

## Step 1 Analytical Data and Summary – Wishram Railyard

<b>Date:</b>	September 20, 2022	<b>Jacobs Engineering Inc.</b>
<b>Project name:</b>	Sediment Remedial Investigation	2020 SW Fourth Avenue
<b>Project no:</b>	D3593500	3rd Floor
<b>Attention:</b>	John Mefford, Washington State Department of Ecology (ECY)	Portland, OR 97201
<b>Prepared by:</b>	Jacobs on behalf of BNSF	United States
<b>Copies to:</b>	Chance Asher, ECY	T +1.503.235.5000
	Shane DeGross, BNSF	www.jacobs.com
	Ryan Hultgren, Kennedy-Jenks	
	Todd Miller, Kennedy-Jenks	
	Jeff Gentry, Jacobs	
	Loren Lund, Jacobs	
	Andrew Hopton, Jacobs	

Step 1 of the remedial investigation in the aquatic lands adjacent to the BNSF Railway Company (BNSF) Wishram Railyard (aka BNSF Track Switching Facility) in Wishram, Washington was conducted between April 11 and April 29, 2022. Work was conducted in accordance with the approved Sediment Remedial Investigation Work Plan (Jacobs 2021). Data was received from the lab on June 9, 2022, however the electronic deliverable needed for validation was not provided until June 23, 2022; the data was validated shortly thereafter. Data was presented to Ecology during a meeting conducted on September 9, 2022. A summary of the field effort and analytical results are presented below.

The Step 1 field effort consisted of utilizing a sediment profile imaging (SPI) camera to evaluate the depth of the biologically active zone and a Van Veen sampler to collect surface sediment samples for chemical analysis. The SPI camera was deployed at the six locations identified in the work plan (SG11, SG19, SG29, SG21, SG04, and SG31) and one additional location (BG01). Refusal was encountered at the seven SPI locations, with the imagery showing the river bottom consisting of gravel and cobbles. Subsurface imagery was not obtained since the camera was unable to penetrate the riverbed. The attempted SPI camera locations are presented on Figure 1.

Surface sediment samples were attempted at the 44 site locations identified in the work plan, and 12 background locations. Sediment samples were successfully collected from 14 site locations. None of the planned background locations had sufficient sediment to complete a successful grab. Following discussions with Ecology on April 22, 2022, additional locations were attempted upriver from the site and 8 background samples were collected. Figures 2 and 3 present the surface sediment sample attempts and successful locations at the site and background areas, respectively.

