reduced non-CLP) <input type="checkbox"/> CT RCP <input type="checkbox"/> Type VI (Raw Data Only) <input type="checkbox"/> TX TRRP-13 <input type="checkbox"/> NJ DKQP <input type="checkbox"/> NYSDEC Category <input type="checkbox"/> A or <input checked="" type="checkbox"/> B				Relinquished by:		Date:	Time:	Received by:		Date:	Time:			
EDD Required? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, format: EQUIS				Relinquished by Commercial Carrier:		Date:	Time:	Received by: <i>[Signature]</i>		Date: 3/13/18	Time: 1030			
				UPS _____ FedEx <input checked="" type="checkbox"/> Other _____				Temperature upon receipt: 0.7 - 1.4 °C						

Environmental Analysis Request/Chain of Custody



Lancaster Laboratories
Environmental

Acct. # 10302 Group # 1918726 Sample # 9801668-717

Client: Amec Foster Wheeler				Matrix			Analyses Requested						For Lab Use Only			
Project Name#: Former Cohn Property		Site ID #:		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Preservation and Filtration Codes						SF #: _____			
Project Manager: John Jolly		P.O. #: SA14.127-001		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	O	O	O	O	O	O	O	O	SCR #: _____	
Sampler: Ken Nye, Daniel Howard		PWSID #:		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6010 - Select List (Analysis Plan attached)	6020 - Select List (Analysis Plan attached)	7471 - Mercury	8082 - Select List (Analysis Plan attached)	8270 - Select List (Analysis Plan attached)	8260 - Select List (Analysis Plan attached)	Preservation Codes		H = HCl T = Thiosulfate N = HNO ₃ B = NaOH S = H ₂ SO ₄ P = H ₃ PO ₄ F = Field Filtered O = Other	
Phone #: 770-421-3400		Quote #:		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>							Remarks			
State where samples were collected: GA		For Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Total # of Containers									
Collection		Grab	Composite	<input checked="" type="checkbox"/> Soil	<input type="checkbox"/> Sediment	<input type="checkbox"/> Tissue										
Sample Identification				Date	Time	Water		Potable	Ground							
				NPDES	Surface											
SBO-42-12-14-0318		03/05/2018	1733	X				5	X					X		
SBO-42-18-20-0318		03/05/2018	1739	X				5	X					X		
SBO-43-0-2-0318		03/09/2018	1525	X				5	X	X	X			X		
SBO-43-2-4-0318		03/09/2018	1530	X				5	X	X	X			X		
SBO-43-6-8-0318		03/09/2018	1535	X				13	X	X	X			X	MS/MSD 8260	
SBO-43-12-14-0318		03/09/2018	1540	X				5	X	X	X			X		
SBO-43-18-20-0318		03/09/2018	1545	X				5	X	X	X			X		
SBO-DUP01-0318		03/09/2018	1200	X				1				X				
SBO-DUP02-0318		03/09/2018	1200	X				1			X					
SBO-DUP03-0318		03/05/2018	1200	X			4					X				
Turnaround Time Requested (TAT) (please check): Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> (Rush TAT is subject to laboratory approval and surcharges.)				Relinquished by: <i>[Signature]</i>			Date	Time	Received by: <i>FEDEX</i>			Date	Time			
Date results are needed:				Relinquished by:			Date	Time	Received by:			Date	Time			
Rush results requested by (please check): E-Mail <input checked="" type="checkbox"/> Phone <input type="checkbox"/>				Relinquished by:			Date	Time	Received by:			Date	Time			
E-mail Address: per Analytical Request Form - Sheet 1 (attached)				Relinquished by:			Date	Time	Received by:			Date	Time			
Phone:				Relinquished by:			Date	Time	Received by:			Date	Time			
Data Package Options (please check if required)				Relinquished by:			Date	Time	Received by:			Date	Time			
Type I (Validation/non-CLP) <input type="checkbox"/>		MA MCP <input type="checkbox"/>		Relinquished by:			Date	Time	Received by: <i>[Signature]</i>			Date	Time			
Type III (Reduced non-CLP) <input type="checkbox"/>		CT RCP <input type="checkbox"/>		Relinquished by:			Date	Time	Received by: <i>Nicole Raiff (ELLE)</i>			8/13/18	1030			
Type VI (Raw Data Only) <input type="checkbox"/>		TX TRRP-13 <input type="checkbox"/>		Relinquished by:			Date	Time	Received by:			Date	Time			
NJ DKQP <input type="checkbox"/>		NYSDEC Category <input type="checkbox"/> A or <input checked="" type="checkbox"/> B		Relinquished by Commercial Carrier:						Temperature upon receipt <u>0.7 - 1.4</u> °C						
EDD Required? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, format: <u>EQULS</u>				UPS _____ FedEx _____ Other _____												

1918726

Katherine Klinefelter

From: Howard, Daniel L <daniel.howard2@woodplc.com>
Sent: Tuesday, March 13, 2018 10:38 AM
To: Katherine Klinefelter
Cc: Hartness, Judy A
Subject: Former Cohn Property, Trip Blanks for sample coolers
Attachments: MX-M623N_20180313_084122.pdf

EXTERNAL EMAIL*

The Trip Blanks were omitted on the COC for the three sample coolers that you will receive today for Former Cohn Property Project. They have been added to the attached COC.

Daniel Howard
Technical Professional III
Environmental & Infrastructure Solutions
1075 Big Shanty Road NW, Suite 100, Kennesaw, Georgia 30144, USA
Direct: 770-421-3382
Mobile: 404-273-0418
daniel.howard2@woodplc.com
www.woodplc.com

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Environmental Analysis Request/Chain of Custody



Lancaster Laboratories
Environmental

Acct. # 10302 Group # 1918726 Sample # 9501605-717

Client: Amec Foster Wheeler				Matrix				Analyses Requested						For Lab Use Only	
Project Name/#: Former Cohn Property		Site ID #:		<input type="checkbox"/> Tissue <input type="checkbox"/> Ground <input type="checkbox"/> Surface <input type="checkbox"/> Potable <input type="checkbox"/> NPDES <input type="checkbox"/> Water <input type="checkbox"/> Soil <input checked="" type="checkbox"/> Sediment <input type="checkbox"/> Other:		Preservation and Filtration Codes						SF #: _____			
Project Manager: John Jolly		P.O. #: SA14.127-001				O O O O O O (Analysis Plan attached) (Analysis Plan attached)						SCR #: _____			
Sampler: Ken Nye, Daniel Howard		PWSID #:				6010 - Select List (Analysis Plan attached) 6020 - Select List (Analysis Plan attached) 7471 - Mercury 8082 - Select List (Analysis Plan attached) 8270 - Select List (Analysis Plan attached) 8280 - Select List (Analysis Plan attached)						Preservation Codes			
Phone #: 770-421-3400		Quote #:										H = HCl T = Thiosulfate N = HNO ₃ B = NaOH S = H ₂ SO ₄ P = H ₃ PO ₄ F = Field Filtered O = Other			
State where samples were collected: GA For Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>				Collection		Total # of Containers								Remarks	
Sample Identification		Date												Time	
SBO-DUP04-0318		03/09/2018		1200		X				X					
TRIP BLANK (Cooler 1)		---		---		X						X			
TRIP BLANK (Cooler 2)		---		---		X						X			
TRIP BLANK (Cooler 3)		---		---		X						X			
Turnaround Time Requested (TAT) (please check): Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> (Rush TAT is subject to laboratory approval and surcharges.)				Relinquished by:		Date		Time		Received by:		Date		Time	
Date results are needed:				Relinquished by:		Date		Time		Received by:		Date		Time	
Rush results requested by (please check): E-Mail <input checked="" type="checkbox"/> Phone <input type="checkbox"/>				Relinquished by:		Date		Time		Received by:		Date		Time	
E-mail Address: per Analytical Request Form - Sheet 1 (attached)				Relinquished by:		Date		Time		Received by:		Date		Time	
Phone:				Relinquished by:		Date		Time		Received by:		Date		Time	
Data Package Options (please check if required) Type I (Validation/non-CLP) <input type="checkbox"/> MA MCP <input type="checkbox"/> Type III (Reduced non-CLP) <input type="checkbox"/> CT RCP <input type="checkbox"/> Type VI (Raw Data Only) <input type="checkbox"/> TX TRRP-13 <input type="checkbox"/> NJ DKQP <input type="checkbox"/> NYSDEC Category <input type="checkbox"/> A or <input checked="" type="checkbox"/> B				Relinquished by:		Date		Time		Received by:		Date		Time	
EDD Required? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, format: EQUIS				Relinquished by Commercial Carrier:		Date		Time		Received by:		Date		Time	
				UPS _____ FedEx _____ Other _____						Temperature upon receipt _____ °C					

1918726

Delineation and Characterization Sampling and Analysis Plan - Soil - March 5-9, 2018
Former Cohn Property - Norfolk Southern / Columbus, Muscogee Co, Georgia

Location	Sample	Sample	Metals ICP	Metals ICPMS	Hg	PCBs	SVOCs	VOCs	QC		8 oz	8 oz Glass	VOC Soil	Trip
ID	ID	Date	6010	6020	7471	8082	8270	8260	MS/MSD	Comments	Glass	(MS/SD)	Kit (a)	Blanks
SBO-30	SBO-30-0-2-0318	3/8/2018	Pb	--	--	--	--	--	--	Metals	1			
SBO-30	SBO-30-2-4-0318	3/8/2018	--	Sb	--	--	--	--	--	Metals	1			
SBO-30	SBO-30-6-8-0318	3/8/2018	--	Sb	--	--	--	--	--	Metals	1			
SBO-32	SBO-32-0-2-0318	3/7/2018	--	As	--	--	--	--	--	Metals	1			
SBO-33	SBO-33-0-2-0318	3/8/2018	Cu,Pb,Ni,Zn	Sb,As,Cd,Cr	Hg	1248 & 1254	BaP	--	Metals	Metals, PCBs, SVOCs	1	1		
SBO-34	SBO-34-0-2-0318	3/9/2018	Cu,Pb,Zn	Cd,Cr	--	--	BaA, BaP, BbF, CRY	--	SVOCs	Metals, SVOCs	1	1		
SBO-34	SBO-34-2-4-0318	3/9/2018	Pb	--	--	--	--	--	--	Metals	1			
SBO-34	SBO-34-6-8-0318	3/9/2018	Pb	--	--	--	--	--	--	Metals	1			
SBO-35	SBO-35-0-2-0318	3/9/2018	Cu,Pb,Zn	--	--	1248 & 1254	--	--	--	Metals, PCBs	1			
SBO-35	SBO-35-2-4-0318	3/9/2018	Cu,Pb,Ni,Zn	Sb,As,Cd,Cr	--	1248 & 1254	--	--	--	Metals, PCBs	1			
SBO-35	SBO-35-6-8-0318	3/9/2018	Cu,Pb,Ni,Zn	Sb,As,Cd,Cr	--	1248 & 1254	--	--	--	Metals, PCBs	1			
SBO-35	SBO-35-8-10-0318	3/9/2018	Zn	--	--	--	--	--	--	Metals	1			
SBO-36	SBO-36-0-2-0318	3/9/2018	Cu,Pb,Zn	--	--	1248 & 1254	--	--	--	Metals, PCBs	1			
SBO-36	SBO-36-2-4-0318	3/9/2018	Cu,Pb,Ni,Zn	Sb,As,Cd,Cr	--	1248 & 1254	--	--	PCBs	Metals, PCBs	1	1		
SBO-36	SBO-36-6-8-0318	3/9/2018	Cu,Pb,Ni,Zn	Sb,As,Cd,Cr	--	1248 & 1254	--	--	--	Metals, PCBs	1			
SBO-36	SBO-36-8-10-0318	3/9/2018	Zn	--	--	--	--	--	--	Metals	1			
SBO-37	SBO-37-0-2-0318	3/9/2018	Cu,Pb,Zn	--	--	--	--	--	--	Metals	1			
SBO-37	SBO-37-2-4-0318	3/9/2018	Cu,Pb,Zn	Cd	--	--	--	--	--	Metals	1			
SBO-37	SBO-37-6-8-0318	3/9/2018	Pb,Zn	Cd	--	--	--	--	--	Metals	1			
SBO-38	SBO-38-0-2-0318	3/6/2018	Zn	--	--	--	--	--	--	Metals	1			
SBO-39	SBO-39-0-2-0318	3/8/2018	Pb,Zn	Sb	--	--	--	--	--	Metals	1			
SBO-40	SBO-40-0-2-0318	3/8/2018	Pb,Zn	Sb	--	--	BaP, BbF	--	--	Metals, SVOCs	1			
SBO-41	SBO-41-0-2-0318	3/6/2018	--	--	--	--	--	PCE	--	VOCs			1	1
SBO-41	SBO-41-2-4-0318	3/6/2018	--	Cr	--	--	--	PCE	--	Metals, VOCs	1		1	
SBO-41	SBO-41-6-8-0318	3/6/2018	--	Cr	--	--	--	PCE	--	Metals, VOCs	1		1	
SBO-41	SBO-41-12-14-0318	3/6/2018	--	--	--	--	--	PCE	--	VOCs			1	
SBO-41	SBO-41-18-20-0318	3/6/2018	--	--	--	--	--	PCE	--	VOCs			1	
SBO-42	SBO-42-0-2-0318	3/5/2018	Cu,Pb	--	--	--	--	PCE	--	Metals, VOCs	1		1	1
SBO-42	SBO-42-2-4-0318	3/5/2018	Cu,Pb	--	--	--	--	PCE	--	Metals, VOCs	1		1	
SBO-42	SBO-42-6-8-0318	3/5/2018	Cu,Pb	--	--	--	--	PCE	--	Metals, VOCs	1		1	

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Delineation and Characterization Sampling and Analysis Plan - Soil - March 5-9, 2018
Former Cohn Property - Norfolk Southern / Columbus, Muscogee Co, Georgia

Location	Sample	Sample	Metals ICP	Metals ICPMS	Hg	PCBs	SVOCs	VOCs	QC		8 oz	8 oz Glass	VOC Soil	Trip	
ID	ID	Date	6010	6020	7471	8082	8270	8260	MS/MSD	Comments	Glass	(MS/SD)	Kit (a)	Blanks	
SBO-42	SBO-42-12-14-0318	3/5/2018	Cu,Pb	--	--	--	--	PCE	--	Metals, VOCs	1		1		
SBO-42	SBO-42-18-20-0318	3/5/2018	Cu,Pb	--	--	--	--	PCE	--	Metals, VOCs	1		1		
SBO-43	SBO-43-0-2-0318	3/9/2018	Cu,Pb,Ni,Zn	Sb,Cd,Cr	Hg	--	--	PCE	--	Metals, VOCs	1		1	1	
SBO-43	SBO-43-2-4-0318	3/9/2018	Cu,Pb,Ni,Zn	Sb,Cd,Cr	Hg	--	--	PCE	--	Metals, VOCs	1		1		
SBO-43	SBO-43-6-8-0318	3/9/2018	Cu,Pb,Ni,Zn	Sb,Cd,Cr	Hg	--	--	PCE	VOCs	Metals, VOCs	1		3		
SBO-43	SBO-43-12-14-0318	3/9/2018	Cu,Pb,Ni,Zn	Sb,Cd,Cr	Hg	--	--	PCE	--	Metals, VOCs	1		1		
SBO-43	SBO-43-18-20-0318	3/9/2018	Cu,Pb,Ni,Zn	Sb,Cd,Cr	Hg	--	--	PCE	--	Metals, VOCs	1		1		
SBO-34	SBO-DUP01-0318	3/9/2018	--	--	--	--	SVOCs	--	--	SVOCs	1				
SBO-35	SBO-DUP02-0318	3/9/2018	--	--	--	1248 & 1254	--	--	--	PCBs	1				
SBO-42	SBO-DUP03-0318	3/5/2018	--	--	--	--	--	PCE	--	VOCs			1		
SBO-43	SBO-DUP04-0318	3/9/2018	Cu,Pb,Ni,Zn	Sb,Cd,Cr	Hg	--	--	--	--	Metals	1				
											Total Bottles =	35	3	17	3
											Extra Bottles =	8	0	5	0
											Grand Total Bottles=	43	3	22	3

Notes:

- BaA = Benzo(a)anthracene
- BaP = Benzo(a) pyrene
- BbF = Benzo(b)fluoranthene
- CRY = Chrysene

Metals: As = Arsenic, Cd = Cadmium, Cr = Chromium, Cr(VI) = Hexavalent Chromium, Cu = Copper, Hg = Mercury, Ni = Nickel, Pb = Lead, Sb = Antimony, Zn = Zinc
 PCE = Tetrachloroethene

- ☐ = Collect QC
- ▨ = Collect Field Dup
- ▩ = Collect MS/MSD

1 jar for all parameters
 1 jar for all parameters + MS/MSD
 (a) 1 soil VOC kit = 2 NaHSO4 vials + 1 MeOH vial + 1 tube for moisture
 No. of Trip Blanks based on No. of coolers w/VOCs

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TABLE 1 METALS

Metals	CAS Number	Soil Method	Soil LOQ (mg/kg)
Antimony	7440-36-0	6020A	0.4
Arsenic	7440-38-2	6020A	0.8
Cadmium	7440-43-9	6020A	0.2
Chromium	7440-47-3	6020A	0.8
Copper	7440-50-8	6010C	2
Lead	7439-92-1	6010C	3
Nickel	7440-02-0	6010C	2
Zinc	7440-66-6	6010C	4

Metals	CAS Number	Soil Method	Soil LOQ (mg/kg)
Mercury	7439-97-6	7471B	0.2

Metals	CAS Number	Soil Method	Soil LOQ (mg/kg)
Hexavalent Chromium	18540-29-9	7199	TBD

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TABLE 2 VOCS

GC/MS Volatiles SW-846 8260C	CAS Number	Soil LOQ (ug/kg)
Tetrachloroethene	127-18-4	5

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TABLE 3 SVOCS

PAHs SW-846 8270D	CAS Number	Soil LOQ (ug/kg)
Benzo(a)anthracene	56-55-3	17
Benzo(a)pyrene	50-32-8	17
Benzo(b)fluoranthene	205-99-2	17
Chrysene	218-01-9	17

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TABLE 4 PCBs

Pesticides/PCBs SW-846 8082A	CAS Number	Laboratory Quantitation Limit (ug/L)	Soil LOQ (ug/kg)
PCB-1248	12672-29-6	0.40	17
PCB-1254	11097-69-1	0.40	17



Client: Amec Foster Wheeler

Former Cohn Property

Delivery and Receipt Information

Delivery Method:	<u>Fed Ex</u>	Arrival Timestamp:	<u>03/13/2018 10:30</u>
Number of Packages:	<u>3</u>	Number of Projects:	<u>1</u>
State/Province of Origin:	<u>GA</u>		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace \geq 6mm:	N/A
Samples Chilled:	Yes	Total Trip Blank Qty:	3
Paperwork Enclosed:	Yes	Trip Blank Type:	See Below
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Trip Blank Type(s): Sodium Bisulfate

Unpacked by Nicole Reiff (25684) at 15:56 on 03/13/2018

Samples Chilled Details: Former Cohn Property

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT146	1.0	DT	Wet	Y	Bagged	N
2	DT146	1.4	DT	Wet	Y	Bagged	N
3	DT146	0.7	DT	Wet	Y	Bagged	N

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	mg	milligram(s)
C	degrees Celsius	mL	milliliter(s)
cfu	colony forming units	MPN	Most Probable Number
CP Units	cobalt-chloroplatinate units	N.D.	non-detect
F	degrees Fahrenheit	ng	nanogram(s)
g	gram(s)	NTU	nephelometric turbidity units
IU	International Units	pg/L	picogram/liter
kg	kilogram(s)	RL	Reporting Limit
L	liter(s)	TNTC	Too Numerous To Count
lb.	pound(s)	µg	microgram(s)
m3	cubic meter(s)	µL	microliter(s)
meq	milliequivalents	umhos/cm	micromhos/cm
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

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Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

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Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
J (or G, I, X)	Estimated value \geq the Method Detection Limit (MDL or DL) and $<$ the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column $>40\%$. The lower result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column $>100\%$. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.



ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Norfolk Southern Railway Co.
1200 Peachtree Street, NE
Box 13
Atlanta GA 30309

Report Date: March 30, 2018 12:53

Project: Former Cohn Property/Columbus, GA

Account #: 10302
Group Number: 1920793
PO Number: SA14.127-001
Release Number: 1440001625
State of Sample Origin: GA

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at <http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/> . To request copies of prior scopes of accreditation, contact your project manager.

Electronic Copy To Amec Foster Wheeler
Electronic Copy To Amec Foster Wheeler
Electronic Copy To Amec Foster Wheeler

Attn: Rhonda Quinn
Attn: Michelle Barker
Attn: Judy Hartness

Respectfully Submitted,



Katherine A. Klinefelter
Principal Specialist

(717) 556-7256



SAMPLE INFORMATION

<u>Client Sample Description</u>	<u>Sample Collection Date/Time</u>	<u>ELLE#</u>
SBO-31-0-2-0318 Grab Soil	03/14/2018 11:30	9510115
SBO-43-0-2-0318 Grab Soil	03/16/2018 09:40	9510116
SBO-43-2-4-0318 Grab Soil	03/16/2018 09:50	9510117
SBO-44-0-2-0318 Grab Soil	03/16/2018 12:10	9510118
SBO-44-0-2-0318SS Grab Soil	03/16/2018 12:10	9510119
SBO-44-0-2-0318IS Grab Soil	03/16/2018 12:10	9510120
SBO-44-0-2-0318PDS Grab Soil	03/16/2018 12:10	9510121
SBO-44-0-2-0318DUP Grab Soil	03/16/2018 12:10	9510122
SBO-45-0-1.5-0318 Grab Soil	03/16/2018 15:35	9510123
IDW-Soil-0318 Composite Soil	03/16/2018 16:35	9510124
IDW-Soil-0318 Composite Soil	03/16/2018 16:35	9510125
IDW-Soil-0318 Composite Soil	03/16/2018 16:35	9510126
SBO-DUP04-0318 Grab Soil	03/16/2018 12:00	9510127

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Project Name: Former Cohn Property/Columbus, GA
ELLE Group #: 1920793

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below.

Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are included in this data set.

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

For dual column analyses, the surrogate (for multi-surrogate tests, at least one surrogate) must be within the acceptance limits on at least one of the two columns.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:**SW-846 6010C, Metals**

Batch #: 180821063602 (Sample number(s): 9510125 UNSPK: 9510125 BKG: 9510125)

The recovery(ies) for the following analyte(s) in the MS and/or MSD were below the acceptance window:
Selenium

SW-846 7470A, Metals

Batch #: 180820571302 (Sample number(s): 9510125 UNSPK: P502042 BKG: P502042)

The recovery(ies) for the following analyte(s) in the MS and/or MSD were below the acceptance window:
Mercury

SW-846 7199, Wet Chemistry

Batch #: 18078243201A (Sample number(s): 9510116-9510123, 9510127 UNSPK: 9510118 BKG: 9510118)

The recovery(ies) for the following analyte(s) in the MS were below the acceptance window: Hexavalent Chromium by IC

The duplicate RPD for the following analyte(s) exceeded the acceptance window: Hexavalent Chromium by IC

SW-846 9045C modified, Wet Chemistry

Sample #s: 9510116, 9510122

The pH was measured in water at 19.6 C.

Sample #s: 9510117, 9510123, 9510127

The pH was measured in water at 19.7 C.

Sample #s: 9510118

The pH was measured in water at 19.8 C.

Sample Description: SBO-31-0-2-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9510115
ELLE Group #: 1920793
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/17/2018 10:00
Collection Date/Time: 03/14/2018 11:30

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Metals						
		SW-846 6020A	mg/kg	mg/kg	mg/kg	
06125	Arsenic	7440-38-2	41.3	0.855	0.137	2
Wet Chemistry						
		SM 2540 G-1997	%	%	%	
		%Moisture Calc				
00111	Moisture	n.a.	20.7	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06125	Arsenic	SW-846 6020A	1	180801063701A	03/27/2018 23:01	Bradley M Berlot	2
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	180801063701	03/23/2018 15:25	JoElla L Rice	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18079820002A	03/20/2018 12:41	Larry E Bevins	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-43-0-2-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9510116
ELLE Group #: 1920793
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/17/2018 10:00
Collection Date/Time: 03/16/2018 09:40

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Wet Chemistry						
		SW-846 7199	mg/kg	mg/kg	mg/kg	
05892	Hexavalent Chromium by IC	18540-29-9	< 0.47	0.47	0.17	1
ASTM D1498						
			mV	mV	mV	
01821	Oxidation Reduction Potential	n.a.	390	10.0	10.0	1
The oxidation-reduction potential is reported in mV as referred to the standard hydrogen scale.						
SW-846 9045C modified						
			Std. Units	Std. Units	Std. Units	
00394	pH	n.a.	8.14	0.0100	0.0100	1
The pH was measured in water at 19.6 C.						
Wet Chemistry						
		SM 2540 G-1997	%	%	%	
		%Moisture Calc				
00111	Moisture	n.a.	15.0	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
05892	Hexavalent Chromium by IC	SW-846 7199	1	18078243201A	03/22/2018 21:28	Clinton M Wilson	1
01821	Oxidation Reduction Potential	ASTM D1498	1	18082182101A	03/23/2018 20:00	Luz M Groff	1
00394	pH	SW-846 9045C modified	1	18082039401A	03/23/2018 20:00	Luz M Groff	1
02432	Hexavalent Cr Extraction - IC	SW-846 3060A	1	18078243201A	03/19/2018 22:55	Daniel S Smith	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18079820002A	03/20/2018 12:41	Larry E Bevins	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-43-2-4-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9510117
ELLE Group #: 1920793
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/17/2018 10:00
Collection Date/Time: 03/16/2018 09:50

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Wet Chemistry						
SW-846 7199			mg/kg	mg/kg	mg/kg	
05892	Hexavalent Chromium by IC	18540-29-9	1.9	0.45	0.16	1
ASTM D1498						
			mV	mV	mV	
01821	Oxidation Reduction Potential	n.a.	389	10.0	10.0	1
The oxidation-reduction potential is reported in mV as referred to the standard hydrogen scale.						
SW-846 9045C modified						
			Std. Units	Std. Units	Std. Units	
00394	pH	n.a.	8.10	0.0100	0.0100	1
The pH was measured in water at 19.7 C.						
Wet Chemistry						
SM 2540 G-1997			%	%	%	
%Moisture Calc						
00111	Moisture	n.a.	9.7	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
05892	Hexavalent Chromium by IC	SW-846 7199	1	18078243201A	03/22/2018 21:42	Clinton M Wilson	1
01821	Oxidation Reduction Potential	ASTM D1498	1	18082182101A	03/23/2018 20:00	Luz M Groff	1
00394	pH	SW-846 9045C modified	1	18082039401A	03/23/2018 20:00	Luz M Groff	1
02432	Hexavalent Cr Extraction - IC	SW-846 3060A	1	18078243201A	03/19/2018 22:55	Daniel S Smith	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18079820002A	03/20/2018 12:41	Larry E Bevins	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-44-0-2-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9510118
ELLE Group #: 1920793
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/17/2018 10:00
Collection Date/Time: 03/16/2018 12:10

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Wet Chemistry						
SW-846 7199			mg/kg	mg/kg	mg/kg	
05892	Hexavalent Chromium by IC	18540-29-9	< 0.47	0.47	0.16	1
ASTM D1498						
			mV	mV	mV	
01821	Oxidation Reduction Potential	n.a.	340	10.0	10.0	1
The oxidation-reduction potential is reported in mV as referred to the standard hydrogen scale.						
SW-846 9045C modified						
			Std. Units	Std. Units	Std. Units	
00394	pH	n.a.	8.36	0.0100	0.0100	1
The pH was measured in water at 19.8 C.						
Wet Chemistry						
SM 2540 G-1997			%	%	%	
%Moisture Calc						
00111	Moisture	n.a.	14.4	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
05892	Hexavalent Chromium by IC	SW-846 7199	1	18078243201A	03/22/2018 22:11	Clinton M Wilson	1
01821	Oxidation Reduction Potential	ASTM D1498	1	18082182101A	03/23/2018 20:00	Luz M Groff	1
00394	pH	SW-846 9045C modified	1	18082039401A	03/23/2018 20:00	Luz M Groff	1
02432	Hexavalent Cr Extraction - IC	SW-846 3060A	1	18078243201A	03/19/2018 22:55	Daniel S Smith	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18079820002A	03/20/2018 12:41	Larry E Bevins	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-44-0-2-0318SS Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9510119
ELLE Group #: 1920793
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/17/2018 10:00
Collection Date/Time: 03/16/2018 12:10

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Wet Chemistry						
		SW-846 7199	mg/kg	mg/kg	mg/kg	
05892	Hexavalent Chromium by IC	18540-29-9	< 0.46	0.46	0.16	1
Wet Chemistry						
		SM 2540 G-1997	%	%	%	
		%Moisture Calc				
00118	Moisture	n.a.	14.4	0.50	0.50	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
05892	Hexavalent Chromium by IC	SW-846 7199	1	18078243201A	03/22/2018 22:25	Clinton M Wilson	1
02432	Hexavalent Cr Extraction - IC	SW-846 3060A	1	18078243201A	03/19/2018 22:55	Daniel S Smith	1
00118	Moisture	SM 2540 G-1997 %Moisture Calc	1	18079820002A	03/20/2018 12:41	Larry E Bevins	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-44-0-2-0318IS Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9510120
ELLE Group #: 1920793
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/17/2018 10:00
Collection Date/Time: 03/16/2018 12:10

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Wet Chemistry						
		SW-846 7199	mg/kg	mg/kg	mg/kg	
05892	Hexavalent Chromium by IC	18540-29-9	571	47.9	16.8	100
Wet Chemistry						
		SM 2540 G-1997	%	%	%	
		%Moisture Calc				
00118	Moisture	n.a.	14.4	0.50	0.50	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
05892	Hexavalent Chromium by IC	SW-846 7199	1	18078243201A	03/22/2018 22:39	Clinton M Wilson	100
02432	Hexavalent Cr Extraction - IC	SW-846 3060A	1	18078243201A	03/19/2018 22:55	Daniel S Smith	1
00118	Moisture	SM 2540 G-1997 %Moisture Calc	1	18079820002A	03/20/2018 12:41	Larry E Bevins	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-44-0-2-0318PDS Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9510121
ELLE Group #: 1920793
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/17/2018 10:00
Collection Date/Time: 03/16/2018 12:10

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Wet Chemistry						
		SW-846 7199	mg/kg	mg/kg	mg/kg	
05892	Hexavalent Chromium by IC	18540-29-9	49.7	4.7	1.6	10
Wet Chemistry						
		SM 2540 G-1997	%	%	%	
		%Moisture Calc				
00118	Moisture	n.a.	14.4	0.50	0.50	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
05892	Hexavalent Chromium by IC	SW-846 7199	1	18078243201A	03/22/2018 22:54	Clinton M Wilson	10
02432	Hexavalent Cr Extraction - IC	SW-846 3060A	1	18078243201A	03/19/2018 22:55	Daniel S Smith	1
00118	Moisture	SM 2540 G-1997 %Moisture Calc	1	18079820002A	03/20/2018 12:41	Larry E Bevins	1

*=This limit was used in the evaluation of the final result

Sample Description: SBO-44-0-2-0318DUP Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9510122
ELLE Group #: 1920793
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/17/2018 10:00
Collection Date/Time: 03/16/2018 12:10

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Wet Chemistry						
SW-846 7199			mg/kg	mg/kg	mg/kg	
05892	Hexavalent Chromium by IC	18540-29-9	1.9	0.46	0.16	1
ASTM D1498			mV	mV	mV	
01821	Oxidation Reduction Potential	n.a.	338	10.0	10.0	1
The oxidation-reduction potential is reported in mV as referred to the standard hydrogen scale.						
SW-846 9045C modified			Std. Units	Std. Units	Std. Units	
00394	pH	n.a.	8.38	0.0100	0.0100	1
The pH was measured in water at 19.6 C.						
Wet Chemistry						
SM 2540 G-1997			%	%	%	
%Moisture Calc						
00118	Moisture	n.a.	14.4	0.50	0.50	1
00121	Moisture Duplicate	n.a.	14.7	0.50	0.50	1
The duplicate moisture value is provided to assess the precision of the moisture test. For comparability purposes, the initial moisture determination is the value used to perform dry weight calculations.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
05892	Hexavalent Chromium by IC	SW-846 7199	2	18078243201A	03/22/2018 23:15	Clinton M Wilson	1
01821	Oxidation Reduction Potential	ASTM D1498	1	18082182101A	03/23/2018 20:00	Luz M Groff	1
00394	pH	SW-846 9045C modified	1	18082039401A	03/23/2018 20:00	Luz M Groff	1
02432	Hexavalent Cr Extraction - IC	SW-846 3060A	1	18078243201A	03/19/2018 22:55	Daniel S Smith	1
00118	Moisture	SM 2540 G-1997	1	18079820002A	03/20/2018 12:41	Larry E Bevins	1
		%Moisture Calc					
00121	Moisture Duplicate	SM 2540 G-1997	1	18079820002A	03/20/2018 12:41	Larry E Bevins	1
		%Moisture Calc					

*=This limit was used in the evaluation of the final result

Sample Description: SBO-45-0-1.5-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9510123
ELLE Group #: 1920793
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/17/2018 10:00
Collection Date/Time: 03/16/2018 15:35

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Wet Chemistry						
SW-846 7199			mg/kg	mg/kg	mg/kg	
05892	Hexavalent Chromium by IC	18540-29-9	1.5	0.47	0.16	1
ASTM D1498						
			mV	mV	mV	
01821	Oxidation Reduction Potential	n.a.	327	10.0	10.0	1
The oxidation-reduction potential is reported in mV as referred to the standard hydrogen scale.						
SW-846 9045C modified						
			Std. Units	Std. Units	Std. Units	
00394	pH	n.a.	8.41	0.0100	0.0100	1
The pH was measured in water at 19.7 C.						
Wet Chemistry						
SM 2540 G-1997			%	%	%	
%Moisture Calc						
00111	Moisture	n.a.	15.7	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
05892	Hexavalent Chromium by IC	SW-846 7199	1	18078243201A	03/22/2018 23:22	Clinton M Wilson	1
01821	Oxidation Reduction Potential	ASTM D1498	1	18082182101A	03/23/2018 20:00	Luz M Groff	1
00394	pH	SW-846 9045C modified	1	18082039401A	03/23/2018 20:00	Luz M Groff	1
02432	Hexavalent Cr Extraction - IC	SW-846 3060A	1	18078243201A	03/19/2018 22:55	Daniel S Smith	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18079820002A	03/20/2018 12:41	Larry E Bevins	1

*=This limit was used in the evaluation of the final result

Sample Description: IDW-Soil-0318 Composite Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9510124
ELLE Group #: 1920793
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/17/2018 10:00
Collection Date/Time: 03/16/2018 16:35

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
PCBs		SW-846 8082A Feb 2007 Rev 1	ug/kg	ug/kg	ug/kg	
10885	PCB-1016	12674-11-2	< 19 D1	19	2.3	1
10885	PCB-1221	11104-28-2	< 19 D1	19	2.3	1
10885	PCB-1232	11141-16-5	< 19 D1	19	2.3	1
10885	PCB-1242	53469-21-9	210 D2	19	2.3	1
10885	PCB-1248	12672-29-6	< 19 D1	19	2.3	1
10885	PCB-1254	11097-69-1	81 D1	19	2.9	1
10885	PCB-1260	11096-82-5	32 D1	19	2.9	1

Wet Chemistry

**SM 2540 G-1997
%Moisture Calc**

CAT No.	Analysis Name	Method	Result	Limit	Dilution Factor
00111	Moisture	n.a.	12.2	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10885	PCBs 8082A	SW-846 8082A Feb 2007 Rev 1	1	180790006A	03/26/2018 06:20	Kirby B Turner	1
10497	PCB Microwave Soil Extraction	SW-846 3546	1	180790006A	03/22/2018 07:00	Joshua S Ruth	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18079820002A	03/20/2018 12:41	Larry E Bevins	1

*=This limit was used in the evaluation of the final result

Sample Description: IDW-Soil-0318 Composite Soil
TCLP NVE
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: TL 9510125
ELLE Group #: 1920793
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/17/2018 10:00
Collection Date/Time: 03/16/2018 16:35

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Semivolatiles SW-846 8270D			mg/l	mg/l	mg/l	
14252	1,4-Dichlorobenzene	106-46-7	< 0.005	0.005	0.003	1
14252	2,4-Dinitrotoluene	121-14-2	< 0.025	0.025	0.005	1
14252	Hexachlorobenzene	118-74-1	< 0.003	0.003	0.0005	1
14252	Hexachlorobutadiene	87-68-3	< 0.005	0.005	0.003	1
14252	Hexachloroethane	67-72-1	< 0.025	0.025	0.005	1
14252	2-Methylphenol	95-48-7	< 0.005	0.005	0.003	1
14252	4-Methylphenol	106-44-5	< 0.005	0.005	0.003	1
3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
14252	Nitrobenzene	98-95-3	< 0.005	0.005	0.003	1
14252	Pentachlorophenol	87-86-5	< 0.025	0.025	0.005	1
14252	Pyridine	110-86-1	< 0.025	0.025	0.010	1
14252	2,4,5-Trichlorophenol	95-95-4	< 0.005	0.005	0.003	1
14252	2,4,6-Trichlorophenol	88-06-2	< 0.005	0.005	0.003	1
Metals SW-846 6010C			mg/l	mg/l	mg/l	
07035	Arsenic	7440-38-2	< 0.0400	0.0400	0.0096	1
07046	Barium	7440-39-3	0.715	0.0100	0.00085	1
07049	Cadmium	7440-43-9	< 0.0100	0.0100	0.0018	1
07051	Chromium	7440-47-3	< 0.0300	0.0300	0.0033	1
07055	Lead	7439-92-1	< 0.0300	0.0300	0.0060	1
07036	Selenium	7782-49-2	< 0.0400	0.0400	0.0093	1
07066	Silver	7440-22-4	< 0.0100	0.0100	0.0024	1
SW-846 7470A			mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	< 0.00020	0.00020	0.000050	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

If the analysis is for determination of Hazardous Waste Characteristics, see Table 1 in EPA Code of Federal Regulations 40 CFR 261.24.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14252	TCLP 8270D MINI	SW-846 8270D	1	18086WAH026	03/29/2018 15:40	Edward C Monborne	1
04731	TCLP Leachate Extraction	SW-846 3510C	1	18086WAH026	03/27/2018 16:15	Oswaldo R Sanchez	1

*=This limit was used in the evaluation of the final result

Sample Description: IDW-Soil-0318 Composite Soil
TCLP NVE
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: TL 9510125
ELLE Group #: 1920793
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/17/2018 10:00

Collection Date/Time: 03/16/2018 16:35

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07035	Arsenic	SW-846 6010C	1	180821063602	03/26/2018 19:33	Elaine F Stoltzfus	1
07046	Barium	SW-846 6010C	1	180821063602	03/26/2018 19:33	Elaine F Stoltzfus	1
07049	Cadmium	SW-846 6010C	1	180821063602	03/26/2018 19:33	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010C	1	180821063602	03/26/2018 19:33	Elaine F Stoltzfus	1
07055	Lead	SW-846 6010C	1	180821063602	03/26/2018 19:33	Elaine F Stoltzfus	1
07036	Selenium	SW-846 6010C	1	180821063602	03/26/2018 19:33	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010C	1	180821063602	03/26/2018 19:33	Elaine F Stoltzfus	1
00259	Mercury	SW-846 7470A	1	180820571302	03/26/2018 07:16	Damary Valentin	1
10636	WW/TL SW846 (IV) ICP Dig (tot)	SW-846 3010A	1	180821063602	03/25/2018 21:00	Annamaria Kuhns	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	180820571302	03/25/2018 23:30	Annamaria Kuhns	1
00947	TCLP Non-volatile Extraction	SW-846 1311	1	18081-10253-947	03/22/2018 12:22	Scarlett M Barrett	n.a.