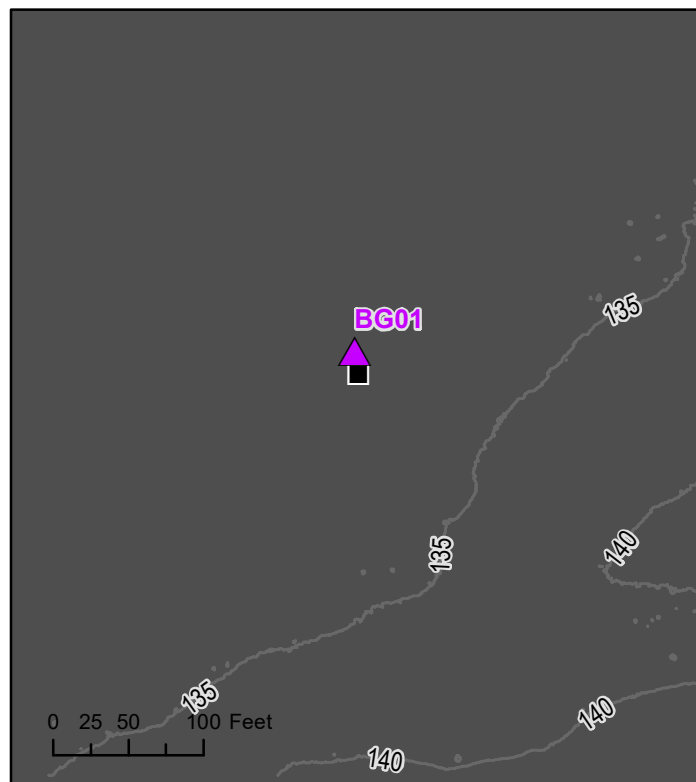
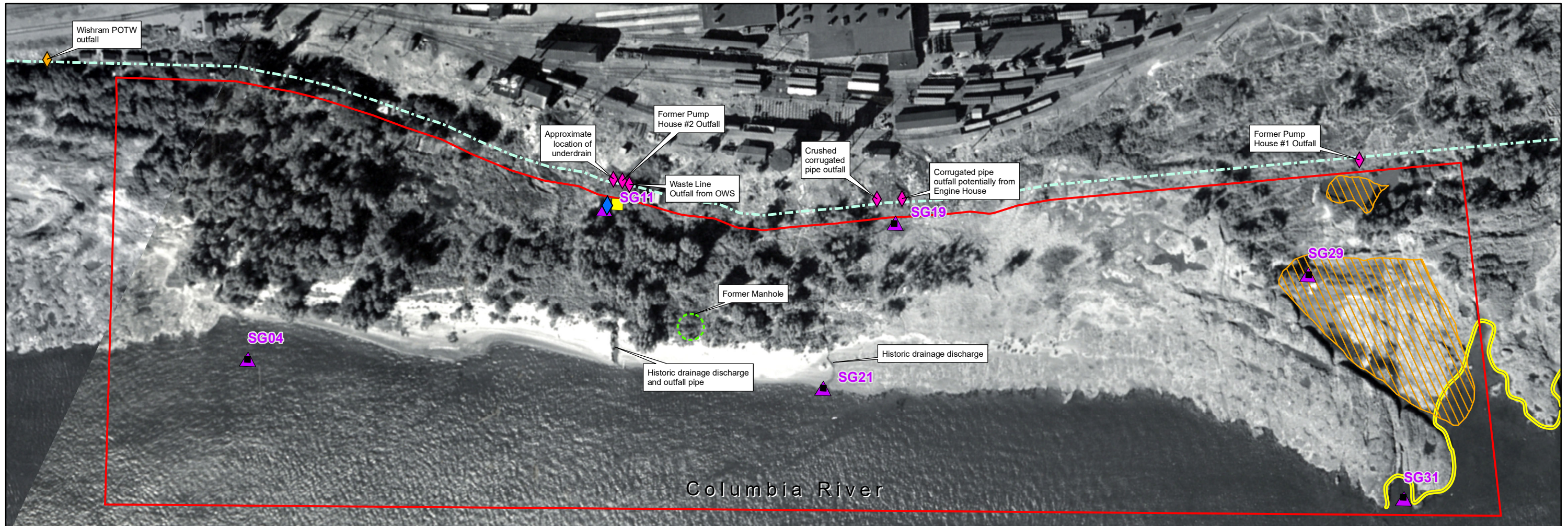
Analytical results (Attachment A) were compared to WAC 173-204-563 Table VI, SCUM II table 8-1 Freshwater Benthic Dry Weight Sediment Cleanup Objective (SCO) and/or the Dry Weight Cleanup Screening Level (CSL). The only exceedance of an SCO or CSL from either site or background samples was sulfide (Figure 4). Sulfide is not considered a site-related constituent, since there is no site source. In addition, there was a high level of organic material in the grab samples where elevated sulfide was reported. Organic material, such as milfoil, would have been included in small amounts within the sediment sample and could be a source of sulfide due to the anaerobic conditions in the sample jar. Therefore, bioassays are not planned for the Step 2 investigation.

Seventy-three of the 80 constituents analyzed had similar concentrations in both site and background samples with concentrations below the most stringent SCUM II human health Tier 1 risk-based screening levels. Carcinogenic polycyclic aromatic hydrocarbons (cPAHs) at SG03 were reported above background levels and above the most conservative SCUM II human health risk-based sediment concentration. SG03 is located west of the area where light nonaqueous phase liquid petroleum hydrocarbons were observed in 2018. The potential human health risks associated with cPAHs will be evaluated during the risk assessment phase.

#### References:

Jacobs Engineering Group (Jacobs). 2021. Final Sediment Remedial Investigation Work Plan. BNSF Wishram Railyard, Wishram, Washington. November.