*=This limit was used in the evaluation of the final result

Sample Description: IDW-Soil-0318 Composite Soil
TCLP ZHE
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: TL 9510126
ELLE Group #: 1920793
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/17/2018 10:00
Collection Date/Time: 03/16/2018 16:35

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/l	mg/l	mg/l	
11997	Benzene	71-43-2	< 0.020	0.020	0.010	20
11997	2-Butanone	78-93-3	< 0.20	0.20	0.060	20
11997	Carbon Tetrachloride	56-23-5	< 0.020	0.020	0.010	20
11997	Chlorobenzene	108-90-7	< 0.020	0.020	0.010	20
11997	Chloroform	67-66-3	< 0.020	0.020	0.010	20
11997	1,2-Dichloroethane	107-06-2	< 0.020	0.020	0.010	20
11997	1,1-Dichloroethene	75-35-4	< 0.020	0.020	0.010	20
11997	Tetrachloroethene	127-18-4	< 0.020	0.020	0.010	20
11997	Trichloroethene	79-01-6	< 0.020	0.020	0.010	20
11997	Vinyl Chloride	75-01-4	< 0.020	0.020	0.010	20

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

If the analysis is for determination of Hazardous Waste Characteristics, see Table 1 in EPA Code of Federal Regulations 40 CFR 261.24.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11997	VOCs- 5ml Water by 8260C	SW-846 8260C	1	L180873AA	03/29/2018 07:21	Don V Viray	20
01163	GC/MS VOA Water Prep	SW-846 5030C	1	L180873AA	03/29/2018 07:21	Don V Viray	20
00946	TCLP Zero Headspace Extraction	SW-846 1311	1	18082-12245-946	03/23/2018 13:41	Tanner E Grumbling	n.a.

*=This limit was used in the evaluation of the final result

Sample Description: SBO-DUP04-0318 Grab Soil
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: SW 9510127
ELLE Group #: 1920793
Matrix: Soil

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/17/2018 10:00
Collection Date/Time: 03/16/2018 12:00

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Wet Chemistry						
SW-846 7199			mg/kg	mg/kg	mg/kg	
05892	Hexavalent Chromium by IC	18540-29-9	2.4	0.47	0.16	1
ASTM D1498			mV	mV	mV	
01821	Oxidation Reduction Potential	n.a.	358	10.0	10.0	1
The oxidation-reduction potential is reported in mV as referred to the standard hydrogen scale.						
SW-846 9045C modified			Std. Units	Std. Units	Std. Units	
00394	pH	n.a.	8.24	0.0100	0.0100	1
The pH was measured in water at 19.7 C.						
Wet Chemistry						
SM 2540 G-1997			%	%	%	
%Moisture Calc						
00111	Moisture	n.a.	12.4	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
05892	Hexavalent Chromium by IC	SW-846 7199	1	18078243201A	03/22/2018 23:37	Clinton M Wilson	1
01821	Oxidation Reduction Potential	ASTM D1498	1	18082182101A	03/23/2018 20:00	Luz M Groff	1
00394	pH	SW-846 9045C modified	1	18082039401A	03/23/2018 20:00	Luz M Groff	1
02432	Hexavalent Cr Extraction - IC	SW-846 3060A	1	18078243201A	03/19/2018 22:55	Daniel S Smith	1
00111	Moisture	SM 2540 G-1997 %Moisture Calc	1	18079820002A	03/20/2018 12:41	Larry E Bevins	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 03/30/2018 12:53

Group Number: 1920793

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	LOQ**	MDL
	mg/l	mg/l	mg/l
Batch number: L180873AA	Sample number(s): 9510126		
Benzene	< 0.001	0.001	0.0005
2-Butanone	< 0.010	0.010	0.003
Carbon Tetrachloride	< 0.001	0.001	0.0005
Chlorobenzene	< 0.001	0.001	0.0005
Chloroform	< 0.001	0.001	0.0005
1,2-Dichloroethane	< 0.001	0.001	0.0005
1,1-Dichloroethene	< 0.001	0.001	0.0005
Tetrachloroethene	< 0.001	0.001	0.0005
Trichloroethene	< 0.001	0.001	0.0005
Vinyl Chloride	< 0.001	0.001	0.0005
Batch number: 18086WAH026	Sample number(s): 9510125		
1,4-Dichlorobenzene	< 0.005	0.005	0.003
2,4-Dinitrotoluene	< 0.025	0.025	0.005
Hexachlorobenzene	< 0.003	0.003	0.0005
Hexachlorobutadiene	< 0.005	0.005	0.003
Hexachloroethane	< 0.025	0.025	0.005
2-Methylphenol	< 0.005	0.005	0.003
4-Methylphenol	< 0.005	0.005	0.003
Nitrobenzene	< 0.005	0.005	0.003
Pentachlorophenol	< 0.025	0.025	0.005
Pyridine	< 0.025	0.025	0.010
2,4,5-Trichlorophenol	< 0.005	0.005	0.003
2,4,6-Trichlorophenol	< 0.005	0.005	0.003
	ug/kg	ug/kg	ug/kg
Batch number: 180790006A	Sample number(s): 9510124		
PCB-1016	< 17	17	2.0
PCB-1221	< 17	17	2.0
PCB-1232	< 17	17	2.0
PCB-1242	< 17	17	2.0
PCB-1248	< 17	17	2.0
PCB-1254	< 17	17	2.6
PCB-1260	< 17	17	2.6
	mg/kg	mg/kg	mg/kg
Batch number: 180801063701A	Sample number(s): 9510115		
Arsenic	< 0.800	0.800	0.128
	mg/l	mg/l	mg/l

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 03/30/2018 12:53

Group Number: 1920793

Method Blank (continued)

Analysis Name	Result mg/l	LOQ** mg/l	MDL mg/l
Batch number: 180820571302	Sample number(s): 9510125		
Mercury	< 0.00020	0.00020	0.000050
Batch number: 180821063602	Sample number(s): 9510125		
Arsenic	< 0.0400	0.0400	0.0096
Barium	< 0.0100	0.0100	0.00085
Cadmium	< 0.0100	0.0100	0.0018
Chromium	< 0.0300	0.0300	0.0033
Lead	< 0.0300	0.0300	0.0060
Selenium	< 0.0400	0.0400	0.0093
Silver	< 0.0100	0.0100	0.0024
	mg/kg	mg/kg	mg/kg
Batch number: 18078243201A	Sample number(s): 9510116-9510123,9510127		
Hexavalent Chromium by IC	< 0.40	0.40	0.14

LCS/LCSD

Analysis Name	LCS Spike Added mg/l	LCS Conc mg/l	LCSD Spike Added mg/l	LCSD Conc mg/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: L180873AA	Sample number(s): 9510126								
Benzene	0.0200	0.0210			105		80-120		
2-Butanone	0.150	0.163			109		59-135		
Carbon Tetrachloride	0.0200	0.0164			82		64-134		
Chlorobenzene	0.0200	0.0199			100		80-120		
Chloroform	0.0200	0.0194			97		80-120		
1,2-Dichloroethane	0.0200	0.0188			94		73-124		
1,1-Dichloroethane	0.0200	0.0216			108		80-131		
Tetrachloroethene	0.0200	0.0198			99		80-120		
Trichloroethene	0.0200	0.0193			97		80-120		
Vinyl Chloride	0.0200	0.0143			72		68-120		
	mg/l	mg/l	mg/l	mg/l					
Batch number: 18086WAH026	Sample number(s): 9510125								
1,4-Dichlorobenzene	0.250	0.193	0.250	0.177	77	71	30-109	9	30
2,4-Dinitrotoluene	0.250	0.237	0.250	0.224	95	90	56-128	6	30
Hexachlorobenzene	0.250	0.259	0.250	0.252	104	101	57-123	3	30
Hexachlorobutadiene	0.250	0.214	0.250	0.204	86	82	16-119	5	30
Hexachloroethane	0.250	0.160	0.250	0.150	64	60	19-105	7	30
2-Methylphenol	0.250	0.214	0.250	0.207	86	83	46-113	4	30
4-Methylphenol	0.250	0.203	0.250	0.198	81	79	42-115	2	30
Nitrobenzene	0.250	0.247	0.250	0.229	99	92	43-128	8	30

*- Outside of specification

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P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 03/30/2018 12:53

Group Number: 1920793

LCS/LCSD (continued)

Analysis Name	LCS Spike Added mg/l	LCS Conc mg/l	LCSD Spike Added mg/l	LCSD Conc mg/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Pentachlorophenol	0.250	0.283	0.250	0.287	113	115	50-127	1	30
Pyridine	0.250	0.126	0.250	0.119	50	48	19-67	5	30
2,4,5-Trichlorophenol	0.250	0.250	0.250	0.252	100	101	59-129	1	30
2,4,6-Trichlorophenol	0.250	0.241	0.250	0.240	96	96	61-130	0	30
	ug/kg	ug/kg	ug/kg	ug/kg					
Batch number: 180790006A	Sample number(s): 9510124								
PCB-1016	167	153.09			92		76-121		
PCB-1260	167	184			110		79-130		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 180801063701A	Sample number(s): 9510115								
Arsenic	1.00	1.10			110		80-120		
	mg/l	mg/l	mg/l	mg/l					
Batch number: 180820571302	Sample number(s): 9510125								
Mercury	0.00100	0.000949			95		80-120		
Batch number: 180821063602	Sample number(s): 9510125								
Arsenic	0.150	0.161			108		80-120		
Barium	2.00	2.00			100		80-120		
Cadmium	0.0500	0.0531			106		80-120		
Chromium	0.200	0.203			102		80-120		
Lead	0.150	0.144			96		80-120		
Selenium	0.150	0.168			112		80-120		
Silver	0.0500	0.0511			102		80-120		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 18078243201A	Sample number(s): 9510116-9510123,9510127								
Hexavalent Chromium by IC	5.00	5.18			104		80-120		
	mV	mV	mV	mV					
Batch number: 18082182101A	Sample number(s): 9510116-9510118,9510122-9510123,9510127								
Oxidation Reduction Potential	427	432			101		98-102		
	Std. Units	Std. Units	Std. Units	Std. Units					
Batch number: 18082039401A	Sample number(s): 9510116-9510118,9510122-9510123,9510127								
pH	7.00	7.00			100		95-105		
	%	%	%	%					
Batch number: 18079820002A	Sample number(s): 9510115-9510124,9510127								
Moisture	89.5	89.43			100		99-101		
Moisture	89.5	89.43			100		99-101		
Moisture Duplicate	89.5	89.43			100		99-101		

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 03/30/2018 12:53

Group Number: 1920793

LCS/LCSD (continued)

Analysis Name	LCS Spike Added %	LCS Conc %	LCSD Spike Added %	LCSD Conc %	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
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MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/l	MS Spike Added mg/l	MS Conc mg/l	MSD Spike Added mg/l	MSD Conc mg/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: L180873AA	Sample number(s): 9510126 UNSPK: P513400									
Benzene	< 0.001	0.0200	0.0223	0.0200	0.0230	111	115	80-120	3	30
2-Butanone	< 0.010	0.150	0.160	0.150	0.165	107	110	59-135	3	30
Carbon Tetrachloride	< 0.001	0.0200	0.0180	0.0200	0.0186	90	93	64-134	3	30
Chlorobenzene	< 0.001	0.0200	0.0208	0.0200	0.0213	104	106	80-120	2	30
Chloroform	< 0.001	0.0200	0.0204	0.0200	0.0212	102	106	80-120	4	30
1,2-Dichloroethane	< 0.001	0.0200	0.0194	0.0200	0.0199	97	100	73-124	3	30
1,1-Dichloroethene	< 0.001	0.0200	0.0242	0.0200	0.0249	121	125	80-131	3	30
Tetrachloroethene	0.00848	0.0200	0.0307	0.0200	0.0310	111	113	80-120	1	30
Trichloroethene	< 0.001	0.0200	0.0210	0.0200	0.0213	105	106	80-120	1	30
Vinyl Chloride	< 0.001	0.0200	0.0175	0.0200	0.0183	88	92	68-120	4	30
	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg					
Batch number: 180790006A	Sample number(s): 9510124 UNSPK: P501683									
PCB-1016	< 17	165	143.09	165	144.36	87	87	76-121	1	50
PCB-1260	< 17	165	178.77	165	180.38	108	109	79-130	1	50
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 180801063701A	Sample number(s): 9510115 UNSPK: P513665									
Arsenic	4.84	1.65	6.62	1.85	6.81	108	106	75-125	3	20
	mg/l	mg/l	mg/l	mg/l	mg/l					
Batch number: 180820571302	Sample number(s): 9510125 UNSPK: P502042									
Mercury	< 0.00020	0.0200	0.0157	0.0200	0.0153	78*	77*	80-120	2	20
Batch number: 180821063602	Sample number(s): 9510125 UNSPK: 9510125									
Arsenic	< 0.0400	0.150	0.164	0.150	0.170	109	114	75-125	4	20
Barium	0.715	2.00	2.62	2.00	2.64	95	96	75-125	1	20
Cadmium	< 0.0100	0.0500	0.0530	0.0500	0.0526	106	105	75-125	1	20
Chromium	< 0.0300	0.200	0.200	0.200	0.200	100	100	75-125	0	20
Lead	0.0120	0.150	0.164	0.150	0.158	101	97	75-125	4	20
Selenium	0.0120	1.00	0.169	1.00	0.167	16*	15*	75-125	1	20
Silver	< 0.0100	0.0500	0.0496	0.0500	0.0501	99	100	75-125	1	20

*- Outside of specification

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(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 03/30/2018 12:53

Group Number: 1920793

MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/kg	MS Spike Added mg/kg	MS Conc mg/kg	MSD Spike Added mg/kg	MSD Conc mg/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 18078243201A Hexavalent Chromium by IC	Sample number(s): 9510116-9510123,9510127 < 0.40	39.68	< 0.40	UNSPK: 9510118		0*		75-125		

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/kg	DUP Conc mg/kg	DUP RPD	DUP RPD Max
Batch number: 180801063701A Arsenic	Sample number(s): 9510115 BKG: P513665 4.84	5.03	4	20
	mg/l	mg/l		
Batch number: 180820571302 Mercury	Sample number(s): 9510125 BKG: P502042 < 0.00020	< 0.00020	0 (1)	20
Batch number: 180821063602 Arsenic	Sample number(s): 9510125 BKG: 9510125 < 0.0400	< 0.0400	0 (1)	20
Barium	0.715	0.712	1	20
Cadmium	< 0.0100	< 0.0100	0 (1)	20
Chromium	< 0.0300	< 0.0300	0 (1)	20
Lead	0.0120	0.0117	2 (1)	20
Selenium	0.0120	0.0147	20 (1)	20
Silver	< 0.0100	< 0.0100	0 (1)	20
	mg/kg	mg/kg		
Batch number: 18078243201A Hexavalent Chromium by IC	Sample number(s): 9510116-9510123,9510127 BKG: 9510118 < 0.40	1.60	200* (1)	20
	mV	mV		
Batch number: 18082182101A Oxidation Reduction Potential	Sample number(s): 9510116-9510118,9510122-9510123,9510127 BKG: 9510118 339.5	337.5	1	5
	Std. Units	Std. Units		
Batch number: 18082039401A pH	Sample number(s): 9510116-9510118,9510122-9510123,9510127 BKG: 9510118 8.36	8.38	0	3
	%	%		
Batch number: 18079820002A Moisture	Sample number(s): 9510115-9510124,9510127 BKG: 9510118, P510118 14.39	14.68	2	5

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 03/30/2018 12:53

Group Number: 1920793

Laboratory Duplicate (continued)

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc %	DUP Conc %	DUP RPD	DUP RPD Max
Moisture	14.39	14.68	2	5
Moisture Duplicate	14.39	14.68	2	5

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: VOCs- 5ml Water by 8260C
Batch number: L180873AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
9510126	94	102	104	99
Blank	94	101	104	101
LCS	94	101	105	101
MS	94	102	105	101
MSD	95	100	105	101
Limits:	80-120	80-120	80-120	80-120

Analysis Name: TCLP 8270D MINI
Batch number: 18086WAH026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol
9510125	87	77	76	37	46	85
Blank	86	80	90	38	47	101
LCS	94	86	94	44	53	111
LCSD	87	80	93	42	52	111
Limits:	30-111	39-105	27-116	10-71	10-82	21-134

Analysis Name: PCBs 8082A
Batch number: 180790006A

	Tetrachloro-m-xylene-D1	Decachlorobiphenyl-D1	Tetrachloro-m-xylene-D2	Decachlorobiphenyl-D2
9510124	71	81	71	73
Blank	108	122	104	114
LCS	103	114	107	113
MS	97	109	97	103
MSD	98	108	100	102
Limits:	53-140	45-143	53-140	45-143

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Environmental Analysis Request/Chain of Custody



Lancaster Laboratories Environmental

For Eurofins Lancaster Laboratories Environmental use only

Acct. # 10302 Group # 1920793 Sample # 9510115-27

COC # 546730

770-421-3400 Client Information				Matrix			Analysis Requested								For Lab Use Only						
Client: <u>AmeceFoster Wheeler</u>		Acct. #:		Soil <input checked="" type="checkbox"/> Sediment <input type="checkbox"/> Tissue <input type="checkbox"/>	Potable <input type="checkbox"/> Ground <input type="checkbox"/>	Water <input type="checkbox"/> NPDES <input type="checkbox"/> Surface <input type="checkbox"/>	Other:	Total # of Containers	Preservation Codes								FSC: _____	SCR#: <u>221298</u>			
Project Name/#: <u>Former Cohn Property</u>		PWSID #:							0	6	0	0	6	0	0	0					
Project Manager: <u>John Jolly</u>		P.O. #:																			
Sampler: <u>Ken Nye, Daniel Howard</u>		Quote #: <u>SA14.127-001</u>																			
State where samples were collected: <u>GA</u>		For Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>																			
Sample Identification		Collected		Grab	Composite	Soil	Water	Other:	Total # of Containers	6020A	7199	9045	ORP	1311/8270D-TCLP SVOCs	1311/600/7470-TCLP ICP Metals	8082A-TCLP PCBs	1311/8260C-TCLP VOCs	Preservation Codes		Remarks	
Date	Time	H=HCl	T=Thiosulfate																		
<u>SBO-31-0-2-0318</u>	<u>3/14/18</u>	<u>1130</u>	<input checked="" type="checkbox"/>						1	X											
<u>SBO-43-0-2-0318</u>	<u>3/16/18</u>	<u>0940</u>	<input checked="" type="checkbox"/>						1		X	X	X								
<u>SBO-43-2-4-0318</u>	<u>3/16/18</u>	<u>0950</u>	<input checked="" type="checkbox"/>						1		X	X	X								
<u>SBO-44-0-2-0318</u>	<u>3/16/18</u>	<u>1210</u>	<input checked="" type="checkbox"/>						2		X	X	X								<u>MS/MSD</u>
<u>SBO-45-02-0318</u>	<u>3/16/18</u>	<u>1535</u>	<input checked="" type="checkbox"/>						1		X	X	X								
<u>IDW-Soil-0318</u>	<u>3/16/18</u>	<u>1635</u>		<input checked="" type="checkbox"/>					3					X	X	X	X				

Turnaround Time (TAT) Requested (please circle) Standard _____ Rush _____ (Rush TAT is subject to laboratory approval and surcharge.) Date results are needed: _____ E-mail address: _____	Relinquished by <u>Chelsea West</u>	Date	Time	Received by	Date	Time
	Relinquished by <u>Daniel Howard</u>	Date	Time	Received by	Date	Time
	Relinquished by	Date	Time	Received by	Date	Time
	Relinquished by	Date	Time	Received by	Date	Time
Data Package Options (circle if required) Type I (EPA Level 3 Equivalent/non-CLP) <input type="checkbox"/> Type VI (Raw Data Only) <input type="checkbox"/> Type III (Reduced non-CLP) <input type="checkbox"/> NJ DKQP <input type="checkbox"/> TX TRRP-13 <input type="checkbox"/> NYSDEC Category A or B <input type="checkbox"/> MA MCP <input type="checkbox"/> CT RCP <input type="checkbox"/>	Relinquished by <u>Enrique Sanchez</u>	Date	Time	Received by	Date	Time
	Relinquished by	Date	Time	Received by	Date	Time
	Relinquished by	Date	Time	Received by	Date	Time
	Relinquished by	Date	Time	Received by	Date	Time
	EDD Required? <input checked="" type="checkbox"/> Yes No	If yes, format: _____		Relinquished by Commercial Carrier: UPS _____ FedEx _____ Other _____		
	Site-Specific QC (MS/MSD/Dup)? <input checked="" type="checkbox"/> Yes No	(If yes, indicate QC sample and submit triplicate sample volume.)		Temperature upon receipt <u>4.0</u> °C		

1920793

Katherine Klinefelter

From: Hartness, Judy A <judy.hartness@woodplc.com>
Sent: Monday, March 19, 2018 10:33 AM
To: Katherine Klinefelter
Cc: Quinn, Rhonda R; Howard, Daniel L; Nye, Kenneth; Bowen, Matthew
Subject: NS - Former Cohn Property
Attachments: NS-Cohn - COC_revised.pdf; NS-Former Cohn_Phase III Soil CrVI_SAP_0318_r2.pdf; NS Former Cohn Property_SO_IDW SAP_0318_r3.pdf; NS Former Cohn Property_IDW_RLs.pdf

Importance: High

EXTERNAL EMAIL*

Kathy,
We need to correct a soil sample ID on the COC received Saturday.

SBO-45-02-0318 should be
SBO-45-0-1.5-0318

Please see revised COC.

We plan to send the groundwaters today for priority overnight delivery.

Judith Hartness
Senior Scientist
Environment & Infrastructure Solutions
1075 Big Shanty Rd. NW, Suite 100, Kennesaw, GA 30144
Direct: (770) 421-3336
Mobile: (404) 247-0360
judy.hartness@woodplc.com
Note: Amec Foster Wheeler E&I is now part of Wood
www.woodplc.com



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Environmental Analysis Request/Chain of Custody



Lancaster Laboratories Environmental

For Eurofins Lancaster Laboratories Environmental use only

Acct. # 10302 Group # 1920793 Sample # 9510/15-27

COC # 546730

770-421-3400 Client Information				Matrix			Analysis Requested										For Lab Use Only																		
Client: <u>ArcFastor Wheeler</u>		Acct. #:		<input type="checkbox"/> Soil	<input type="checkbox"/> Sediment	<input type="checkbox"/> Tissue	<input type="checkbox"/> Potable	<input type="checkbox"/> Ground	<input type="checkbox"/> Surface	<input type="checkbox"/> Water	<input type="checkbox"/> NPDES	<input type="checkbox"/> Other:	Total # of Containers	Preservation Codes										FSC:	SCR#: <u>221298</u>										
Project Name/#: <u>Farmer Cohn Property</u>		PWSID #:												<table border="1" style="width:100%; text-align: center;"> <tr> <td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td> </tr> </table>										0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0															
Project Manager: <u>John Jolly</u>		P.O. #: <u>SAH.127-001</u>												Preservation Codes																					
Sampler: <u>Ken Nye, Daniel Howard</u>		Quote #:												H=HCl T=Thiosulfate N=HNO ₃ B=NaOH S=H ₂ SO ₄ O=Other																					
State where samples were collected: <u>GA</u>		For Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>												Remarks																					
Sample Identification			Collected		Grab	Composite																													
			Date	Time																															
<u>SBO-31-0-2-0318</u>			<u>3/14/18</u>	<u>1130</u>	<input checked="" type="checkbox"/>								1	X																					
<u>SBO-43-0-2-0318</u>			<u>3/16/18</u>	<u>0940</u>	<input checked="" type="checkbox"/>								1	X	X	X																			
<u>SBO-43-2-4-0318</u>			<u>3/16/18</u>	<u>0950</u>	<input checked="" type="checkbox"/>								1	X	X	X																			
<u>SBO-44-0-2-0318</u>			<u>3/16/18</u>	<u>1210</u>	<input checked="" type="checkbox"/>								2	X	X	X																			
<u>SBO-45-0-2-0318</u> <u>0-1.5</u>			<u>3/16/18</u>	<u>1535</u>	<input checked="" type="checkbox"/>								1	X	X	X								<u>MS/MSD</u>											
<u>IDW-Soil-0318</u>			<u>3/16/18</u>	<u>1635</u>		<input checked="" type="checkbox"/>							3				X	X	X	X															

QA 3-19-18

Turnaround Time (TAT) Requested (please circle) Standard Rush (Rush TAT is subject to laboratory approval and surcharge.)		Relinquished by <u>Daniel Howard</u> Date <u>3/16/18</u> Time <u>1130</u>		Received by _____ Date _____ Time _____	
Date results are needed: _____		Relinquished by _____ Date _____ Time _____		Received by _____ Date _____ Time _____	
E-mail address: _____		Relinquished by _____ Date _____ Time _____		Received by _____ Date _____ Time _____	
Data Package Options (circle if required)		Relinquished by _____ Date _____ Time _____		Received by _____ Date _____ Time _____	
Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data Only)		Relinquished by _____ Date _____ Time _____		Received by _____ Date _____ Time _____	
Type III (Reduced non-CLP) NJ DKQP TX TRRP-13		Relinquished by _____ Date _____ Time _____		Relinquished by Commercial Carrier: UPS _____ FedEx _____ Other _____	
NYSDEC Category A or B MA MCP CT RCP		EDD Required? <input checked="" type="checkbox"/> Yes No If yes, format: _____		Temperature upon receipt _____ °C	
		Site-Specific QC (MS/MSD/Dup)? <input checked="" type="checkbox"/> Yes No (If yes, indicate QC sample and submit triplicate sample volume.)			

1920793

Katherine Klinefelter

From: Hartness, Judy A <judy.hartness@woodplc.com>
Sent: Tuesday, March 20, 2018 6:12 PM
To: Katherine Klinefelter
Cc: Nye, Kenneth; Quinn, Rhonda R; Howard, Daniel L; Bowen, Matthew
Subject: FW: 1920793-Former Cohn Property/Columbus, GA-03/17/2018 10:00:00 Acknowledgement
Attachments: EAcknow_1920793.xls; 1920793c.pdf; 1920793d.pdf

EXTERNAL EMAIL*

Kathy,

Looks like we forgot to put a soil duplicate on the COC and Eurofins logged the sample (SBOD-DUP04-0318) in for the correct analysis.

However, I believe the sample ID should be:

SBO-DUP04-0318

Judith Hartness
Senior Scientist
Environment & Infrastructure Solutions
1075 Big Shanty Rd. NW, Suite 100, Kennesaw, GA 30144
Direct: (770) 421-3336
Mobile: (404) 247-0360
judy.hartness@woodplc.com
Note: Amec Foster Wheeler E&I is now part of Wood www.woodplc.com

-----Original Message-----

From: LLAutomatedReportingSystem@eurofins.com [<mailto:LLAutomatedReportingSystem@eurofins.com>]
Sent: Tuesday, March 20, 2018 5:38 PM
To: Hartness, Judy A <Judy.Hartness@amecfw.com>; Barker, Michelle <Michelle.Barker@amecfw.com>; Quinn, Rhonda R <Rhonda.Quinn@amecfw.com>
Subject: 1920793-Former Cohn Property/Columbus, GA-03/17/2018 10:00:00 Acknowledgement

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1920793

Delineation and Characterization Sampling and Analysis Plan - Soil - March 2018
 Former Cohn Property - Norfolk Southern / Columbus, Muscogee Co, Georgia

Location	Sample	Sample	Metals ICPMS	Cr(VI)	pH	ORP	QC		8 oz	500 mL	500 mL Glass
ID	ID	Date	6020	7199	9045	ASTM D1498	MS/MSD	Comments	Glass	Glass	(MS/SD)
SBO-31	SBO-31-0-2-0318	3/14/2018	As	--	--	--	--	Metals	1		
SBO-43	SBO-43-0-2-0318	3/16/2018	--	Cr(VI)	pH	ORP	--	Cr(VI), pH, ORP		1	
SBO-43	SBO-43-2-4-0318	3/16/2018	--	Cr(VI)	pH	ORP	--	Cr(VI), pH, ORP		1	
SBO-44	SBO-44-0-2-0318	3/16/2018	--	Cr(VI)	pH	ORP	Cr(VI)	Cr(VI), pH, ORP		1	1
SBO-45	SBO-45-0-1.5-0318	3/16/2018	--	Cr(VI)	pH	ORP	--	Cr(VI), pH, ORP		1	
Total Bottles =									0	4	1

Notes:

Cr(VI) = Hexavalent Chromium
 ORP = Oxidation-Reduction Potential

 = Collect QC
 = Collect MS/MSD

Cr (VI), pH,
 1 jar for all ORP in same
 parameters container Cr (VI) MS/MSD
 sample

1920793

Delineation and Characterization Sampling and Analysis Plan - IDW - March 2018
Former Cohn Property - Norfolk Southern / Columbus, Muscogee Co, Georgia

Location	Sample	Sample	TCLP Metals	TCLP Mercury	TCLP SVOCs	TCLP VOCs	PCBs	Comments	500 mL glass jar	125 mL glass jar	60 mL glass jar
ID	ID	Date	1311/6010	1311/7470	1311/8270	1311/8260	8082A	SOIL IDW	TCLP SVOCs & Metals	PCBs & Moisture	TCLP VOCs
IDW-Soil	IDW-Soil-0318	3/16/2018	RCRA ICP Metals -See Table 6	Hg See table 6	SVOCs TCLP list - See table 6	VOCs TCLP list - See Table 6	PCBs SEE table 6	TCLP Metals, TCLP SVOCs, TCLP VOCs, & PCBs	1	1	1
Total Bottles =									1	1	1

Notes:

RCRA ICP Metals: As = Arsenic, Ba=Barium, Cd = Cadmium, Cr= Chromium, Pb=Lead,Se=Selenium, Ag=Silver

Hg = Mercury

PCBs = PCBs 1016, 1221,1232, 1242, 1248, 1254, 1260

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TABLE 1 METALS

Metals	CAS Number	Soil Method	Soil LOQ (mg/kg)
Antimony	7440-36-0	6020A	0.4
Arsenic	7440-38-2	6020A	0.8
Cadmium	7440-43-9	6020A	0.2
Chromium	7440-47-3	6020A	0.8
Copper	7440-50-8	6010C	2
Lead	7439-92-1	6010C	3
Nickel	7440-02-0	6010C	2
Zinc	7440-66-6	6010C	4

Metals	CAS Number	Soil Method	Soil LOQ (mg/kg)
Mercury	7439-97-6	7471B	0.2

Metals	CAS Number	Soil Method	Soil LOQ (mg/kg)
Hexavalent Chromium	18540-29-9	7199	TBD

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TABLE 2 VOCS

GC/MS Volatiles SW-846 8260C	CAS Number	Soil LOQ (ug/kg)
Tetrachloroethene	127-18-4	5

1926793

TABLE 3 SVOCS

PAHs SW-846 8270D	CAS Number	Soil LOQ (ug/kg)
Benzo(a)anthracene	56-55-3	17
Benzo(a)pyrene	50-32-8	17
Benzo(b)fluoranthene	205-99-2	17
Chrysene	218-01-9	17

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TABLE 4 PCBs

Pesticides/PCBs SW-846 8082A	CAS Number	Laboratory Quantitation Limit (ug/L)	Soil LOQ (ug/kg)
PCB-1248	12672-29-6	0.40	17
PCB-1254	11097-69-1	0.40	17

1920793

TABLE 6
INVESTIGATION DERIVED WASTES CHARACTERIZATION TESTS RLs and STANDARDS
 Former Cohn Property
 Norfolk Southern
 Columbus, Georgia

Test Method/Constituents	TCLP Regulatory Standard	RLs mg/L
<u>TCLP Mercury, Total - SW846 1311/7470A, mg/L</u>		
Mercury	0.2	0.0002
<u>TCLP Metals, Total - SW846 1311/6010C, mg/L</u>		
Arsenic	5.0	0.04
Barium	100	0.01
Cadmium	1.0	0.01
Chromium	5.0	0.03
Lead	5.0	0.03
Selenium	1.0	0.04
Silver	5.0	0.01
<u>TCLP Semi-Volatile Organic Compounds - SW846 1311/8270C, mg/L</u>		
1,4-Dichlorobenzene	7.5	0.005
2,4,5-Trichlorophenol	400	0.005
2,4,6-Trichlorophenol	2.0	0.005
2,4-Dinitrotoluene	0.13	0.025
2-Methylphenol (o-Cresol)	200	0.005
3+4-Methylphenol (m,p-Cresol)	200	0.005
Hexachlorobenzene	0.13	0.003
Hexachlorobutadiene	0.5	0.005
Hexachloroethane	3.0	0.025
Nitrobenzene	2.0	0.005
Pentachlorophenol	100	0.025
Pyridine	5.0	0.025
<u>TCLP Volatile Organic Compounds - SW846 Zero Headspace/8260B, mg/L</u>		
1,1-Dichloroethene	0.7	0.02
1,2-Dichloroethane	0.5	0.02
2-Butanone (Methyl ethyl ketone)	200	0.2
Benzene	0.5	0.02
Carbon tetrachloride	0.5	0.02
Chlorobenzene	100	0.02
Chloroform	6.0	0.02
Tetrachloroethene (PCE)	0.7	0.02
Trichloroethene (TCE)	0.5	0.02
Vinyl Chloride	0.2	0.02
<u>Polychlorinated Biphenyls - SW846 8082A, ug/kg</u>		
PCB-1016	50,000 ^(b)	17
PCB-1221	50,000 ^(b)	17
PCB-1232	50,000 ^(b)	17
PCB-1242	50,000 ^(b)	17
PCB-1248	50,000 ^(b)	17
PCB-1254	50,000 ^(b)	17
PCB-1260	50,000 ^(b)	17

Notes:

^(a) = TCLP: Toxicity Characteristic Leaching Procedure. 40 CFR Subpart C, §261.20, §261.23 and §

^(b) = Toxic Substances Control Act (TSCA) Criteria defined as PCB Containing Material.

mg/kg = milligrams per kilogram

mg/L = milligrams per liter

ug/kg = micrograms per kilogram



Client: Amec Foster Wheeler

Delivery and Receipt Information

Delivery Method:	<u>Fed Ex</u>	Arrival Timestamp:	<u>03/17/2018 10:00</u>
Number of Packages:	<u>1</u>	Number of Projects:	<u>1</u>
State/Province of Origin:	<u>GA</u>		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	No	Sample Date/Times match COC:	Yes
Samples Chilled:	Yes	VOA Vial Headspace \geq 6mm:	N/A
Paperwork Enclosed:	Yes	Total Trip Blank Qty:	0
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	Yes		
Discrepancy in Container Qty on COC:	No		

Unpacked by Melvin Sanchez (8943) at 14:58 on 03/17/2018

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

<u>Cooler #</u>	<u>Thermometer ID</u>	<u>Corrected Temp</u>	<u>Therm. Type</u>	<u>Ice Type</u>	<u>Ice Present?</u>	<u>Ice Container</u>	<u>Elevated Temp?</u>
1	DT131	4.0	DT	Wet	Y	Bagged	N

Extra Sample Details

<u>Sample ID on Label</u>	<u>Number of Extra Containers</u>	<u>Date on Label</u>	<u>Comments</u>
SBOD-DUP04-0318	1	3/16/2018 12:00	

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	mg	milligram(s)
C	degrees Celsius	mL	milliliter(s)
cfu	colony forming units	MPN	Most Probable Number
CP Units	cobalt-chloroplatinate units	N.D.	non-detect
F	degrees Fahrenheit	ng	nanogram(s)
g	gram(s)	NTU	nephelometric turbidity units
IU	International Units	pg/L	picogram/liter
kg	kilogram(s)	RL	Reporting Limit
L	liter(s)	TNTC	Too Numerous To Count
lb.	pound(s)	µg	microgram(s)
m3	cubic meter(s)	µL	microliter(s)
meq	milliequivalents	umhos/cm	micromhos/cm
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
J (or G, I, X)	Estimated value \geq the Method Detection Limit (MDL or DL) and $<$ the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column $>40\%$. The lower result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column $>100\%$. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.



ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Norfolk Southern Railway Co.
1200 Peachtree Street, NE
Box 13
Atlanta GA 30309

Report Date: April 23, 2018 16:13

Project: Former Cohn Property/Columbus, GA

Account #: 10302
Group Number: 1921499
PO Number: SA14.127-001
Release Number: 1440001625
State of Sample Origin: GA

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at <http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/> . To request copies of prior scopes of accreditation, contact your project manager.

Electronic Copy To Amec Foster Wheeler
Electronic Copy To Amec Foster Wheeler
Electronic Copy To Amec Foster Wheeler

Attn: Rhonda Quinn
Attn: Michelle Barker
Attn: Judy Hartness

Respectfully Submitted,



Katherine A. Klinefelter
Principal Specialist

(717) 556-7256



SAMPLE INFORMATION

<u>Client Sample Description</u>	<u>Sample Collection Date/Time</u>	<u>ELLE#</u>
MW-01-0318 Grab Groundwater	03/15/2018 16:55	9513400
MW-01-0318MS Grab Groundwater	03/15/2018 16:55	9513401
MW-01-0318MSD Grab Groundwater	03/15/2018 16:55	9513402
MW-01-0318DUP Grab Groundwater	03/15/2018 16:55	9513403
MW-02-0318 Grab Groundwater	03/16/2018 10:45	9513404
MW-04-0318 Grab Groundwater	03/16/2018 13:25	9513405
DUP-WG-01-0318 Grab Groundwater	03/16/2018 12:00	9513406
EB-WG-0318 Grab Water	03/16/2018 17:55	9513407
TRIP BLANK (Cooler 1) Water	03/15/2018	9513408
TRIP BLANK (Cooler 2) Water	03/15/2018	9513409

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Project Name: Former Cohn Property/Columbus, GA
ELLE Group #: 1921499

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below.

Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are included in this data set.

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:**SW-846 8260C, GC/MS Volatiles**

Sample #s: 9513401, 9513402

Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.

Sample #s: 9513400, 9513404, 9513405, 9513406, 9513407, 9513408, 9513409

Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.

A Method Detection Limit (MDL) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The MDL standard shows adequate sensitivity at or below the reporting limit.

Batch #: L180873AA (Sample number(s): 9513400-9513402, 9513404-9513409 UNSPK: 9513400)

The recovery(ies) for the following analyte(s) in the MS and/or MSD exceeded the acceptance window indicating a positive bias: Cyclohexane

SW-846 8270D, GC/MS Semivolatiles

Sample #s: 9513404

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following action was taken:

The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial.

Batch #: 18080WAB026 (Sample number(s): 9513400-9513402, 9513405-9513407 UNSPK: 9513400)

The recovery(ies) for the following analyte(s) in the MS and/or MSD were below the acceptance window: Pentachlorophenol

Batch #: 18082WAG026 (Sample number(s): 9513404)

The relative percent difference(s) for the following analyte(s) in the LCS/LCSD were outside acceptance windows: Hexachlorocyclopentadiene, Dimethylphthalate, Butylbenzylphthalate, 3,3'-Dichlorobenzidine

SW-846 6020A, Metals

Batch #: 180931063903A (Sample number(s): 9513400-9513404 UNSPK: 9513400 BKG: 9513400)

The duplicate RPD for the following analyte(s) exceeded the acceptance window: Chromium, Lead

Sample Description: MW-01-0318 Grab Groundwater
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513400
ELLE Group #: 1921499
Matrix: Groundwater

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/15/2018 16:55

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Volatiles						
		SW-846 8260C	ug/l	ug/l	ug/l	
11997	Acetone	67-64-1	< 20	20	6	1
11997	Benzene	71-43-2	< 1	1	0.5	1
11997	Bromodichloromethane	75-27-4	< 1	1	0.5	1
11997	Bromoform	75-25-2	< 4	4	0.5	1
11997	Bromomethane	74-83-9	< 1	1	0.5	1
11997	2-Butanone	78-93-3	< 10	10	3	1
11997	Carbon Disulfide	75-15-0	< 5	5	1	1
11997	Carbon Tetrachloride	56-23-5	< 1	1	0.5	1
11997	Chlorobenzene	108-90-7	< 1	1	0.5	1
11997	Chloroethane	75-00-3	< 1	1	0.5	1
11997	Chloroform	67-66-3	< 1	1	0.5	1
11997	Chloromethane	74-87-3	< 1	1	0.5	1
11997	Cyclohexane	110-82-7	< 5	5	2	1
11997	1,2-Dibromo-3-chloropropane	96-12-8	< 5	5	2	1
11997	Dibromochloromethane	124-48-1	< 1	1	0.5	1
11997	1,2-Dibromoethane	106-93-4	< 1	1	0.5	1
11997	1,2-Dichlorobenzene	95-50-1	< 5	5	1	1
11997	1,3-Dichlorobenzene	541-73-1	< 5	5	1	1
11997	1,4-Dichlorobenzene	106-46-7	< 5	5	1	1
11997	Dichlorodifluoromethane	75-71-8	< 1	1	0.5	1
11997	1,1-Dichloroethane	75-34-3	< 1	1	0.5	1
11997	1,2-Dichloroethane	107-06-2	< 1	1	0.5	1
11997	1,1-Dichloroethene	75-35-4	< 1	1	0.5	1
11997	cis-1,2-Dichloroethene	156-59-2	3	1	0.5	1
11997	trans-1,2-Dichloroethene	156-60-5	< 1	1	0.5	1
11997	1,2-Dichloropropane	78-87-5	< 1	1	0.5	1
11997	cis-1,3-Dichloropropene	10061-01-5	< 1	1	0.5	1
11997	trans-1,3-Dichloropropene	10061-02-6	< 1	1	0.5	1
11997	Ethylbenzene	100-41-4	< 1	1	0.5	1
11997	Freon 113	76-13-1	< 10	10	2	1
11997	4-Methyl-2-pentanone	108-10-1	< 10	10	3	1
11997	Methylcyclohexane	108-87-2	< 5	5	1	1
11997	Methylene Chloride	75-09-2	< 1	1	0.5	1
11997	Styrene	100-42-5	< 5	5	1	1
11997	1,1,1,2-Tetrachloroethane	79-34-5	< 1	1	0.5	1
11997	Tetrachloroethene	127-18-4	8	1	0.5	1
11997	Toluene	108-88-3	< 1	1	0.5	1
11997	1,2,4-Trichlorobenzene	120-82-1	< 5	5	1	1
11997	1,1,1-Trichloroethane	71-55-6	< 1	1	0.5	1
11997	1,1,2-Trichloroethane	79-00-5	< 1	1	0.5	1
11997	Trichloroethene	79-01-6	< 1	1	0.5	1
11997	Trichlorofluoromethane	75-69-4	< 1	1	0.5	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-01-0318 Grab Groundwater
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513400
ELLE Group #: 1921499
Matrix: Groundwater

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/15/2018 16:55

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Volatiles						
		SW-846 8260C	ug/l	ug/l	ug/l	
11997	Vinyl Chloride	75-01-4	< 1	1	0.5	1
11997	Xylene (Total)	1330-20-7	< 1	1	0.5	1

Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.

A Method Detection Limit (MDL) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The MDL standard shows adequate sensitivity at or below the reporting limit.

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Semivolatiles						
		SW-846 8270D	ug/l	ug/l	ug/l	
14241	Acetophenone	98-86-2	< 1	1	0.5	1
14241	Butylbenzylphthalate	85-68-7	< 5	5	2	1
14241	Di-n-butylphthalate	84-74-2	< 5	5	2	1
14241	4-Chloroaniline	106-47-8	< 4	4	2	1
14241	bis(2-Chloroethyl)ether	111-44-4	< 1	1	0.5	1
14241	bis(2-Chloroisopropyl)ether	39638-32-9	< 1	1	0.5	1
Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
14241	2-Chlorophenol	95-57-8	< 1	1	0.5	1
14241	2,2'-oxybis(1-Chloropropane)	108-60-1	< 1	1	0.5	1
Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
14241	3,3'-Dichlorobenzidine	91-94-1	< 5	5	2	1
14241	2,4-Dichlorophenol	120-83-2	< 1	1	0.5	1
14241	Diethylphthalate	84-66-2	< 5	5	2	1
14241	2,4-Dimethylphenol	105-67-9	< 1	1	0.5	1
14241	Dimethylphthalate	131-11-3	< 5	5	2	1
14241	2,4-Dinitrophenol	51-28-5	< 31	31	10	1
14241	2,4-Dinitrotoluene	121-14-2	< 5	5	1	1
14241	bis(2-Ethylhexyl)phthalate	117-81-7	< 5	5	2	1
14241	Hexachlorobenzene	118-74-1	< 0.5	0.5	0.1	1
14241	Hexachlorobutadiene	87-68-3	< 1	1	0.5	1
14241	Hexachlorocyclopentadiene	77-47-4	< 16	16	5	1
14241	Hexachloroethane	67-72-1	< 5	5	1	1
14241	Isophorone	78-59-1	< 1	1	0.5	1
14241	4-Methylphenol	106-44-5	< 1	1	0.5	1
3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
14241	Nitrobenzene	98-95-3	< 1	1	0.5	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-01-0318 Grab Groundwater
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513400
ELLE Group #: 1921499
Matrix: Groundwater

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/15/2018 16:55

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Semivolatiles SW-846 8270D						
14241	2-Nitrophenol	88-75-5	< 1	1	0.5	1
14241	4-Nitrophenol	100-02-7	< 31	31	10	1
14241	N-Nitroso-di-n-propylamine	621-64-7	< 1	1	0.5	1
14241	N-Nitrosodiphenylamine	86-30-6	< 1	1	0.5	1
N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
14241	Di-n-octylphthalate	117-84-0	< 5	5	2	1
14241	Pentachlorophenol	87-86-5	< 5	5	1	1
14241	Phenol	108-95-2	< 1	1	0.5	1
14241	2,4,5-Trichlorophenol	95-95-4	< 1	1	0.5	1
14241	2,4,6-Trichlorophenol	88-06-2	< 1	1	0.5	1
GC/MS Semivolatiles SW-846 8270D SIM						
14244	Acenaphthene	83-32-9	< 0.05	0.05	0.01	1
14244	Acenaphthylene	208-96-8	< 0.05	0.05	0.01	1
14244	Anthracene	120-12-7	< 0.05	0.05	0.01	1
14244	Benzo(a)anthracene	56-55-3	< 0.05	0.05	0.01	1
14244	Benzo(a)pyrene	50-32-8	< 0.05	0.05	0.01	1
14244	Benzo(b)fluoranthene	205-99-2	< 0.05	0.05	0.01	1
14244	Benzo(g,h,i)perylene	191-24-2	< 0.05	0.05	0.01	1
14244	Benzo(k)fluoranthene	207-08-9	< 0.05	0.05	0.01	1
14244	Chrysene	218-01-9	< 0.05	0.05	0.01	1
14244	Dibenz(a,h)anthracene	53-70-3	< 0.05	0.05	0.01	1
14244	Fluoranthene	206-44-0	< 0.05	0.05	0.01	1
14244	Fluorene	86-73-7	< 0.05	0.05	0.01	1
14244	Indeno(1,2,3-cd)pyrene	193-39-5	< 0.05	0.05	0.01	1
14244	2-Methylnaphthalene	91-57-6	< 0.05	0.05	0.01	1
14244	Naphthalene	91-20-3	< 0.06	0.06	0.03	1
14244	Phenanthrene	85-01-8	< 0.06	0.06	0.03	1
14244	Pyrene	129-00-0	< 0.05	0.05	0.01	1
Explosives SW-846 8330B Rev.2 Oct. 2006						
13395	1,3-Dinitrobenzene	99-65-0	< 0.60	0.60	0.11	1
13395	2,4-Dinitrotoluene	121-14-2	< 0.60	0.60	0.24	1
13395	Nitrobenzene	98-95-3	< 0.90	0.90	0.20	1
13395	4-Nitrotoluene	99-99-0	< 0.70	0.70	0.26	1
13395	1,3,5-Trinitrobenzene	99-35-4	< 0.60	0.60	0.20	1
PCBs SW-846 8082A						
10591	PCB-1016	12674-11-2	< 0.41 D1	0.41	0.025	1
10591	PCB-1221	11104-28-2	< 0.41 D1	0.41	0.025	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-01-0318 Grab Groundwater
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513400
ELLE Group #: 1921499
Matrix: Groundwater

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/15/2018 16:55

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
PCBs			SW-846 8082A	ug/l	ug/l	
10591	PCB-1232	11141-16-5	< 0.41 D1	0.41	0.025	1
10591	PCB-1242	53469-21-9	< 0.41 D1	0.41	0.025	1
10591	PCB-1248	12672-29-6	< 0.41 D1	0.41	0.025	1
10591	PCB-1254	11097-69-1	< 0.41 D1	0.41	0.025	1
10591	PCB-1260	11096-82-5	< 0.41 D1	0.41	0.025	1
Metals			SW-846 6020A	mg/l	mg/l	
06024	Antimony	7440-36-0	< 0.0020	0.0020	0.00045	1
06025	Arsenic	7440-38-2	< 0.0040	0.0040	0.00072	1
06026	Barium	7440-39-3	0.107	0.0040	0.00072	1
06027	Beryllium	7440-41-7	< 0.0010	0.0010	0.000071	1
06028	Cadmium	7440-43-9	< 0.0010	0.0010	0.00015	1
06031	Chromium	7440-47-3	< 0.0040	0.0040	0.00087	1
06033	Copper	7440-50-8	< 0.0040	0.0040	0.00054	1
06035	Lead	7439-92-1	< 0.0020	0.0020	0.00011	1
06039	Nickel	7440-02-0	< 0.0040	0.0040	0.0010	1
06041	Selenium	7782-49-2	< 0.0040	0.0040	0.00050	1
06042	Silver	7440-22-4	< 0.0010	0.0010	0.00015	1
06045	Thallium	7440-28-0	< 0.0010	0.0010	0.00012	1
06049	Zinc	7440-66-6	0.0302	0.0300	0.0039	1
			SW-846 7470A	mg/l	mg/l	
00259	Mercury	7439-97-6	< 0.00020	0.00020	0.000050	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11997	VOCs- 5ml Water by 8260C	SW-846 8260C	1	L180873AA	03/29/2018 01:09	Don V Viray	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	L180873AA	03/29/2018 01:09	Don V Viray	1
14241	SVOAs 8270D MINI	SW-846 8270D	1	18080WAB026	03/25/2018 22:11	Holly B Ziegler	1
14244	PAHs by 8270D SIM	SW-846 8270D SIM	1	18080WAA026	03/23/2018 20:48	Brandon K Cordova	1
10466	BNA Water Extraction SIM	SW-846 3510C	1	18080WAA026	03/22/2018 17:00	Oswaldo R Sanchez	1
11010	8270D BNA Extraction	SW-846 3510C	1	18080WAB026	03/22/2018 17:00	Oswaldo R Sanchez	1
13395	Nitroaromatics/Amines 8330B(w)	SW-846 8330B Rev.2 Oct. 2006	1	180800006A	04/04/2018 21:58	Jessica L Miller	1
10591	PCBs in Water by 8082A	SW-846 8082A	1	180810008A	03/25/2018 18:27	Kirby B Turner	1
11121	PCB Waters Update IV Ext	SW-846 3510C	1	180810008A	03/22/2018 16:55	Kate E Lutte	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-01-0318 Grab Groundwater
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513400
ELLE Group #: 1921499
Matrix: Groundwater

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/15/2018 16:55

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13432	Nitroaromatic/Amine Ext 8330B	SW-846 8330B Rev.2 Oct. 2006	1	180800006A	03/22/2018 13:00	Olivia Arosemena	1
06024	Antimony	SW-846 6020A	2	180931063903A	04/04/2018 09:20	Choon Y Tian	1
06025	Arsenic	SW-846 6020A	2	180931063903A	04/04/2018 09:20	Choon Y Tian	1
06026	Barium	SW-846 6020A	2	180931063903D	04/04/2018 09:20	Choon Y Tian	1
06027	Beryllium	SW-846 6020A	2	180931063903A	04/04/2018 09:20	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	2	180931063903A	04/04/2018 09:20	Choon Y Tian	1
06031	Chromium	SW-846 6020A	2	180931063903A	04/04/2018 09:20	Choon Y Tian	1
06033	Copper	SW-846 6020A	2	180931063903A	04/04/2018 09:20	Choon Y Tian	1
06035	Lead	SW-846 6020A	2	180931063903A	04/04/2018 09:20	Choon Y Tian	1
06039	Nickel	SW-846 6020A	2	180931063903A	04/04/2018 09:20	Choon Y Tian	1
06041	Selenium	SW-846 6020A	2	180931063903B	04/05/2018 13:10	Patrick J Engle	1
06042	Silver	SW-846 6020A	2	180931063903A	04/04/2018 09:20	Choon Y Tian	1
06045	Thallium	SW-846 6020A	2	180931063903A	04/04/2018 09:20	Choon Y Tian	1
06049	Zinc	SW-846 6020A	2	180931063903A	04/04/2018 09:20	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	180820571308	03/27/2018 08:48	Damary Valentin	1
10639	ICPMS - Water, 3020A - U4	SW-846 3020A	1	180821063908	03/26/2018 06:05	James L Mertz	1
10639	ICPMS - Water, 3020A - U4	SW-846 3020A	2	180931063903	04/03/2018 22:25	Denise L Trimby	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	180820571308	03/26/2018 17:45	JoElla L Rice	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-01-0318MS Grab Groundwater
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513401
ELLE Group #: 1921499
Matrix: Groundwater

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/15/2018 16:55

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Volatiles			ug/l	ug/l	ug/l	
	SW-846 8260C					
11997	Acetone	67-64-1	160	20	6	1
11997	Benzene	71-43-2	22	1	0.5	1
11997	Bromodichloromethane	75-27-4	18	1	0.5	1
11997	Bromoform	75-25-2	16	4	0.5	1
11997	Bromomethane	74-83-9	16	1	0.5	1
11997	2-Butanone	78-93-3	160	10	3	1
11997	Carbon Disulfide	75-15-0	24	5	1	1
11997	Carbon Tetrachloride	56-23-5	18	1	0.5	1
11997	Chlorobenzene	108-90-7	21	1	0.5	1
11997	Chloroethane	75-00-3	18	1	0.5	1
11997	Chloroform	67-66-3	20	1	0.5	1
11997	Chloromethane	74-87-3	20	1	0.5	1
11997	Cyclohexane	110-82-7	25	5	2	1
11997	1,2-Dibromo-3-chloropropane	96-12-8	18	5	2	1
11997	Dibromochloromethane	124-48-1	18	1	0.5	1
11997	1,2-Dibromoethane	106-93-4	21	1	0.5	1
11997	1,2-Dichlorobenzene	95-50-1	20	5	1	1
11997	1,3-Dichlorobenzene	541-73-1	20	5	1	1
11997	1,4-Dichlorobenzene	106-46-7	20	5	1	1
11997	Dichlorodifluoromethane	75-71-8	17	1	0.5	1
11997	1,1-Dichloroethane	75-34-3	22	1	0.5	1
11997	1,2-Dichloroethane	107-06-2	19	1	0.5	1
11997	1,1-Dichloroethene	75-35-4	24	1	0.5	1
11997	cis-1,2-Dichloroethene	156-59-2	24	1	0.5	1
11997	trans-1,2-Dichloroethene	156-60-5	23	1	0.5	1
11997	1,2-Dichloropropane	78-87-5	22	1	0.5	1
11997	cis-1,3-Dichloropropene	10061-01-5	19	1	0.5	1
11997	trans-1,3-Dichloropropene	10061-02-6	19	1	0.5	1
11997	Ethylbenzene	100-41-4	22	1	0.5	1
11997	Freon 113	76-13-1	24	10	2	1
11997	4-Methyl-2-pentanone	108-10-1	110	10	3	1
11997	Methylcyclohexane	108-87-2	23	5	1	1
11997	Methylene Chloride	75-09-2	22	1	0.5	1
11997	Styrene	100-42-5	21	5	1	1
11997	1,1,1,2-Tetrachloroethane	79-34-5	21	1	0.5	1
11997	Tetrachloroethene	127-18-4	31	1	0.5	1
11997	Toluene	108-88-3	23	1	0.5	1
11997	1,2,4-Trichlorobenzene	120-82-1	19	5	1	1
11997	1,1,1-Trichloroethane	71-55-6	19	1	0.5	1
11997	1,1,2-Trichloroethane	79-00-5	22	1	0.5	1
11997	Trichloroethene	79-01-6	21	1	0.5	1
11997	Trichlorofluoromethane	75-69-4	18	1	0.5	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-01-0318MS Grab Groundwater
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513401
ELLE Group #: 1921499
Matrix: Groundwater

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/15/2018 16:55

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Volatiles SW-846 8260C						
11997	Vinyl Chloride	75-01-4	18	1 ug/l	0.5 ug/l	1
11997	Xylene (Total)	1330-20-7	63	1 ug/l	0.5 ug/l	1
Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.						
GC/MS Semivolatiles SW-846 8270D						
14241	Acetophenone	98-86-2	45	1 ug/l	0.5 ug/l	1
14241	Butylbenzylphthalate	85-68-7	41	5 ug/l	2 ug/l	1
14241	Di-n-butylphthalate	84-74-2	44	5 ug/l	2 ug/l	1
14241	4-Chloroaniline	106-47-8	30	4 ug/l	2 ug/l	1
14241	bis(2-Chloroethyl)ether	111-44-4	40	1 ug/l	0.5 ug/l	1
14241	bis(2-Chloroisopropyl)ether	39638-32-9	41	1 ug/l	0.5 ug/l	1
Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
14241	2-Chlorophenol	95-57-8	42	1 ug/l	0.5 ug/l	1
14241	2,2'-oxybis(1-Chloropropane)	108-60-1	41	1 ug/l	0.5 ug/l	1
Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
14241	3,3'-Dichlorobenzidine	91-94-1	34	5 ug/l	2 ug/l	1
14241	2,4-Dichlorophenol	120-83-2	45	1 ug/l	0.5 ug/l	1
14241	Diethylphthalate	84-66-2	39	5 ug/l	2 ug/l	1
14241	2,4-Dimethylphenol	105-67-9	41	1 ug/l	0.5 ug/l	1
14241	Dimethylphthalate	131-11-3	33	5 ug/l	2 ug/l	1
14241	2,4-Dinitrophenol	51-28-5	51	31 ug/l	10 ug/l	1
14241	2,4-Dinitrotoluene	121-14-2	45	5 ug/l	1 ug/l	1
14241	bis(2-Ethylhexyl)phthalate	117-81-7	46	5 ug/l	2 ug/l	1
14241	Hexachlorobenzene	118-74-1	46	0.5 ug/l	0.1 ug/l	1
14241	Hexachlorobutadiene	87-68-3	32	1 ug/l	0.5 ug/l	1
14241	Hexachlorocyclopentadiene	77-47-4	50	15 ug/l	5 ug/l	1
14241	Hexachloroethane	67-72-1	28	5 ug/l	1 ug/l	1
14241	Isophorone	78-59-1	46	1 ug/l	0.5 ug/l	1
14241	4-Methylphenol	106-44-5	40	1 ug/l	0.5 ug/l	1
3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
14241	Nitrobenzene	98-95-3	41	1 ug/l	0.5 ug/l	1
14241	2-Nitrophenol	88-75-5	46	1 ug/l	0.5 ug/l	1
14241	4-Nitrophenol	100-02-7	< 31	31 ug/l	10 ug/l	1
14241	N-Nitroso-di-n-propylamine	621-64-7	45	1 ug/l	0.5 ug/l	1
14241	N-Nitrosodiphenylamine	86-30-6	45	1 ug/l	0.5 ug/l	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-01-0318MS Grab Groundwater
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513401
ELLE Group #: 1921499
Matrix: Groundwater

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/15/2018 16:55

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Semivolatiles		SW-846 8270D	ug/l	ug/l	ug/l	
N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
14241	Di-n-octylphthalate	117-84-0	47	5	2	1
14241	Pentachlorophenol	87-86-5	25	5	1	1
14241	Phenol	108-95-2	24	1	0.5	1
14241	2,4,5-Trichlorophenol	95-95-4	49	1	0.5	1
14241	2,4,6-Trichlorophenol	88-06-2	49	1	0.5	1
GC/MS Semivolatiles		SW-846 8270D SIM	ug/l	ug/l	ug/l	
14244	Acenaphthene	83-32-9	1	0.05	0.01	1
14244	Acenaphthylene	208-96-8	0.8	0.05	0.01	1
14244	Anthracene	120-12-7	0.9	0.05	0.01	1
14244	Benzo(a)anthracene	56-55-3	0.9	0.05	0.01	1
14244	Benzo(a)pyrene	50-32-8	0.8	0.05	0.01	1
14244	Benzo(b)fluoranthene	205-99-2	0.9	0.05	0.01	1
14244	Benzo(g,h,i)perylene	191-24-2	0.6	0.05	0.01	1
14244	Benzo(k)fluoranthene	207-08-9	0.8	0.05	0.01	1
14244	Chrysene	218-01-9	0.9	0.05	0.01	1
14244	Dibenz(a,h)anthracene	53-70-3	0.7	0.05	0.01	1
14244	Fluoranthene	206-44-0	0.9	0.05	0.01	1
14244	Fluorene	86-73-7	0.8	0.05	0.01	1
14244	Indeno(1,2,3-cd)pyrene	193-39-5	0.6	0.05	0.01	1
14244	2-Methylnaphthalene	91-57-6	0.8	0.05	0.01	1
14244	Naphthalene	91-20-3	0.8	0.06	0.03	1
14244	Phenanthrene	85-01-8	0.9	0.06	0.03	1
14244	Pyrene	129-00-0	0.8	0.05	0.01	1
Explosives		SW-846 8330B Rev.2 Oct. 2006	ug/l	ug/l	ug/l	
13395	1,3-Dinitrobenzene	99-65-0	10	0.60	0.11	1
13395	2,4-Dinitrotoluene	121-14-2	10	0.60	0.24	1
13395	Nitrobenzene	98-95-3	10	0.90	0.20	1
13395	4-Nitrotoluene	99-99-0	11	0.70	0.26	1
13395	1,3,5-Trinitrobenzene	99-35-4	9.4	0.60	0.20	1
PCBs		SW-846 8082A	ug/l	ug/l	ug/l	
10591	PCB-1016	12674-11-2	4.0 D2	0.40	0.024	1
10591	PCB-1221	11104-28-2	< 0.40 D1	0.40	0.024	1
10591	PCB-1232	11141-16-5	< 0.40 D1	0.40	0.024	1
10591	PCB-1242	53469-21-9	< 0.40 D1	0.40	0.024	1
10591	PCB-1248	12672-29-6	< 0.40 D1	0.40	0.024	1
10591	PCB-1254	11097-69-1	< 0.40 D1	0.40	0.024	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-01-0318MS Grab Groundwater
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513401
ELLE Group #: 1921499
Matrix: Groundwater

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/15/2018 16:55

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
PCBs						
SW-846 8082A			ug/l	ug/l	ug/l	
10591	PCB-1260	11096-82-5	4.1 D1	0.40	0.024	1
Metals						
SW-846 6020A			mg/l	mg/l	mg/l	
06024	Antimony	7440-36-0	0.0061	0.0020	0.00045	1
06025	Arsenic	7440-38-2	0.0108	0.0040	0.00072	1
06026	Barium	7440-39-3	0.161	0.0040	0.00072	1
06027	Beryllium	7440-41-7	0.0042	0.0010	0.000071	1
06028	Cadmium	7440-43-9	0.0052	0.0010	0.00015	1
06031	Chromium	7440-47-3	0.0513	0.0040	0.00087	1
06033	Copper	7440-50-8	0.0543	0.0040	0.00054	1
06035	Lead	7439-92-1	0.0157	0.0020	0.00011	1
06039	Nickel	7440-02-0	0.0545	0.0040	0.0010	1
06041	Selenium	7782-49-2	0.0115	0.0040	0.00050	1
06042	Silver	7440-22-4	0.0505	0.0010	0.00015	1
06045	Thallium	7440-28-0	0.0021	0.0010	0.00012	1
06049	Zinc	7440-66-6	0.566	0.0300	0.0039	1
SW-846 7470A			mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	0.00088	0.00020	0.000050	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11997	VOCs- 5ml Water by 8260C	SW-846 8260C	1	L180873AA	03/29/2018 01:31	Don V Viray	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	L180873AA	03/29/2018 01:31	Don V Viray	1
14241	SVOAs 8270D MINI	SW-846 8270D	1	18080WAB026	03/25/2018 22:39	Holly B Ziegler	1
14244	PAHs by 8270D SIM	SW-846 8270D SIM	1	18080WAA026	03/23/2018 21:16	Brandon K Cordova	1
10466	BNA Water Extraction SIM	SW-846 3510C	1	18080WAA026	03/22/2018 17:00	Osvaldo R Sanchez	1
11010	8270D BNA Extraction	SW-846 3510C	1	18080WAB026	03/22/2018 17:00	Osvaldo R Sanchez	1
13395	Nitroaromatics/Amines 8330B(w)	SW-846 8330B Rev.2 Oct. 2006	1	180800006A	04/04/2018 22:35	Jessica L Miller	1
10591	PCBs in Water by 8082A	SW-846 8082A	1	180810008A	03/25/2018 18:38	Kirby B Turner	1
11121	PCB Waters Update IV Ext	SW-846 3510C	1	180810008A	03/22/2018 16:55	Kate E Lutte	1
13432	Nitroaromatic/Amine Ext 8330B	SW-846 8330B Rev.2 Oct. 2006	1	180800006A	03/22/2018 13:00	Olivia Arosemena	1
06024	Antimony	SW-846 6020A	2	180931063903A	04/04/2018 09:29	Choon Y Tian	1
06025	Arsenic	SW-846 6020A	2	180931063903A	04/04/2018 09:29	Choon Y Tian	1
06026	Barium	SW-846 6020A	2	180931063903D	04/04/2018 09:29	Choon Y Tian	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-01-0318MS Grab Groundwater
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513401
ELLE Group #: 1921499
Matrix: Groundwater

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/15/2018 16:55

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06027	Beryllium	SW-846 6020A	2	180931063903A	04/04/2018 09:29	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	2	180931063903A	04/04/2018 09:29	Choon Y Tian	1
06031	Chromium	SW-846 6020A	2	180931063903A	04/04/2018 09:29	Choon Y Tian	1
06033	Copper	SW-846 6020A	2	180931063903A	04/04/2018 09:29	Choon Y Tian	1
06035	Lead	SW-846 6020A	2	180931063903A	04/04/2018 09:29	Choon Y Tian	1
06039	Nickel	SW-846 6020A	1	180931063903A	04/04/2018 09:29	Choon Y Tian	1
06041	Selenium	SW-846 6020A	2	180931063903B	04/05/2018 13:17	Patrick J Engle	1
06042	Silver	SW-846 6020A	2	180931063903A	04/04/2018 09:29	Choon Y Tian	1
06045	Thallium	SW-846 6020A	2	180931063903A	04/04/2018 09:29	Choon Y Tian	1
06049	Zinc	SW-846 6020A	2	180931063903A	04/04/2018 09:29	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	180820571308	03/27/2018 08:52	Damary Valentin	1
10639	ICPMS - Water, 3020A - U4	SW-846 3020A	1	180821063908	03/26/2018 06:05	James L Mertz	1
10639	ICPMS - Water, 3020A - U4	SW-846 3020A	2	180931063903	04/03/2018 22:25	Denise L Trimby	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	180820571308	03/26/2018 17:45	JoElla L Rice	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-01-0318MSD Grab Groundwater
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513402
ELLE Group #: 1921499
Matrix: Groundwater

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/15/2018 16:55

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Volatiles			ug/l	ug/l	ug/l	
	SW-846 8260C					
11997	Acetone	67-64-1	170	20	6	1
11997	Benzene	71-43-2	23	1	0.5	1
11997	Bromodichloromethane	75-27-4	19	1	0.5	1
11997	Bromoform	75-25-2	15	4	0.5	1
11997	Bromomethane	74-83-9	17	1	0.5	1
11997	2-Butanone	78-93-3	170	10	3	1
11997	Carbon Disulfide	75-15-0	25	5	1	1
11997	Carbon Tetrachloride	56-23-5	19	1	0.5	1
11997	Chlorobenzene	108-90-7	21	1	0.5	1
11997	Chloroethane	75-00-3	18	1	0.5	1
11997	Chloroform	67-66-3	21	1	0.5	1
11997	Chloromethane	74-87-3	21	1	0.5	1
11997	Cyclohexane	110-82-7	26	5	2	1
11997	1,2-Dibromo-3-chloropropane	96-12-8	19	5	2	1
11997	Dibromochloromethane	124-48-1	18	1	0.5	1
11997	1,2-Dibromoethane	106-93-4	21	1	0.5	1
11997	1,2-Dichlorobenzene	95-50-1	21	5	1	1
11997	1,3-Dichlorobenzene	541-73-1	21	5	1	1
11997	1,4-Dichlorobenzene	106-46-7	21	5	1	1
11997	Dichlorodifluoromethane	75-71-8	18	1	0.5	1
11997	1,1-Dichloroethane	75-34-3	23	1	0.5	1
11997	1,2-Dichloroethane	107-06-2	20	1	0.5	1
11997	1,1-Dichloroethene	75-35-4	25	1	0.5	1
11997	cis-1,2-Dichloroethene	156-59-2	24	1	0.5	1
11997	trans-1,2-Dichloroethene	156-60-5	23	1	0.5	1
11997	1,2-Dichloropropane	78-87-5	23	1	0.5	1
11997	cis-1,3-Dichloropropene	10061-01-5	20	1	0.5	1
11997	trans-1,3-Dichloropropene	10061-02-6	19	1	0.5	1
11997	Ethylbenzene	100-41-4	22	1	0.5	1
11997	Freon 113	76-13-1	25	10	2	1
11997	4-Methyl-2-pentanone	108-10-1	110	10	3	1
11997	Methylcyclohexane	108-87-2	23	5	1	1
11997	Methylene Chloride	75-09-2	22	1	0.5	1
11997	Styrene	100-42-5	22	5	1	1
11997	1,1,1,2-Tetrachloroethane	79-34-5	22	1	0.5	1
11997	Tetrachloroethene	127-18-4	31	1	0.5	1
11997	Toluene	108-88-3	23	1	0.5	1
11997	1,2,4-Trichlorobenzene	120-82-1	19	5	1	1
11997	1,1,1-Trichloroethane	71-55-6	20	1	0.5	1
11997	1,1,2-Trichloroethane	79-00-5	22	1	0.5	1
11997	Trichloroethene	79-01-6	21	1	0.5	1
11997	Trichlorofluoromethane	75-69-4	18	1	0.5	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-01-0318MSD Grab Groundwater
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513402
ELLE Group #: 1921499
Matrix: Groundwater

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/15/2018 16:55

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Volatiles SW-846 8260C						
11997	Vinyl Chloride	75-01-4	18	1 ug/l	0.5 ug/l	1
11997	Xylene (Total)	1330-20-7	65	1 ug/l	0.5 ug/l	1
Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.						
GC/MS Semivolatiles SW-846 8270D						
14241	Acetophenone	98-86-2	46	1 ug/l	0.5 ug/l	1
14241	Butylbenzylphthalate	85-68-7	44	5 ug/l	2 ug/l	1
14241	Di-n-butylphthalate	84-74-2	45	5 ug/l	2 ug/l	1
14241	4-Chloroaniline	106-47-8	28	4 ug/l	2 ug/l	1
14241	bis(2-Chloroethyl)ether	111-44-4	41	1 ug/l	0.5 ug/l	1
14241	bis(2-Chloroisopropyl)ether	39638-32-9	42	1 ug/l	0.5 ug/l	1
Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
14241	2-Chlorophenol	95-57-8	42	1 ug/l	0.5 ug/l	1
14241	2,2'-oxybis(1-Chloropropane)	108-60-1	42	1 ug/l	0.5 ug/l	1
Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
14241	3,3'-Dichlorobenzidine	91-94-1	34	5 ug/l	2 ug/l	1
14241	2,4-Dichlorophenol	120-83-2	47	1 ug/l	0.5 ug/l	1
14241	Diethylphthalate	84-66-2	38	5 ug/l	2 ug/l	1
14241	2,4-Dimethylphenol	105-67-9	42	1 ug/l	0.5 ug/l	1
14241	Dimethylphthalate	131-11-3	37	5 ug/l	2 ug/l	1
14241	2,4-Dinitrophenol	51-28-5	66	31 ug/l	10 ug/l	1
14241	2,4-Dinitrotoluene	121-14-2	43	5 ug/l	1 ug/l	1
14241	bis(2-Ethylhexyl)phthalate	117-81-7	47	5 ug/l	2 ug/l	1
14241	Hexachlorobenzene	118-74-1	48	0.5 ug/l	0.1 ug/l	1
14241	Hexachlorobutadiene	87-68-3	28	1 ug/l	0.5 ug/l	1
14241	Hexachlorocyclopentadiene	77-47-4	43	15 ug/l	5 ug/l	1
14241	Hexachloroethane	67-72-1	25	5 ug/l	1 ug/l	1
14241	Isophorone	78-59-1	47	1 ug/l	0.5 ug/l	1
14241	4-Methylphenol	106-44-5	40	1 ug/l	0.5 ug/l	1
3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
14241	Nitrobenzene	98-95-3	43	1 ug/l	0.5 ug/l	1
14241	2-Nitrophenol	88-75-5	48	1 ug/l	0.5 ug/l	1
14241	4-Nitrophenol	100-02-7	< 31	31 ug/l	10 ug/l	1
14241	N-Nitroso-di-n-propylamine	621-64-7	46	1 ug/l	0.5 ug/l	1
14241	N-Nitrosodiphenylamine	86-30-6	44	1 ug/l	0.5 ug/l	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-01-0318MSD Grab Groundwater
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513402
ELLE Group #: 1921499
Matrix: Groundwater

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/15/2018 16:55

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Semivolatiles		SW-846 8270D	ug/l	ug/l	ug/l	
N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
14241	Di-n-octylphthalate	117-84-0	47	5	2	1
14241	Pentachlorophenol	87-86-5	29	5	1	1
14241	Phenol	108-95-2	24	1	0.5	1
14241	2,4,5-Trichlorophenol	95-95-4	48	1	0.5	1
14241	2,4,6-Trichlorophenol	88-06-2	51	1	0.5	1
GC/MS Semivolatiles		SW-846 8270D SIM	ug/l	ug/l	ug/l	
14244	Acenaphthene	83-32-9	1	0.05	0.01	1
14244	Acenaphthylene	208-96-8	0.8	0.05	0.01	1
14244	Anthracene	120-12-7	0.9	0.05	0.01	1
14244	Benzo(a)anthracene	56-55-3	0.9	0.05	0.01	1
14244	Benzo(a)pyrene	50-32-8	0.9	0.05	0.01	1
14244	Benzo(b)fluoranthene	205-99-2	0.9	0.05	0.01	1
14244	Benzo(g,h,i)perylene	191-24-2	0.6	0.05	0.01	1
14244	Benzo(k)fluoranthene	207-08-9	0.9	0.05	0.01	1
14244	Chrysene	218-01-9	0.9	0.05	0.01	1
14244	Dibenz(a,h)anthracene	53-70-3	0.6	0.05	0.01	1
14244	Fluoranthene	206-44-0	0.9	0.05	0.01	1
14244	Fluorene	86-73-7	0.8	0.05	0.01	1
14244	Indeno(1,2,3-cd)pyrene	193-39-5	0.7	0.05	0.01	1
14244	2-Methylnaphthalene	91-57-6	0.8	0.05	0.01	1
14244	Naphthalene	91-20-3	0.7	0.06	0.03	1
14244	Phenanthrene	85-01-8	0.9	0.06	0.03	1
14244	Pyrene	129-00-0	0.8	0.05	0.01	1
Explosives		SW-846 8330B Rev.2 Oct. 2006	ug/l	ug/l	ug/l	
13395	1,3-Dinitrobenzene	99-65-0	11	0.60	0.11	1
13395	2,4-Dinitrotoluene	121-14-2	11	0.60	0.24	1
13395	Nitrobenzene	98-95-3	10	0.90	0.20	1
13395	4-Nitrotoluene	99-99-0	10	0.70	0.26	1
13395	1,3,5-Trinitrobenzene	99-35-4	9.4	0.60	0.20	1
PCBs		SW-846 8082A	ug/l	ug/l	ug/l	
10591	PCB-1016	12674-11-2	4.5 D2	0.41	0.025	1
10591	PCB-1221	11104-28-2	< 0.41 D1	0.41	0.025	1
10591	PCB-1232	11141-16-5	< 0.41 D1	0.41	0.025	1
10591	PCB-1242	53469-21-9	< 0.41 D1	0.41	0.025	1
10591	PCB-1248	12672-29-6	< 0.41 D1	0.41	0.025	1
10591	PCB-1254	11097-69-1	< 0.41 D1	0.41	0.025	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-01-0318MSD Grab Groundwater
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513402
ELLE Group #: 1921499
Matrix: Groundwater

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/15/2018 16:55

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
PCBs						
SW-846 8082A			ug/l	ug/l	ug/l	
10591	PCB-1260	11096-82-5	4.7 D2	0.41	0.025	1
Metals						
SW-846 6020A			mg/l	mg/l	mg/l	
06024	Antimony	7440-36-0	0.0061	0.0020	0.00045	1
06025	Arsenic	7440-38-2	0.0105	0.0040	0.00072	1
06026	Barium	7440-39-3	0.157	0.0040	0.00072	1
06027	Beryllium	7440-41-7	0.0041	0.0010	0.000071	1
06028	Cadmium	7440-43-9	0.0051	0.0010	0.00015	1
06031	Chromium	7440-47-3	0.0514	0.0040	0.00087	1
06033	Copper	7440-50-8	0.0529	0.0040	0.00054	1
06035	Lead	7439-92-1	0.0157	0.0020	0.00011	1
06039	Nickel	7440-02-0	0.0538	0.0040	0.0010	1
06041	Selenium	7782-49-2	0.0109	0.0040	0.00050	1
06042	Silver	7440-22-4	0.0496	0.0010	0.00015	1
06045	Thallium	7440-28-0	0.0020	0.0010	0.00012	1
06049	Zinc	7440-66-6	0.547	0.0300	0.0039	1
SW-846 7470A			mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	0.00087	0.00020	0.000050	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11997	VOCs- 5ml Water by 8260C	SW-846 8260C	1	L180873AA	03/29/2018 01:53	Don V Viray	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	L180873AA	03/29/2018 01:53	Don V Viray	1
14241	SVOAs 8270D MINI	SW-846 8270D	1	18080WAB026	03/25/2018 23:07	Holly B Ziegler	1
14244	PAHs by 8270D SIM	SW-846 8270D SIM	1	18080WAA026	03/23/2018 21:44	Brandon K Cordova	1
10466	BNA Water Extraction SIM	SW-846 3510C	1	18080WAA026	03/22/2018 17:00	Oswaldo R Sanchez	1
11010	8270D BNA Extraction	SW-846 3510C	1	18080WAB026	03/22/2018 17:00	Oswaldo R Sanchez	1
13395	Nitroaromatics/Amines 8330B(w)	SW-846 8330B Rev.2 Oct. 2006	1	180800006A	04/04/2018 23:12	Jessica L Miller	1
10591	PCBs in Water by 8082A	SW-846 8082A	1	180810008A	03/25/2018 18:49	Kirby B Turner	1
11121	PCB Waters Update IV Ext	SW-846 3510C	1	180810008A	03/22/2018 16:55	Kate E Lutte	1
13432	Nitroaromatic/Amine Ext 8330B	SW-846 8330B Rev.2 Oct. 2006	1	180800006A	03/22/2018 13:00	Olivia Arosemena	1
06024	Antimony	SW-846 6020A	2	180931063903A	04/04/2018 09:32	Choon Y Tian	1
06025	Arsenic	SW-846 6020A	2	180931063903A	04/04/2018 09:32	Choon Y Tian	1
06026	Barium	SW-846 6020A	2	180931063903D	04/04/2018 09:32	Choon Y Tian	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-01-0318MSD Grab Groundwater
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513402
ELLE Group #: 1921499
Matrix: Groundwater

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/15/2018 16:55

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06027	Beryllium	SW-846 6020A	2	180931063903A	04/04/2018 09:32	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	2	180931063903A	04/04/2018 09:32	Choon Y Tian	1
06031	Chromium	SW-846 6020A	2	180931063903A	04/04/2018 09:32	Choon Y Tian	1
06033	Copper	SW-846 6020A	2	180931063903A	04/04/2018 09:32	Choon Y Tian	1
06035	Lead	SW-846 6020A	2	180931063903A	04/04/2018 09:32	Choon Y Tian	1
06039	Nickel	SW-846 6020A	1	180931063903A	04/04/2018 09:32	Choon Y Tian	1
06041	Selenium	SW-846 6020A	2	180931063903B	04/05/2018 13:19	Patrick J Engle	1
06042	Silver	SW-846 6020A	2	180931063903A	04/04/2018 09:32	Choon Y Tian	1
06045	Thallium	SW-846 6020A	2	180931063903A	04/04/2018 09:32	Choon Y Tian	1
06049	Zinc	SW-846 6020A	2	180931063903A	04/04/2018 09:32	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	180820571308	03/27/2018 08:55	Damary Valentin	1
10639	ICPMS - Water, 3020A - U4	SW-846 3020A	1	180821063908	03/26/2018 06:05	James L Mertz	1
10639	ICPMS - Water, 3020A - U4	SW-846 3020A	2	180931063903	04/03/2018 22:25	Denise L Trimby	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	180820571308	03/26/2018 17:45	JoElla L Rice	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-01-0318DUP Grab Groundwater
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513403
ELLE Group #: 1921499
Matrix: Groundwater