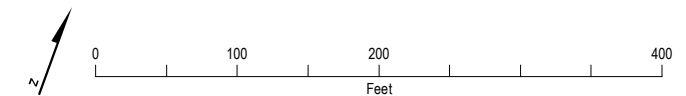
## Figures



**LEGEND**

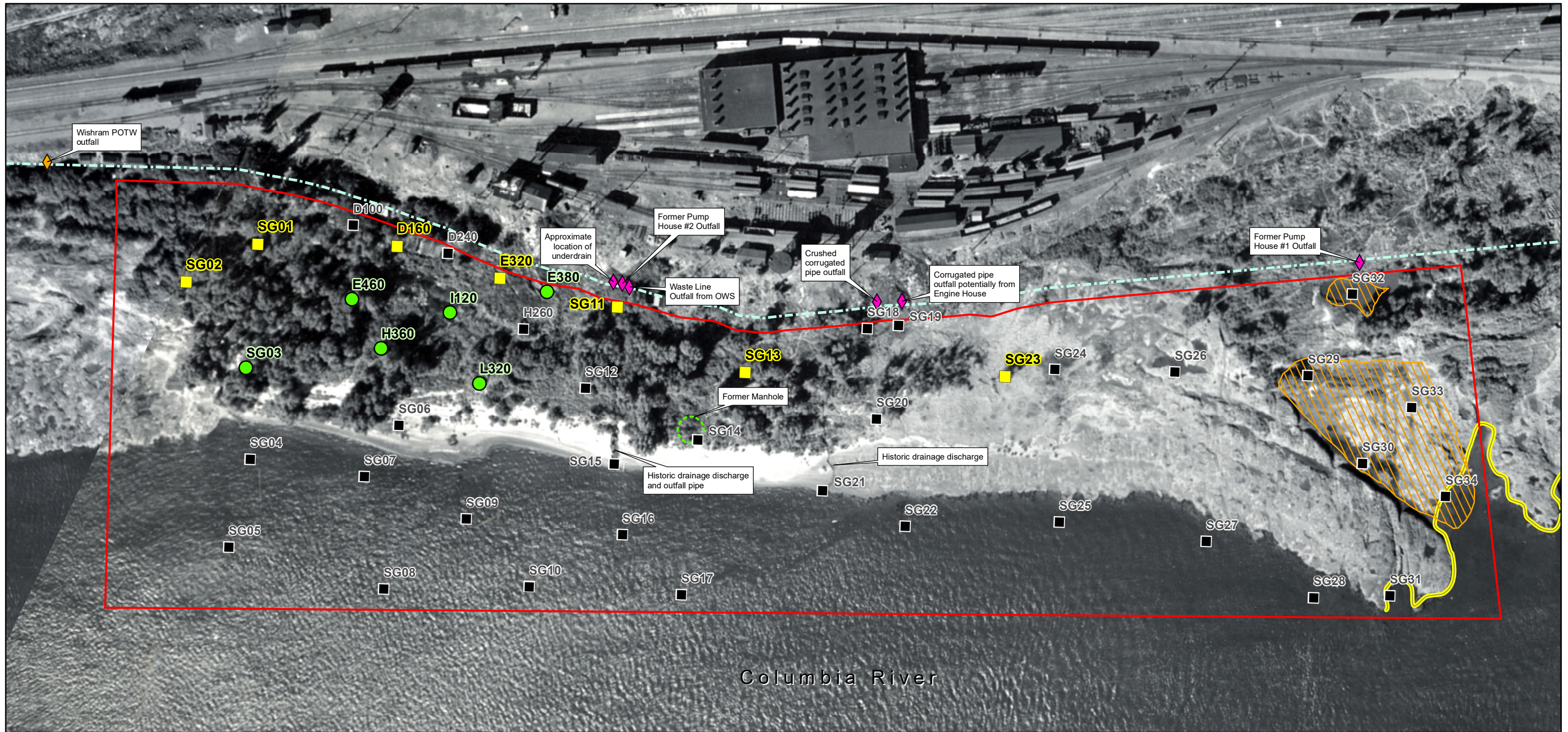
- ▲ SPI Camera Location
- Grab Sample
- ◆ O2 Profile Sample
- No Sample\*
- ◆ Current Outfall Location
- ◆ Former Outfall Location
- Proposed RI Area
- Potential Sediment
- Current Shoreline
- Historic Shoreline

Notes:  
 \*No recovery due to the presence of bedrock, cobbles, boulders, grass, or shells.  
 Base map is 1951 aerial photo.  
 OWS = oil/water separator  
 POTW = publicly owned treatment works



**DRAFT**

Figure 1. Actual Sediment Characterization Locations shown with 1951 Aerial Photo  
 BNSF Track Switching Facility  
 Wishram, Washington

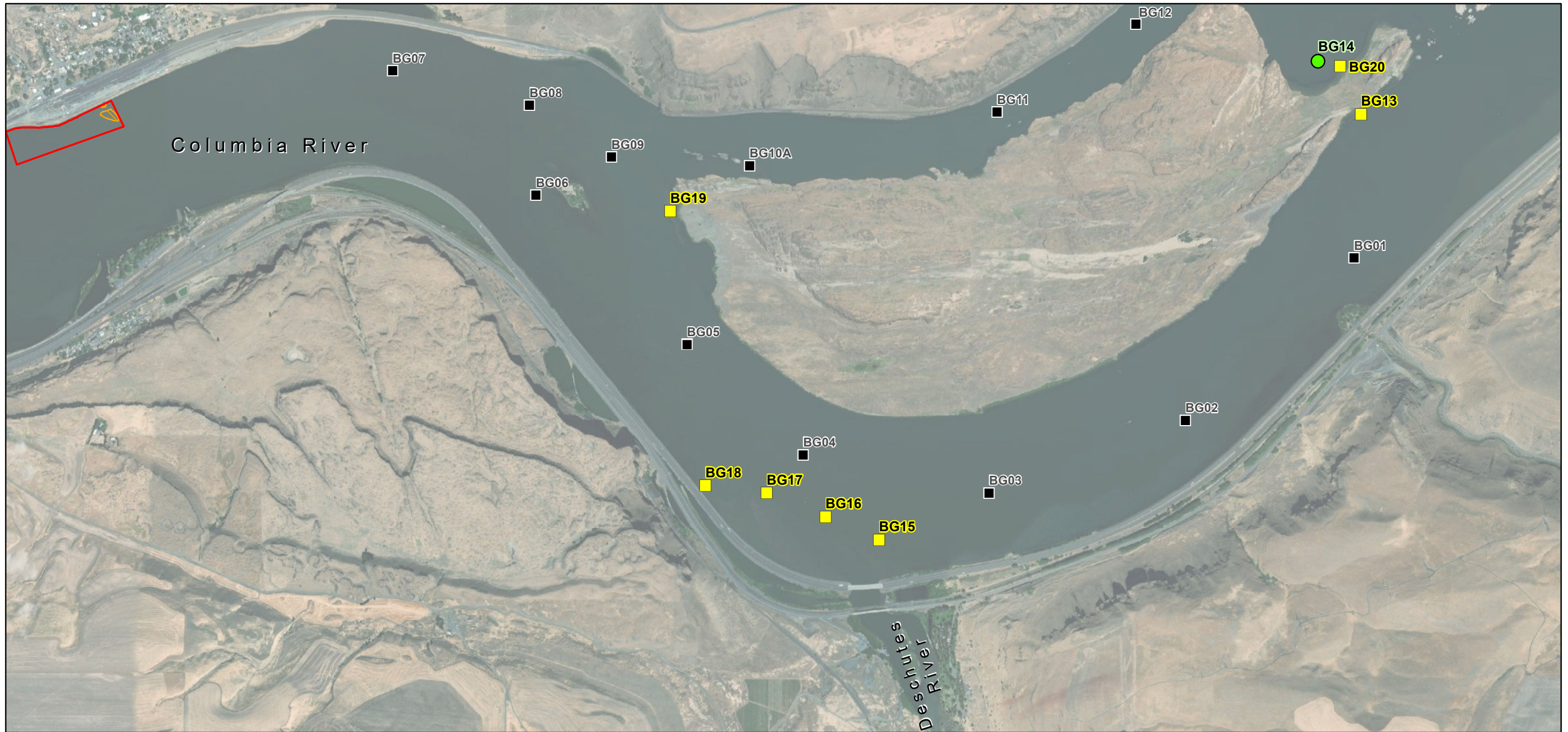


- LEGEND**
- Composite Sample
  - Grab Sample
  - No Sample\*
  - ◆ Current Outfall Location
  - ◆ Former Outfall Location
  - Proposed RI Area
  - Potential Sediment
  - Current Shoreline
  - Historic Shoreline

Notes:  
 \*No recovery due to the presence of bedrock, cobbles, boulders, grass, or shells.  
 Base map is 1951 aerial photo.  
 OWS = oil/water separator  
 POTW = publicly owned treatment works

DRAFT

**Figure 2. Actual Sediment Characterization Locations shown with 1951 Aerial Photo**  
 BNSF Track Switching Facility  
 Wishram, Washington



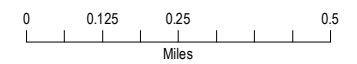
**LEGEND**

- Composite Sample
- Grab Sample
- No Sample\*
- Proposed RI Area
- Potential Sediment