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/15/2018 16:55

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
Metals		SW-846 6020A	mg/l	mg/l	mg/l	
06024	Antimony	7440-36-0	< 0.0020	0.0020	0.00045	1
06025	Arsenic	7440-38-2	< 0.0040	0.0040	0.00072	1
06026	Barium	7440-39-3	0.108	0.0040	0.00072	1
06027	Beryllium	7440-41-7	< 0.0010	0.0010	0.000071	1
06028	Cadmium	7440-43-9	< 0.0010	0.0010	0.00015	1
06031	Chromium	7440-47-3	< 0.0040	0.0040	0.00087	1
06033	Copper	7440-50-8	< 0.0040	0.0040	0.00054	1
06035	Lead	7439-92-1	< 0.0020	0.0020	0.00011	1
06039	Nickel	7440-02-0	< 0.0040	0.0040	0.0010	1
06041	Selenium	7782-49-2	< 0.0040	0.0040	0.00050	1
06042	Silver	7440-22-4	< 0.0010	0.0010	0.00015	1
06045	Thallium	7440-28-0	< 0.0010	0.0010	0.00012	1
06049	Zinc	7440-66-6	< 0.0300	0.0300	0.0039	1
		SW-846 7470A	mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	< 0.00020	0.00020	0.000050	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06024	Antimony	SW-846 6020A	2	180931063903A	04/04/2018 09:26	Choon Y Tian	1
06025	Arsenic	SW-846 6020A	2	180931063903A	04/04/2018 09:26	Choon Y Tian	1
06026	Barium	SW-846 6020A	2	180931063903D	04/04/2018 09:26	Choon Y Tian	1
06027	Beryllium	SW-846 6020A	2	180931063903A	04/04/2018 09:26	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	2	180931063903A	04/04/2018 09:26	Choon Y Tian	1
06031	Chromium	SW-846 6020A	2	180931063903A	04/04/2018 09:26	Choon Y Tian	1
06033	Copper	SW-846 6020A	2	180931063903A	04/04/2018 09:26	Choon Y Tian	1
06035	Lead	SW-846 6020A	2	180931063903A	04/04/2018 09:26	Choon Y Tian	1
06039	Nickel	SW-846 6020A	2	180931063903A	04/04/2018 09:26	Choon Y Tian	1
06041	Selenium	SW-846 6020A	2	180931063903B	04/05/2018 13:15	Patrick J Engle	1
06042	Silver	SW-846 6020A	2	180931063903A	04/04/2018 09:26	Choon Y Tian	1
06045	Thallium	SW-846 6020A	2	180931063903A	04/04/2018 09:26	Choon Y Tian	1
06049	Zinc	SW-846 6020A	2	180931063903A	04/04/2018 09:26	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	180820571308	03/27/2018 08:50	Damary Valentin	1
10639	ICPMS - Water, 3020A - U4	SW-846 3020A	1	180821063908	03/26/2018 06:05	James L Mertz	1
10639	ICPMS - Water, 3020A - U4	SW-846 3020A	2	180931063903	04/03/2018 22:25	Denise L Trimby	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	180820571308	03/26/2018 17:45	JoElla L Rice	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-02-0318 Grab Groundwater
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513404
ELLE Group #: 1921499
Matrix: Groundwater

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/16/2018 10:45

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Volatiles			ug/l	ug/l	ug/l	
	SW-846 8260C					
11997	Acetone	67-64-1	< 20	20	6	1
11997	Benzene	71-43-2	< 1	1	0.5	1
11997	Bromodichloromethane	75-27-4	< 1	1	0.5	1
11997	Bromoform	75-25-2	< 4	4	0.5	1
11997	Bromomethane	74-83-9	< 1	1	0.5	1
11997	2-Butanone	78-93-3	< 10	10	3	1
11997	Carbon Disulfide	75-15-0	< 5	5	1	1
11997	Carbon Tetrachloride	56-23-5	< 1	1	0.5	1
11997	Chlorobenzene	108-90-7	< 1	1	0.5	1
11997	Chloroethane	75-00-3	< 1	1	0.5	1
11997	Chloroform	67-66-3	< 1	1	0.5	1
11997	Chloromethane	74-87-3	< 1	1	0.5	1
11997	Cyclohexane	110-82-7	< 5	5	2	1
11997	1,2-Dibromo-3-chloropropane	96-12-8	< 5	5	2	1
11997	Dibromochloromethane	124-48-1	< 1	1	0.5	1
11997	1,2-Dibromoethane	106-93-4	< 1	1	0.5	1
11997	1,2-Dichlorobenzene	95-50-1	< 5	5	1	1
11997	1,3-Dichlorobenzene	541-73-1	< 5	5	1	1
11997	1,4-Dichlorobenzene	106-46-7	< 5	5	1	1
11997	Dichlorodifluoromethane	75-71-8	< 1	1	0.5	1
11997	1,1-Dichloroethane	75-34-3	< 1	1	0.5	1
11997	1,2-Dichloroethane	107-06-2	< 1	1	0.5	1
11997	1,1-Dichloroethene	75-35-4	< 1	1	0.5	1
11997	cis-1,2-Dichloroethene	156-59-2	27	1	0.5	1
11997	trans-1,2-Dichloroethene	156-60-5	< 1	1	0.5	1
11997	1,2-Dichloropropane	78-87-5	< 1	1	0.5	1
11997	cis-1,3-Dichloropropene	10061-01-5	< 1	1	0.5	1
11997	trans-1,3-Dichloropropene	10061-02-6	< 1	1	0.5	1
11997	Ethylbenzene	100-41-4	< 1	1	0.5	1
11997	Freon 113	76-13-1	< 10	10	2	1
11997	4-Methyl-2-pentanone	108-10-1	< 10	10	3	1
11997	Methylcyclohexane	108-87-2	< 5	5	1	1
11997	Methylene Chloride	75-09-2	< 1	1	0.5	1
11997	Styrene	100-42-5	< 5	5	1	1
11997	1,1,1,2-Tetrachloroethane	79-34-5	< 1	1	0.5	1
11997	Tetrachloroethene	127-18-4	5	1	0.5	1
11997	Toluene	108-88-3	< 1	1	0.5	1
11997	1,2,4-Trichlorobenzene	120-82-1	< 5	5	1	1
11997	1,1,1-Trichloroethane	71-55-6	< 1	1	0.5	1
11997	1,1,2-Trichloroethane	79-00-5	< 1	1	0.5	1
11997	Trichloroethene	79-01-6	2	1	0.5	1
11997	Trichlorofluoromethane	75-69-4	< 1	1	0.5	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-02-0318 Grab Groundwater
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513404
ELLE Group #: 1921499
Matrix: Groundwater

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/16/2018 10:45

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Volatiles						
SW-846 8260C			ug/l	ug/l	ug/l	
11997	Vinyl Chloride	75-01-4	< 1	1	0.5	1
11997	Xylene (Total)	1330-20-7	< 1	1	0.5	1

Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.

A Method Detection Limit (MDL) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The MDL standard shows adequate sensitivity at or below the reporting limit.

GC/MS Semivolatiles						
SW-846 8270D			ug/l	ug/l	ug/l	
14241	Acetophenone	98-86-2	< 1	1	0.5	1
14241	Butylbenzylphthalate	85-68-7	< 5	5	2	1
14241	Di-n-butylphthalate	84-74-2	< 5	5	2	1
14241	4-Chloroaniline	106-47-8	< 4	4	2	1
14241	bis(2-Chloroethyl)ether	111-44-4	< 1	1	0.5	1
14241	bis(2-Chloroisopropyl)ether	39638-32-9	< 1	1	0.5	1
Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
14241	2-Chlorophenol	95-57-8	< 1	1	0.5	1
14241	2,2'-oxybis(1-Chloropropane)	108-60-1	< 1	1	0.5	1
Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
14241	3,3'-Dichlorobenzidine	91-94-1	< 5	5	2	1
14241	2,4-Dichlorophenol	120-83-2	< 1	1	0.5	1
14241	Diethylphthalate	84-66-2	< 5	5	2	1
14241	2,4-Dimethylphenol	105-67-9	< 1	1	0.5	1
14241	Dimethylphthalate	131-11-3	< 5	5	2	1
14241	2,4-Dinitrophenol	51-28-5	< 31	31	10	1
14241	2,4-Dinitrotoluene	121-14-2	< 5	5	1	1
14241	bis(2-Ethylhexyl)phthalate	117-81-7	< 5	5	2	1
14241	Hexachlorobenzene	118-74-1	< 0.5	0.5	0.1	1
14241	Hexachlorobutadiene	87-68-3	< 1	1	0.5	1
14241	Hexachlorocyclopentadiene	77-47-4	< 15	15	5	1
14241	Hexachloroethane	67-72-1	< 5	5	1	1
14241	Isophorone	78-59-1	< 1	1	0.5	1
14241	4-Methylphenol	106-44-5	< 1	1	0.5	1
3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
14241	Nitrobenzene	98-95-3	< 1	1	0.5	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-02-0318 Grab Groundwater
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513404
ELLE Group #: 1921499
Matrix: Groundwater

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/16/2018 10:45

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Semivolatiles		SW-846 8270D	ug/l	ug/l	ug/l	
14241	2-Nitrophenol	88-75-5	< 1	1	0.5	1
14241	4-Nitrophenol	100-02-7	< 31	31	10	1
14241	N-Nitroso-di-n-propylamine	621-64-7	< 1	1	0.5	1
14241	N-Nitrosodiphenylamine	86-30-6	< 1	1	0.5	1
N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
14241	Di-n-octylphthalate	117-84-0	< 5	5	2	1
14241	Pentachlorophenol	87-86-5	< 5	5	1	1
14241	Phenol	108-95-2	< 1	1	0.5	1
14241	2,4,5-Trichlorophenol	95-95-4	< 1	1	0.5	1
14241	2,4,6-Trichlorophenol	88-06-2	< 1	1	0.5	1

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following action was taken:

The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial.

GC/MS Semivolatiles	SW-846 8270D SIM	ug/l	ug/l	ug/l		
14244	Acenaphthene	83-32-9	< 0.05	0.05	0.01	1
14244	Acenaphthylene	208-96-8	< 0.05	0.05	0.01	1
14244	Anthracene	120-12-7	< 0.05	0.05	0.01	1
14244	Benzo(a)anthracene	56-55-3	< 0.05	0.05	0.01	1
14244	Benzo(a)pyrene	50-32-8	< 0.05	0.05	0.01	1
14244	Benzo(b)fluoranthene	205-99-2	< 0.05	0.05	0.01	1
14244	Benzo(g,h,i)perylene	191-24-2	< 0.05	0.05	0.01	1
14244	Benzo(k)fluoranthene	207-08-9	< 0.05	0.05	0.01	1
14244	Chrysene	218-01-9	< 0.05	0.05	0.01	1
14244	Dibenz(a,h)anthracene	53-70-3	< 0.05	0.05	0.01	1
14244	Fluoranthene	206-44-0	< 0.05	0.05	0.01	1
14244	Fluorene	86-73-7	< 0.05	0.05	0.01	1
14244	Indeno(1,2,3-cd)pyrene	193-39-5	< 0.05	0.05	0.01	1
14244	2-Methylnaphthalene	91-57-6	< 0.05	0.05	0.01	1
14244	Naphthalene	91-20-3	< 0.06	0.06	0.03	1
14244	Phenanthrene	85-01-8	< 0.06	0.06	0.03	1
14244	Pyrene	129-00-0	< 0.05	0.05	0.01	1

Explosives	SW-846 8330B Rev.2 Oct. 2006	ug/l	ug/l	ug/l		
13395	1,3-Dinitrobenzene	99-65-0	< 0.60	0.60	0.11	1
13395	2,4-Dinitrotoluene	121-14-2	< 0.60	0.60	0.24	1
13395	Nitrobenzene	98-95-3	< 0.90	0.90	0.20	1
13395	4-Nitrotoluene	99-99-0	< 0.70	0.70	0.26	1
13395	1,3,5-Trinitrobenzene	99-35-4	< 0.60	0.60	0.20	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-02-0318 Grab Groundwater
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513404
ELLE Group #: 1921499
Matrix: Groundwater

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/16/2018 10:45

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
PCBs		SW-846 8082A	ug/l	ug/l	ug/l	
10591	PCB-1016	12674-11-2	< 0.41 D1	0.41	0.025	1
10591	PCB-1221	11104-28-2	< 0.41 D1	0.41	0.025	1
10591	PCB-1232	11141-16-5	< 0.41 D1	0.41	0.025	1
10591	PCB-1242	53469-21-9	< 0.41 D1	0.41	0.025	1
10591	PCB-1248	12672-29-6	< 0.41 D2	0.41	0.025	1
10591	PCB-1254	11097-69-1	< 0.41 D2	0.41	0.025	1
10591	PCB-1260	11096-82-5	< 0.41 D1	0.41	0.025	1
Metals		SW-846 6020A	mg/l	mg/l	mg/l	
06024	Antimony	7440-36-0	< 0.0020	0.0020	0.00045	1
06025	Arsenic	7440-38-2	< 0.0040	0.0040	0.00072	1
06026	Barium	7440-39-3	0.107	0.0040	0.00072	1
06027	Beryllium	7440-41-7	< 0.0010	0.0010	0.000071	1
06028	Cadmium	7440-43-9	< 0.0010	0.0010	0.00015	1
06031	Chromium	7440-47-3	0.0080	0.0040	0.00087	1
06033	Copper	7440-50-8	0.0114	0.0040	0.00054	1
06035	Lead	7439-92-1	0.0040	0.0020	0.00011	1
06039	Nickel	7440-02-0	0.0079	0.0040	0.0010	1
06041	Selenium	7782-49-2	< 0.0040	0.0040	0.00050	1
06042	Silver	7440-22-4	< 0.0010	0.0010	0.00015	1
06045	Thallium	7440-28-0	< 0.0010	0.0010	0.00012	1
06049	Zinc	7440-66-6	0.0627	0.0300	0.0039	1
		SW-846 7470A	mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	< 0.00020	0.00020	0.000050	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11997	VOCs- 5ml Water by 8260C	SW-846 8260C	1	L180873AA	03/29/2018 05:10	Don V Viray	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	L180873AA	03/29/2018 05:10	Don V Viray	1
14241	SVOAs 8270D MINI	SW-846 8270D	1	18082WAG026	03/26/2018 12:43	Edward C Monborne	1
14244	PAHs by 8270D SIM	SW-846 8270D SIM	1	18082WAF026	03/26/2018 18:12	Brandon K Cordova	1
10466	BNA Water Extraction SIM	SW-846 3510C	1	18082WAF026	03/23/2018 17:00	Oswaldo R Sanchez	1
11010	8270D BNA Extraction	SW-846 3510C	1	18082WAG026	03/23/2018 17:00	Oswaldo R Sanchez	1
13395	Nitroaromatics/Amines 8330B(w)	SW-846 8330B Rev.2 Oct. 2006	1	180820001A	04/05/2018 05:56	Jessica L Miller	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-02-0318 Grab Groundwater
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513404
ELLE Group #: 1921499
Matrix: Groundwater

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/16/2018 10:45

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10591	PCBs in Water by 8082A	SW-846 8082A	1	180810043A	03/25/2018 21:39	Kirby B Turner	1
11121	PCB Waters Update IV Ext	SW-846 3510C	1	180810043A	03/23/2018 08:00	Kayla A Yuditsky	1
13432	Nitroaromatic/Amine Ext 8330B	SW-846 8330B Rev.2 Oct. 2006	1	180820001A	03/23/2018 14:15	Edwin Ortiz	1
06024	Antimony	SW-846 6020A	2	180931063903A	04/04/2018 09:44	Choon Y Tian	1
06025	Arsenic	SW-846 6020A	2	180931063903A	04/04/2018 09:44	Choon Y Tian	1
06026	Barium	SW-846 6020A	2	180931063903D	04/04/2018 09:44	Choon Y Tian	1
06027	Beryllium	SW-846 6020A	2	180931063903A	04/04/2018 09:44	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	2	180931063903A	04/04/2018 09:44	Choon Y Tian	1
06031	Chromium	SW-846 6020A	2	180931063903A	04/04/2018 09:44	Choon Y Tian	1
06033	Copper	SW-846 6020A	2	180931063903A	04/04/2018 09:44	Choon Y Tian	1
06035	Lead	SW-846 6020A	2	180931063903A	04/04/2018 09:44	Choon Y Tian	1
06039	Nickel	SW-846 6020A	1	180931063903A	04/04/2018 09:44	Choon Y Tian	1
06041	Selenium	SW-846 6020A	2	180931063903B	04/05/2018 13:24	Patrick J Engle	1
06042	Silver	SW-846 6020A	2	180931063903A	04/04/2018 09:44	Choon Y Tian	1
06045	Thallium	SW-846 6020A	2	180931063903A	04/04/2018 09:44	Choon Y Tian	1
06049	Zinc	SW-846 6020A	2	180931063903A	04/04/2018 09:44	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	180820571308	03/27/2018 08:57	Damary Valentin	1
10639	ICPMS - Water, 3020A - U4	SW-846 3020A	1	180821063908	03/26/2018 06:05	James L Mertz	1
10639	ICPMS - Water, 3020A - U4	SW-846 3020A	2	180931063903	04/03/2018 22:25	Denise L Trimby	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	180820571308	03/26/2018 17:45	JoElla L Rice	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-04-0318 Grab Groundwater
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513405
ELLE Group #: 1921499
Matrix: Groundwater

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/16/2018 13:25

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Volatiles						
		SW-846 8260C	ug/l	ug/l	ug/l	
11997	Acetone	67-64-1	< 20	20	6	1
11997	Benzene	71-43-2	< 1	1	0.5	1
11997	Bromodichloromethane	75-27-4	< 1	1	0.5	1
11997	Bromoform	75-25-2	< 4	4	0.5	1
11997	Bromomethane	74-83-9	< 1	1	0.5	1
11997	2-Butanone	78-93-3	< 10	10	3	1
11997	Carbon Disulfide	75-15-0	< 5	5	1	1
11997	Carbon Tetrachloride	56-23-5	< 1	1	0.5	1
11997	Chlorobenzene	108-90-7	< 1	1	0.5	1
11997	Chloroethane	75-00-3	< 1	1	0.5	1
11997	Chloroform	67-66-3	< 1	1	0.5	1
11997	Chloromethane	74-87-3	< 1	1	0.5	1
11997	Cyclohexane	110-82-7	< 5	5	2	1
11997	1,2-Dibromo-3-chloropropane	96-12-8	< 5	5	2	1
11997	Dibromochloromethane	124-48-1	< 1	1	0.5	1
11997	1,2-Dibromoethane	106-93-4	< 1	1	0.5	1
11997	1,2-Dichlorobenzene	95-50-1	< 5	5	1	1
11997	1,3-Dichlorobenzene	541-73-1	< 5	5	1	1
11997	1,4-Dichlorobenzene	106-46-7	< 5	5	1	1
11997	Dichlorodifluoromethane	75-71-8	< 1	1	0.5	1
11997	1,1-Dichloroethane	75-34-3	< 1	1	0.5	1
11997	1,2-Dichloroethane	107-06-2	< 1	1	0.5	1
11997	1,1-Dichloroethene	75-35-4	< 1	1	0.5	1
11997	cis-1,2-Dichloroethene	156-59-2	24	1	0.5	1
11997	trans-1,2-Dichloroethene	156-60-5	< 1	1	0.5	1
11997	1,2-Dichloropropane	78-87-5	< 1	1	0.5	1
11997	cis-1,3-Dichloropropene	10061-01-5	< 1	1	0.5	1
11997	trans-1,3-Dichloropropene	10061-02-6	< 1	1	0.5	1
11997	Ethylbenzene	100-41-4	< 1	1	0.5	1
11997	Freon 113	76-13-1	< 10	10	2	1
11997	4-Methyl-2-pentanone	108-10-1	< 10	10	3	1
11997	Methylcyclohexane	108-87-2	< 5	5	1	1
11997	Methylene Chloride	75-09-2	< 1	1	0.5	1
11997	Styrene	100-42-5	< 5	5	1	1
11997	1,1,1,2-Tetrachloroethane	79-34-5	< 1	1	0.5	1
11997	Tetrachloroethene	127-18-4	7	1	0.5	1
11997	Toluene	108-88-3	< 1	1	0.5	1
11997	1,2,4-Trichlorobenzene	120-82-1	< 5	5	1	1
11997	1,1,1-Trichloroethane	71-55-6	< 1	1	0.5	1
11997	1,1,2-Trichloroethane	79-00-5	< 1	1	0.5	1
11997	Trichloroethene	79-01-6	2	1	0.5	1
11997	Trichlorofluoromethane	75-69-4	< 1	1	0.5	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-04-0318 Grab Groundwater
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513405
ELLE Group #: 1921499
Matrix: Groundwater

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/16/2018 13:25

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Volatiles						
		SW-846 8260C	ug/l	ug/l	ug/l	
11997	Vinyl Chloride	75-01-4	< 1	1	0.5	1
11997	Xylene (Total)	1330-20-7	< 1	1	0.5	1

Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.

A Method Detection Limit (MDL) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The MDL standard shows adequate sensitivity at or below the reporting limit.

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Semivolatiles						
		SW-846 8270D	ug/l	ug/l	ug/l	
14241	Acetophenone	98-86-2	< 1	1	0.5	1
14241	Butylbenzylphthalate	85-68-7	< 5	5	2	1
14241	Di-n-butylphthalate	84-74-2	< 5	5	2	1
14241	4-Chloroaniline	106-47-8	< 4	4	2	1
14241	bis(2-Chloroethyl)ether	111-44-4	< 1	1	0.5	1
14241	bis(2-Chloroisopropyl)ether	39638-32-9	< 1	1	0.5	1
Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
14241	2-Chlorophenol	95-57-8	< 1	1	0.5	1
14241	2,2'-oxybis(1-Chloropropane)	108-60-1	< 1	1	0.5	1
Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
14241	3,3'-Dichlorobenzidine	91-94-1	< 5	5	2	1
14241	2,4-Dichlorophenol	120-83-2	< 1	1	0.5	1
14241	Diethylphthalate	84-66-2	< 5	5	2	1
14241	2,4-Dimethylphenol	105-67-9	< 1	1	0.5	1
14241	Dimethylphthalate	131-11-3	< 5	5	2	1
14241	2,4-Dinitrophenol	51-28-5	< 31	31	10	1
14241	2,4-Dinitrotoluene	121-14-2	< 5	5	1	1
14241	bis(2-Ethylhexyl)phthalate	117-81-7	< 5	5	2	1
14241	Hexachlorobenzene	118-74-1	< 0.5	0.5	0.1	1
14241	Hexachlorobutadiene	87-68-3	< 1	1	0.5	1
14241	Hexachlorocyclopentadiene	77-47-4	< 15	15	5	1
14241	Hexachloroethane	67-72-1	< 5	5	1	1
14241	Isophorone	78-59-1	< 1	1	0.5	1
14241	4-Methylphenol	106-44-5	< 1	1	0.5	1
3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
14241	Nitrobenzene	98-95-3	< 1	1	0.5	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-04-0318 Grab Groundwater
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513405
ELLE Group #: 1921499
Matrix: Groundwater

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/16/2018 13:25

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Semivolatiles SW-846 8270D						
14241	2-Nitrophenol	88-75-5	< 1	1	0.5	1
14241	4-Nitrophenol	100-02-7	< 31	31	10	1
14241	N-Nitroso-di-n-propylamine	621-64-7	< 1	1	0.5	1
14241	N-Nitrosodiphenylamine	86-30-6	< 1	1	0.5	1
N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
14241	Di-n-octylphthalate	117-84-0	< 5	5	2	1
14241	Pentachlorophenol	87-86-5	< 5	5	1	1
14241	Phenol	108-95-2	< 1	1	0.5	1
14241	2,4,5-Trichlorophenol	95-95-4	< 1	1	0.5	1
14241	2,4,6-Trichlorophenol	88-06-2	< 1	1	0.5	1
GC/MS Semivolatiles SW-846 8270D SIM						
14244	Acenaphthene	83-32-9	< 0.05	0.05	0.01	1
14244	Acenaphthylene	208-96-8	< 0.05	0.05	0.01	1
14244	Anthracene	120-12-7	< 0.05	0.05	0.01	1
14244	Benzo(a)anthracene	56-55-3	< 0.05	0.05	0.01	1
14244	Benzo(a)pyrene	50-32-8	< 0.05	0.05	0.01	1
14244	Benzo(b)fluoranthene	205-99-2	< 0.05	0.05	0.01	1
14244	Benzo(g,h,i)perylene	191-24-2	< 0.05	0.05	0.01	1
14244	Benzo(k)fluoranthene	207-08-9	< 0.05	0.05	0.01	1
14244	Chrysene	218-01-9	< 0.05	0.05	0.01	1
14244	Dibenz(a,h)anthracene	53-70-3	< 0.05	0.05	0.01	1
14244	Fluoranthene	206-44-0	< 0.05	0.05	0.01	1
14244	Fluorene	86-73-7	< 0.05	0.05	0.01	1
14244	Indeno(1,2,3-cd)pyrene	193-39-5	< 0.05	0.05	0.01	1
14244	2-Methylnaphthalene	91-57-6	< 0.05	0.05	0.01	1
14244	Naphthalene	91-20-3	< 0.06	0.06	0.03	1
14244	Phenanthrene	85-01-8	< 0.06	0.06	0.03	1
14244	Pyrene	129-00-0	< 0.05	0.05	0.01	1
Explosives SW-846 8330B Rev.2 Oct. 2006						
13395	1,3-Dinitrobenzene	99-65-0	< 0.60	0.60	0.11	1
13395	2,4-Dinitrotoluene	121-14-2	< 0.60	0.60	0.24	1
13395	Nitrobenzene	98-95-3	< 0.90	0.90	0.20	1
13395	4-Nitrotoluene	99-99-0	< 0.70	0.70	0.26	1
13395	1,3,5-Trinitrobenzene	99-35-4	< 0.60	0.60	0.20	1
PCBs SW-846 8082A						
10591	PCB-1016	12674-11-2	< 0.41 D1	0.41	0.024	1
10591	PCB-1221	11104-28-2	< 0.41 D1	0.41	0.024	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-04-0318 Grab Groundwater
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513405
ELLE Group #: 1921499
Matrix: Groundwater

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/16/2018 13:25

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
PCBs			SW-846 8082A	ug/l	ug/l	
10591	PCB-1232	11141-16-5	< 0.41 D1	0.41	0.024	1
10591	PCB-1242	53469-21-9	< 0.41 D1	0.41	0.024	1
10591	PCB-1248	12672-29-6	< 0.41 D1	0.41	0.024	1
10591	PCB-1254	11097-69-1	< 0.41 D1	0.41	0.024	1
10591	PCB-1260	11096-82-5	< 0.41 D1	0.41	0.024	1
Metals			SW-846 6020A	mg/l	mg/l	
06024	Antimony	7440-36-0	< 0.0020	0.0020	0.00045	1
06025	Arsenic	7440-38-2	< 0.0040	0.0040	0.00072	1
06026	Barium	7440-39-3	0.0588	0.0040	0.00072	1
06027	Beryllium	7440-41-7	< 0.0010	0.0010	0.000071	1
06028	Cadmium	7440-43-9	< 0.0010	0.0010	0.00015	1
06031	Chromium	7440-47-3	< 0.0040	0.0040	0.00087	1
06033	Copper	7440-50-8	< 0.0040	0.0040	0.00054	1
06035	Lead	7439-92-1	< 0.0020	0.0020	0.00011	1
06039	Nickel	7440-02-0	< 0.0040	0.0040	0.0010	1
06041	Selenium	7782-49-2	< 0.0040	0.0040	0.00050	1
06042	Silver	7440-22-4	< 0.0010	0.0010	0.00015	1
06045	Thallium	7440-28-0	< 0.0010	0.0010	0.00012	1
06049	Zinc	7440-66-6	0.0459	0.0300	0.0039	1
			SW-846 7470A	mg/l	mg/l	
00259	Mercury	7439-97-6	< 0.00020	0.00020	0.000050	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11997	VOCs- 5ml Water by 8260C	SW-846 8260C	1	L180873AA	03/29/2018 05:31	Don V Viray	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	L180873AA	03/29/2018 05:31	Don V Viray	1
14241	SVOAs 8270D MINI	SW-846 8270D	1	18080WAB026	03/26/2018 00:04	Holly B Ziegler	1
14244	PAHs by 8270D SIM	SW-846 8270D SIM	1	18080WAA026	03/23/2018 22:12	Brandon K Cordova	1
10466	BNA Water Extraction SIM	SW-846 3510C	1	18080WAA026	03/22/2018 17:00	Oswaldo R Sanchez	1
11010	8270D BNA Extraction	SW-846 3510C	1	18080WAB026	03/22/2018 17:00	Oswaldo R Sanchez	1
13395	Nitroaromatics/Amines 8330B(w)	SW-846 8330B Rev.2 Oct. 2006	1	180800006A	04/04/2018 23:48	Jessica L Miller	1
10591	PCBs in Water by 8082A	SW-846 8082A	1	180810008A	03/25/2018 19:01	Kirby B Turner	1
11121	PCB Waters Update IV Ext	SW-846 3510C	1	180810008A	03/22/2018 16:55	Kate E Lutte	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-04-0318 Grab Groundwater
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513405
ELLE Group #: 1921499
Matrix: Groundwater

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/16/2018 13:25

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13432	Nitroaromatic/Amine Ext 8330B	SW-846 8330B Rev.2 Oct. 2006	1	180800006A	03/22/2018 13:00	Olivia Arosemena	1
06024	Antimony	SW-846 6020A	1	180811063901A	03/29/2018 10:04	Patrick J Engle	1
06025	Arsenic	SW-846 6020A	1	180811063901A	03/29/2018 10:04	Patrick J Engle	1
06026	Barium	SW-846 6020A	1	180811063901D	03/29/2018 10:04	Patrick J Engle	1
06027	Beryllium	SW-846 6020A	1	180811063901A	03/29/2018 10:04	Patrick J Engle	1
06028	Cadmium	SW-846 6020A	1	180811063901A	03/29/2018 10:04	Patrick J Engle	1
06031	Chromium	SW-846 6020A	1	180811063901A	03/29/2018 10:04	Patrick J Engle	1
06033	Copper	SW-846 6020A	1	180811063901A	03/29/2018 10:04	Patrick J Engle	1
06035	Lead	SW-846 6020A	1	180811063901A	03/29/2018 10:04	Patrick J Engle	1
06039	Nickel	SW-846 6020A	1	180811063901A	03/29/2018 10:04	Patrick J Engle	1
06041	Selenium	SW-846 6020A	1	180811063901B	03/29/2018 10:04	Patrick J Engle	1
06042	Silver	SW-846 6020A	1	180811063901A	03/29/2018 10:04	Patrick J Engle	1
06045	Thallium	SW-846 6020A	1	180811063901A	03/29/2018 10:04	Patrick J Engle	1
06049	Zinc	SW-846 6020A	1	180811063901A	03/29/2018 10:04	Patrick J Engle	1
00259	Mercury	SW-846 7470A	1	180810571305	03/24/2018 09:19	Damary Valentin	1
10639	ICPMS - Water, 3020A - U4	SW-846 3020A	1	180811063901	03/22/2018 22:35	Denise L Trimby	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	180810571305	03/23/2018 18:40	Barbara A Kane	1

*=This limit was used in the evaluation of the final result

Sample Description: DUP-WG-01-0318 Grab Groundwater
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513406
ELLE Group #: 1921499
Matrix: Groundwater

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/16/2018 12:00

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Volatiles						
		SW-846 8260C	ug/l	ug/l	ug/l	
11997	Acetone	67-64-1	< 20	20	6	1
11997	Benzene	71-43-2	< 1	1	0.5	1
11997	Bromodichloromethane	75-27-4	< 1	1	0.5	1
11997	Bromoform	75-25-2	< 4	4	0.5	1
11997	Bromomethane	74-83-9	< 1	1	0.5	1
11997	2-Butanone	78-93-3	< 10	10	3	1
11997	Carbon Disulfide	75-15-0	< 5	5	1	1
11997	Carbon Tetrachloride	56-23-5	< 1	1	0.5	1
11997	Chlorobenzene	108-90-7	< 1	1	0.5	1
11997	Chloroethane	75-00-3	< 1	1	0.5	1
11997	Chloroform	67-66-3	< 1	1	0.5	1
11997	Chloromethane	74-87-3	< 1	1	0.5	1
11997	Cyclohexane	110-82-7	< 5	5	2	1
11997	1,2-Dibromo-3-chloropropane	96-12-8	< 5	5	2	1
11997	Dibromochloromethane	124-48-1	< 1	1	0.5	1
11997	1,2-Dibromoethane	106-93-4	< 1	1	0.5	1
11997	1,2-Dichlorobenzene	95-50-1	< 5	5	1	1
11997	1,3-Dichlorobenzene	541-73-1	< 5	5	1	1
11997	1,4-Dichlorobenzene	106-46-7	< 5	5	1	1
11997	Dichlorodifluoromethane	75-71-8	< 1	1	0.5	1
11997	1,1-Dichloroethane	75-34-3	< 1	1	0.5	1
11997	1,2-Dichloroethane	107-06-2	< 1	1	0.5	1
11997	1,1-Dichloroethene	75-35-4	< 1	1	0.5	1
11997	cis-1,2-Dichloroethene	156-59-2	23	1	0.5	1
11997	trans-1,2-Dichloroethene	156-60-5	< 1	1	0.5	1
11997	1,2-Dichloropropane	78-87-5	< 1	1	0.5	1
11997	cis-1,3-Dichloropropene	10061-01-5	< 1	1	0.5	1
11997	trans-1,3-Dichloropropene	10061-02-6	< 1	1	0.5	1
11997	Ethylbenzene	100-41-4	< 1	1	0.5	1
11997	Freon 113	76-13-1	< 10	10	2	1
11997	4-Methyl-2-pentanone	108-10-1	< 10	10	3	1
11997	Methylcyclohexane	108-87-2	< 5	5	1	1
11997	Methylene Chloride	75-09-2	< 1	1	0.5	1
11997	Styrene	100-42-5	< 5	5	1	1
11997	1,1,1,2-Tetrachloroethane	79-34-5	< 1	1	0.5	1
11997	Tetrachloroethene	127-18-4	7	1	0.5	1
11997	Toluene	108-88-3	< 1	1	0.5	1
11997	1,2,4-Trichlorobenzene	120-82-1	< 5	5	1	1
11997	1,1,1-Trichloroethane	71-55-6	< 1	1	0.5	1
11997	1,1,2-Trichloroethane	79-00-5	< 1	1	0.5	1
11997	Trichloroethene	79-01-6	2	1	0.5	1
11997	Trichlorofluoromethane	75-69-4	< 1	1	0.5	1

*=This limit was used in the evaluation of the final result

Sample Description: DUP-WG-01-0318 Grab Groundwater
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513406
ELLE Group #: 1921499
Matrix: Groundwater

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/16/2018 12:00

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Volatiles						
		SW-846 8260C	ug/l	ug/l	ug/l	
11997	Vinyl Chloride	75-01-4	< 1	1	0.5	1
11997	Xylene (Total)	1330-20-7	< 1	1	0.5	1

Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.

A Method Detection Limit (MDL) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The MDL standard shows adequate sensitivity at or below the reporting limit.