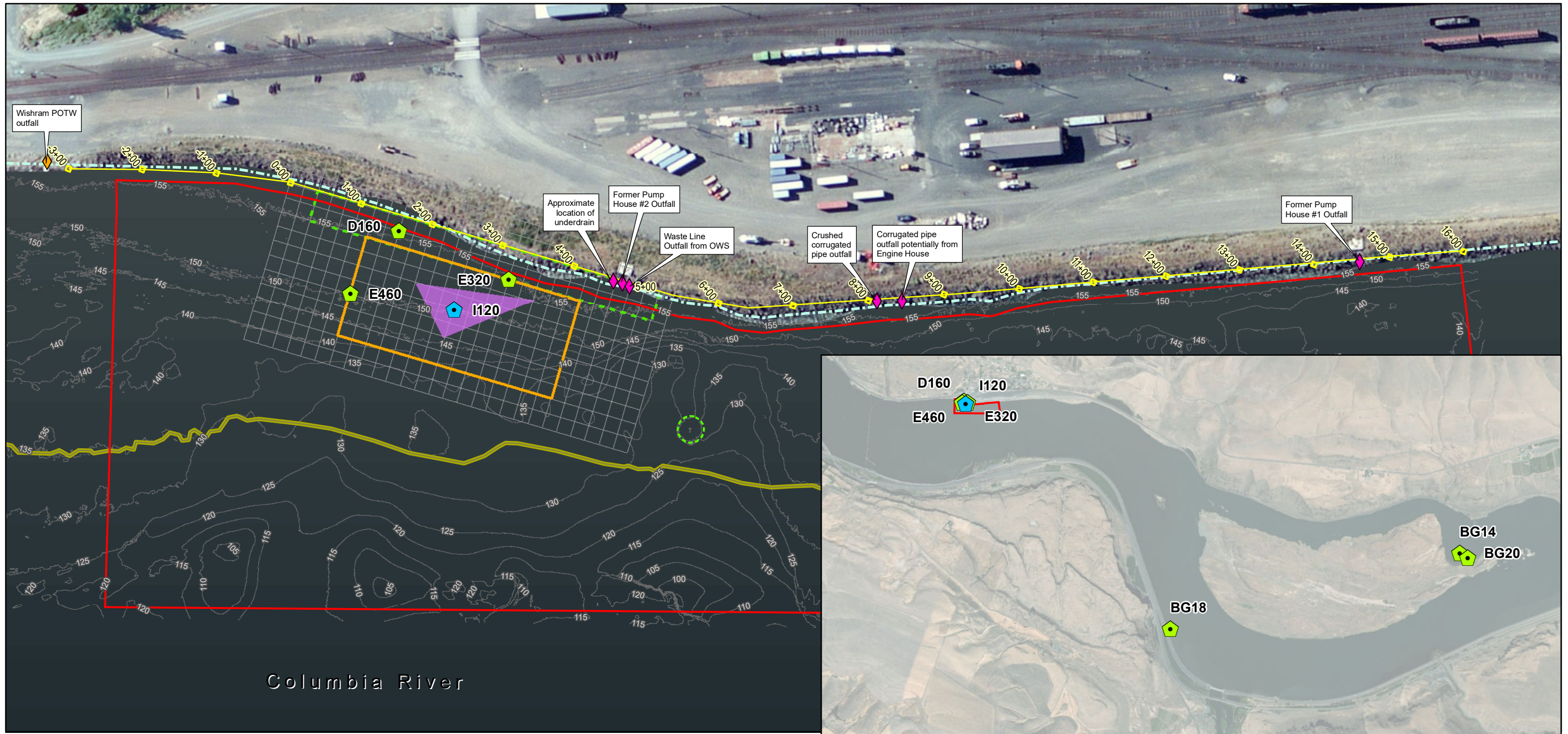
**Notes:**

\*No recovery due to the presence of bedrock, cobbles, boulders, grass, or shells.

DRAFT



**Figure 3. Actual Background Sample Locations**  
 BNSF Track Switching Facility  
 Wishram, Washington



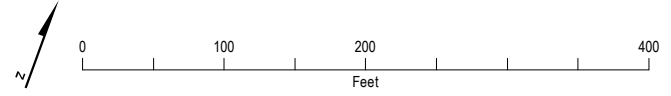
**LEGEND**

- ◆ Locations where the sulfide CSL was exceeded
- ◆ Locations where the sulfide SCO was exceeded, but not the CSL
- ◆ Current POTW Outfall Location
- ◆ Former Outfall Location
- Proposed RI Area

- Shoreline Stationing
- WA Ecology Initial Investigation Area
- 2018 Initial Investigation Area
- Offshore Area - NAPL Present
- 2018 Initial Investigation Area Sampling Grid

- Bathymetric Contour (ft NAVD88, 1 ft Contour Interval)
- Current Shoreline
- Historic Shoreline