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Semivolatiles						
		SW-846 8270D	ug/l	ug/l	ug/l	
14241	Acetophenone	98-86-2	< 1	1	0.5	1
14241	Butylbenzylphthalate	85-68-7	< 5	5	2	1
14241	Di-n-butylphthalate	84-74-2	< 5	5	2	1
14241	4-Chloroaniline	106-47-8	< 4	4	2	1
14241	bis(2-Chloroethyl)ether	111-44-4	< 1	1	0.5	1
14241	bis(2-Chloroisopropyl)ether	39638-32-9	< 1	1	0.5	1
Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
14241	2-Chlorophenol	95-57-8	< 1	1	0.5	1
14241	2,2'-oxybis(1-Chloropropane)	108-60-1	< 1	1	0.5	1
Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
14241	3,3'-Dichlorobenzidine	91-94-1	< 5	5	2	1
14241	2,4-Dichlorophenol	120-83-2	< 1	1	0.5	1
14241	Diethylphthalate	84-66-2	< 5	5	2	1
14241	2,4-Dimethylphenol	105-67-9	< 1	1	0.5	1
14241	Dimethylphthalate	131-11-3	< 5	5	2	1
14241	2,4-Dinitrophenol	51-28-5	< 30	30	10	1
14241	2,4-Dinitrotoluene	121-14-2	< 5	5	1	1
14241	bis(2-Ethylhexyl)phthalate	117-81-7	< 5	5	2	1
14241	Hexachlorobenzene	118-74-1	< 0.5	0.5	0.1	1
14241	Hexachlorobutadiene	87-68-3	< 1	1	0.5	1
14241	Hexachlorocyclopentadiene	77-47-4	< 15	15	5	1
14241	Hexachloroethane	67-72-1	< 5	5	1	1
14241	Isophorone	78-59-1	< 1	1	0.5	1
14241	4-Methylphenol	106-44-5	< 1	1	0.5	1
3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
14241	Nitrobenzene	98-95-3	< 1	1	0.5	1

*=This limit was used in the evaluation of the final result

Sample Description: DUP-WG-01-0318 Grab Groundwater
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513406
ELLE Group #: 1921499
Matrix: Groundwater

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/16/2018 12:00

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Semivolatiles SW-846 8270D						
14241	2-Nitrophenol	88-75-5	< 1	1	0.5	1
14241	4-Nitrophenol	100-02-7	< 30	30	10	1
14241	N-Nitroso-di-n-propylamine	621-64-7	< 1	1	0.5	1
14241	N-Nitrosodiphenylamine	86-30-6	< 1	1	0.5	1
N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
14241	Di-n-octylphthalate	117-84-0	< 5	5	2	1
14241	Pentachlorophenol	87-86-5	< 5	5	1	1
14241	Phenol	108-95-2	< 1	1	0.5	1
14241	2,4,5-Trichlorophenol	95-95-4	< 1	1	0.5	1
14241	2,4,6-Trichlorophenol	88-06-2	< 1	1	0.5	1
GC/MS Semivolatiles SW-846 8270D SIM						
14244	Acenaphthene	83-32-9	< 0.05	0.05	0.01	1
14244	Acenaphthylene	208-96-8	< 0.05	0.05	0.01	1
14244	Anthracene	120-12-7	< 0.05	0.05	0.01	1
14244	Benzo(a)anthracene	56-55-3	< 0.05	0.05	0.01	1
14244	Benzo(a)pyrene	50-32-8	< 0.05	0.05	0.01	1
14244	Benzo(b)fluoranthene	205-99-2	< 0.05	0.05	0.01	1
14244	Benzo(g,h,i)perylene	191-24-2	< 0.05	0.05	0.01	1
14244	Benzo(k)fluoranthene	207-08-9	< 0.05	0.05	0.01	1
14244	Chrysene	218-01-9	< 0.05	0.05	0.01	1
14244	Dibenz(a,h)anthracene	53-70-3	< 0.05	0.05	0.01	1
14244	Fluoranthene	206-44-0	< 0.05	0.05	0.01	1
14244	Fluorene	86-73-7	< 0.05	0.05	0.01	1
14244	Indeno(1,2,3-cd)pyrene	193-39-5	< 0.05	0.05	0.01	1
14244	2-Methylnaphthalene	91-57-6	< 0.05	0.05	0.01	1
14244	Naphthalene	91-20-3	< 0.06	0.06	0.03	1
14244	Phenanthrene	85-01-8	< 0.06	0.06	0.03	1
14244	Pyrene	129-00-0	< 0.05	0.05	0.01	1
Explosives SW-846 8330B Rev.2 Oct. 2006						
13395	1,3-Dinitrobenzene	99-65-0	< 0.60	0.60	0.11	1
13395	2,4-Dinitrotoluene	121-14-2	< 0.60	0.60	0.24	1
13395	Nitrobenzene	98-95-3	< 0.90	0.90	0.20	1
13395	4-Nitrotoluene	99-99-0	< 0.70	0.70	0.26	1
13395	1,3,5-Trinitrobenzene	99-35-4	< 0.60	0.60	0.20	1
PCBs SW-846 8082A						
10591	PCB-1016	12674-11-2	< 0.41 D1	0.41	0.024	1
10591	PCB-1221	11104-28-2	< 0.41 D1	0.41	0.024	1

*=This limit was used in the evaluation of the final result

Sample Description: DUP-WG-01-0318 Grab Groundwater
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513406
ELLE Group #: 1921499
Matrix: Groundwater

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/16/2018 12:00

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
PCBs			SW-846 8082A	ug/l	ug/l	
10591	PCB-1232	11141-16-5	< 0.41 D1	0.41	0.024	1
10591	PCB-1242	53469-21-9	< 0.41 D1	0.41	0.024	1
10591	PCB-1248	12672-29-6	< 0.41 D1	0.41	0.024	1
10591	PCB-1254	11097-69-1	< 0.41 D1	0.41	0.024	1
10591	PCB-1260	11096-82-5	< 0.41 D1	0.41	0.024	1
Metals			SW-846 6020A	mg/l	mg/l	
06024	Antimony	7440-36-0	< 0.0020	0.0020	0.00045	1
06025	Arsenic	7440-38-2	< 0.0040	0.0040	0.00072	1
06026	Barium	7440-39-3	0.0558	0.0040	0.00072	1
06027	Beryllium	7440-41-7	< 0.0010	0.0010	0.000071	1
06028	Cadmium	7440-43-9	< 0.0010	0.0010	0.00015	1
06031	Chromium	7440-47-3	< 0.0040	0.0040	0.00087	1
06033	Copper	7440-50-8	< 0.0040	0.0040	0.00054	1
06035	Lead	7439-92-1	< 0.0020	0.0020	0.00011	1
06039	Nickel	7440-02-0	< 0.0040	0.0040	0.0010	1
06041	Selenium	7782-49-2	< 0.0040	0.0040	0.00050	1
06042	Silver	7440-22-4	< 0.0010	0.0010	0.00015	1
06045	Thallium	7440-28-0	< 0.0010	0.0010	0.00012	1
06049	Zinc	7440-66-6	0.0468	0.0300	0.0039	1
			SW-846 7470A	mg/l	mg/l	
00259	Mercury	7439-97-6	< 0.00020	0.00020	0.000050	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11997	VOCs- 5ml Water by 8260C	SW-846 8260C	1	L180873AA	03/29/2018 05:53	Don V Viray	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	L180873AA	03/29/2018 05:53	Don V Viray	1
14241	SVOAs 8270D MINI	SW-846 8270D	1	18080WAB026	03/26/2018 00:32	Holly B Ziegler	1
14244	PAHs by 8270D SIM	SW-846 8270D SIM	1	18080WAA026	03/26/2018 12:12	Edward C Monborne	1
10466	BNA Water Extraction SIM	SW-846 3510C	1	18080WAA026	03/22/2018 17:00	Oswaldo R Sanchez	1
11010	8270D BNA Extraction	SW-846 3510C	1	18080WAB026	03/22/2018 17:00	Oswaldo R Sanchez	1
13395	Nitroaromatics/Amines 8330B(w)	SW-846 8330B Rev.2 Oct. 2006	1	180800006A	04/05/2018 00:25	Jessica L Miller	1
10591	PCBs in Water by 8082A	SW-846 8082A	1	180810008A	03/25/2018 19:12	Kirby B Turner	1
11121	PCB Waters Update IV Ext	SW-846 3510C	1	180810008A	03/22/2018 16:55	Kate E Lutte	1

*=This limit was used in the evaluation of the final result

Sample Description: DUP-WG-01-0318 Grab Groundwater
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513406
ELLE Group #: 1921499
Matrix: Groundwater

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/16/2018 12:00

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13432	Nitroaromatic/Amine Ext 8330B	SW-846 8330B Rev.2 Oct. 2006	1	180800006A	03/22/2018 13:00	Olivia Arosemena	1
06024	Antimony	SW-846 6020A	1	180811063901A	03/29/2018 10:07	Patrick J Engle	1
06025	Arsenic	SW-846 6020A	1	180811063901A	03/29/2018 10:07	Patrick J Engle	1
06026	Barium	SW-846 6020A	1	180811063901D	03/29/2018 10:07	Patrick J Engle	1
06027	Beryllium	SW-846 6020A	1	180811063901A	03/29/2018 10:07	Patrick J Engle	1
06028	Cadmium	SW-846 6020A	1	180811063901A	03/29/2018 10:07	Patrick J Engle	1
06031	Chromium	SW-846 6020A	1	180811063901A	03/29/2018 10:07	Patrick J Engle	1
06033	Copper	SW-846 6020A	1	180811063901A	03/29/2018 10:07	Patrick J Engle	1
06035	Lead	SW-846 6020A	1	180811063901A	03/29/2018 10:07	Patrick J Engle	1
06039	Nickel	SW-846 6020A	1	180811063901A	03/29/2018 10:07	Patrick J Engle	1
06041	Selenium	SW-846 6020A	1	180811063901B	03/29/2018 10:07	Patrick J Engle	1
06042	Silver	SW-846 6020A	1	180811063901A	03/29/2018 10:07	Patrick J Engle	1
06045	Thallium	SW-846 6020A	1	180811063901A	03/29/2018 10:07	Patrick J Engle	1
06049	Zinc	SW-846 6020A	1	180811063901A	03/29/2018 10:07	Patrick J Engle	1
00259	Mercury	SW-846 7470A	1	180810571305	03/24/2018 09:21	Damary Valentin	1
10639	ICPMS - Water, 3020A - U4	SW-846 3020A	1	180811063901	03/22/2018 22:35	Denise L Trimby	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	180810571305	03/23/2018 18:40	Barbara A Kane	1

*=This limit was used in the evaluation of the final result

Sample Description: EB-WG-0318 Grab Water
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513407
ELLE Group #: 1921499
Matrix: Water

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/16/2018 17:55

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Volatiles						
		SW-846 8260C	ug/l	ug/l	ug/l	
11997	Acetone	67-64-1	< 20	20	6	1
11997	Benzene	71-43-2	< 1	1	0.5	1
11997	Bromodichloromethane	75-27-4	< 1	1	0.5	1
11997	Bromoform	75-25-2	< 4	4	0.5	1
11997	Bromomethane	74-83-9	< 1	1	0.5	1
11997	2-Butanone	78-93-3	< 10	10	3	1
11997	Carbon Disulfide	75-15-0	< 5	5	1	1
11997	Carbon Tetrachloride	56-23-5	< 1	1	0.5	1
11997	Chlorobenzene	108-90-7	< 1	1	0.5	1
11997	Chloroethane	75-00-3	< 1	1	0.5	1
11997	Chloroform	67-66-3	< 1	1	0.5	1
11997	Chloromethane	74-87-3	< 1	1	0.5	1
11997	Cyclohexane	110-82-7	< 5	5	2	1
11997	1,2-Dibromo-3-chloropropane	96-12-8	< 5	5	2	1
11997	Dibromochloromethane	124-48-1	< 1	1	0.5	1
11997	1,2-Dibromoethane	106-93-4	< 1	1	0.5	1
11997	1,2-Dichlorobenzene	95-50-1	< 5	5	1	1
11997	1,3-Dichlorobenzene	541-73-1	< 5	5	1	1
11997	1,4-Dichlorobenzene	106-46-7	< 5	5	1	1
11997	Dichlorodifluoromethane	75-71-8	< 1	1	0.5	1
11997	1,1-Dichloroethane	75-34-3	< 1	1	0.5	1
11997	1,2-Dichloroethane	107-06-2	< 1	1	0.5	1
11997	1,1-Dichloroethene	75-35-4	< 1	1	0.5	1
11997	cis-1,2-Dichloroethene	156-59-2	< 1	1	0.5	1
11997	trans-1,2-Dichloroethene	156-60-5	< 1	1	0.5	1
11997	1,2-Dichloropropane	78-87-5	< 1	1	0.5	1
11997	cis-1,3-Dichloropropene	10061-01-5	< 1	1	0.5	1
11997	trans-1,3-Dichloropropene	10061-02-6	< 1	1	0.5	1
11997	Ethylbenzene	100-41-4	< 1	1	0.5	1
11997	Freon 113	76-13-1	< 10	10	2	1
11997	4-Methyl-2-pentanone	108-10-1	< 10	10	3	1
11997	Methylcyclohexane	108-87-2	< 5	5	1	1
11997	Methylene Chloride	75-09-2	< 1	1	0.5	1
11997	Styrene	100-42-5	< 5	5	1	1
11997	1,1,1,2-Tetrachloroethane	79-34-5	< 1	1	0.5	1
11997	Tetrachloroethene	127-18-4	< 1	1	0.5	1
11997	Toluene	108-88-3	< 1	1	0.5	1
11997	1,2,4-Trichlorobenzene	120-82-1	< 5	5	1	1
11997	1,1,1-Trichloroethane	71-55-6	< 1	1	0.5	1
11997	1,1,2-Trichloroethane	79-00-5	< 1	1	0.5	1
11997	Trichloroethene	79-01-6	< 1	1	0.5	1
11997	Trichlorofluoromethane	75-69-4	< 1	1	0.5	1

*=This limit was used in the evaluation of the final result

Sample Description: EB-WG-0318 Grab Water
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513407
ELLE Group #: 1921499
Matrix: Water

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/16/2018 17:55

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Volatiles						
		SW-846 8260C	ug/l	ug/l	ug/l	
11997	Vinyl Chloride	75-01-4	< 1	1	0.5	1
11997	Xylene (Total)	1330-20-7	< 1	1	0.5	1

Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.

A Method Detection Limit (MDL) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The MDL standard shows adequate sensitivity at or below the reporting limit.

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Semivolatiles						
		SW-846 8270D	ug/l	ug/l	ug/l	
14241	Acetophenone	98-86-2	< 1	1	0.5	1
14241	Butylbenzylphthalate	85-68-7	< 5	5	2	1
14241	Di-n-butylphthalate	84-74-2	< 5	5	2	1
14241	4-Chloroaniline	106-47-8	< 4	4	2	1
14241	bis(2-Chloroethyl)ether	111-44-4	< 1	1	0.5	1
14241	bis(2-Chloroisopropyl)ether	39638-32-9	< 1	1	0.5	1
Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
14241	2-Chlorophenol	95-57-8	< 1	1	0.5	1
14241	2,2'-oxybis(1-Chloropropane)	108-60-1	< 1	1	0.5	1
Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
14241	3,3'-Dichlorobenzidine	91-94-1	< 5	5	2	1
14241	2,4-Dichlorophenol	120-83-2	< 1	1	0.5	1
14241	Diethylphthalate	84-66-2	< 5	5	2	1
14241	2,4-Dimethylphenol	105-67-9	< 1	1	0.5	1
14241	Dimethylphthalate	131-11-3	< 5	5	2	1
14241	2,4-Dinitrophenol	51-28-5	< 30	30	10	1
14241	2,4-Dinitrotoluene	121-14-2	< 5	5	1	1
14241	bis(2-Ethylhexyl)phthalate	117-81-7	< 5	5	2	1
14241	Hexachlorobenzene	118-74-1	< 0.5	0.5	0.1	1
14241	Hexachlorobutadiene	87-68-3	< 1	1	0.5	1
14241	Hexachlorocyclopentadiene	77-47-4	< 15	15	5	1
14241	Hexachloroethane	67-72-1	< 5	5	1	1
14241	Isophorone	78-59-1	< 1	1	0.5	1
14241	4-Methylphenol	106-44-5	< 1	1	0.5	1
3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
14241	Nitrobenzene	98-95-3	< 1	1	0.5	1

*=This limit was used in the evaluation of the final result

Sample Description: EB-WG-0318 Grab Water
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513407
ELLE Group #: 1921499
Matrix: Water

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/16/2018 17:55

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Semivolatiles SW-846 8270D						
14241	2-Nitrophenol	88-75-5	< 1	1	0.5	1
14241	4-Nitrophenol	100-02-7	< 30	30	10	1
14241	N-Nitroso-di-n-propylamine	621-64-7	< 1	1	0.5	1
14241	N-Nitrosodiphenylamine	86-30-6	< 1	1	0.5	1
N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
14241	Di-n-octylphthalate	117-84-0	< 5	5	2	1
14241	Pentachlorophenol	87-86-5	< 5	5	1	1
14241	Phenol	108-95-2	< 1	1	0.5	1
14241	2,4,5-Trichlorophenol	95-95-4	< 1	1	0.5	1
14241	2,4,6-Trichlorophenol	88-06-2	< 1	1	0.5	1
GC/MS Semivolatiles SW-846 8270D SIM						
14244	Acenaphthene	83-32-9	< 0.05	0.05	0.01	1
14244	Acenaphthylene	208-96-8	< 0.05	0.05	0.01	1
14244	Anthracene	120-12-7	< 0.05	0.05	0.01	1
14244	Benzo(a)anthracene	56-55-3	< 0.05	0.05	0.01	1
14244	Benzo(a)pyrene	50-32-8	< 0.05	0.05	0.01	1
14244	Benzo(b)fluoranthene	205-99-2	< 0.05	0.05	0.01	1
14244	Benzo(g,h,i)perylene	191-24-2	< 0.05	0.05	0.01	1
14244	Benzo(k)fluoranthene	207-08-9	< 0.05	0.05	0.01	1
14244	Chrysene	218-01-9	< 0.05	0.05	0.01	1
14244	Dibenz(a,h)anthracene	53-70-3	< 0.05	0.05	0.01	1
14244	Fluoranthene	206-44-0	< 0.05	0.05	0.01	1
14244	Fluorene	86-73-7	< 0.05	0.05	0.01	1
14244	Indeno(1,2,3-cd)pyrene	193-39-5	< 0.05	0.05	0.01	1
14244	2-Methylnaphthalene	91-57-6	< 0.05	0.05	0.01	1
14244	Naphthalene	91-20-3	< 0.06	0.06	0.03	1
14244	Phenanthrene	85-01-8	< 0.06	0.06	0.03	1
14244	Pyrene	129-00-0	< 0.05	0.05	0.01	1
Explosives SW-846 8330B Rev.2 Oct. 2006						
13395	1,3-Dinitrobenzene	99-65-0	< 0.60	0.60	0.11	1
13395	2,4-Dinitrotoluene	121-14-2	< 0.60	0.60	0.24	1
13395	Nitrobenzene	98-95-3	< 0.90	0.90	0.20	1
13395	4-Nitrotoluene	99-99-0	< 0.70	0.70	0.26	1
13395	1,3,5-Trinitrobenzene	99-35-4	< 0.60	0.60	0.20	1
PCBs SW-846 8082A						
10591	PCB-1016	12674-11-2	< 0.40 D1	0.40	0.024	1
10591	PCB-1221	11104-28-2	< 0.40 D1	0.40	0.024	1

*=This limit was used in the evaluation of the final result

Sample Description: EB-WG-0318 Grab Water
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513407
ELLE Group #: 1921499
Matrix: Water

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/16/2018 17:55

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
PCBs			SW-846 8082A	ug/l	ug/l	
10591	PCB-1232	11141-16-5	< 0.40 D1	0.40	0.024	1
10591	PCB-1242	53469-21-9	< 0.40 D1	0.40	0.024	1
10591	PCB-1248	12672-29-6	< 0.40 D1	0.40	0.024	1
10591	PCB-1254	11097-69-1	< 0.40 D1	0.40	0.024	1
10591	PCB-1260	11096-82-5	< 0.40 D1	0.40	0.024	1
Metals			SW-846 6020A	mg/l	mg/l	
06024	Antimony	7440-36-0	< 0.0020	0.0020	0.00045	1
06025	Arsenic	7440-38-2	< 0.0040	0.0040	0.00072	1
06026	Barium	7440-39-3	< 0.0040	0.0040	0.00072	1
06027	Beryllium	7440-41-7	< 0.0010	0.0010	0.000071	1
06028	Cadmium	7440-43-9	< 0.0010	0.0010	0.00015	1
06031	Chromium	7440-47-3	< 0.0040	0.0040	0.00087	1
06033	Copper	7440-50-8	< 0.0040	0.0040	0.00054	1
06035	Lead	7439-92-1	< 0.0020	0.0020	0.00011	1
06039	Nickel	7440-02-0	< 0.0040	0.0040	0.0010	1
06041	Selenium	7782-49-2	< 0.0040	0.0040	0.00050	1
06042	Silver	7440-22-4	< 0.0010	0.0010	0.00015	1
06045	Thallium	7440-28-0	< 0.0010	0.0010	0.00012	1
06049	Zinc	7440-66-6	< 0.0300	0.0300	0.0039	1
			SW-846 7470A	mg/l	mg/l	
00259	Mercury	7439-97-6	< 0.00020	0.00020	0.000050	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11997	VOCs- 5ml Water by 8260C	SW-846 8260C	1	L180873AA	03/29/2018 06:15	Don V Viray	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	L180873AA	03/29/2018 06:15	Don V Viray	1
14241	SVOAs 8270D MINI	SW-846 8270D	1	18080WAB026	03/26/2018 01:00	Holly B Ziegler	1
14244	PAHs by 8270D SIM	SW-846 8270D SIM	1	18080WAA026	03/23/2018 23:09	Brandon K Cordova	1
10466	BNA Water Extraction SIM	SW-846 3510C	1	18080WAA026	03/22/2018 17:00	Oswaldo R Sanchez	1
11010	8270D BNA Extraction	SW-846 3510C	1	18080WAB026	03/22/2018 17:00	Oswaldo R Sanchez	1
13395	Nitroaromatics/Amines 8330B(w)	SW-846 8330B Rev.2 Oct. 2006	1	180800006A	04/05/2018 01:02	Jessica L Miller	1
10591	PCBs in Water by 8082A	SW-846 8082A	1	180810008A	03/25/2018 19:23	Kirby B Turner	1
11121	PCB Waters Update IV Ext	SW-846 3510C	1	180810008A	03/22/2018 16:55	Kate E Lutte	1

*=This limit was used in the evaluation of the final result

Sample Description: EB-WG-0318 Grab Water
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513407
ELLE Group #: 1921499
Matrix: Water

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/16/2018 17:55

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13432	Nitroaromatic/Amine Ext 8330B	SW-846 8330B Rev.2 Oct. 2006	1	180800006A	03/22/2018 13:00	Olivia Arosemena	1
06024	Antimony	SW-846 6020A	1	180811063901A	03/29/2018 10:11	Patrick J Engle	1
06025	Arsenic	SW-846 6020A	1	180811063901A	03/29/2018 10:11	Patrick J Engle	1
06026	Barium	SW-846 6020A	1	180811063901D	03/29/2018 10:11	Patrick J Engle	1
06027	Beryllium	SW-846 6020A	1	180811063901A	03/29/2018 10:11	Patrick J Engle	1
06028	Cadmium	SW-846 6020A	1	180811063901A	03/29/2018 10:11	Patrick J Engle	1
06031	Chromium	SW-846 6020A	1	180811063901A	03/29/2018 10:11	Patrick J Engle	1
06033	Copper	SW-846 6020A	1	180811063901A	03/29/2018 10:11	Patrick J Engle	1
06035	Lead	SW-846 6020A	1	180811063901A	03/29/2018 10:11	Patrick J Engle	1
06039	Nickel	SW-846 6020A	1	180811063901A	03/29/2018 10:11	Patrick J Engle	1
06041	Selenium	SW-846 6020A	1	180811063901B	03/29/2018 10:11	Patrick J Engle	1
06042	Silver	SW-846 6020A	1	180811063901A	03/29/2018 10:11	Patrick J Engle	1
06045	Thallium	SW-846 6020A	1	180811063901A	03/29/2018 10:11	Patrick J Engle	1
06049	Zinc	SW-846 6020A	1	180811063901A	03/29/2018 10:11	Patrick J Engle	1
00259	Mercury	SW-846 7470A	1	180810571305	03/24/2018 09:23	Damary Valentin	1
10639	ICPMS - Water, 3020A - U4	SW-846 3020A	1	180811063901	03/22/2018 22:35	Denise L Trimby	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	180810571305	03/23/2018 18:40	Barbara A Kane	1

*=This limit was used in the evaluation of the final result

Sample Description: TRIP BLANK (Cooler 1) Water
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513408
ELLE Group #: 1921499
Matrix: Water

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/15/2018

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Volatiles						
		SW-846 8260C	ug/l	ug/l	ug/l	
11997	Acetone	67-64-1	< 20	20	6	1
11997	Benzene	71-43-2	< 1	1	0.5	1
11997	Bromodichloromethane	75-27-4	< 1	1	0.5	1
11997	Bromoform	75-25-2	< 4	4	0.5	1
11997	Bromomethane	74-83-9	< 1	1	0.5	1
11997	2-Butanone	78-93-3	< 10	10	3	1
11997	Carbon Disulfide	75-15-0	< 5	5	1	1
11997	Carbon Tetrachloride	56-23-5	< 1	1	0.5	1
11997	Chlorobenzene	108-90-7	< 1	1	0.5	1
11997	Chloroethane	75-00-3	< 1	1	0.5	1
11997	Chloroform	67-66-3	< 1	1	0.5	1
11997	Chloromethane	74-87-3	< 1	1	0.5	1
11997	Cyclohexane	110-82-7	< 5	5	2	1
11997	1,2-Dibromo-3-chloropropane	96-12-8	< 5	5	2	1
11997	Dibromochloromethane	124-48-1	< 1	1	0.5	1
11997	1,2-Dibromoethane	106-93-4	< 1	1	0.5	1
11997	1,2-Dichlorobenzene	95-50-1	< 5	5	1	1
11997	1,3-Dichlorobenzene	541-73-1	< 5	5	1	1
11997	1,4-Dichlorobenzene	106-46-7	< 5	5	1	1
11997	Dichlorodifluoromethane	75-71-8	< 1	1	0.5	1
11997	1,1-Dichloroethane	75-34-3	< 1	1	0.5	1
11997	1,2-Dichloroethane	107-06-2	< 1	1	0.5	1
11997	1,1-Dichloroethene	75-35-4	< 1	1	0.5	1
11997	cis-1,2-Dichloroethene	156-59-2	< 1	1	0.5	1
11997	trans-1,2-Dichloroethene	156-60-5	< 1	1	0.5	1
11997	1,2-Dichloropropane	78-87-5	< 1	1	0.5	1
11997	cis-1,3-Dichloropropene	10061-01-5	< 1	1	0.5	1
11997	trans-1,3-Dichloropropene	10061-02-6	< 1	1	0.5	1
11997	Ethylbenzene	100-41-4	< 1	1	0.5	1
11997	Freon 113	76-13-1	< 10	10	2	1
11997	4-Methyl-2-pentanone	108-10-1	< 10	10	3	1
11997	Methylcyclohexane	108-87-2	< 5	5	1	1
11997	Methylene Chloride	75-09-2	< 1	1	0.5	1
11997	Styrene	100-42-5	< 5	5	1	1
11997	1,1,1,2-Tetrachloroethane	79-34-5	< 1	1	0.5	1
11997	Tetrachloroethene	127-18-4	< 1	1	0.5	1
11997	Toluene	108-88-3	< 1	1	0.5	1
11997	1,2,4-Trichlorobenzene	120-82-1	< 5	5	1	1
11997	1,1,1-Trichloroethane	71-55-6	< 1	1	0.5	1
11997	1,1,2-Trichloroethane	79-00-5	< 1	1	0.5	1
11997	Trichloroethene	79-01-6	< 1	1	0.5	1
11997	Trichlorofluoromethane	75-69-4	< 1	1	0.5	1

*=This limit was used in the evaluation of the final result

Sample Description: TRIP BLANK (Cooler 1) Water
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513408
ELLE Group #: 1921499
Matrix: Water

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/15/2018

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Volatiles						
		SW-846 8260C	ug/l	ug/l	ug/l	
11997	Vinyl Chloride	75-01-4	< 1	1	0.5	1
11997	Xylene (Total)	1330-20-7	< 1	1	0.5	1

Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.

A Method Detection Limit (MDL) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The MDL standard shows adequate sensitivity at or below the reporting limit.

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11997	VOCs- 5ml Water by 8260C	SW-846 8260C	1	L180873AA	03/28/2018 23:20	Don V Viray	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	L180873AA	03/28/2018 23:20	Don V Viray	1

*=This limit was used in the evaluation of the final result

Sample Description: TRIP BLANK (Cooler 2) Water
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513409
ELLE Group #: 1921499
Matrix: Water

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/15/2018

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Volatiles			ug/l	ug/l	ug/l	
11997	Acetone	67-64-1	< 20	20	6	1
11997	Benzene	71-43-2	< 1	1	0.5	1
11997	Bromodichloromethane	75-27-4	< 1	1	0.5	1
11997	Bromoform	75-25-2	< 4	4	0.5	1
11997	Bromomethane	74-83-9	< 1	1	0.5	1
11997	2-Butanone	78-93-3	< 10	10	3	1
11997	Carbon Disulfide	75-15-0	< 5	5	1	1
11997	Carbon Tetrachloride	56-23-5	< 1	1	0.5	1
11997	Chlorobenzene	108-90-7	< 1	1	0.5	1
11997	Chloroethane	75-00-3	< 1	1	0.5	1
11997	Chloroform	67-66-3	< 1	1	0.5	1
11997	Chloromethane	74-87-3	< 1	1	0.5	1
11997	Cyclohexane	110-82-7	< 5	5	2	1
11997	1,2-Dibromo-3-chloropropane	96-12-8	< 5	5	2	1
11997	Dibromochloromethane	124-48-1	< 1	1	0.5	1
11997	1,2-Dibromoethane	106-93-4	< 1	1	0.5	1
11997	1,2-Dichlorobenzene	95-50-1	< 5	5	1	1
11997	1,3-Dichlorobenzene	541-73-1	< 5	5	1	1
11997	1,4-Dichlorobenzene	106-46-7	< 5	5	1	1
11997	Dichlorodifluoromethane	75-71-8	< 1	1	0.5	1
11997	1,1-Dichloroethane	75-34-3	< 1	1	0.5	1
11997	1,2-Dichloroethane	107-06-2	< 1	1	0.5	1
11997	1,1-Dichloroethene	75-35-4	< 1	1	0.5	1
11997	cis-1,2-Dichloroethene	156-59-2	< 1	1	0.5	1
11997	trans-1,2-Dichloroethene	156-60-5	< 1	1	0.5	1
11997	1,2-Dichloropropane	78-87-5	< 1	1	0.5	1
11997	cis-1,3-Dichloropropene	10061-01-5	< 1	1	0.5	1
11997	trans-1,3-Dichloropropene	10061-02-6	< 1	1	0.5	1
11997	Ethylbenzene	100-41-4	< 1	1	0.5	1
11997	Freon 113	76-13-1	< 10	10	2	1
11997	4-Methyl-2-pentanone	108-10-1	< 10	10	3	1
11997	Methylcyclohexane	108-87-2	< 5	5	1	1
11997	Methylene Chloride	75-09-2	< 1	1	0.5	1
11997	Styrene	100-42-5	< 5	5	1	1
11997	1,1,1,2-Tetrachloroethane	79-34-5	< 1	1	0.5	1
11997	Tetrachloroethene	127-18-4	< 1	1	0.5	1
11997	Toluene	108-88-3	< 1	1	0.5	1
11997	1,2,4-Trichlorobenzene	120-82-1	< 5	5	1	1
11997	1,1,1-Trichloroethane	71-55-6	< 1	1	0.5	1
11997	1,1,2-Trichloroethane	79-00-5	< 1	1	0.5	1
11997	Trichloroethene	79-01-6	< 1	1	0.5	1
11997	Trichlorofluoromethane	75-69-4	< 1	1	0.5	1

*=This limit was used in the evaluation of the final result

Sample Description: TRIP BLANK (Cooler 2) Water
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513409
ELLE Group #: 1921499
Matrix: Water

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/15/2018

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Volatiles						
		SW-846 8260C	ug/l	ug/l	ug/l	
11997	Vinyl Chloride	75-01-4	< 1	1	0.5	1
11997	Xylene (Total)	1330-20-7	< 1	1	0.5	1

Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.

A Method Detection Limit (MDL) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The MDL standard shows adequate sensitivity at or below the reporting limit.

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11997	VOCs- 5ml Water by 8260C	SW-846 8260C	1	L180873AA	03/28/2018 23:42	Don V Viray	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	L180873AA	03/28/2018 23:42	Don V Viray	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/23/2018 16:13

Group Number: 1921499

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	LOQ**	MDL
	ug/l	ug/l	ug/l
Batch number: L180873AA	Sample number(s): 9513400-9513402,9513404-9513409		
Acetone	< 20	20	6
Benzene	< 1	1	0.5
Bromodichloromethane	< 1	1	0.5
Bromoform	< 4	4	0.5
Bromomethane	< 1	1	0.5
2-Butanone	< 10	10	3
Carbon Disulfide	< 5	5	1
Carbon Tetrachloride	< 1	1	0.5
Chlorobenzene	< 1	1	0.5
Chloroethane	< 1	1	0.5
Chloroform	< 1	1	0.5
Chloromethane	< 1	1	0.5
Cyclohexane	< 5	5	2
1,2-Dibromo-3-chloropropane	< 5	5	2
Dibromochloromethane	< 1	1	0.5
1,2-Dibromoethane	< 1	1	0.5
1,2-Dichlorobenzene	< 5	5	1
1,3-Dichlorobenzene	< 5	5	1
1,4-Dichlorobenzene	< 5	5	1
Dichlorodifluoromethane	< 1	1	0.5
1,1-Dichloroethane	< 1	1	0.5
1,2-Dichloroethane	< 1	1	0.5
1,1-Dichloroethene	< 1	1	0.5
cis-1,2-Dichloroethene	< 1	1	0.5
trans-1,2-Dichloroethene	< 1	1	0.5
1,2-Dichloropropane	< 1	1	0.5
cis-1,3-Dichloropropene	< 1	1	0.5
trans-1,3-Dichloropropene	< 1	1	0.5
Ethylbenzene	< 1	1	0.5
Freon 113	< 10	10	2
4-Methyl-2-pentanone	< 10	10	3
Methylcyclohexane	< 5	5	1
Methylene Chloride	< 1	1	0.5
Styrene	< 5	5	1
1,1,2,2-Tetrachloroethane	< 1	1	0.5
Tetrachloroethene	< 1	1	0.5
Toluene	< 1	1	0.5
1,2,4-Trichlorobenzene	< 5	5	1
1,1,1-Trichloroethane	< 1	1	0.5

*- Outside of specification

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Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/23/2018 16:13

Group Number: 1921499

Method Blank (continued)

Analysis Name	Result	LOQ**	MDL
	ug/l	ug/l	ug/l
1,1,2-Trichloroethane	< 1	1	0.5
Trichloroethene	< 1	1	0.5
Trichlorofluoromethane	< 1	1	0.5
Vinyl Chloride	< 1	1	0.5
Xylene (Total)	< 1	1	0.5
Batch number: 18080WAA026	Sample number(s): 9513400-9513402,9513405-9513407		
Acenaphthene	< 0.05	0.05	0.01
Acenaphthylene	< 0.05	0.05	0.01
Anthracene	< 0.05	0.05	0.01
Benzo(a)anthracene	< 0.05	0.05	0.01
Benzo(a)pyrene	< 0.05	0.05	0.01
Benzo(b)fluoranthene	< 0.05	0.05	0.01
Benzo(g,h,i)perylene	< 0.05	0.05	0.01
Benzo(k)fluoranthene	< 0.05	0.05	0.01
Chrysene	< 0.05	0.05	0.01
Dibenz(a,h)anthracene	< 0.05	0.05	0.01
Fluoranthene	< 0.05	0.05	0.01
Fluorene	< 0.05	0.05	0.01
Indeno(1,2,3-cd)pyrene	< 0.05	0.05	0.01
2-Methylnaphthalene	< 0.05	0.05	0.01
Naphthalene	< 0.06	0.06	0.03
Phenanthrene	< 0.06	0.06	0.03
Pyrene	< 0.05	0.05	0.01
Batch number: 18080WAB026	Sample number(s): 9513400-9513402,9513405-9513407		
Acetophenone	< 1	1	0.5
Butylbenzylphthalate	< 5	5	2
Di-n-butylphthalate	< 5	5	2
4-Chloroaniline	< 4	4	2
bis(2-Chloroethyl)ether	< 1	1	0.5
bis(2-Chloroisopropyl)ether	< 1	1	0.5
2-Chlorophenol	< 1	1	0.5
2,2'-oxybis(1-Chloropropane)	< 1	1	0.5
3,3'-Dichlorobenzidine	< 5	5	2
2,4-Dichlorophenol	< 1	1	0.5
Diethylphthalate	< 5	5	2
2,4-Dimethylphenol	< 1	1	0.5
Dimethylphthalate	< 5	5	2
2,4-Dinitrophenol	< 30	30	10
2,4-Dinitrotoluene	< 5	5	1
bis(2-Ethylhexyl)phthalate	< 5	5	2
Hexachlorobenzene	< 0.5	0.5	0.1
Hexachlorobutadiene	< 1	1	0.5
Hexachlorocyclopentadiene	< 15	15	5
Hexachloroethane	< 5	5	1

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Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/23/2018 16:13

Group Number: 1921499

Method Blank (continued)

Analysis Name	Result	LOQ**	MDL
	ug/l	ug/l	ug/l
Isophorone	< 1	1	0.5
4-Methylphenol	< 1	1	0.5
Nitrobenzene	< 1	1	0.5
2-Nitrophenol	< 1	1	0.5
4-Nitrophenol	< 30	30	10
N-Nitroso-di-n-propylamine	< 1	1	0.5
N-Nitrosodiphenylamine	< 1	1	0.5
Di-n-octylphthalate	< 5	5	2
Pentachlorophenol	< 5	5	1
Phenol	< 1	1	0.5
2,4,5-Trichlorophenol	< 1	1	0.5
2,4,6-Trichlorophenol	< 1	1	0.5
Batch number: 18082WAF026	Sample number(s): 9513404		
Acenaphthene	< 0.05	0.05	0.01
Acenaphthylene	< 0.05	0.05	0.01
Anthracene	< 0.05	0.05	0.01
Benzo(a)anthracene	< 0.05	0.05	0.01
Benzo(a)pyrene	< 0.05	0.05	0.01
Benzo(b)fluoranthene	< 0.05	0.05	0.01
Benzo(g,h,i)perylene	< 0.05	0.05	0.01
Benzo(k)fluoranthene	< 0.05	0.05	0.01
Chrysene	< 0.05	0.05	0.01
Dibenz(a,h)anthracene	< 0.05	0.05	0.01
Fluoranthene	< 0.05	0.05	0.01
Fluorene	< 0.05	0.05	0.01
Indeno(1,2,3-cd)pyrene	< 0.05	0.05	0.01
2-Methylnaphthalene	< 0.05	0.05	0.01
Naphthalene	< 0.06	0.06	0.03
Phenanthrene	< 0.06	0.06	0.03
Pyrene	< 0.05	0.05	0.01
Batch number: 18082WAG026	Sample number(s): 9513404		
Acetophenone	< 1	1	0.5
Butylbenzylphthalate	< 5	5	2
Di-n-butylphthalate	< 5	5	2
4-Chloroaniline	< 4	4	2
bis(2-Chloroethyl)ether	< 1	1	0.5
bis(2-Chloroisopropyl)ether	< 1	1	0.5
2-Chlorophenol	< 1	1	0.5
2,2'-oxybis(1-Chloropropane)	< 1	1	0.5
3,3'-Dichlorobenzidine	< 5	5	2
2,4-Dichlorophenol	< 1	1	0.5
Diethylphthalate	< 5	5	2
2,4-Dimethylphenol	< 1	1	0.5
Dimethylphthalate	< 5	5	2

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Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/23/2018 16:13

Group Number: 1921499

Method Blank (continued)

Analysis Name	Result	LOQ**	MDL
	ug/l	ug/l	ug/l
2,4-Dinitrophenol	< 30	30	10
2,4-Dinitrotoluene	< 5	5	1
bis(2-Ethylhexyl)phthalate	< 5	5	2
Hexachlorobenzene	< 0.5	0.5	0.1
Hexachlorobutadiene	< 1	1	0.5
Hexachlorocyclopentadiene	< 15	15	5
Hexachloroethane	< 5	5	1
Isophorone	< 1	1	0.5
4-Methylphenol	< 1	1	0.5
Nitrobenzene	< 1	1	0.5
2-Nitrophenol	< 1	1	0.5
4-Nitrophenol	< 30	30	10
N-Nitroso-di-n-propylamine	< 1	1	0.5
N-Nitrosodiphenylamine	< 1	1	0.5
Di-n-octylphthalate	< 5	5	2
Pentachlorophenol	< 5	5	1
Phenol	< 1	1	0.5
2,4,5-Trichlorophenol	< 1	1	0.5
2,4,6-Trichlorophenol	< 1	1	0.5
Batch number: 180800006A	Sample number(s): 9513400-9513402,9513405-9513407		
1,3-Dinitrobenzene	< 0.60	0.60	0.11
2,4-Dinitrotoluene	< 0.60	0.60	0.24
Nitrobenzene	< 0.90	0.90	0.20
4-Nitrotoluene	< 0.70	0.70	0.26
1,3,5-Trinitrobenzene	< 0.60	0.60	0.20
Batch number: 180820001A	Sample number(s): 9513404		
1,3-Dinitrobenzene	< 0.60	0.60	0.11
2,4-Dinitrotoluene	< 0.60	0.60	0.24
Nitrobenzene	< 0.90	0.90	0.20
4-Nitrotoluene	< 0.70	0.70	0.26
1,3,5-Trinitrobenzene	< 0.60	0.60	0.20
Batch number: 180810008A	Sample number(s): 9513400-9513402,9513405-9513407		
PCB-1016	< 0.40	0.40	0.024
PCB-1221	< 0.40	0.40	0.024
PCB-1232	< 0.40	0.40	0.024
PCB-1242	< 0.40	0.40	0.024
PCB-1248	< 0.40	0.40	0.024
PCB-1254	< 0.40	0.40	0.024
PCB-1260	< 0.40	0.40	0.024
Batch number: 180810043A	Sample number(s): 9513404		
PCB-1016	< 0.40	0.40	0.024
PCB-1221	< 0.40	0.40	0.024
PCB-1232	< 0.40	0.40	0.024

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Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/23/2018 16:13

Group Number: 1921499

Method Blank (continued)

Analysis Name	Result	LOQ**	MDL
	ug/l	ug/l	ug/l
PCB-1242	< 0.40	0.40	0.024
PCB-1248	< 0.40	0.40	0.024
PCB-1254	< 0.40	0.40	0.024
PCB-1260	< 0.40	0.40	0.024
	mg/l	mg/l	mg/l
Batch number: 180810571305	Sample number(s): 9513405-9513407		
Mercury	< 0.00020	0.00020	0.000050
Batch number: 180811063901A	Sample number(s): 9513405-9513407		
Antimony	< 0.0020	0.0020	0.00045
Arsenic	< 0.0040	0.0040	0.00072
Beryllium	< 0.0010	0.0010	0.000071
Cadmium	< 0.0010	0.0010	0.00015
Chromium	< 0.0040	0.0040	0.00087
Copper	< 0.0040	0.0040	0.00054
Lead	< 0.0020	0.0020	0.00011
Nickel	< 0.0040	0.0040	0.0010
Silver	< 0.0010	0.0010	0.00015
Thallium	< 0.0010	0.0010	0.00012
Zinc	< 0.0300	0.0300	0.0039
Batch number: 180811063901B	Sample number(s): 9513405-9513407		
Selenium	< 0.0040	0.0040	0.00050
Batch number: 180811063901D	Sample number(s): 9513405-9513407		
Barium	< 0.0040	0.0040	0.00072
Batch number: 180820571308	Sample number(s): 9513400-9513404		
Mercury	< 0.00020	0.00020	0.000050
Batch number: 180931063903A	Sample number(s): 9513400-9513404		
Antimony	< 0.0020	0.0020	0.00045
Arsenic	< 0.0040	0.0040	0.00072
Beryllium	< 0.0010	0.0010	0.000071
Cadmium	< 0.0010	0.0010	0.00015
Chromium	< 0.0040	0.0040	0.00087
Copper	< 0.0040	0.0040	0.00054
Lead	< 0.0020	0.0020	0.00011
Nickel	< 0.0040	0.0040	0.0010
Silver	< 0.0010	0.0010	0.00015
Thallium	< 0.0010	0.0010	0.00012
Zinc	< 0.0300	0.0300	0.0039
Batch number: 180931063903B	Sample number(s): 9513400-9513404		
Selenium	< 0.0040	0.0040	0.00050
Batch number: 180931063903D	Sample number(s): 9513400-9513404		
Barium	< 0.0040	0.0040	0.00072

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Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/23/2018 16:13

Group Number: 1921499

Method Blank (continued)

Analysis Name	Result mg/l	LOQ** mg/l	MDL mg/l
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LCS/LCSD

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: L180873AA	Sample number(s): 9513400-9513402,9513404-9513409								
Acetone	150	168.74			112		54-157		
Benzene	20	21			105		80-120		
Bromodichloromethane	20	17.54			88		71-120		
Bromoform	20	14.98			75		59-120		
Bromomethane	20	14			70		58-130		
2-Butanone	150	163.41			109		59-135		
Carbon Disulfide	20	21.89			109		65-128		
Carbon Tetrachloride	20	16.44			82		64-134		
Chlorobenzene	20	19.94			100		80-120		
Chloroethane	20	15.58			78		61-123		
Chloroform	20	19.43			97		80-120		
Chloromethane	20	17.37			87		63-120		
Cyclohexane	20	21.37			107		67-121		
1,2-Dibromo-3-chloropropane	20	18.52			93		53-128		
Dibromochloromethane	20	17.36			87		71-120		
1,2-Dibromoethane	20	20.32			102		75-120		
1,2-Dichlorobenzene	20	19.57			98		80-120		
1,3-Dichlorobenzene	20	19.56			98		80-120		
1,4-Dichlorobenzene	20	19.65			98		80-120		
Dichlorodifluoromethane	20	12.22			61		47-124		
1,1-Dichloroethane	20	21.36			107		80-120		
1,2-Dichloroethane	20	18.78			94		73-124		
1,1-Dichloroethene	20	21.57			108		80-131		
cis-1,2-Dichloroethene	20	20.19			101		80-120		
trans-1,2-Dichloroethene	20	20.74			104		80-120		
1,2-Dichloropropane	20	21.37			107		80-120		
cis-1,3-Dichloropropene	20	18.5			93		75-120		
trans-1,3-Dichloropropene	20	18.71			94		76-120		
Ethylbenzene	20	20.82			104		80-120		
Freon 113	20	19.77			99		68-137		
4-Methyl-2-pentanone	100	108.13			108		62-133		
Methylcyclohexane	20	18.99			95		67-121		
Methylene Chloride	20	20.93			105		80-120		
Styrene	20	20.33			102		80-120		
1,1,2,2-Tetrachloroethane	20	21.82			109		72-120		

*- Outside of specification

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Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/23/2018 16:13

Group Number: 1921499

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Tetrachloroethene	20	19.79			99		80-120		
Toluene	20	21.54			108		80-120		
1,2,4-Trichlorobenzene	20	18.73			94		70-120		
1,1,1-Trichloroethane	20	17.49			87		67-126		
1,1,2-Trichloroethane	20	21.24			106		80-120		
Trichloroethene	20	19.3			97		80-120		
Trichlorofluoromethane	20	13.63			68		60-136		
Vinyl Chloride	20	14.33			72		68-120		
Xylene (Total)	60	60.51			101		80-120		
	ug/l	ug/l	ug/l	ug/l					
Batch number: 18080WAA026	Sample number(s): 9513400-9513402,9513405-9513407								
Acenaphthene	1.00	0.988			99		70-133		
Acenaphthylene	1.00	0.821			82		47-102		
Anthracene	1.00	0.957			96		68-120		
Benzo(a)anthracene	1.00	0.939			94		65-129		
Benzo(a)pyrene	1.00	1.04			104		65-126		
Benzo(b)fluoranthene	1.00	1.28			128		65-136		
Benzo(g,h,i)perylene	1.00	0.949			95		49-134		
Benzo(k)fluoranthene	1.00	1.18			118		65-131		
Chrysene	1.00	1.00			100		62-129		
Dibenz(a,h)anthracene	1.00	1.04			104		50-139		
Fluoranthene	1.00	0.908			91		62-126		
Fluorene	1.00	0.809			81		61-115		
Indeno(1,2,3-cd)pyrene	1.00	1.03			103		52-133		
2-Methylnaphthalene	1.00	0.714			71		39-136		
Naphthalene	1.00	0.715			71		43-120		
Phenanthrene	1.00	0.901			90		66-120		
Pyrene	1.00	0.845			85		55-131		
Batch number: 18080WAB026	Sample number(s): 9513400-9513402,9513405-9513407								
Acetophenone	50	45.52			91		53-118		
Butylbenzylphthalate	50	41.34			83		40-131		
Di-n-butylphthalate	50	43.58			87		58-119		
4-Chloroaniline	50	31.05			62		33-106		
bis(2-Chloroethyl)ether	50	40.4			81		48-119		
bis(2-Chloroisopropyl)ether	50	40.85			82		35-128		
2-Chlorophenol	50	39.82			80		47-116		
2,2'-oxybis(1-Chloropropane)	50	40.85			82		40-117		
3,3'-Dichlorobenzidine	50	35.81			72		32-106		
2,4-Dichlorophenol	50	43.47			87		53-126		
Diethylphthalate	50	37.97			76		42-124		
2,4-Dimethylphenol	50	40.06			80		41-103		
Dimethylphthalate	50	36.46			73		19-119		

*- Outside of specification

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Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/23/2018 16:13

Group Number: 1921499

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
2,4-Dinitrophenol	100	62.95			63		19-140		
2,4-Dinitrotoluene	50	42.37			85		56-128		
bis(2-Ethylhexyl)phthalate	50	44.43			89		52-132		
Hexachlorobenzene	50	43.93			88		57-123		
Hexachlorobutadiene	50	31.36			63		16-119		
Hexachlorocyclopentadiene	100	15.31			15		10-104		
Hexachloroethane	50	28.1			56		19-105		
Isophorone	50	45.53			91		49-129		
4-Methylphenol	50	38.87			78		42-115		
Nitrobenzene	50	40.5			81		43-128		
2-Nitrophenol	50	44.46			89		58-125		
4-Nitrophenol	50	25.84			52		10-96		
N-Nitroso-di-n-propylamine	50	45.09			90		48-128		
N-Nitrosodiphenylamine	50	45.46			91		55-128		
Di-n-octylphthalate	50	45.8			92		51-134		
Pentachlorophenol	50	37.82			76		50-127		
Phenol	50	22.49			45		10-92		
2,4,5-Trichlorophenol	50	45.14			90		59-129		
2,4,6-Trichlorophenol	50	44.34			89		61-130		
Batch number: 18082WAF026	Sample number(s): 9513404								
Acenaphthene	1.00	0.880	1.00	0.955	88	96	70-133	8	30
Acenaphthylene	1.00	0.735	1.00	0.813	73	81	47-102	10	30
Anthracene	1.00	0.864	1.00	0.906	86	91	68-120	5	30
Benzo(a)anthracene	1.00	0.866	1.00	0.871	87	87	65-129	1	30
Benzo(a)pyrene	1.00	0.940	1.00	0.959	94	96	65-126	2	30
Benzo(b)fluoranthene	1.00	0.953	1.00	0.982	95	98	65-136	3	30
Benzo(g,h,i)perylene	1.00	0.654	1.00	0.648	65	65	49-134	1	30
Benzo(k)fluoranthene	1.00	0.958	1.00	0.934	96	93	65-131	2	30
Chrysene	1.00	0.890	1.00	0.884	89	88	62-129	1	30
Dibenz(a,h)anthracene	1.00	0.719	1.00	0.713	72	71	50-139	1	30
Fluoranthene	1.00	0.853	1.00	0.866	85	87	62-126	2	30
Fluorene	1.00	0.739	1.00	0.819	74	82	61-115	10	30
Indeno(1,2,3-cd)pyrene	1.00	0.686	1.00	0.687	69	69	52-133	0	30
2-Methylnaphthalene	1.00	0.637	1.00	0.743	64	74	39-136	15	30
Naphthalene	1.00	0.612	1.00	0.727	61	73	43-120	17	30
Phenanthrene	1.00	0.832	1.00	0.858	83	86	66-120	3	30
Pyrene	1.00	0.835	1.00	0.824	84	82	55-131	1	30
Batch number: 18082WAG026	Sample number(s): 9513404								
Acetophenone	50	42.73	50	42.35	85	85	53-118	1	30
Butylbenzylphthalate	50	40.97	50	25.54	82	51	40-131	46*	30
Di-n-butylphthalate	50	44.16	50	41.23	88	82	58-119	7	30
4-Chloroaniline	50	37.15	50	35.37	74	71	33-106	5	30
bis(2-Chloroethyl)ether	50	42.04	50	38.08	84	76	48-119	10	30

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Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/23/2018 16:13

Group Number: 1921499

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
bis(2-Chloroisopropyl)ether	50	38.55	50	37.8	77	76	35-128	2	30
2-Chlorophenol	50	39.74	50	39.02	79	78	47-116	2	30
2,2'-oxybis(1-Chloropropane)	50	38.55	50	37.8	77	76	40-117	2	30
3,3'-Dichlorobenzidine	50	42.08	50	29.68	84	59	32-106	35*	30
2,4-Dichlorophenol	50	41.29	50	44.21	83	88	53-126	7	30
Diethylphthalate	50	41.81	50	33.24	84	66	42-124	23	30
2,4-Dimethylphenol	50	37.87	50	40.19	76	80	41-103	6	30
Dimethylphthalate	50	34.99	50	18.54	70	37	19-119	61*	30
2,4-Dinitrophenol	100	57.23	100	48.73	57	49	19-140	16	30
2,4-Dinitrotoluene	50	44.56	50	41.95	89	84	56-128	6	30
bis(2-Ethylhexyl)phthalate	50	45.02	50	35.56	90	71	52-132	23	30
Hexachlorobenzene	50	44.74	50	43.51	89	87	57-123	3	30
Hexachlorobutadiene	50	32.34	50	28.08	65	56	16-119	14	30
Hexachlorocyclopentadiene	100	6.11	100	12.28	6*	12	10-104	67*	30
Hexachloroethane	50	29.31	50	27.07	59	54	19-105	8	30
Isophorone	50	43.66	50	47.79	87	96	49-129	9	30
4-Methylphenol	50	38.25	50	38.29	76	77	42-115	0	30
Nitrobenzene	50	40.92	50	39.45	82	79	43-128	4	30
2-Nitrophenol	50	41.17	50	45.86	82	92	58-125	11	30
4-Nitrophenol	50	31.06	50	31.85	62	64	10-96	3	30
N-Nitroso-di-n-propylamine	50	40.79	50	40.32	82	81	48-128	1	30
N-Nitrosodiphenylamine	50	47.26	50	44.86	95	90	55-128	5	30
Di-n-octylphthalate	50	42.01	50	43.09	84	86	51-134	3	30
Pentachlorophenol	50	48.21	50	47.5	96	95	50-127	1	30
Phenol	50	27.2	50	25.25	54	51	10-92	7	30
2,4,5-Trichlorophenol	50	52.3	50	44.07	105	88	59-129	17	30
2,4,6-Trichlorophenol	50	46.1	50	42.63	92	85	61-130	8	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: 180800006A	Sample number(s): 9513400-9513402,9513405-9513407								
1,3-Dinitrobenzene	10	10.48			105		85-120		
2,4-Dinitrotoluene	10	10.47			105		84-122		
Nitrobenzene	10	10.24			102		85-115		
4-Nitrotoluene	10	10.48			105		61-133		
1,3,5-Trinitrobenzene	10	9.17			92		55-122		
Batch number: 180820001A	Sample number(s): 9513404								
1,3-Dinitrobenzene	10	10.16	10	10.13	102	101	85-120	0	30
2,4-Dinitrotoluene	10	10.38	10	10.23	104	102	84-122	2	30
Nitrobenzene	10	9.96	10	9.89	100	99	85-115	1	30
4-Nitrotoluene	10	10.52	10	10.29	105	103	61-133	2	30
1,3,5-Trinitrobenzene	10	8.60	10	8.42	86	84	55-122	2	30
	ug/l	ug/l	ug/l	ug/l					

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Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/23/2018 16:13

Group Number: 1921499

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 180810008A	Sample number(s): 9513400-9513402,9513405-9513407								
PCB-1016	5.01	4.47			89		60-117		
PCB-1260	5.01	5.14			103		57-134		
Batch number: 180810043A	Sample number(s): 9513404								
PCB-1016	5.01	4.34			87		60-117		
PCB-1260	5.01	5.00			100		57-134		
	mg/l	mg/l	mg/l	mg/l					
Batch number: 180810571305	Sample number(s): 9513405-9513407								
Mercury	0.00100	0.000901			90		80-120		
Batch number: 180811063901A	Sample number(s): 9513405-9513407								
Antimony	0.00600	0.00605			101		80-120		
Arsenic	0.0100	0.00953			95		80-120		
Beryllium	0.00400	0.00397			99		80-120		
Cadmium	0.00500	0.00503			101		80-120		
Chromium	0.0500	0.0522			104		80-120		
Copper	0.0500	0.0528			106		80-120		
Lead	0.0150	0.0148			99		80-120		
Nickel	0.0500	0.0531			106		80-120		
Silver	0.0500	0.0493			99		80-120		
Thallium	0.00200	0.00181			91		80-120		
Zinc	0.500	0.510			102		80-120		
Batch number: 180811063901B	Sample number(s): 9513405-9513407								
Selenium	0.0100	0.0101			101		80-120		
Batch number: 180811063901D	Sample number(s): 9513405-9513407								
Barium	0.0500	0.0491			98		80-120		
Batch number: 180820571308	Sample number(s): 9513400-9513404								
Mercury	0.00100	0.000899			90		80-120		
Batch number: 180931063903A	Sample number(s): 9513400-9513404								
Antimony	0.00600	0.00645			108		80-120		
Arsenic	0.0100	0.0110			110		80-120		
Beryllium	0.00400	0.00428			107		90-112		
Cadmium	0.00500	0.00532			106		84-120		
Chromium	0.0500	0.0504			101		90-112		
Copper	0.0500	0.0545			109		89-120		
Lead	0.0150	0.0153			102		90-110		
Nickel	0.0500	0.0534			107		90-114		
Silver	0.0500	0.0516			103		88-113		
Thallium	0.00200	0.00200			100		80-120		
Zinc	0.500	0.566			113		90-113		

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Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/23/2018 16:13

Group Number: 1921499

LCS/LCSD (continued)

Analysis Name	LCS Spike Added mg/l	LCS Conc mg/l	LCSD Spike Added mg/l	LCSD Conc mg/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 180931063903B Selenium	0.0100	0.0107	Sample number(s): 9513400-9513404		107		90-113		
Batch number: 180931063903D Barium	0.0500	0.0515	Sample number(s): 9513400-9513404		103		80-120		

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: L180873AA	Sample number(s): 9513400-9513402,9513404-9513409 UNSPK: 9513400									
Acetone	< 20	150	163.32	150	173.5	109	116	54-157	6	30
Benzene	< 1	20	22.29	20	23.02	111	115	80-120	3	30
Bromodichloromethane	< 1	20	17.93	20	18.71	90	94	71-120	4	30
Bromoform	< 4	20	15.51	20	15.48	78	77	59-120	0	30
Bromomethane	< 1	20	16.03	20	16.53	80	83	58-130	3	30
2-Butanone	< 10	150	160.48	150	165.25	107	110	59-135	3	30
Carbon Disulfide	< 5	20	24.19	20	24.69	121	123	65-128	2	30
Carbon Tetrachloride	< 1	20	17.95	20	18.58	90	93	64-134	3	30
Chlorobenzene	< 1	20	20.81	20	21.27	104	106	80-120	2	30
Chloroethane	< 1	20	17.92	20	18.4	90	92	61-123	3	30
Chloroform	< 1	20	20.35	20	21.22	102	106	80-120	4	30
Chloromethane	< 1	20	20.11	20	20.62	101	103	63-120	2	30
Cyclohexane	< 5	20	25.29	20	26.3	126*	131*	67-121	4	30
1,2-Dibromo-3-chloropropane	< 5	20	18.05	20	18.75	90	94	53-128	4	30
Dibromochloromethane	< 1	20	17.92	20	18.27	90	91	71-120	2	30
1,2-Dibromoethane	< 1	20	20.68	20	21.04	103	105	75-120	2	30
1,2-Dichlorobenzene	< 5	20	19.85	20	20.59	99	103	80-120	4	30
1,3-Dichlorobenzene	< 5	20	19.9	20	20.69	99	103	80-120	4	30
1,4-Dichlorobenzene	< 5	20	20.11	20	20.82	101	104	80-120	3	30
Dichlorodifluoromethane	< 1	20	17.3	20	17.82	86	89	47-124	3	30
1,1-Dichloroethane	< 1	20	22.43	20	23.3	112	117	80-120	4	30
1,2-Dichloroethane	< 1	20	19.42	20	19.95	97	100	73-124	3	30
1,1-Dichloroethene	< 1	20	24.23	20	24.92	121	125	80-131	3	30
cis-1,2-Dichloroethene	2.52	20	23.91	20	24.49	107	110	80-120	2	30
trans-1,2-Dichloroethene	< 1	20	22.52	20	22.76	113	114	80-120	1	30
1,2-Dichloropropane	< 1	20	22.06	20	22.95	110	115	80-120	4	30
cis-1,3-Dichloropropene	< 1	20	18.74	20	19.52	94	98	75-120	4	30

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Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/23/2018 16:13

Group Number: 1921499

MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
trans-1,3-Dichloropropene	< 1	20	18.83	20	19.14	94	96	76-120	2	30
Ethylbenzene	< 1	20	21.98	20	22.45	110	112	80-120	2	30
Freon 113	< 10	20	24.31	20	24.93	122	125	68-137	3	30
4-Methyl-2-pentanone	< 10	100	106.67	100	110.51	107	111	62-133	4	30
Methylcyclohexane	< 5	20	22.83	20	23.5	114	117	67-121	3	30
Methylene Chloride	< 1	20	21.78	20	22.4	109	112	80-120	3	30
Styrene	< 5	20	21	20	21.71	105	109	80-120	3	30
1,1,2,2-Tetrachloroethane	< 1	20	20.71	20	21.59	104	108	72-120	4	30
Tetrachloroethene	8.48	20	30.68	20	31	111	113	80-120	1	30
Toluene	< 1	20	22.66	20	23.06	113	115	80-120	2	30
1,2,4-Trichlorobenzene	< 5	20	18.58	20	19.02	93	95	70-120	2	30
1,1,1-Trichloroethane	< 1	20	19.1	20	19.74	95	99	67-126	3	30
1,1,2-Trichloroethane	< 1	20	22.14	20	21.99	111	110	80-120	1	30
Trichloroethene	< 1	20	21.02	20	21.28	105	106	80-120	1	30
Trichlorofluoromethane	< 1	20	17.79	20	18.12	89	91	60-136	2	30
Vinyl Chloride	< 1	20	17.54	20	18.32	88	92	68-120	4	30
Xylene (Total)	< 1	60	63.47	60	65.02	106	108	80-120	2	30
	ug/l	ug/l	ug/l	ug/l	ug/l					
Batch number: 18080WAA026	Sample number(s): 9513400-9513402,9513405-9513407 UNSPK: 9513400									
Acenaphthene	< 0.05	1.00	0.978	1.03	0.975	97	95	70-133	0	30
Acenaphthylene	< 0.05	1.00	0.808	1.03	0.817	80	79	47-102	1	30
Anthracene	0.0165	1.00	0.895	1.03	0.938	88	90	68-120	5	30
Benzo(a)anthracene	< 0.05	1.00	0.897	1.03	0.896	89	87	65-129	0	30
Benzo(a)pyrene	< 0.05	1.00	0.772	1.03	0.918	77	89	65-126	17	30
Benzo(b)fluoranthene	< 0.05	1.00	0.874	1.03	0.933	87	91	65-136	6	30
Benzo(g,h,i)perylene	< 0.05	1.00	0.592	1.03	0.621	59	60	49-134	5	30
Benzo(k)fluoranthene	< 0.05	1.00	0.830	1.03	0.885	83	86	65-131	6	30
Chrysene	< 0.05	1.00	0.874	1.03	0.866	87	84	62-129	1	30
Dibenz(a,h)anthracene	< 0.05	1.00	0.674	1.03	0.623	67	61	50-139	8	30
Fluoranthene	< 0.05	1.00	0.850	1.03	0.856	85	83	62-126	1	30
Fluorene	< 0.05	1.00	0.815	1.03	0.803	81	78	61-115	1	30
Indeno(1,2,3-cd)pyrene	< 0.05	1.00	0.641	1.03	0.664	64	65	52-133	4	30
2-Methylnaphthalene	< 0.05	1.00	0.756	1.03	0.817	75	79	39-136	8	30
Naphthalene	< 0.06	1.00	0.750	1.03	0.747	75	73	43-120	0	30
Phenanthrene	< 0.06	1.00	0.876	1.03	0.887	87	86	66-120	1	30
Pyrene	< 0.05	1.00	0.841	1.03	0.837	84	81	55-131	0	30
Batch number: 18080WAB026	Sample number(s): 9513400-9513402,9513405-9513407 UNSPK: 9513400									
Acetophenone	< 1	51.02	44.83	51.65	45.69	88	88	53-118	2	30
Butylbenzylphthalate	< 5	51.02	40.93	51.65	43.61	80	84	40-131	6	30
Di-n-butylphthalate	< 5	51.02	44.13	51.65	44.79	86	87	58-119	1	30
4-Chloroaniline	< 4	51.02	30.38	51.65	27.64	60	54	33-106	9	30

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Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/23/2018 16:13

Group Number: 1921499

MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
bis(2-Chloroethyl)ether	< 1	51.02	40.04	51.65	40.98	78	79	48-119	2	30
bis(2-Chloroisopropyl)ether	< 1	51.02	40.75	51.65	41.61	80	81	35-128	2	30
2-Chlorophenol	< 1	51.02	41.82	51.65	41.84	82	81	47-116	0	30
2,2'-oxybis(1-Chloropropane)	< 1	51.02	40.75	51.65	41.61	80	81	40-117	2	30
3,3'-Dichlorobenzidine	< 5	51.02	34.12	51.65	33.76	67	65	32-106	1	30
2,4-Dichlorophenol	< 1	51.02	45.02	51.65	46.85	88	91	53-126	4	30
Diethylphthalate	< 5	51.02	38.91	51.65	38.18	76	74	42-124	2	30
2,4-Dimethylphenol	< 1	51.02	41.14	51.65	41.99	81	81	41-103	2	30
Dimethylphthalate	< 5	51.02	32.53	51.65	37.48	64	73	19-119	14	30
2,4-Dinitrophenol	< 31	102.04	51.26	103.31	66.23	50	64	19-140	25	30
2,4-Dinitrotoluene	< 5	51.02	44.77	51.65	42.52	88	82	56-128	5	30
bis(2-Ethylhexyl)phthalate	< 5	51.02	45.77	51.65	47.2	90	91	52-132	3	30
Hexachlorobenzene	< 0.5	51.02	45.7	51.65	48.18	90	93	57-123	5	30
Hexachlorobutadiene	< 1	51.02	32.05	51.65	27.55	63	53	16-119	15	30
Hexachlorocyclopentadiene	< 16	102.04	50.48	103.31	43.06	49	42	10-104	16	30
Hexachloroethane	< 5	51.02	28.22	51.65	25.48	55	49	19-105	10	30
Isophorone	< 1	51.02	45.92	51.65	47.05	90	91	49-129	2	30
4-Methylphenol	< 1	51.02	39.62	51.65	39.98	78	77	42-115	1	30
Nitrobenzene	< 1	51.02	41.3	51.65	42.65	81	83	43-128	3	30
2-Nitrophenol	< 1	51.02	45.95	51.65	48.02	90	93	58-125	4	30
4-Nitrophenol	< 31	51.02	27.16	51.65	29.03	53	56	10-96	7	30
N-Nitroso-di-n-propylamine	< 1	51.02	44.74	51.65	45.8	88	89	48-128	2	30
N-Nitrosodiphenylamine	< 1	51.02	44.88	51.65	44.05	88	85	55-128	2	30
Di-n-octylphthalate	< 5	51.02	47.42	51.65	47.41	93	92	51-134	0	30
Pentachlorophenol	< 5	51.02	24.63	51.65	29.35	48*	57	50-127	17	30
Phenol	< 1	51.02	23.69	51.65	24.24	46	47	10-92	2	30
2,4,5-Trichlorophenol	< 1	51.02	49.23	51.65	48.28	96	93	59-129	2	30
2,4,6-Trichlorophenol	< 1	51.02	48.67	51.65	50.52	95	98	61-130	4	30
	ug/l	ug/l	ug/l	ug/l	ug/l					
Batch number: 180800006A	Sample number(s): 9513400-9513402,9513405-9513407 UNSPK: 9513400									
1,3-Dinitrobenzene	< 0.60	10	10.4	10	10.57	104	106	70-130	2	30
2,4-Dinitrotoluene	< 0.60	10	10.42	10	10.58	104	106	84-122	2	30
Nitrobenzene	< 0.90	10	10.21	10	10.38	102	104	85-115	2	30
4-Nitrotoluene	< 0.70	10	10.55	10	10.45	105	104	61-133	1	30
1,3,5-Trinitrobenzene	< 0.60	10	9.38	10	9.39	94	94	55-122	0	30
	ug/l	ug/l	ug/l	ug/l	ug/l					
Batch number: 180810008A	Sample number(s): 9513400-9513402,9513405-9513407 UNSPK: 9513400									
PCB-1016	< 0.41	5.07	4.00	5.20	4.55	79	87	60-117	13	30
PCB-1260	< 0.41	5.07	4.09	5.20	4.69	81	90	57-134	14	30
Batch number: 180810043A	Sample number(s): 9513404 UNSPK: P510409									

*- Outside of specification

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(2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/23/2018 16:13

Group Number: 1921499

MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
PCB-1016	< 0.40	5.13	4.29	5.18	3.95	84	76	60-117	8	30
PCB-1260	< 0.40	5.13	5.02	5.18	4.64	98	90	57-134	8	30
	mg/l	mg/l	mg/l	mg/l	mg/l					
Batch number: 180810571305	Sample number(s): 9513405-9513407 UNSPK: P506208									
Mercury	< 0.00020	0.00100	0.000862	0.00100	0.000867	86	87	80-120	0	20
Batch number: 180811063901A	Sample number(s): 9513405-9513407 UNSPK: P510409									
Antimony	< 0.0020	0.00600	0.00687	0.00600	0.00610	115	102	75-125	12	20
Arsenic	< 0.0040	0.0100	0.0101	0.0100	0.00987	101	99	75-125	2	20
Beryllium	< 0.0010	0.00400	0.00407	0.00400	0.00408	102	102	75-125	0	20
Cadmium	< 0.0010	0.00500	0.00493	0.00500	0.00484	99	97	75-125	2	20
Chromium	< 0.0040	0.0500	0.0517	0.0500	0.0516	103	103	75-125	0	20
Copper	< 0.0040	0.0500	0.0497	0.0500	0.0506	99	101	75-125	2	20
Lead	< 0.0020	0.0150	0.0153	0.0150	0.0150	102	100	75-125	2	20
Nickel	< 0.0040	0.0500	0.0503	0.0500	0.0513	101	103	75-125	2	20
Silver	< 0.0010	0.0500	0.0486	0.0500	0.0487	97	97	75-125	0	20
Thallium	< 0.0010	0.00200	0.00209	0.00200	0.00201	105	101	75-125	4	20
Zinc	< 0.0300	0.500	0.493	0.500	0.504	99	101	75-125	2	20
Batch number: 180811063901B	Sample number(s): 9513405-9513407 UNSPK: P510409									
Selenium	< 0.0040	0.0100	0.0102	0.0100	0.0101	102	101	75-125	1	20
Batch number: 180811063901D	Sample number(s): 9513405-9513407 UNSPK: P510409									
Barium	0.0875	0.0500	0.139	0.0500	0.140	103	105	75-125	1	20
Batch number: 180820571308	Sample number(s): 9513400-9513404 UNSPK: 9513400									
Mercury	< 0.00020	0.00100	0.000878	0.00100	0.000872	88	87	80-120	1	20
Batch number: 180931063903A	Sample number(s): 9513400-9513404 UNSPK: 9513400									
Antimony	< 0.0020	0.00600	0.00608	0.00600	0.00607	101	101	75-125	0	20
Arsenic	< 0.0040	0.0100	0.0108	0.0100	0.0105	108	105	75-125	3	20
Beryllium	0.0000927	0.00400	0.00416	0.00400	0.00410	102	100	75-125	2	20
Cadmium	< 0.0010	0.00500	0.00520	0.00500	0.00513	104	103	75-125	1	20
Chromium	0.00228	0.0500	0.0513	0.0500	0.0514	98	98	75-125	0	20
Copper	0.00128	0.0500	0.0543	0.0500	0.0529	106	103	75-125	3	20
Lead	0.000417	0.0150	0.0157	0.0150	0.0157	102	102	75-125	0	20
Nickel	0.00126	0.0500	0.0545	0.0500	0.0538	106	105	75-125	1	20
Silver	< 0.0010	0.0500	0.0505	0.0500	0.0496	101	99	75-125	2	20
Thallium	< 0.0010	0.00200	0.00208	0.00200	0.00201	104	101	75-125	4	20
Zinc	0.0302	0.500	0.566	0.500	0.547	107	103	75-125	3	20
Batch number: 180931063903B	Sample number(s): 9513400-9513404 UNSPK: 9513400									
Selenium	0.000749	0.0100	0.0115	0.0100	0.0109	107	102	75-125	5	20

*- Outside of specification

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(2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/23/2018 16:13

Group Number: 1921499

MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/l	MS Spike Added mg/l	MS Conc mg/l	MSD Spike Added mg/l	MSD Conc mg/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 180931063903D Barium	0.107	0.0500	0.161	0.0500	0.157	108	102	75-125	2	20

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/l	DUP Conc mg/l	DUP RPD	DUP RPD Max
Batch number: 180810571305 Mercury	< 0.00020	< 0.00020	0 (1)	20
Batch number: 180811063901A Antimony	< 0.0020	< 0.0020	0 (1)	20
Arsenic	< 0.0040	< 0.0040	0 (1)	20
Beryllium	< 0.0010	< 0.0010	0 (1)	20
Cadmium	< 0.0010	< 0.0010	0 (1)	20
Chromium	< 0.0040	< 0.0040	0 (1)	20
Copper	< 0.0040	< 0.0040	0 (1)	20
Lead	< 0.0020	< 0.0020	0 (1)	20
Nickel	< 0.0040	< 0.0040	0 (1)	20
Silver	< 0.0010	< 0.0010	0 (1)	20
Thallium	< 0.0010	< 0.0010	0 (1)	20
Zinc	< 0.0300	< 0.0300	0 (1)	20
Batch number: 180811063901B Selenium	< 0.0040	< 0.0040	0 (1)	20
Batch number: 180811063901D Barium	0.0875	0.0884	1	20
Batch number: 180820571308 Mercury	< 0.00020	< 0.00020	0 (1)	20
Batch number: 180931063903A Antimony	< 0.0020	< 0.0020	0 (1)	20
Arsenic	< 0.0040	< 0.0040	0 (1)	20
Beryllium	0.0000927	0.000104	12 (1)	20
Cadmium	< 0.0010	< 0.0010	0 (1)	20
Chromium	0.00228	0.00372	48* (1)	20
Copper	0.00128	0.00121	5 (1)	20
Lead	0.000417	0.000544	26* (1)	20

*- Outside of specification

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Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/23/2018 16:13

Group Number: 1921499

Laboratory Duplicate (continued)

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/l	DUP Conc mg/l	DUP RPD	DUP RPD Max
Nickel	0.00126	0.00148	16 (1)	20
Silver	< 0.0010	< 0.0010	0 (1)	20
Thallium	< 0.0010	< 0.0010	0 (1)	20
Zinc	0.0302	0.0299	1 (1)	20
Batch number: 180931063903B	Sample number(s): 9513400-9513404 BKG: 9513400			
Selenium	0.000749	0.000793	6 (1)	20
Batch number: 180931063903D	Sample number(s): 9513400-9513404 BKG: 9513400			
Barium	0.107	0.108	2	20

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: VOCs- 5ml Water by 8260C
Batch number: L180873AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
9513400	93	101	103	100
9513401	94	102	105	101
9513402	95	100	105	101
9513404	94	101	104	100
9513405	93	100	104	101
9513406	93	100	104	101
9513407	93	103	103	100
9513408	92	99	104	101
9513409	93	101	104	100
Blank	94	101	104	101
LCS	94	101	105	101
MS	94	102	105	101
MSD	95	100	105	101
Limits:	80-120	80-120	80-120	80-120

Analysis Name: PAHs by 8270D SIM
Batch number: 18080WAA026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
9513400	82	64	86
9513401	80	73	72
9513402	79	85	75
9513405	78	57	62

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P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/23/2018 16:13

Group Number: 1921499

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: PAHs by 8270D SIM
Batch number: 18080WAA026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
9513406	92	64	75
9513407	77	84	61
Blank	91	105	71
LCS	86	97	69
MS	80	73	72
MSD	79	85	75
Limits:	43-130	23-144	31-121

Analysis Name: SVOAs 8270D MINI
Batch number: 18080WAB026

	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
9513400	24	32	70	60	58	46
9513401	46	57	93	77	76	75
9513402	47	57	89	78	74	74
9513405	24	34	78	62	61	58
9513406	21	27	62	53	52	48
9513407	22	30	69	56	56	63
Blank	31	42	95	72	69	87
LCS	45	53	90	77	71	80
MS	46	57	93	77	76	75
MSD	47	57	89	78	74	74
Limits:	10-71	10-82	21-134	30-111	39-105	27-116

Analysis Name: PAHs by 8270D SIM
Batch number: 18082WAF026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
9513404	96	54	86
Blank	78	86	59
LCS	80	88	57
LCSD	82	92	73
Limits:	43-130	23-144	31-121

Analysis Name: SVOAs 8270D MINI
Batch number: 18082WAG026

	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
9513404	21	29	58	58	62	56
Blank	35	43	86	76	69	98
LCS	48	54	93	78	81	98
LCSD	45	58	91	74	67	85

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Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/23/2018 16:13

Group Number: 1921499

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: SVOAs 8270D MINI
Batch number: 18082WAG026

Limits:	10-71	10-82	21-134	30-111	39-105	27-116
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Analysis Name: Nitroaromatics/Amines 8330B(w)
Batch number: 180800006A

2-nitro-m-xylene

9513400	106
9513401	104
9513402	104
9513405	98
9513406	102
9513407	98
Blank	105
LCS	102
MS	104
MSD	104

Limits: 68-122

Analysis Name: PCBs in Water by 8082A
Batch number: 180810008A

	Tetrachloro-m-xylene-D1	Decachlorobiphenyl-D1	Tetrachloro-m-xylene-D2	Decachlorobiphenyl-D2
--	-------------------------	-----------------------	-------------------------	-----------------------

9513400	85	50	85	46
9513401	81	42	82	41
9513402	87	47	89	44
9513405	82	44	83	43
9513406	92	53	93	50
9513407	84	41	83	39
Blank	91	71	93	68
LCS	88	58	89	57
MS	81	42	82	41
MSD	87	47	89	44

Limits: 33-137 10-148 33-137 10-148

Analysis Name: PCBs in Water by 8082A
Batch number: 180810043A

	Tetrachloro-m-xylene-D1	Decachlorobiphenyl-D1	Tetrachloro-m-xylene-D2	Decachlorobiphenyl-D2
--	-------------------------	-----------------------	-------------------------	-----------------------

9513404	84	45	83	43
Blank	76	52	77	49
LCS	90	41	92	40
MS	86	65	88	63
MSD	77	60	78	57

*- Outside of specification

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Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/23/2018 16:13

Group Number: 1921499

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: PCBs in Water by 8082A

Batch number: 180810043A

Limits: 33-137 10-148 33-137 10-148

Analysis Name: Nitroaromatics/Amines 8330B(w)

Batch number: 180820001A

2-nitro-m-xylene

9513404	100
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Blank	100
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LCS	101
-----	-----

LCSD	98
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Limits: 68-122

*- Outside of specification

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Environmental Analysis Request/Chain of Custody



Lancaster Laboratories
Environmental

Acct. # 10302 Group # 1921499 Sample # 9513400-09

Client: Amec Foster Wheeler				Matrix			Analyses Requested										For Lab Use Only		
Project Name/#: Former Cohn Property		Site ID #:		<input type="checkbox"/> Tissue	<input checked="" type="checkbox"/> Ground	<input type="checkbox"/> Surface	Preservation and Filtration Codes										SF #: _____		
Project Manager: John Jolly		P.O. #: SA14.127-001		<input type="checkbox"/> Potable	<input type="checkbox"/> NPDES	Total # of Containers	N	O	O	O	H	O							
Sampler: Ken Nye, Daniel Howard		PWSID #:		<input type="checkbox"/> Soil	<input type="checkbox"/> Water		6020 - Metals-Select List (Analysis Plan attached)	7470 - Mercury	8082A - PCBs-Select List (Analysis Plan attached)	8270 - SVOCs-Select List (Analysis Plan attached)	8260 - VOCs-Select List (Analysis Plan attached)	8330B - Explosives-Select (Analysis Plan attached)							
Phone #: 770-421-3400		Quote #:																	
State where samples were collected: GA				For Compliance: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>															
Collection		Grab	Composite	Preservation Codes															
Sample Identification				Date	Time	H = HCl T = Thiosulfate N = HNO ₃ B = NaOH S = H ₂ SO ₄ P = H ₃ PO ₄ F = Field Filtered O = Other													
				Remarks															
MW-01-0318		03/15/2018	1655	X		X		X	X	X	X	X							MS/MSD
MW-02-0318		03/16/2018	1045	X		X		X	X	X	X	X							
MW-04-0318		03/16/2018	1325	X		X		X	X	X	X	X							
DUP-WG-01-0318		03/16/2018	1200	X		X		X	X	X	X	X							
EB-WG-0318		03/16/2018	1755	X		X		X	X	X	X	X							
TRIP BLANK (Cooler 1)		---	---	--		X					X								
TRIP BLANK (Cooler 2)		---	---	--		X					X								
Turnaround Time Requested (TAT) (please check): Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>				Relinquished by:			Date	Time	Received by:		Date	Time							
(Rush TAT is subject to laboratory approval and surcharges.)																			
Date results are needed:				Relinquished by:			Date	Time	Received by:		Date	Time							
Rush results requested by (please check): E-Mail <input checked="" type="checkbox"/> Phone <input type="checkbox"/>																			
E-mail Address: per Analytical Request Form				Relinquished by:			Date	Time	Received by:		Date	Time							
Phone:																			
Data Package Options (please check if required)				Relinquished by:			Date	Time	Received by:		Date	Time							
Type I (Validation/non-CLP) <input type="checkbox"/>		MA MCP <input type="checkbox"/>							<i>Enrique Sanchez</i>		Date	Time							
Type III (Reduced non-CLP) <input type="checkbox"/>		CT RCP <input type="checkbox"/>							<i>E. Sanchez</i>		<u>3-20-18</u>	<u>1030</u>							
Type VI (Raw Data Only) <input type="checkbox"/>		TX TRRP-13 <input type="checkbox"/>																	
NJ DKQP <input checked="" type="checkbox"/>		NYSDEC Category <input type="checkbox"/> A or <input type="checkbox"/> B		Relinquished by Commercial Carrier:							Temperature upon receipt <u>0.8-0.9</u> °C								
EDD Required? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				If yes, format: EQUIS			UPS _____ FedEx _____ Other _____												

1921499

Delineation and Characterization Sampling and Analysis Plan - GROUND WATER - March 2018
 Former Cohn Property - Norfolk Southern / Columbus, Muscogee Co, Georgia

Location	Sample	Sample	Metals ICPMS	Mercury	PCBs	SVOCs	VOCs	Explosives	QC		250 ml	2 x 250 mL	2 x 250 mL	3 x 40ml	2 x 1 Liter
ID	ID	Date	6020	7470	8082A	8270 and 8270 SIM	8260	8330B	MS/MSD	Comments	plastic	Glass	Glass	glass vials	Glass
											HNO3 to pH<2	cool <6°C	cool <6°C	HCL to pH<2 and cool <6°C	cool <6°C
											Metals	PCBs	SVOCs/PAHs	VOCs	Explosives
MW-01	MW-01-0318	3/15/2018	Sb, As, Ba, Be Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn-SEE TABLE 1	Hg SEE TABLE 1	PCBs SEE TABLE 4	SVOCs SEE TABLE 3	VOCs SEE TABLE 2	Explosives SEE TABLE 5	Metals, PCBs, SVOCs, VOCs, Explosives	Metals, PCBs, SVOCs, VOCs, Explosives	3	6	6	9	6
MW-02	MW-02-0318	3/16/2018	Sb, As, Ba, Be Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn-SEE TABLE 1	Hg SEE TABLE 1	PCBs SEE TABLE 4	SVOCs SEE TABLE 3	VOCs SEE TABLE 2	Explosives SEE TABLE 5	--	Metals, PCBs, SVOCs, VOCs, Explosives	1	2	2	3	2
MW-04	MW-04-0318	3/16/2018	Sb, As, Ba, Be Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn-SEE TABLE 1	Hg SEE TABLE 1	PCBs SEE TABLE 4	SVOCs SEE TABLE 3	VOCs SEE TABLE 2	Explosives SEE TABLE 5		Metals, PCBs, SVOCs, VOCs, Explosives	1	2	2	3	2
QC	DUP-WG-01-0318	3/16/2018	Sb, As, Ba, Be Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn-SEE TABLE 1	Hg SEE TABLE 1	PCBs SEE TABLE 4	SVOCs SEE TABLE 3	VOCs SEE TABLE 2	Explosives SEE TABLE 5	--	Metals, PCBs, SVOCs, VOCs, Explosives	1	2	2	3	2
QC	EB-WG-0318	3/16/2018	Sb, As, Ba, Be Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn-SEE TABLE 1	Hg SEE TABLE 1	PCBs SEE TABLE 4	SVOCs SEE TABLE 3	VOCs SEE TABLE 2	Explosives SEE TABLE 5	--	Metals, PCBs, SVOCs, VOCs, Explosive	1	2	2	3	2
QC	TRIP BLANK (Cooler 1)	3/16/2018	--	--	--	--	--	--	--	VOCs					
QC	TRIP BLANK (Cooler 2)	3/16/2018	--	--	--	--	--	--	--	VOCs	1	2	2	3	2
Total Bottles =											10	20	20	30	18