Notes:  
ft = feet  
NAPL = nonaqueous phase liquid



DRAFT

**Figure 4. Sulfide Exceedances**  
BNSF Track Switching Facility  
Wishram, Washington

**Attachment A**  
Analytical Data Tables



## Attachment A: Analytical Data Tables, Step 1

		Location ID		BG13	BG14	BG15	BG16
		Sample ID		BNSF-BG13-042122-0-10	BNSF-BG14-042722-0-5.5	BNSF-BG15-042722-0-10	BNSF-BG16-042722-0-10
		Sample Type Code		N	N	N	N
		Sample Date		4/21/2022	4/27/2022	4/27/2022	4/27/2022
Method	Analyte	CAS	Units				
ASTM D422	Coarse Gravel	PSD_GV-C	%	0			
ASTM D422	Coarse Sand (0.5 to 1mm), Wentworth	PSD_SD-C	%	0			
ASTM D422	Cobbles	PSD_COB	%	0			
ASTM D422	Fine Gravel	PSD_GV-F	%	0			
ASTM D422	Fine Sand (0.125 to 0.25mm), Wentworth	PSD_SD-F	%	96			
ASTM D422	Fines	PSD_F	%	3.6			
ASTM D422	Gravel (greater than 2mm), Wentworth	PSD_GV	%	0			
ASTM D422	Hydrometer Reading after 1 min - Percent Finer	HYD_1	%	0.1			
ASTM D422	Hydrometer Reading after 1440 min - Percent Finer	HYD_1440	%	0			
ASTM D422	Hydrometer Reading after 15 min - Percent Finer	HYD_15	%	0.1			
ASTM D422	Hydrometer Reading after 240 min - Percent Finer	HYD_240	%	0			
ASTM D422	Hydrometer Reading after 30 min - Percent Finer	HYD_30	%	0			
ASTM D422	Hydrometer Reading after 60 min - Percent Finer	HYD_60	%	0			
ASTM D422	Medium Sand (0.25 to 0.5mm), Wentworth	PSD_SD-M	%	0.2			
ASTM D422	Particle Size Distribution (Clay: less than 0.00391mm), Wentworth	PSD_CL	%	0			
ASTM D422	Particle Size Distribution (Sand: 0.0625 to 2mm), Wentworth	PSD_SD	%	96			
ASTM D422	Particle Size Distribution (Silt: 0.00391 to 0.0625mm), Wentworth	PSD_ST	%	3.6			
ASTM D422	Sieve 0.375 mm percent passing	SIEVE 0.375mm	%	100			
ASTM D422	Sieve 0.50 mm percent passing	SIEVE 0.50mm	%	100			
ASTM D422	Sieve 1.0 mm percent passing	SIEVE 1.0mm	%	100			
ASTM D422	Sieve 1.5 mm percent passing	SIEVE 1.5mm	%	100			
ASTM D422	Sieve 2.0 mm percent passing	SIEVE 2.0mm	%	100			
ASTM D422	Sieve 3.0 mm percent passing	SIEVE 3.0mm	%	100			
ASTM D422	Sieve Analysis - 75 microns	SIEVE200	%	3.6			
ASTM D422	Sieve, #10	SIEVE10	%	100			
ASTM D422	Sieve, #100	SIEVE100	%	41			
ASTM D422	Sieve, #4	SIEVE4	%	100			
ASTM D422	Sieve, #40	SIEVE40	%	100			
ASTM D422	Sieve, #60	SIEVE60	%	92			
E1613B	1,2,3,4,6,7,8-HpCDD	35822-46-9	ng/kg	0.51 U	4.1 J	0.51 U	0.52 U
E1613B	1,2,3,4,6,7,8-HpCDF	67562-39-4	ng/kg	0.64 U	0.95 J	0.63 U	0.65 U
E1613B	1,2,3,4,7,8,9-HpCDF	55673-89-7	ng/kg	0.44 U	0.43 U	0.44 U	0.45 U
E1613B	1,2,3,4,7,8-HxCDD	39227-28-6	ng/kg	0.42 U	0.41 U	0.41 U	0.43 U
E1613B	1,2,3,4,7,8-HxCDF	70648-26-9	ng/kg	0.41 U	0.4 U	0.41 U	0.42 U
E1613B	1,2,3,6,7,8-HxCDD	57653-85-7	ng/kg	0.46 U	0.45 U	0.46 U	0.47 U
E1613B	1,2,3,6,7,8-HxCDF	57117-44-9	ng/kg	0.38 U	0.37 U	0.38 U	0.39 U
E1613B	1,2,3,7,8,9-HxCDD	19408-74-3	ng/kg	0.4 U	0.39 U	0.39 U	0.4 U
E1613B	1,2,3,7,8,9-HxCDF	72918-21-9	ng/kg	0.48 U	0.47 U	0.47 U	0.49 U
E1613B	1,2,3,7,8-PeCDD	40321-76-4	ng/kg	0.21 U	0.2 U	0.2 U	0.21 U
E1613B	1,2,3,7,8-PeCDF	57117-41-6	ng/kg	0.21 U	0.21 U	0.21 U	0.22 U
E1613B	2,3,4,6,7,8-HxCDF	60851-34-5	ng/kg	0.41 U	0.4 U	0.41 U	0.42 U
E1613B	2,3,4,7,8-PeCDF	57117-31-4	ng/kg	0.22 U	0.22 U	0.22 U	0.23 U
E1613B	2,3,7,8-TCDD	1746-01-6	ng/kg	0.19 U	0.19 U	0.19 U	0.19 U
E1613B	2,3,7,8-TCDF	51207-31-9	ng/kg	0.21 U	0.33 J	0.21 U	0.21 U