Notes:

Metals: As = Arsenic, Ba=Barium, Be=Beryllium, Cd = Cadmium, Cr=Chromium, Cu = Copper, Pb=Lead, Hg = Mercury, Ni = Nickel, Sb = Antimony, Se=Selenium, Ag=Silver, Tl = Thallium, Zn = Zinc

PCBs = PCBs 1016, 1221, 1232, 1242, 1248, 1254, 1260

- = Collect QC
- = Collect Field Dup
- = Collect MS/MSD

1921499

TABLE 1 METALS

Metals SW-846 6020A	CAS Number	Laboratory Quantitation Limit (mg/L)
Antimony ✓	7440-36-0	0.002
Arsenic ✓	7440-38-2	0.004
Barium ✓	7440-39-3	0.004
Beryllium ✓	7440-41-7	0.001
Cadmium ✓	7440-43-9	0.001
Chromium ✓	7440-47-3	0.004
Copper ✓	7440-50-8	0.004
Lead ✓	7439-92-1	0.002
Nickel ✓	7440-02-0	0.004
Selenium ✓	7782-49-2	0.004
Silver ✓	7440-22-4	0.001
Thallium ✓	7440-28-0	0.001
Zinc ✓	7440-66-6	0.03

Metals SW-846 7470A	CAS Number	Laboratory Quantitation Limit (mg/L)
Mercury ✓	7439-97-6	0.0002

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TABLE 2 VOCS

GC/MS Volatiles SW-846 8260C	CAS Number	Laboratory Quantitation Limit (ug/L)
Acetone	67-64-1	20
Benzene	71-43-2	1
Bromodichloromethane	75-27-4	1
Bromoform	75-25-2	4
Bromomethane	74-83-9	1
2-Butanone	78-93-3	10
Carbon Disulfide	75-15-0	5
Carbon Tetrachloride	56-23-5	1
Chlorobenzene	108-90-7	1
Chloroethane	75-00-3	1
Chloroform	67-66-3	1
Chloromethane	74-87-3	1
Cyclohexane	110-82-7	5
1,2-Dibromo-3-chloropropane	96-12-8	5
Dibromochloromethane	124-48-1	1
1,2-Dibromoethane	106-93-4	1
1,2-Dichlorobenzene	95-50-1	5
1,3-Dichlorobenzene	541-73-1	5
1,4-Dichlorobenzene	106-46-7	5
Dichlorodifluoromethane	75-71-8	1
1,1-Dichloroethane	75-34-3	1
1,2-Dichloroethane	107-06-2	1
1,1-Dichloroethene	75-35-4	1
cis-1,2-Dichloroethene	156-59-2	1
trans-1,2-Dichloroethene	156-60-5	1
1,2-Dichloropropane	78-87-5	1
cis-1,3-Dichloropropene	10061-01-5	1
trans-1,3-Dichloropropene	10061-02-6	1
Ethylbenzene	100-41-4	1
Freon-113	76-13-1	10
4-Methyl-2-pentanone	108-10-1	10
Methylcyclohexane	108-87-2	5
Methylene Chloride	75-09-2	4
Styrene	100-42-5	5
1,1,2,2-Tetrachloroethane	79-34-5	1
Tetrachloroethene	127-18-4	1
Toluene	108-88-3	1
1,2,4-Trichlorobenzene	120-82-1	5
1,1,1-Trichloroethane	71-55-6	1
1,1,2-Trichloroethane	79-00-5	1
Trichloroethene	79-01-6	1
Trichlorofluoromethane	75-69-4	1
Vinyl Chloride	75-01-4	1
Xylene, Total	1330-20-7	1

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TABLE 3 SVOCS

GC/MS Semivolatiles SW-846 8270D	CAS Number	Laboratory Quantitation Limit (ug/L)
Acetophenone	98-86-2	1
Butylbenzylphthalate	85-68-7	5
Di-n-butylphthalate	84-74-2	5
4-Chloroaniline	106-47-8	4
bis(2-Chloroethyl)ether	111-44-4	1
2-Chlorophenol	95-57-8	1
2,2'-oxybis(1-Chloropropane)	108-60-1	1
Bis(2-chloroisopropyl) ether	39638-32-9	
2,2'-Oxybis(1-chloropropane)	108-60-1	
3,3'-Dichlorobenzidine	91-94-1	5
2,4-Dichlorophenol	120-83-2	1
Diethylphthalate	84-66-2	5
2,4-Dimethylphenol	105-67-9	1
Dimethylphthalate	131-11-3	5
2,4-Dinitrophenol	51-28-5	30
2,4-Dinitrotoluene	121-14-2	5
bis(2-Ethylhexyl)phthalate	117-81-7	5
Hexachlorobenzene	118-74-1	0.5
Hexachlorobutadiene	87-68-3	1
Hexachlorocyclopentadiene	77-47-4	15
Hexachloroethane	67-72-1	5
Isophorone	78-59-1	1
4-Methylphenol	106-44-5	1
3-Methylphenol		
Nitrobenzene	98-95-3	1
2-Nitrophenol	88-75-5	1
4-Nitrophenol	100-02-7	30
N-Nitroso-di-n-propylamine	621-64-7	1
N-Nitrosodiphenylamine	86-30-6	1
Di-n-octylphthalate	117-84-0	5
Pentachlorophenol	87-86-5	5
Phenol	108-95-2	1
2,4,5-Trichlorophenol	95-95-4	1
2,4,6-Trichlorophenol	88-06-2	1

GC/MS Semivolatiles SW-846 8270D SIM	CAS Number	Laboratory Quantitation Limit (ug/L)
Acenaphthene	83-32-9	0.05
Acenaphthylene	208-96-8	0.05
Anthracene	120-12-7	0.05
Benzo(a)anthracene	56-55-3	0.05
Benzo(a)pyrene	50-32-8	0.05
Benzo(b)fluoranthene	205-99-2	0.05
Benzo(g,h,i)perylene	191-24-2	0.05
Benzo(k)fluoranthene	207-08-9	0.05
Chrysene	218-01-9	0.05
Dibenz(a,h)anthracene	53-70-3	0.05
Fluoranthene	206-44-0	0.05
Fluorene	86-73-7	0.05
Indeno(1,2,3-cd)pyrene	193-39-5	0.05
2-Methylnaphthalene	91-57-6	0.05
Naphthalene	91-20-3	0.06
Phenanthrene	85-01-8	0.06
Pyrene	129-00-0	0.05

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TABLE 4 PCBS

Pesticides/PCBs SW-846 8082A	CAS Number	Laboratory Quantitation Limit (ug/L)
PCB-1016	12674-11-2	0.40
PCB-1221	11104-28-2	0.40
PCB-1232	11141-16-5	0.40
PCB-1242	53469-21-9	0.40
PCB-1248	12672-29-6	0.40
PCB-1254	11097-69-1	0.40
PCB-1260	11096-82-5	0.40

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TABLE 5 EXPLOSIVES

Explosives SW-846 8330B Rev 2 (Oct 2006)	CAS Number	Laboratory Quantitation Limit (ug/L)
1,3-Dinitrobenzene	99-65-0	0.60
2,4-Dinitrotoluene	121-14-2	0.60
Nitrobenzene	98-95-3	0.60
4-Nitrotoluene	99-99-0	0.60
1,3,5-Trinitrobenzene	99-35-4	0.60



Client: Amec Foster Wheeler E&I, Inc.

Delivery and Receipt Information

Delivery Method: Fed Ex Arrival Timestamp: 03/20/2018 10:30
 Number of Packages: 2 Number of Projects: 3
 State/Province of Origin: GA

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	N/A
Samples Chilled:	Yes	Total Trip Blank Qty:	2
Paperwork Enclosed:	Yes	Trip Blank Type:	HCl
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	Yes		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	Yes		

Unpacked by Melvin Sanchez (8943) at 15:29 on 03/20/2018

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT131	0.9	DT	Wet	Y	Loose/Bag	N
2	DT131	0.8	DT	Wet	Y	Loose/Bag	N

Missing Sample Details

<u>Sample ID on COC</u>	<u>Comments</u>
MW-02-0318	

Container Quantity Discrepancy Details

Sample ID on COC	Container Qty. Received	Container Qty. on COC	Comments
MW-01-0318	9	30	

General Comments: OnlyReceived 2 trip blanks.



Client: Amec Foster Wheeler

Delivery and Receipt Information

Delivery Method:	<u>Fed Ex</u>	Arrival Timestamp:	<u>03/21/2018 12:40</u>
Number of Packages:	<u>2</u>	Number of Projects:	<u>3</u>
State/Province of Origin:	<u>GA</u>		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	No
Samples Chilled:	Yes	Total Trip Blank Qty:	2
Paperwork Enclosed:	Yes	Trip Blank Type:	HCL
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Conrad Burkholder (12671) at 15:47 on 03/21/2018

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT146	1.4	DT	Wet	Y	Bagged	N
2	DT146	0.9	DT	Wet	Y	Bagged	N

General Comments: Only received 21 bottles of first sample and all of second sample.

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	mg	milligram(s)
C	degrees Celsius	mL	milliliter(s)
cfu	colony forming units	MPN	Most Probable Number
CP Units	cobalt-chloroplatinate units	N.D.	non-detect
F	degrees Fahrenheit	ng	nanogram(s)
g	gram(s)	NTU	nephelometric turbidity units
IU	International Units	pg/L	picogram/liter
kg	kilogram(s)	RL	Reporting Limit
L	liter(s)	TNTC	Too Numerous To Count
lb.	pound(s)	µg	microgram(s)
m3	cubic meter(s)	µL	microliter(s)
meq	milliequivalents	umhos/cm	micromhos/cm
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
J (or G, I, X)	Estimated value \geq the Method Detection Limit (MDL or DL) and $<$ the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column $>40\%$. The lower result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column $>100\%$. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.



ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Norfolk Southern Railway Co.
1200 Peachtree Street, NE
Box 13
Atlanta GA 30309

Report Date: April 03, 2018 13:45

Project: Former Cohn Property/Columbus, GA

Account #: 10302
Group Number: 1921500
PO Number: SA14.127-001
Release Number: 1440001625
State of Sample Origin: GA

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at <http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/> . To request copies of prior scopes of accreditation, contact your project manager.

Electronic Copy To Amec Foster Wheeler
Electronic Copy To Amec Foster Wheeler
Electronic Copy To Amec Foster Wheeler

Attn: Rhonda Quinn
Attn: Michelle Barker
Attn: Judy Hartness

Respectfully Submitted,



Katherine A. Klinefelter
Principal Specialist

(717) 556-7256



SAMPLE INFORMATION

<u>Client Sample Description</u>	<u>Sample Collection</u> <u>Date/Time</u>	<u>ELLE#</u>
EB-SOIL-0318 Grab Water	03/16/2018 17:30	9513410
TRIP BLANK (Cooler 2) Water	03/16/2018	9513411

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Project Name: Former Cohn Property/Columbus, GA
ELLE Group #: 1921500

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below.

Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set.

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

For dual column analyses, the surrogate (for multi-surrogate tests, at least one surrogate) must be within the acceptance limits on at least one of the two columns.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:**SW-846 8260C, GC/MS Volatiles**

Sample #s: 9513410, 9513411

Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.

A Method Detection Limit (MDL) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The MDL standard shows adequate sensitivity at or below the reporting limit.

Batch #: L180882AA (Sample number(s): 9513410-9513411 UNSPK: P515698)

The recovery(ies) for the following analyte(s) in the MS and/or MSD exceeded the acceptance window indicating a positive bias: Cyclohexane

SW-846 8270D, GC/MS Semivolatiles

Batch #: 18080WAB026 (Sample number(s): 9513410 UNSPK: P513400)

The recovery(ies) for the following analyte(s) in the MS and/or MSD were below the acceptance window: Pentachlorophenol

Sample Description: EB-SOIL-0318 Grab Water
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513410
ELLE Group #: 1921500
Matrix: Water

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/16/2018 17:30

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Volatiles						
		SW-846 8260C	ug/l	ug/l	ug/l	
11997	Acetone	67-64-1	< 20	20	6	1
11997	Benzene	71-43-2	< 1	1	0.5	1
11997	Bromodichloromethane	75-27-4	< 1	1	0.5	1
11997	Bromoform	75-25-2	< 4	4	0.5	1
11997	Bromomethane	74-83-9	< 1	1	0.5	1
11997	2-Butanone	78-93-3	< 10	10	3	1
11997	Carbon Disulfide	75-15-0	< 5	5	1	1
11997	Carbon Tetrachloride	56-23-5	< 1	1	0.5	1
11997	Chlorobenzene	108-90-7	< 1	1	0.5	1
11997	Chloroethane	75-00-3	< 1	1	0.5	1
11997	Chloroform	67-66-3	< 1	1	0.5	1
11997	Chloromethane	74-87-3	< 1	1	0.5	1
11997	Cyclohexane	110-82-7	< 5	5	2	1
11997	1,2-Dibromo-3-chloropropane	96-12-8	< 5	5	2	1
11997	Dibromochloromethane	124-48-1	< 1	1	0.5	1
11997	1,2-Dibromoethane	106-93-4	< 1	1	0.5	1
11997	1,2-Dichlorobenzene	95-50-1	< 5	5	1	1
11997	1,3-Dichlorobenzene	541-73-1	< 5	5	1	1
11997	1,4-Dichlorobenzene	106-46-7	< 5	5	1	1
11997	Dichlorodifluoromethane	75-71-8	< 1	1	0.5	1
11997	1,1-Dichloroethane	75-34-3	< 1	1	0.5	1
11997	1,2-Dichloroethane	107-06-2	< 1	1	0.5	1
11997	1,1-Dichloroethene	75-35-4	< 1	1	0.5	1
11997	cis-1,2-Dichloroethene	156-59-2	< 1	1	0.5	1
11997	trans-1,2-Dichloroethene	156-60-5	< 1	1	0.5	1
11997	1,2-Dichloropropane	78-87-5	< 1	1	0.5	1
11997	cis-1,3-Dichloropropene	10061-01-5	< 1	1	0.5	1
11997	trans-1,3-Dichloropropene	10061-02-6	< 1	1	0.5	1
11997	Ethylbenzene	100-41-4	< 1	1	0.5	1
11997	Freon 113	76-13-1	< 10	10	2	1
11997	4-Methyl-2-pentanone	108-10-1	< 10	10	3	1
11997	Methylcyclohexane	108-87-2	< 5	5	1	1
11997	Methylene Chloride	75-09-2	< 1	1	0.5	1
11997	Styrene	100-42-5	< 5	5	1	1
11997	1,1,1,2-Tetrachloroethane	79-34-5	< 1	1	0.5	1
11997	Tetrachloroethene	127-18-4	< 1	1	0.5	1
11997	Toluene	108-88-3	< 1	1	0.5	1
11997	1,2,4-Trichlorobenzene	120-82-1	< 5	5	1	1
11997	1,1,1-Trichloroethane	71-55-6	< 1	1	0.5	1
11997	1,1,2-Trichloroethane	79-00-5	< 1	1	0.5	1
11997	Trichloroethene	79-01-6	< 1	1	0.5	1
11997	Trichlorofluoromethane	75-69-4	< 1	1	0.5	1

*=This limit was used in the evaluation of the final result

Sample Description: EB-SOIL-0318 Grab Water
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513410
ELLE Group #: 1921500
Matrix: Water

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/16/2018 17:30

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Volatiles						
		SW-846 8260C	ug/l	ug/l	ug/l	
11997	Vinyl Chloride	75-01-4	< 1	1	0.5	1
11997	Xylene (Total)	1330-20-7	< 1	1	0.5	1

Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.

A Method Detection Limit (MDL) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The MDL standard shows adequate sensitivity at or below the reporting limit.

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Semivolatiles						
		SW-846 8270D	ug/l	ug/l	ug/l	
14241	Acetophenone	98-86-2	< 1	1	0.5	1
14241	Butylbenzylphthalate	85-68-7	< 5	5	2	1
14241	Di-n-butylphthalate	84-74-2	< 5	5	2	1
14241	4-Chloroaniline	106-47-8	< 4	4	2	1
14241	bis(2-Chloroethyl)ether	111-44-4	< 1	1	0.5	1
14241	bis(2-Chloroisopropyl)ether	39638-32-9	< 1	1	0.5	1
Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
14241	2-Chlorophenol	95-57-8	< 1	1	0.5	1
14241	2,2'-oxybis(1-Chloropropane)	108-60-1	< 1	1	0.5	1
Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
14241	3,3'-Dichlorobenzidine	91-94-1	< 5	5	2	1
14241	2,4-Dichlorophenol	120-83-2	< 1	1	0.5	1
14241	Diethylphthalate	84-66-2	< 5	5	2	1
14241	2,4-Dimethylphenol	105-67-9	< 1	1	0.5	1
14241	Dimethylphthalate	131-11-3	< 5	5	2	1
14241	2,4-Dinitrophenol	51-28-5	< 30	30	10	1
14241	2,4-Dinitrotoluene	121-14-2	< 5	5	1	1
14241	bis(2-Ethylhexyl)phthalate	117-81-7	< 5	5	2	1
14241	Hexachlorobenzene	118-74-1	< 0.5	0.5	0.1	1
14241	Hexachlorobutadiene	87-68-3	< 1	1	0.5	1
14241	Hexachlorocyclopentadiene	77-47-4	< 15	15	5	1
14241	Hexachloroethane	67-72-1	< 5	5	1	1
14241	Isophorone	78-59-1	< 1	1	0.5	1
14241	4-Methylphenol	106-44-5	< 1	1	0.5	1
3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
14241	Nitrobenzene	98-95-3	< 1	1	0.5	1

*=This limit was used in the evaluation of the final result

Sample Description: EB-SOIL-0318 Grab Water
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513410
ELLE Group #: 1921500
Matrix: Water

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/16/2018 17:30

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Semivolatiles SW-846 8270D						
14241	2-Nitrophenol	88-75-5	< 1	1	0.5	1
14241	4-Nitrophenol	100-02-7	< 30	30	10	1
14241	N-Nitroso-di-n-propylamine	621-64-7	< 1	1	0.5	1
14241	N-Nitrosodiphenylamine	86-30-6	< 1	1	0.5	1
N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
14241	Di-n-octylphthalate	117-84-0	< 5	5	2	1
14241	Pentachlorophenol	87-86-5	< 5	5	1	1
14241	Phenol	108-95-2	< 1	1	0.5	1
14241	2,4,5-Trichlorophenol	95-95-4	< 1	1	0.5	1
14241	2,4,6-Trichlorophenol	88-06-2	< 1	1	0.5	1
GC/MS Semivolatiles SW-846 8270D SIM						
14244	Acenaphthene	83-32-9	< 0.05	0.05	0.01	1
14244	Acenaphthylene	208-96-8	< 0.05	0.05	0.01	1
14244	Anthracene	120-12-7	< 0.05	0.05	0.01	1
14244	Benzo(a)anthracene	56-55-3	< 0.05	0.05	0.01	1
14244	Benzo(a)pyrene	50-32-8	< 0.05	0.05	0.01	1
14244	Benzo(b)fluoranthene	205-99-2	< 0.05	0.05	0.01	1
14244	Benzo(g,h,i)perylene	191-24-2	< 0.05	0.05	0.01	1
14244	Benzo(k)fluoranthene	207-08-9	< 0.05	0.05	0.01	1
14244	Chrysene	218-01-9	< 0.05	0.05	0.01	1
14244	Dibenz(a,h)anthracene	53-70-3	< 0.05	0.05	0.01	1
14244	Fluoranthene	206-44-0	< 0.05	0.05	0.01	1
14244	Fluorene	86-73-7	< 0.05	0.05	0.01	1
14244	Indeno(1,2,3-cd)pyrene	193-39-5	< 0.05	0.05	0.01	1
14244	2-Methylnaphthalene	91-57-6	< 0.05	0.05	0.01	1
14244	Naphthalene	91-20-3	< 0.06	0.06	0.03	1
14244	Phenanthrene	85-01-8	< 0.06	0.06	0.03	1
14244	Pyrene	129-00-0	< 0.05	0.05	0.01	1
PCBs SW-846 8082A						
10591	PCB-1016	12674-11-2	< 0.40 D1	0.40	0.024	1
10591	PCB-1221	11104-28-2	< 0.40 D1	0.40	0.024	1
10591	PCB-1232	11141-16-5	< 0.40 D1	0.40	0.024	1
10591	PCB-1242	53469-21-9	< 0.40 D1	0.40	0.024	1
10591	PCB-1248	12672-29-6	< 0.40 D1	0.40	0.024	1
10591	PCB-1254	11097-69-1	< 0.40 D1	0.40	0.024	1
10591	PCB-1260	11096-82-5	< 0.40 D1	0.40	0.024	1
Metals SW-846 6010C						
07046	Barium	7440-39-3	< 0.0100	0.0100	0.00085	1

*=This limit was used in the evaluation of the final result

Sample Description: EB-SOIL-0318 Grab Water
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513410
ELLE Group #: 1921500
Matrix: Water

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/16/2018 17:30

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
Metals		SW-846 6010C	mg/l	mg/l	mg/l	
07053	Copper	7440-50-8	< 0.0200	0.0200	0.0040	1
07055	Lead	7439-92-1	< 0.0300	0.0300	0.0060	1
07061	Nickel	7440-02-0	< 0.0200	0.0200	0.0040	1
07072	Zinc	7440-66-6	0.460	0.0400	0.0065	1
		SW-846 6020A	mg/l	mg/l	mg/l	
06024	Antimony	7440-36-0	< 0.0020	0.0020	0.00045	1
06025	Arsenic	7440-38-2	< 0.0040	0.0040	0.00072	1
06027	Beryllium	7440-41-7	< 0.0010	0.0010	0.000071	1
06028	Cadmium	7440-43-9	< 0.0010	0.0010	0.00015	1
06031	Chromium	7440-47-3	< 0.0040	0.0040	0.00087	1
06041	Selenium	7782-49-2	< 0.0040	0.0040	0.00050	1
06042	Silver	7440-22-4	< 0.0010	0.0010	0.00015	1
06045	Thallium	7440-28-0	< 0.0010	0.0010	0.00012	1
		SW-846 7470A	mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	< 0.00020	0.00020	0.000050	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11997	VOCs- 5ml Water by 8260C	SW-846 8260C	1	L180882AA	03/29/2018 11:00	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	L180882AA	03/29/2018 11:00	Jennifer K Howe	1
14241	SVOAs 8270D MINI	SW-846 8270D	1	18080WAB026	03/26/2018 01:28	Holly B Ziegler	1
14244	PAHs by 8270D SIM	SW-846 8270D SIM	1	18080WAA026	03/26/2018 12:40	Edward C Monborne	1
10466	BNA Water Extraction SIM	SW-846 3510C	1	18080WAA026	03/22/2018 17:00	Osvaldo R Sanchez	1
11010	8270D BNA Extraction	SW-846 3510C	1	18080WAB026	03/22/2018 17:00	Osvaldo R Sanchez	1
10591	PCBs in Water by 8082A	SW-846 8082A	1	180810008A	03/25/2018 19:35	Kirby B Turner	1
11121	PCB Waters Update IV Ext	SW-846 3510C	1	180810008A	03/22/2018 16:55	Kate E Lutte	1
07046	Barium	SW-846 6010C	1	180811063501	03/25/2018 16:49	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010C	1	180811063501	03/25/2018 16:49	Elaine F Stoltzfus	1
07055	Lead	SW-846 6010C	1	180811063501	03/25/2018 16:49	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010C	1	180811063501	03/25/2018 16:49	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010C	1	180811063501	03/25/2018 16:49	Elaine F Stoltzfus	1
06024	Antimony	SW-846 6020A	1	180811063901A	03/29/2018 10:14	Patrick J Engle	1
06025	Arsenic	SW-846 6020A	1	180811063901A	03/29/2018 10:14	Patrick J Engle	1
06027	Beryllium	SW-846 6020A	1	180811063901A	03/29/2018 10:14	Patrick J Engle	1
06028	Cadmium	SW-846 6020A	1	180811063901A	03/29/2018 10:14	Patrick J Engle	1

*=This limit was used in the evaluation of the final result

Sample Description: EB-SOIL-0318 Grab Water
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513410
ELLE Group #: 1921500
Matrix: Water

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/16/2018 17:30

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06031	Chromium	SW-846 6020A	1	180811063901A	03/29/2018 10:14	Patrick J Engle	1
06041	Selenium	SW-846 6020A	1	180811063901B	03/29/2018 10:14	Patrick J Engle	1
06042	Silver	SW-846 6020A	1	180811063901A	03/29/2018 10:14	Patrick J Engle	1
06045	Thallium	SW-846 6020A	1	180811063901A	03/29/2018 10:14	Patrick J Engle	1
00259	Mercury	SW-846 7470A	1	180810571305	03/24/2018 09:25	Damary Valentin	1
10635	ICP-WW, 3005A (tot rec) - U4	SW-846 3005A	1	180811063501	03/23/2018 16:48	Barbara A Kane	1
10639	ICPMS - Water, 3020A - U4	SW-846 3020A	1	180811063901	03/22/2018 22:35	Denise L Trimby	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	180810571305	03/23/2018 18:40	Barbara A Kane	1

*=This limit was used in the evaluation of the final result

Sample Description: TRIP BLANK (Cooler 2) Water
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513411
ELLE Group #: 1921500
Matrix: Water

Project Name: Former Cohn Property/Columbus, GA

Submittal Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/16/2018

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Volatiles						
		SW-846 8260C	ug/l	ug/l	ug/l	
11997	Acetone	67-64-1	< 20	20	6	1
11997	Benzene	71-43-2	< 1	1	0.5	1
11997	Bromodichloromethane	75-27-4	< 1	1	0.5	1
11997	Bromoform	75-25-2	< 4	4	0.5	1
11997	Bromomethane	74-83-9	< 1	1	0.5	1
11997	2-Butanone	78-93-3	< 10	10	3	1
11997	Carbon Disulfide	75-15-0	< 5	5	1	1
11997	Carbon Tetrachloride	56-23-5	< 1	1	0.5	1
11997	Chlorobenzene	108-90-7	< 1	1	0.5	1
11997	Chloroethane	75-00-3	< 1	1	0.5	1
11997	Chloroform	67-66-3	< 1	1	0.5	1
11997	Chloromethane	74-87-3	< 1	1	0.5	1
11997	Cyclohexane	110-82-7	< 5	5	2	1
11997	1,2-Dibromo-3-chloropropane	96-12-8	< 5	5	2	1
11997	Dibromochloromethane	124-48-1	< 1	1	0.5	1
11997	1,2-Dibromoethane	106-93-4	< 1	1	0.5	1
11997	1,2-Dichlorobenzene	95-50-1	< 5	5	1	1
11997	1,3-Dichlorobenzene	541-73-1	< 5	5	1	1
11997	1,4-Dichlorobenzene	106-46-7	< 5	5	1	1
11997	Dichlorodifluoromethane	75-71-8	< 1	1	0.5	1
11997	1,1-Dichloroethane	75-34-3	< 1	1	0.5	1
11997	1,2-Dichloroethane	107-06-2	< 1	1	0.5	1
11997	1,1-Dichloroethene	75-35-4	< 1	1	0.5	1
11997	cis-1,2-Dichloroethene	156-59-2	< 1	1	0.5	1
11997	trans-1,2-Dichloroethene	156-60-5	< 1	1	0.5	1
11997	1,2-Dichloropropane	78-87-5	< 1	1	0.5	1
11997	cis-1,3-Dichloropropene	10061-01-5	< 1	1	0.5	1
11997	trans-1,3-Dichloropropene	10061-02-6	< 1	1	0.5	1
11997	Ethylbenzene	100-41-4	< 1	1	0.5	1
11997	Freon 113	76-13-1	< 10	10	2	1
11997	4-Methyl-2-pentanone	108-10-1	< 10	10	3	1
11997	Methylcyclohexane	108-87-2	< 5	5	1	1
11997	Methylene Chloride	75-09-2	< 1	1	0.5	1
11997	Styrene	100-42-5	< 5	5	1	1
11997	1,1,1,2-Tetrachloroethane	79-34-5	< 1	1	0.5	1
11997	Tetrachloroethene	127-18-4	< 1	1	0.5	1
11997	Toluene	108-88-3	< 1	1	0.5	1
11997	1,2,4-Trichlorobenzene	120-82-1	< 5	5	1	1
11997	1,1,1-Trichloroethane	71-55-6	< 1	1	0.5	1
11997	1,1,2-Trichloroethane	79-00-5	< 1	1	0.5	1
11997	Trichloroethene	79-01-6	< 1	1	0.5	1
11997	Trichlorofluoromethane	75-69-4	< 1	1	0.5	1

*=This limit was used in the evaluation of the final result

Sample Description: TRIP BLANK (Cooler 2) Water
Former Cohn Property / Columbus, GA

Norfolk Southern Railway Co.
ELLE Sample #: WW 9513411
ELLE Group #: 1921500
Matrix: Water

Project Name: Former Cohn Property/Columbus, GA

Submission Date/Time: 03/20/2018 10:30
Collection Date/Time: 03/16/2018

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS Volatiles						
		SW-846 8260C	ug/l	ug/l	ug/l	
11997	Vinyl Chloride	75-01-4	< 1	1	0.5	1
11997	Xylene (Total)	1330-20-7	< 1	1	0.5	1

Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.

A Method Detection Limit (MDL) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The MDL standard shows adequate sensitivity at or below the reporting limit.

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/19.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11997	VOCs- 5ml Water by 8260C	SW-846 8260C	1	L180882AA	03/29/2018 11:22	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	L180882AA	03/29/2018 11:22	Jennifer K Howe	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/03/2018 13:45

Group Number: 1921500

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result ug/l	LOQ** ug/l	MDL ug/l
Batch number: L180882AA	Sample number(s): 9513410-9513411		
Acetone	< 20	20	6
Benzene	< 1	1	0.5
Bromodichloromethane	< 1	1	0.5
Bromoform	< 4	4	0.5
Bromomethane	< 1	1	0.5
2-Butanone	< 10	10	3
Carbon Disulfide	< 5	5	1
Carbon Tetrachloride	< 1	1	0.5
Chlorobenzene	< 1	1	0.5
Chloroethane	< 1	1	0.5
Chloroform	< 1	1	0.5
Chloromethane	< 1	1	0.5
Cyclohexane	< 5	5	2
1,2-Dibromo-3-chloropropane	< 5	5	2
Dibromochloromethane	< 1	1	0.5
1,2-Dibromoethane	< 1	1	0.5
1,2-Dichlorobenzene	< 5	5	1
1,3-Dichlorobenzene	< 5	5	1
1,4-Dichlorobenzene	< 5	5	1
Dichlorodifluoromethane	< 1	1	0.5
1,1-Dichloroethane	< 1	1	0.5
1,2-Dichloroethane	< 1	1	0.5
1,1-Dichloroethene	< 1	1	0.5
cis-1,2-Dichloroethene	< 1	1	0.5
trans-1,2-Dichloroethene	< 1	1	0.5
1,2-Dichloropropane	< 1	1	0.5
cis-1,3-Dichloropropene	< 1	1	0.5
trans-1,3-Dichloropropene	< 1	1	0.5
Ethylbenzene	< 1	1	0.5
Freon 113	< 10	10	2
4-Methyl-2-pentanone	< 10	10	3
Methylcyclohexane	< 5	5	1
Methylene Chloride	< 1	1	0.5
Styrene	< 5	5	1
1,1,2,2-Tetrachloroethane	< 1	1	0.5
Tetrachloroethene	< 1	1	0.5
Toluene	< 1	1	0.5
1,2,4-Trichlorobenzene	< 5	5	1
1,1,1-Trichloroethane	< 1	1	0.5

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/03/2018 13:45

Group Number: 1921500

Method Blank (continued)

Analysis Name	Result	LOQ**	MDL
	ug/l	ug/l	ug/l
1,1,2-Trichloroethane	< 1	1	0.5
Trichloroethene	< 1	1	0.5
Trichlorofluoromethane	< 1	1	0.5
Vinyl Chloride	< 1	1	0.5
Xylene (Total)	< 1	1	0.5
Batch number: 18080WAA026	Sample number(s): 9513410		
Acenaphthene	< 0.05	0.05	0.01
Acenaphthylene	< 0.05	0.05	0.01
Anthracene	< 0.05	0.05	0.01
Benzo(a)anthracene	< 0.05	0.05	0.01
Benzo(a)pyrene	< 0.05	0.05	0.01
Benzo(b)fluoranthene	< 0.05	0.05	0.01
Benzo(g,h,i)perylene	< 0.05	0.05	0.01
Benzo(k)fluoranthene	< 0.05	0.05	0.01
Chrysene	< 0.05	0.05	0.01
Dibenz(a,h)anthracene	< 0.05	0.05	0.01
Fluoranthene	< 0.05	0.05	0.01
Fluorene	< 0.05	0.05	0.01
Indeno(1,2,3-cd)pyrene	< 0.05	0.05	0.01
2-Methylnaphthalene	< 0.05	0.05	0.01
Naphthalene	< 0.06	0.06	0.03
Phenanthrene	< 0.06	0.06	0.03
Pyrene	< 0.05	0.05	0.01
Batch number: 18080WAB026	Sample number(s): 9513410		
Acetophenone	< 1	1	0.5
Butylbenzylphthalate	< 5	5	2
Di-n-butylphthalate	< 5	5	2
4-Chloroaniline	< 4	4	2
bis(2-Chloroethyl)ether	< 1	1	0.5
bis(2-Chloroisopropyl)ether	< 1	1	0.5
2-Chlorophenol	< 1	1	0.5
2,2'-oxybis(1-Chloropropane)	< 1	1	0.5
3,3'-Dichlorobenzidine	< 5	5	2
2,4-Dichlorophenol	< 1	1	0.5
Diethylphthalate	< 5	5	2
2,4-Dimethylphenol	< 1	1	0.5
Dimethylphthalate	< 5	5	2
2,4-Dinitrophenol	< 30	30	10
2,4-Dinitrotoluene	< 5	5	1
bis(2-Ethylhexyl)phthalate	< 5	5	2
Hexachlorobenzene	< 0.5	0.5	0.1
Hexachlorobutadiene	< 1	1	0.5
Hexachlorocyclopentadiene	< 15	15	5
Hexachloroethane	< 5	5	1

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/03/2018 13:45

Group Number: 1921500

Method Blank (continued)

Analysis Name	Result	LOQ**	MDL
	ug/l	ug/l	ug/l
Isophorone	< 1	1	0.5
4-Methylphenol	< 1	1	0.5
Nitrobenzene	< 1	1	0.5
2-Nitrophenol	< 1	1	0.5
4-Nitrophenol	< 30	30	10
N-Nitroso-di-n-propylamine	< 1	1	0.5
N-Nitrosodiphenylamine	< 1	1	0.5
Di-n-octylphthalate	< 5	5	2
Pentachlorophenol	< 5	5	1
Phenol	< 1	1	0.5
2,4,5-Trichlorophenol	< 1	1	0.5
2,4,6-Trichlorophenol	< 1	1	0.5
Batch number: 180810008A	Sample number(s): 9513410		
PCB-1016	< 0.40	0.40	0.024
PCB-1221	< 0.40	0.40	0.024
PCB-1232	< 0.40	0.40	0.024
PCB-1242	< 0.40	0.40	0.024
PCB-1248	< 0.40	0.40	0.024
PCB-1254	< 0.40	0.40	0.024
PCB-1260	< 0.40	0.40	0.024
	mg/l	mg/l	mg/l
Batch number: 180810571305	Sample number(s): 9513410		
Mercury	< 0.00020	0.00020	0.000050
Batch number: 180811063501	Sample number(s): 9513410		
Barium	< 0.0100	0.0100	0.00085
Copper	< 0.0200	0.0200	0.0040
Lead	< 0.0300	0.0300	0.0060
Nickel	< 0.0200	0.0200	0.0040
Zinc	< 0.0400	0.0400	0.0065
Batch number: 180811063901A	Sample number(s): 9513410		
Antimony	< 0.0020	0.0020	0.00045
Arsenic	< 0.0040	0.0040	0.00072
Beryllium	< 0.0010	0.0010	0.000071
Cadmium	< 0.0010	0.0010	0.00015
Chromium	< 0.0040	0.0040	0.00087
Silver	< 0.0010	0.0010	0.00015
Thallium	< 0.0010	0.0010	0.00012
Batch number: 180811063901B	Sample number(s): 9513410		
Selenium	< 0.0040	0.0040	0.00050

*- Outside of specification

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P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/03/2018 13:45

Group Number: 1921500

LCS/LCSD

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: L180882AA	Sample number(s): 9513410-9513411								
Acetone	150	172.97			115		54-157		
Benzene	20	21.8			109		80-120		
Bromodichloromethane	20	18.16			91		71-120		
Bromoform	20	15.18			76		59-120		
Bromomethane	20	15.01			75		58-130		
2-Butanone	150	169.81			113		59-135		
Carbon Disulfide	20	22.05			110		65-128		
Carbon Tetrachloride	20	17.42			87		64-134		
Chlorobenzene	20	20.41			102		80-120		
Chloroethane	20	16.43			82		61-123		
Chloroform	20	20.2			101		80-120		
Chloromethane	20	17.87			89		63-120		
Cyclohexane	20	23.27			116		67-121		
1,2-Dibromo-3-chloropropane	20	19.38			97		53-128		
Dibromochloromethane	20	17.73			89		71-120		
1,2-Dibromoethane	20	21.03			105		75-120		
1,2-Dichlorobenzene	20	20.2			101		80-120		
1,3-Dichlorobenzene	20	20			100		80-120		
1,4-Dichlorobenzene	20	20.2			101		80-120		
Dichlorodifluoromethane	20	14.5			73		47-124		
1,1-Dichloroethane	20	21.83			109		80-120		
1,2-Dichloroethane	20	19.77			99		73-124		
1,1-Dichloroethene	20	22.68			113		80-131		
cis-1,2-Dichloroethene	20	20.8			104		80-120		
trans-1,2-Dichloroethene	20	21.42			107		80-120		
1,2-Dichloropropane	20	21.9			110		80-120		
cis-1,3-Dichloropropene	20	18.94			95		75-120		
trans-1,3-Dichloropropene	20	18.91			95		76-120		
Ethylbenzene	20	21.48			107		80-120		
Freon 113	20	22.47			112		68-137		
4-Methyl-2-pentanone	100	112.51			113		62-133		
Methylcyclohexane	20	21.57			108		67-121		
Methylene Chloride	20	21.63			108		80-120		
Styrene	20	20.59			103		80-120		
1,1,2,2-Tetrachloroethane	20	21.45			107		72-120		
Tetrachloroethene	20	20.36			102		80-120		
Toluene	20	21.97			110		80-120		
1,2,4-Trichlorobenzene	20	19.72			99		70-120		
1,1,1-Trichloroethane	20	18.33			92		67-126		
1,1,2-Trichloroethane	20	21.74			109		80-120		
Trichloroethene	20	20.25			101		80-120		
Trichlorofluoromethane	20	16.01			80		60-136		
Vinyl Chloride	20	15.92			80		68-120		

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Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/03/2018 13:45

Group Number: 1921500

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Xylene (Total)	60	62.25			104		80-120		
	ug/l	ug/l	ug/l	ug/l					
Batch number: 18080WAA026	Sample number(s): 9513410								
Acenaphthene	1.00	0.988			99		70-133		
Acenaphthylene	1.00	0.821			82		47-102		
Anthracene	1.00	0.957			96		68-120		
Benzo(a)anthracene	1.00	0.939			94		65-129		
Benzo(a)pyrene	1.00	1.04			104		65-126		
Benzo(b)fluoranthene	1.00	1.28			128		65-136		
Benzo(g,h,i)perylene	1.00	0.949			95		49-134		
Benzo(k)fluoranthene	1.00	1.18			118		65-131		
Chrysene	1.00	1.00			100		62-129		
Dibenz(a,h)anthracene	1.00	1.04			104		50-139		
Fluoranthene	1.00	0.908			91		62-126		
Fluorene	1.00	0.809			81		61-115		
Indeno(1,2,3-cd)pyrene	1.00	1.03			103		52-133		
2-Methylnaphthalene	1.00	0.714			71		39-136		
Naphthalene	1.00	0.715			71		43-120		
Phenanthrene	1.00	0.901			90		66-120		
Pyrene	1.00	0.845			85		55-131		
Batch number: 18080WAB026	Sample number(s): 9513410								
Acetophenone	50	45.52			91		53-118		
Butylbenzylphthalate	50	41.34			83		40-131		
Di-n-butylphthalate	50	43.58			87		58-119		
4-Chloroaniline	50	31.05			62		33-106		
bis(2-Chloroethyl)ether	50	40.4			81		48-119		
bis(2-Chloroisopropyl)ether	50	40.85			82		35-128		
2-Chlorophenol	50	39.82			80		47-116		
2,2'-oxybis(1-Chloropropane)	50	40.85			82		40-117		
3,3'-Dichlorobenzidine	50	35.81			72		32-106		
2,4-Dichlorophenol	50	43.47			87		53-126		
Diethylphthalate	50	37.97			76		42-124		
2,4-Dimethylphenol	50	40.06			80		41-103		
Dimethylphthalate	50	36.46			73		19-119		
2,4-Dinitrophenol	100	62.95			63		19-140		
2,4-Dinitrotoluene	50	42.37			85		56-128		
bis(2-Ethylhexyl)phthalate	50	44.43			89		52-132		
Hexachlorobenzene	50	43.93			88		57-123		
Hexachlorobutadiene	50	31.36			63		16-119		
Hexachlorocyclopentadiene	100	15.31			15		10-104		
Hexachloroethane	50	28.1			56		19-105		
Isophorone	50	45.53			91		49-129		

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Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/03/2018 13:45

Group Number: 1921500

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
4-Methylphenol	50	38.87			78		42-115		
Nitrobenzene	50	40.5			81		43-128		
2-Nitrophenol	50	44.46			89		58-125		
4-Nitrophenol	50	25.84			52		10-96		
N-Nitroso-di-n-propylamine	50	45.09			90		48-128		
N-Nitrosodiphenylamine	50	45.46			91		55-128		
Di-n-octylphthalate	50	45.8			92		51-134		
Pentachlorophenol	50	37.82			76		50-127		
Phenol	50	22.49			45		10-92		
2,4,5-Trichlorophenol	50	45.14			90		59-129		
2,4,6-Trichlorophenol	50	44.34			89		61-130		
	ug/l	ug/l	ug/l	ug/l					
Batch number: 180810008A	Sample number(s): 9513410								
PCB-1016	5.01	4.47			89		60-117		
PCB-1260	5.01	5.14			103		57-134		
	mg/l	mg/l	mg/l	mg/l					
Batch number: 180810571305	Sample number(s): 9513410								
Mercury	0.00100	0.000901			90		80-120		
Batch number: 180811063501	Sample number(s): 9513410								
Barium	2.00	1.93			97		80-120		
Copper	0.250	0.255			102		80-120		
Lead	0.150	0.145			97		80-120		
Nickel	0.500	0.498			100		80-120		
Zinc	0.500	0.487			97		80-120		
Batch number: 180811063901A	Sample number(s): 9513410								
Antimony	0.00600	0.00605			101		80-120		
Arsenic	0.0100	0.00953			95		80-120		
Beryllium	0.00400	0.00397			99		80-120		
Cadmium	0.00500	0.00503			101		80-120		
Chromium	0.0500	0.0522			104		80-120		
Silver	0.0500	0.0493			99		80-120		
Thallium	0.00200	0.00181			91		80-120		
Batch number: 180811063901B	Sample number(s): 9513410								
Selenium	0.0100	0.0101			101		80-120		

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Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/03/2018 13:45

Group Number: 1921500

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: L180882AA	Sample number(s): 9513410-9513411 UNSPK: P515698									
Acetone	< 20	150	176.15	150	163.09	117	109	54-157	8	30
Benzene	< 1	20	22.94	20	22.65	115	113	80-120	1	30
Bromodichloromethane	< 1	20	18.68	20	18.17	93	91	71-120	3	30
Bromoform	< 4	20	15.24	20	14.95	76	75	59-120	2	30
Bromomethane	< 1	20	14.93	20	14.43	75	72	58-130	3	30
2-Butanone	< 10	150	165.82	150	163.67	111	109	59-135	1	30
Carbon Disulfide	< 5	20	23.85	20	23.14	119	116	65-128	3	30
Carbon Tetrachloride	< 1	20	18.89	20	18.55	94	93	64-134	2	30
Chlorobenzene	< 1	20	21.46	20	21.14	107	106	80-120	2	30
Chloroethane	< 1	20	17.01	20	16.18	85	81	61-123	5	30
Chloroform	0.648	20	22.17	20	21.82	108	106	80-120	2	30
Chloromethane	< 1	20	16.53	20	15.93	83	80	63-120	4	30
Cyclohexane	< 5	20	25.75	20	25.84	129*	129*	67-121	0	30
1,2-Dibromo-3-chloropropane	< 5	20	18.45	20	17.94	92	90	53-128	3	30
Dibromochloromethane	< 1	20	18.26	20	17.58	91	88	71-120	4	30
1,2-Dibromoethane	< 1	20	21.03	20	20.78	105	104	75-120	1	30
1,2-Dichlorobenzene	< 5	20	20.4	20	20.01	102	100	80-120	2	30
1,3-Dichlorobenzene	< 5	20	20.56	20	20.31	103	102	80-120	1	30
1,4-Dichlorobenzene	< 5	20	20.77	20	20.08	104	100	80-120	3	30
Dichlorodifluoromethane	< 1	20	14.08	20	14.14	70	71	47-124	0	30
1,1-Dichloroethane	< 1	20	23.09	20	22.72	115	114	80-120	2	30
1,2-Dichloroethane	< 1	20	20.59	20	20.09	103	100	73-124	2	30
1,1-Dichloroethene	< 1	20	25.06	20	24.52	125	123	80-131	2	30
cis-1,2-Dichloroethene	< 1	20	22.04	20	21.3	110	107	80-120	3	30
trans-1,2-Dichloroethene	< 1	20	23.11	20	22.77	116	114	80-120	1	30
1,2-Dichloropropane	< 1	20	22.95	20	22.3	115	111	80-120	3	30
cis-1,3-Dichloropropene	< 1	20	19.22	20	19	96	95	75-120	1	30
trans-1,3-Dichloropropene	< 1	20	18.77	20	18.89	94	94	76-120	1	30
Ethylbenzene	< 1	20	22.58	20	22.27	113	111	80-120	1	30
Freon 113	< 10	20	24.72	20	24.7	124	123	68-137	0	30
4-Methyl-2-pentanone	< 10	100	110.63	100	108.94	111	109	62-133	2	30
Methylcyclohexane	< 5	20	23.57	20	23.8	118	119	67-121	1	30
Methylene Chloride	< 1	20	22.72	20	22.18	114	111	80-120	2	30
Styrene	< 5	20	21.53	20	21.18	108	106	80-120	2	30
1,1,2,2-Tetrachloroethane	< 1	20	21.34	20	21	107	105	72-120	2	30
Tetrachloroethene	< 1	20	22.44	20	21.93	112	110	80-120	2	30
Toluene	< 1	20	23.19	20	22.77	116	114	80-120	2	30
1,2,4-Trichlorobenzene	< 5	20	19.31	20	19.13	97	96	70-120	1	30
1,1,1-Trichloroethane	< 1	20	19.65	20	19.39	98	97	67-126	1	30
1,1,2-Trichloroethane	< 1	20	22.15	20	21.81	111	109	80-120	2	30
Trichloroethene	< 1	20	21.41	20	21.07	107	105	80-120	2	30
Trichlorofluoromethane	< 1	20	17.22	20	16.71	86	84	60-136	3	30

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Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/03/2018 13:45

Group Number: 1921500

MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Vinyl Chloride	< 1	20	15.63	20	15.21	78	76	68-120	3	30
Xylene (Total)	< 1	60	65.63	60	64.43	109	107	80-120	2	30
Batch number: 18080WAA026	Sample number(s): 9513410 UNSPK: P513400									
Acenaphthene	< 0.05	1.00	0.978	1.03	0.975	97	95	70-133	0	30
Acenaphthylene	< 0.05	1.00	0.808	1.03	0.817	80	79	47-102	1	30
Anthracene	0.0165	1.00	0.895	1.03	0.938	88	90	68-120	5	30
Benzo(a)anthracene	< 0.05	1.00	0.897	1.03	0.896	89	87	65-129	0	30
Benzo(a)pyrene	< 0.05	1.00	0.772	1.03	0.918	77	89	65-126	17	30
Benzo(b)fluoranthene	< 0.05	1.00	0.874	1.03	0.933	87	91	65-136	6	30
Benzo(g,h,i)perylene	< 0.05	1.00	0.592	1.03	0.621	59	60	49-134	5	30
Benzo(k)fluoranthene	< 0.05	1.00	0.830	1.03	0.885	83	86	65-131	6	30
Chrysene	< 0.05	1.00	0.874	1.03	0.866	87	84	62-129	1	30
Dibenz(a,h)anthracene	< 0.05	1.00	0.674	1.03	0.623	67	61	50-139	8	30
Fluoranthene	< 0.05	1.00	0.850	1.03	0.856	85	83	62-126	1	30
Fluorene	< 0.05	1.00	0.815	1.03	0.803	81	78	61-115	1	30
Indeno(1,2,3-cd)pyrene	< 0.05	1.00	0.641	1.03	0.664	64	65	52-133	4	30
2-Methylnaphthalene	< 0.05	1.00	0.756	1.03	0.817	75	79	39-136	8	30
Naphthalene	< 0.06	1.00	0.750	1.03	0.747	75	73	43-120	0	30
Phenanthrene	< 0.06	1.00	0.876	1.03	0.887	87	86	66-120	1	30
Pyrene	< 0.05	1.00	0.841	1.03	0.837	84	81	55-131	0	30
Batch number: 18080WAB026	Sample number(s): 9513410 UNSPK: P513400									
Acetophenone	< 1	51.02	44.83	51.65	45.69	88	88	53-118	2	30
Butylbenzylphthalate	< 5	51.02	40.93	51.65	43.61	80	84	40-131	6	30
Di-n-butylphthalate	< 5	51.02	44.13	51.65	44.79	86	87	58-119	1	30
4-Chloroaniline	< 4	51.02	30.38	51.65	27.64	60	54	33-106	9	30
bis(2-Chloroethyl)ether	< 1	51.02	40.04	51.65	40.98	78	79	48-119	2	30
bis(2-Chloroisopropyl)ether	< 1	51.02	40.75	51.65	41.61	80	81	35-128	2	30
2-Chlorophenol	< 1	51.02	41.82	51.65	41.84	82	81	47-116	0	30
2,2'-oxybis(1-Chloropropane)	< 1	51.02	40.75	51.65	41.61	80	81	40-117	2	30
3,3'-Dichlorobenzidine	< 5	51.02	34.12	51.65	33.76	67	65	32-106	1	30
2,4-Dichlorophenol	< 1	51.02	45.02	51.65	46.85	88	91	53-126	4	30
Diethylphthalate	< 5	51.02	38.91	51.65	38.18	76	74	42-124	2	30
2,4-Dimethylphenol	< 1	51.02	41.14	51.65	41.99	81	81	41-103	2	30
Dimethylphthalate	< 5	51.02	32.53	51.65	37.48	64	73	19-119	14	30
2,4-Dinitrophenol	< 31	102.04	51.26	103.31	66.23	50	64	19-140	25	30
2,4-Dinitrotoluene	< 5	51.02	44.77	51.65	42.52	88	82	56-128	5	30
bis(2-Ethylhexyl)phthalate	< 5	51.02	45.77	51.65	47.2	90	91	52-132	3	30
Hexachlorobenzene	< 0.5	51.02	45.7	51.65	48.18	90	93	57-123	5	30
Hexachlorobutadiene	< 1	51.02	32.05	51.65	27.55	63	53	16-119	15	30
Hexachlorocyclopentadiene	< 16	102.04	50.48	103.31	43.06	49	42	10-104	16	30

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Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/03/2018 13:45

Group Number: 1921500

MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Hexachloroethane	< 5	51.02	28.22	51.65	25.48	55	49	19-105	10	30
Isophorone	< 1	51.02	45.92	51.65	47.05	90	91	49-129	2	30
4-Methylphenol	< 1	51.02	39.62	51.65	39.98	78	77	42-115	1	30
Nitrobenzene	< 1	51.02	41.3	51.65	42.65	81	83	43-128	3	30
2-Nitrophenol	< 1	51.02	45.95	51.65	48.02	90	93	58-125	4	30
4-Nitrophenol	< 31	51.02	27.16	51.65	29.03	53	56	10-96	7	30
N-Nitroso-di-n-propylamine	< 1	51.02	44.74	51.65	45.8	88	89	48-128	2	30
N-Nitrosodiphenylamine	< 1	51.02	44.88	51.65	44.05	88	85	55-128	2	30
Di-n-octylphthalate	< 5	51.02	47.42	51.65	47.41	93	92	51-134	0	30
Pentachlorophenol	< 5	51.02	24.63	51.65	29.35	48*	57	50-127	17	30
Phenol	< 1	51.02	23.69	51.65	24.24	46	47	10-92	2	30
2,4,5-Trichlorophenol	< 1	51.02	49.23	51.65	48.28	96	93	59-129	2	30
2,4,6-Trichlorophenol	< 1	51.02	48.67	51.65	50.52	95	98	61-130	4	30
	ug/l	ug/l	ug/l	ug/l	ug/l					
Batch number: 180810008A	Sample number(s): 9513410 UNSPK: P513400									
PCB-1016	< 0.41	5.07	4.00	5.20	4.55	79	87	60-117	13	30
PCB-1260	< 0.41	5.07	4.09	5.20	4.69	81	90	57-134	14	30
	mg/l	mg/l	mg/l	mg/l	mg/l					
Batch number: 180810571305	Sample number(s): 9513410 UNSPK: P506208									
Mercury	< 0.00020	0.00100	0.000862	0.00100	0.000867	86	87	80-120	0	20
Batch number: 180811063501	Sample number(s): 9513410 UNSPK: P512473									
Barium	0.171	2.00	2.01	2.00	2.20	92	101	75-125	9	20
Copper	< 0.0200	0.250	0.247	0.250	0.272	99	109	75-125	9	20
Lead	< 0.0300	0.150	0.144	0.150	0.154	96	103	75-125	7	20
Nickel	< 0.0200	0.500	0.469	0.500	0.503	94	101	75-125	7	20
Zinc	< 0.0400	0.500	0.469	0.500	0.503	94	101	75-125	7	20
Batch number: 180811063901A	Sample number(s): 9513410 UNSPK: P510409									
Antimony	< 0.0020	0.00600	0.00687	0.00600	0.00610	115	102	75-125	12	20
Arsenic	< 0.0040	0.0100	0.0101	0.0100	0.00987	101	99	75-125	2	20
Beryllium	< 0.0010	0.00400	0.00407	0.00400	0.00408	102	102	75-125	0	20
Cadmium	< 0.0010	0.00500	0.00493	0.00500	0.00484	99	97	75-125	2	20
Chromium	< 0.0040	0.0500	0.0517	0.0500	0.0516	103	103	75-125	0	20
Silver	< 0.0010	0.0500	0.0486	0.0500	0.0487	97	97	75-125	0	20
Thallium	< 0.0010	0.00200	0.00209	0.00200	0.00201	105	101	75-125	4	20
Batch number: 180811063901B	Sample number(s): 9513410 UNSPK: P510409									
Selenium	< 0.0040	0.0100	0.0102	0.0100	0.0101	102	101	75-125	1	20

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/03/2018 13:45

Group Number: 1921500

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/l	DUP Conc mg/l	DUP RPD	DUP RPD Max
Batch number: 180810571305 Mercury	Sample number(s): 9513410 BKG: P506208 < 0.00020	< 0.00020	0 (1)	20
Batch number: 180811063501 Barium	Sample number(s): 9513410 BKG: P512473 0.171	0.164	5	20
Copper	< 0.0200	< 0.0200	0 (1)	20
Lead	< 0.0300	< 0.0300	0 (1)	20
Nickel	< 0.0200	< 0.0200	0 (1)	20
Zinc	< 0.0400	< 0.0400	0 (1)	20
Batch number: 180811063901A Antimony	Sample number(s): 9513410 BKG: P510409 < 0.0020	< 0.0020	0 (1)	20
Arsenic	< 0.0040	< 0.0040	0 (1)	20
Beryllium	< 0.0010	< 0.0010	0 (1)	20
Cadmium	< 0.0010	< 0.0010	0 (1)	20
Chromium	< 0.0040	< 0.0040	0 (1)	20
Silver	< 0.0010	< 0.0010	0 (1)	20
Thallium	< 0.0010	< 0.0010	0 (1)	20
Batch number: 180811063901B Selenium	Sample number(s): 9513410 BKG: P510409 < 0.0040	< 0.0040	0 (1)	20

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: VOCs- 5ml Water by 8260C
Batch number: L180882AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
9513410	93	99	104	101
9513411	92	99	104	101
Blank	92	98	105	100
LCS	94	101	105	101
MS	94	100	104	101
MSD	94	103	105	102
Limits:	80-120	80-120	80-120	80-120

Analysis Name: PAHs by 8270D SIM
Batch number: 18080WAA026

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Norfolk Southern Railway Co.
Reported: 04/03/2018 13:45

Group Number: 1921500

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: PAHs by 8270D SIM
Batch number: 18080WAA026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
9513410	100	111	83
Blank	91	105	71
LCS	86	97	69
MS	80	73	72
MSD	79	85	75
Limits:	43-130	23-144	31-121

Analysis Name: SVOAs 8270D MINI
Batch number: 18080WAB026

	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
9513410	25	34	79	64	63	69
Blank	31	42	95	72	69	87
LCS	45	53	90	77	71	80
MS	46	57	93	77	76	75
MSD	47	57	89	78	74	74
Limits:	10-71	10-82	21-134	30-111	39-105	27-116

Analysis Name: PCBs in Water by 8082A
Batch number: 180810008A

	Tetrachloro-m-xylene-D1	Decachlorobiphenyl-D1	Tetrachloro-m-xylene-D2	Decachlorobiphenyl-D2
9513410	94	57	93	53
Blank	91	71	93	68
LCS	88	58	89	57
MS	81	42	82	41
MSD	87	47	89	44
Limits:	33-137	10-148	33-137	10-148

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Environmental Analysis Request/Chain of Custody



Lancaster Laboratories
Environmental

Acct. # 10302 Group # 1921500 Sample # 9513410-11

Client: Amec Foster Wheeler				Matrix			Analyses Requested										For Lab Use Only		
Project Name/#: Former Cohn Property		Site ID #:		<input type="checkbox"/> Tissue	<input type="checkbox"/> Ground	<input type="checkbox"/> Surface	Preservation and Filtration Codes										SF #: _____		
Project Manager: John Jolly		P.O. #: SA14.127-001		<input type="checkbox"/> Potable	<input checked="" type="checkbox"/> NPDES	<input type="checkbox"/> Other:											SCR #: _____		
Sampler: Ken Nye, Daniel Howard		PWSID #:		<input type="checkbox"/> Sediment	<input type="checkbox"/> Water												Preservation Codes H = HCl T = Thiosulfate N = HNO ₃ B = NaOH S = H ₂ SO ₄ P = H ₃ PO ₄ F = Field Filtered O = Other		
Phone #: 770-421-3400		Quote #:		<input type="checkbox"/> Soil															
State where samples were collected: GA				For Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>			Total # of Containers											Remarks	
Sample Identification		Collection		<input type="checkbox"/> Grab	<input type="checkbox"/> Composite			6010 - Select List (per Analysis Plan)	6020 - Select List (per Analysis Plan)	7470 - Mercury	8082 - Select List (per Analysis Plan)	8270 - Select List (per Analysis Plan)	8280 - Select List (per Analysis Plan)						
EB-SOIL-0318		Date: 03/16/2018	Time: 1730	X			6	X	X	X	X	X	X						
TRIP BLANK (Cooler 2)		---	---	-			2						X						
Turnaround Time Requested (TAT) (please check): Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> (Rush TAT is subject to laboratory approval and surcharges.)				Relinquished by:			Date	Time	Received by:		Date	Time							
Date results are needed:				Relinquished by:			Date	Time	Received by:		Date	Time							
Rush results requested by (please check): E-Mail <input checked="" type="checkbox"/> Phone <input type="checkbox"/>				Relinquished by:			Date	Time	Received by:		Date	Time							
E-mail Address: per Analytical Request Form				Relinquished by:			Date	Time	Received by:		Date	Time							
Phone:				Relinquished by:			Date	Time	Received by:		Date	Time							
Data Package Options (please check if required)				Relinquished by:			Date	Time	Received by:		Date	Time							
Type I (Validation/non-CLP) <input type="checkbox"/>		MA MCP <input type="checkbox"/>		Relinquished by:			Date	Time	Received by:		Date	Time							
Type III (Reduced non-CLP) <input type="checkbox"/>		CT RCP <input type="checkbox"/>		Relinquished by:			Date	Time	Received by:		Date	Time							
Type VI (Raw Data Only) <input type="checkbox"/>		TX TRRP-13 <input type="checkbox"/>		Relinquished by:			Date	Time	Received by:		Date	Time							
NJ DKQP <input type="checkbox"/>		NYSDEC Category <input type="checkbox"/> A or <input type="checkbox"/> B		Relinquished by Commercial Carrier:					Received by:		Date	Time							
EDD Required? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, format: EQUIS				UPS _____ FedEx _____ Other _____					Temperature upon receipt		0.8-0.9°C								

1921500

Delineation and Characterization Sampling and Analysis Plan - Soil QC - March 2018
 Former Cohn Property - Norfolk Southern / Columbus, Muscogee Co, Georgia

Location	Sample	Sample	Metals	Metals ICPMS	Mercury	PCBs	SVOCs	VOCs		250 ml	2 x 250 mL	2 x 250 mL	3 x 40ml
ID	ID	Date	6010	6020	7470	8082A	8270 and 8270 SIM	8260	Comments	plastic	Amber Glass	Amber Glass	glass vials
			Ba, Cu, Pb, Ni, Zn	Sb, As, Be Cd, Cr, Se, Ag, TI						HNO3 to pH<2 Metals	cool <6°C PCBs	cool <6°C SVOCs/PAHs	HCL to pH<2 and cool <6°C VOCs
QC	EB-SOIL-0318	3/16/2018	Ba, Cu, Pb, Ni, Zn - SEE TABLE 1	Sb, As, Be Cd, Cr, Se, Ag, TI - SEE TABLE 1	Hg SEE TABLE 1	PCBs SEE TABLE 4	SVOCs SEE TABLE 3	VOCs SEE TABLE 2	Metals, PCBs, SVOCs, VOCs	1	1	1	3
QC	TRIP BLANK (Cooler 2)	3/16/2018		--	--	--	--	--	VOCs				2
Total Bottles =										1	1	1	5

Notes:

Metals: As = Arsenic, Ba=Barium, Be=Beryllium, Cd = Cadmium, Cr= Chromium, Cu = Copper, Pb=Lead, Hg = Mercury, Ni = Nickel, Sb = Antimony, Se=Selenium, Ag=Silver, TI = Thallium, Zn = Zinc
 PCBs = PCBs 1016, 1221,1232, 1242, 1248, 1254, 1260

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TABLE 1 METALS

Metals SW-846 6020A	CAS Number	Laboratory Quantitation Limit (mg/L)	Soil Method	Soil LOQ (mg/kg)
Antimony	7440-36-0	0.002	6020A	0.4
Arsenic	7440-38-2	0.004	6020A	0.8
Barium	7440-39-3	0.004	6010C	1
Beryllium	7440-41-7	0.001	6020A	0.2
Cadmium	7440-43-9	0.001	6020A	0.2
Chromium	7440-47-3	0.004	6020A	0.8
Copper	7440-50-8	0.004	6010C	2
Lead	7439-92-1	0.002	6010C	3
Nickel	7440-02-0	0.004	6010C	2
Selenium	7782-49-2	0.004	6020A	0.8
Silver	7440-22-4	0.001	6020A	0.2
Thallium	7440-28-0	0.001	6020A	0.2
Zinc	7440-66-6	0.03	6010C	4

Metals SW-846 7470A	CAS Number	Laboratory Quantitation Limit (mg/L)	Soil Method	Soil LOQ (mg/kg)
Mercury	7439-97-6	0.0002	7471B	0.2

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TABLE 2 VOCS

GC/MS Volatiles SW-846 8260C	CAS Number	Laboratory	Soil LOQ
		Quantitation Limit (ug/L)	(ug/kg)
Acetone	67-64-1	20	20
Benzene	71-43-2	1	5
Bromodichloromethane	75-27-4	1	5
Bromoform	75-25-2	4	5
Bromomethane	74-83-9	1	5
2-Butanone	78-93-3	10	10
Carbon Disulfide	75-15-0	5	5
Carbon Tetrachloride	56-23-5	1	5
Chlorobenzene	108-90-7	1	5
Chloroethane	75-00-3	1	5
Chloroform	67-66-3	1	5
Chloromethane	74-87-3	1	5
Cyclohexane	110-82-7	5	5
1,2-Dibromo-3-chloropropane	96-12-8	5	5
Dibromochloromethane	124-48-1	1	5
1,2-Dibromoethane	106-93-4	1	5
1,2-Dichlorobenzene	95-50-1	5	5
1,3-Dichlorobenzene	541-73-1	5	5
1,4-Dichlorobenzene	106-46-7	5	5
Dichlorodifluoromethane	75-71-8	1	5
1,1-Dichloroethane	75-34-3	1	5
1,2-Dichloroethane	107-06-2	1	5
1,1-Dichloroethene	75-35-4	1	5
cis-1,2-Dichloroethene	156-59-2	1	5
trans-1,2-Dichloroethene	156-60-5	1	5
1,2-Dichloropropane	78-87-5	1	5
cis-1,3-Dichloropropene	10061-01-5	1	5
trans-1,3-Dichloropropene	10061-02-6	1	5
Ethylbenzene	100-41-4	1	5
Freon-113	76-13-1	10	10
4-Methyl-2-pentanone	108-10-1	10	10
Methylcyclohexane	108-87-2	5	5
Methylene Chloride	75-09-2	4	5
Styrene	100-42-5	5	5
1,1,2,2-Tetrachloroethane	79-34-5	1	5
Tetrachloroethene	127-18-4	1	5
Toluene	108-88-3	1	5
1,2,4-Trichlorobenzene	120-82-1	5	5
1,1,1-Trichloroethane	71-55-6	1	5
1,1,2-Trichloroethane	79-00-5	1	5
Trichloroethene	79-01-6	1	5
Trichlorofluoromethane	75-69-4	1	5
Vinyl Chloride	75-01-4	1	5
Xylene, Total	1330-20-7	1	5

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TABLE 3 SVOCS

GC/MS Semivolatiles SW-846 8270D	CAS Number	Laboratory Quantitation Limit (ug/L)	Soil LOQ (ug/kg)	PAHs SW-846 8270D	CAS Number	Soil LOQ (ug/kg)
Acetophenone	98-86-2		1 33	Acenaphthene	83-32-9	17
Butylbenzylphthalate	85-68-7		5 170	Acenaphthylene	208-96-8	17
Di-n-butylphthalate	84-74-2		5 170	Anthracene	120-12-7	17
4-Chloroaniline	106-47-8		4 67	Benzo(a)anthracene	56-55-3	17
bis(2-Chloroethyl)ether	111-44-4		1 33	Benzo(a)pyrene	50-32-8	17
2-Chlorophenol	95-57-8		1 33	Benzo(b)fluoranthene	205-99-2	17
2,2'-oxybis(1-Chloropropane)	108-60-1		1 33	Benzo(g,h,i)perylene	191-24-2	17
Bis(2-chloroisopropyl) ether	39638-32-9			Benzo(k)fluoranthene	207-08-9	17
2,2'-Oxybis(1-chloropropane)	108-60-1			Chrysene	218-01-9	17
3,3'-Dichlorobenzidine	91-94-1		5 330	Dibenz(a,h)anthracene	53-70-3	17
2,4-Dichlorophenol	120-83-2		1 33	Fluoranthene	206-44-0	17
Diethylphthalate	84-66-2		5 170	Fluorene	86-73-7	17
2,4-Dimethylphenol	105-67-9		1 33	Indeno(1,2,3-cd)pyrene	193-39-5	17
Dimethylphthalate	131-11-3		5 170	2-Methylnaphthalene	91-57-6	17
2,4-Dinitrophenol	51-28-5		30 1000	Naphthalene	91-20-3	17
2,4-Dinitrotoluene	121-14-2		5 170	Phenanthrene	85-01-8	17
bis(2-Ethylhexyl)phthalate	117-81-7		5 170	Pyrene	129-00-0	17
Hexachlorobenzene	118-74-1		0.5 17			
Hexachlorobutadiene	87-68-3		1 33			
Hexachlorocyclopentadiene	77-47-4		15 500			
Hexachloroethane	67-72-1		5 170			
Isophorone	78-59-1		1 33			
4-Methylphenol	106-44-5		1			
3-Methylphenol						
Nitrobenzene	98-95-3		1 33			
2-Nitrophenol	88-75-5		1 33			
4-Nitrophenol	100-02-7		30 500			
N-Nitroso-di-n-propylamine	621-64-7		1 33			
N-Nitrosodiphenylamine	86-30-6		1 33			
Di-n-octylphthalate	117-84-0		5 170			
Pentachlorophenol	87-86-5		5 170			
Phenol	108-95-2		1 33			
2,4,5-Trichlorophenol	95-95-4		1 33			
2,4,6-Trichlorophenol	88-06-2		1 33			

GC/MS Semivolatiles SW-846 8270D SIM	CAS Number	Laboratory Quantitation Limit (ug/L)
Acenaphthene	83-32-9	0.05
Acenaphthylene	208-96-8	0.05
Anthracene	120-12-7	0.05
Benzo(a)anthracene	56-55-3	0.05
Benzo(a)pyrene	50-32-8	0.05
Benzo(b)fluoranthene	205-99-2	0.05
Benzo(g,h,i)perylene	191-24-2	0.05
Benzo(k)fluoranthene	207-08-9	0.05
Chrysene	218-01-9	0.05
Dibenz(a,h)anthracene	53-70-3	0.05
Fluoranthene	206-44-0	0.05
Fluorene	86-73-7	0.05
Indeno(1,2,3-cd)pyrene	193-39-5	0.05
2-Methylnaphthalene	91-57-6	0.05
Naphthalene	91-20-3	0.06
Phenanthrene	85-01-8	0.06
Pyrene	129-00-0	0.05

1921500

TABLE 4 PCBS

Pesticides/PCBs SW-846 8082A	CAS Number	Laboratory Quantitation Limit (ug/L)	Soil LOQ (ug/kg)
PCB-1016	12674-11-2	0.40	17
PCB-1221	11104-28-2	0.40	17
PCB-1232	11141-16-5	0.40	17
PCB-1242	53469-21-9	0.40	17
PCB-1248	12672-29-6	0.40	17
PCB-1254	11097-69-1	0.40	17
PCB-1260	11096-82-5	0.40	17



Client: Amec Foster Wheeler E&I, Inc.

Delivery and Receipt Information

Delivery Method:	<u>Fed Ex</u>	Arrival Timestamp:	<u>03/20/2018 10:30</u>
Number of Packages:	<u>2</u>	Number of Projects:	<u>3</u>
State/Province of Origin:	<u>GA</u>		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace \geq 6mm:	N/A
Samples Chilled:	Yes	Total Trip Blank Qty:	0
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Melvin Sanchez (8943) at 15:29 on 03/20/2018

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT131	0.9	DT	Wet	Y	Loose/Bag	N
2	DT131	0.8	DT	Wet	Y	Loose/Bag	N

General Comments: OnlyReceived 2 trip blanks.

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	mg	milligram(s)
C	degrees Celsius	mL	milliliter(s)
cfu	colony forming units	MPN	Most Probable Number
CP Units	cobalt-chloroplatinate units	N.D.	non-detect
F	degrees Fahrenheit	ng	nanogram(s)
g	gram(s)	NTU	nephelometric turbidity units
IU	International Units	pg/L	picogram/liter
kg	kilogram(s)	RL	Reporting Limit
L	liter(s)	TNTC	Too Numerous To Count
lb.	pound(s)	µg	microgram(s)
m3	cubic meter(s)	µL	microliter(s)
meq	milliequivalents	umhos/cm	micromhos/cm
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

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Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
J (or G, I, X)	Estimated value \geq the Method Detection Limit (MDL or DL) and $<$ the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column $>40\%$. The lower result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column $>100\%$. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

GROUNDWATER SAMPLING SHEETS

PROJECT NAME:
NS - Former Cohn Property

Norfolk Southern - Former Cohn Property
Field Sampling Report

Project Number: 6123-14-0242

Amec Foster Wheeler Environment & Infrastructure, Inc.
1075 Big Shanty Rd. Ste 100
PHONE: (770) 421-3400 / FAX: (770) 421-3486

SAMPLING EVENT: 1ST SEMI-ANNUAL; 2ND SEMI-ANNUAL; OTHER

WELL ID / SAMPLE ID: **MW-1**

WELL MATERIAL: PVC

SAMPLE METHOD: Bladder Pump

QC: **MS/MSD for 6020A, 7470A, 8082A, 8260C, 8270D, 82070SIM**

WELL DIAMETER: 2"

DEPTH TO WATER: 29.89 GRAB (x) COMPOSITE ()

TOTAL DEPTH: 41.9

WATER COLUMN HEIGHT: 12.01

PURGE VOLUME: _____

Pump Intake Set at (btoc): 36'

or

Tubing Inlet Set at (btoc): _____

[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]

[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]

[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 1545	0	4.31	109.5	5.76	0.201	21.33	153	400 ()	29.89
1555	1.0	2.61	154.9	5.50	0.200	21.08	102.5	400	29.89
1605	2.0	2.21	164.1	5.58	0.202	21.07	40.6	400	29.89
1615	3.0	2.07	174.6	5.57	0.202	21.03	25.3	400	29.89
1625	4.0	1.96	176.3	5.57	0.202	21.01	16.8	400	29.89
1630	4.5	1.95	177.7	5.56	0.202	21.05	14.5	400	29.89
1635	5.0	1.92	178.1	5.56	0.203	21.00	14.3	400	29.89
1640	5.5	1.85	179.7	5.56	0.203	21.04	13.2	400	29.89
1645	6.0	1.81	180.9	5.56	0.204	20.98	12.5	400	29.89
1650	6.5	1.79	182.0	5.56	0.204	20.97	10.2 ^{0"} 11.2	400	29.89
NOTES: Turbidity after sampling 12.3 NTU									

SAMPLE DATE: 3/15/18

SAMPLE TIME: 1655

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
250 ml Plastic Vial	3	HNO ₃	6020A 7470A	Special COI List TAL Metals Mercury
250 mL Amber Glass Vial	6	None	8082A	TCL 4.3 PCBs
250 mL Amber Glass Vial	6	None	8270D 8270 SIM	Special COI List SVOCs PAHs by SIM
40 mL glass vial	9	HCl	8260C	Special COI List VOCs
1 Liter Amber Glass Bottle	16	None	8330B	Special COI List Explosives

GENERAL INFORMATION

WEATHER:	Clear & Sunny, Temp 68°F
SHIPPED VIA:	FedEx
SHIPPED TO:	Eurofins Lancaster Laboratories Environmental, LLC Laboratory PM: Kathy Klinefelter (717) 656-7256 2425 New Holland Pk Lancaster, PA 17601
SAMPLER:	Daniel Howard
OBSERVER:	

PROJECT NAME:
NS - Former Cohn Property

Norfolk Southern - Former Cohn Property
Field Sampling Report

Project Number: 6123-14-0242

Amec Foster Wheeler Environment & Infrastructure, Inc.
1075 Big Shanty Rd. Ste 100
PHONE: (770) 421-3400 / FAX: (770) 421-3486

SAMPLING EVENT: ___ 1ST SEMI-ANNUAL; ___ 2ND SEMI-ANNUAL; OTHER

WELL ID / SAMPLE ID: MW-2

WELL MATERIAL: PVC

SAMPLE METHOD: Bladder Pump

WELL DIAMETER: 2"

DEPTH TO WATER: 36.87 GRAB (x) COMPOSITE ()

MEASURED TOTAL DEPTH: 43.55

WATER COLUMN HEIGHT: 6.68

PURGE VOLUME: _____

[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]

[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]

[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

~~QC: Field Duplicate and MS/MSD for 8330B~~
DH

Pump Intake Set at (btoc): 42.5

or

Tubing Inlet Set at (btoc): —

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 0955	0	4.63	174.4	5.77	0.226	15.08	107.8	100 ()	37.74
1005	0.25	3.08	174.1	5.72	0.223	16.03	87.4	100	38.45
1010	0.375	2.34	173.2	5.72	0.223	16.36	97.0	100	38.77
1015	0.5	2.16	173.7	5.72	0.223	16.52	97.5	100	38.92
1020	0.625	2.10	172.9	5.72	0.223	16.63	91.2	100	39.09
1025	0.75	1.89	172.4	5.72	0.223	16.85	81.3	100	39.29
1030	0.875	1.75	173.1	5.72	0.223	16.99	70.4	100	39.42
1035	1.0	1.63	172.0	5.72	0.224	17.27	67.8	100	39.60
1040	1.125	1.66	171.2	5.74	0.225	17.52	64.2	100	39.75

NOTES: Turbidity without flow cell = 50.9 NTU
Final water level 42.32

SAMPLE DATE: 3/16/18

SAMPLE TIME: 1045

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
250 ml Plastic Vial	<u>1</u>	HNO ₃	6020A 7470A	Special COI List TAL Metals Mercury
250 mL Amber Glass Vial	<u>2</u>	None	8082A	TCL 4.3 PCBs
250 mL Amber Glass Vial	<u>2</u>	None	8270D 8270 SIM	Special COI List SVOCs PAHs by SIM
40 mL glass vial	<u>3</u>	HCl	8260C	Special COI List VOCs
1 Liter Amber Glass Bottle	<u>82</u>	None	8330B	Special COI List Explosives

GENERAL INFORMATION

WEATHER: Clear+Cool Temp 49°F

SHIPPED VIA: FedEx

Eurofins Lancaster Laboratories Environmental, LLC Laboratory PM: Kathy Klinefelter (717) 656-7256
2425 New Holland Pk
Lancaster, PA 17601

SHIPPED TO:

SAMPLER: Daniel Howard

OBSERVER:

PROJECT NAME:
NS - Former Cohn Property

Norfolk Souther - Former Cohn Property Field Sampling Report

Project Number: 6123-14-0242

Amec Foster Wheeler Environment & Infrastructure, Inc.
1075 Big Shanty Rd. Ste 100
PHONE: (770) 421-3400 / FAX: (770) 421-3486

SAMPLING EVENT: ___ 1ST SEMI-ANNUAL; ___ 2ND SEMI-ANNUAL; OTHER

WELL ID / SAMPLE ID: **MW-4**

WELL MATERIAL: PVC

SAMPLE METHOD: Bladder Pump

WELL DIAMETER: **2"**

DEPTH TO WATER: **35.72** GRAB (x) COMPOSITE ()

TOTAL DEPTH: **43.76**

WATER COLUMN HEIGHT: **8.04**

PURGE VOLUME: _____

Pump Intake Set at (btoc): **40**

or

Tubing Inlet Set at (btoc): **—**

[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]

[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]

[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 1230	0	1.88	165.3	5.78	0.231	20.98	91.5	250 ()	36.08
1240	0.3 0.6	1.25	168.3	5.69	0.230	20.99	34.5	250	36.08
1250	0.6 1.2	1.21	167.9	5.68	0.229	21.09	25.1	250	36.08
1255	0.75 1.5	1.14	168.0	5.69	0.229	21.21	23.2	250	36.08
1300	1.8	1.14	166.7	5.69	0.229	21.23	21.6	250	36.08
1305	2.1	1.14	164.9	5.69	0.229	21.35	20.0	250	36.08
1310	2.4	1.13	166.6	5.68	0.230	20.78	19.2	250	36.12
1315	2.7	1.08	167.6	5.68	0.229	20.64	19.0	250	36.12
1320	3.0	1.12	168.7	5.67	0.229	20.60	18.7	250	36.12

NOTES:

Turbidity without flow cell 19.5 NTU

SAMPLE DATE: **3/16/18**

SAMPLE TIME: _____

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
250 ml Plastic Vial	1	HNO ₃	6020A 7470A	Special COI List TAL Metals Mercury
250 mL Amber Glass Vial	2	None	8082A	TCL 4.3 PCBs
250 mL Amber Glass Vial	2	None	8270D 8270 SIM	Special COI List SVOCs PAHs by SIM
40 mL glass vial	3	HCl	8260C	Special COI List VOCs
1 Liter Amber Glass Bottle	2	None	8330B	Special COI List Explosives

GENERAL INFORMATION

WEATHER:	<i>Clear, Temp 65°F</i>
SHIPPED VIA:	FedEx
SHIPPED TO:	Eurofins Lancaster Laboratories Environmental, LLC Laboratory PM: Kathy Klinefelter (717) 656-7256 2425 New Holland Pk Lancaster, PA 17601
SAMPLER:	<i>Daniel Howard</i>
OBSERVER:	