Attachment A: Analytical Data Tables, Step 1

		Location ID		BG13	BG14	BG15	BG16
		Sample ID		BNSF-BG13-042122-0-10	BNSF-BG14-042722-0-5.5	BNSF-BG15-042722-0-10	BNSF-BG16-042722-0-10
		Sample Type Code		N	N	N	N
		Sample Date		4/21/2022	4/27/2022	4/27/2022	4/27/2022
Method	Analyte	CAS	Units				
E1613B	OCDD	3268-87-9	ng/kg	2 U	<b>42</b>	1.9 U	2 U
E1613B	OCDF	39001-02-0	ng/kg	1.4 U	<b>1.9 J</b>	1.4 U	1.5 U
E1613B	Total HpCDD	37871-00-4	ng/kg	0.51 U	<b>9.4</b>	0.51 U	0.52 U
E1613B	Total HpCDF	38998-75-3	ng/kg	0.44 U	<b>2.2 J</b>	0.44 U	0.45 U
E1613B	Total HxCDD	34465-46-8	ng/kg	0.4 U	<b>0.75 J</b>	0.39 U	0.4 U
E1613B	Total HxCDF	55684-94-1	ng/kg	0.38 U	<b>0.52 J</b>	0.38 U	0.39 U
E1613B	Total PeCDD	36088-22-9	ng/kg	0.21 U	0.2 U	0.2 U	0.21 U
E1613B	Total PeCDF	30402-15-4	ng/kg	0.21 U	<b>0.69 J</b>	0.21 U	0.22 U
E1613B	Total TCDD	41903-57-5	ng/kg	0.19 U	0.19 U	0.19 U	0.19 U
E1613B	Total TCDF	30402-14-3	ng/kg	0.21 U	<b>0.61 J</b>	0.21 U	0.21 U
E1668C	2,3,3',4,4',5'-Hexachlorobiphenyl	69782-90-7	ng/kg	0.81 U	0.818 U	0.85 U	0.824 U
E1668C	2,3,3',4,4',5'-Hexachlorobiphenyl	38380-08-4	ng/kg	1.9 U	1.92 U	<b>2.13 J</b>	1.93 U
E1668C	PCB-105	32598-14-4	ng/kg	<b>2.95 J</b>	2.82 U	<b>10.7 J</b>	2.84 U
E1668C	PCB-114	74472-37-0	ng/kg	0.621 U	0.627 U	0.651 U	0.631 U
E1668C	PCB-118	31508-00-6	ng/kg	<b>5.98 J</b>	5.27 U	<b>25.4</b>	<b>6.37 J</b>
E1668C	PCB-123	65510-44-3	ng/kg	0.578 U	0.584 U	0.607 U	0.588 U
E1668C	PCB-126	57465-28-8	ng/kg	0.321 U	0.325 U	0.337 U	0.327 U
E1668C	PCB-167	52663-72-6	ng/kg	1.23 U	1.24 U	<b>2.04 J</b>	1.25 U
E1668C	PCB-169	32774-16-6	ng/kg	0.309 U	0.312 U	0.324 U	0.314 U
E1668C	PCB-189	39635-31-9	ng/kg	0.732 U	0.739 U	0.768 U	0.744 U
E1668C	PCB-77	32598-13-3	ng/kg	2.07 U	2.09 U	2.17 U	<b>2.31 J</b>
E1668C	PCB-81	70362-50-4	ng/kg	0.457 U	0.461 U	0.48 U	0.465 U
E350.1	Ammonia as N	NH3N	mg/kg	12 U	<b>32 J</b>	<b>22</b>	11 U
NWTPH-Dx	Diesel Fuel	68334-30-5	mg/kg	<b>15.8 J</b>	<b>19.5 J</b>	<b>34.2</b>	9.2 U
NWTPH-Dx	TPH as Motor Oil	TPHMO	mg/kg	<b>36.9 B</b>	<b>60</b>	<b>174</b>	<b>18</b>
SM2540G	Total Solids	SOLID	%	<b>75.6</b>	<b>62.8</b>	<b>70.7</b>	<b>77</b>
SW6020B	Arsenic	7440-38-2	mg/kg	0.16 U	<b>3.3</b>	<b>0.18 J</b>	<b>0.16 J</b>
SW6020B	Cadmium	7440-43-9	mg/kg	0.046 U	<b>0.52</b>	0.047 U	0.042 U
SW6020B	Chromium	7440-47-3	mg/kg	0.2 U	<b>14.2</b>	<b>2.1 J</b>	<b>2.3 J</b>
SW6020B	Copper	7440-50-8	mg/kg	<b>1.6</b>	<b>16.2</b>	<b>5.7</b>	<b>6</b>
SW6020B	Lead	7439-92-1	mg/kg	<b>0.092 B</b>	<b>8.6</b>	<b>0.32 J</b>	<b>0.26 J</b>
SW6020B	Nickel	7440-02-0	mg/kg	0.29 U	<b>15.3</b>	<b>1.9</b>	<b>2.3</b>
SW6020B	Selenium	7782-49-2	mg/kg	0.12 U	<b>0.45 J</b>	0.13 U	0.12 U
SW6020B	Silver	7440-22-4	mg/kg	0.21 UJ	<b>0.41 J</b>	0.22 U	0.19 U
SW6020B	Zinc	7440-66-6	mg/kg	<b>2 J</b>	<b>106</b>	<b>6.9 J</b>	<b>7.1</b>
SW7471B	Mercury	7439-97-6	mg/kg	0.012 U	<b>0.025 J</b>	0.012 U	0.012 U
SW8270E	1-Methylnaphthalene	90-12-0	mg/kg	0.0113 U	0.00678 U	0.00603 U	0.00554 U
SW8270E	2-Methylnaphthalene	91-57-6	mg/kg	0.0114 U	0.00688 U	0.00611 U	0.00561 U
SW8270E	3 & 4-Methylphenol (m,p-Cresols)	65794-96-9	mg/kg	0.0275 U	0.0166 U	<b>0.0455 J</b>	0.0135 U
SW8270E	Acenaphthene	83-32-9	mg/kg	0.0143 U	0.00858 U	0.00762 U	0.007 U
SW8270E	Acenaphthylene	208-96-8	mg/kg	0.0124 U	0.00747 U	0.00663 U	0.00609 U
SW8270E	Anthracene	120-12-7	mg/kg	0.0157 U	0.00944 U	0.00839 U	0.00771 U
SW8270E	Benzo(a)anthracene	56-55-3	mg/kg	0.0155 U	0.00935 U	0.0083 U	0.00763 U
SW8270E	Benzo(a)pyrene	50-32-8	mg/kg	0.0164 U	0.00986 U	0.00876 U	0.00804 U

Attachment A: Analytical Data Tables, Step 1

		Location ID Sample ID Sample Type Code Sample Date		BG13 BNSF-BG13-042122-0-10 N 4/21/2022	BG14 BNSF-BG14-042722-0-5.5 N 4/27/2022	BG15 BNSF-BG15-042722-0-10 N 4/27/2022	BG16 BNSF-BG16-042722-0-10 N 4/27/2022
Method	Analyte	CAS	Units				
SW8270E	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0164 U	0.00989 U	0.00878 U	0.00807 U
SW8270E	Benzo(g,h,i)perylene	191-24-2	mg/kg	0.0161 U	0.0097 U	0.00861 U	0.00791 U
SW8270E	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0156 U	0.00943 U	0.00837 U	0.00769 U
SW8270E	Benzoic Acid	65-85-0	mg/kg	0.312 U	0.188 U	0.167 U	0.153 U
SW8270E	Bis (2-ethylhexyl) phthalate	117-81-7	mg/kg	0.112 U	0.0672 U	0.0597 U	0.0548 U
SW8270E	Carbazole	86-74-8	mg/kg	0.0272 U	0.0164 U	0.0146 U	0.0134 U
SW8270E	Chrysene	218-01-9	mg/kg	0.0175 U	0.0105 U	0.00936 U	0.0086 U
SW8270E	Dibenzo(a,h)anthracene	53-70-3	mg/kg	0.0245 U	0.0147 U	0.0131 U	0.012 U
SW8270E	Dibenzofuran	132-64-9	mg/kg	0.0288 U	0.0174 U	0.0154 U	0.0142 U
SW8270E	Di-N-Butylphthalate	84-74-2	mg/kg	0.0302 U	0.0182 U	0.0161 U	0.0148 U
SW8270E	Di-n-octyl phthalate	117-84-0	mg/kg	0.0595 U	0.0358 U	0.0318 U	0.0292 U
SW8270E	Fluoranthene	206-44-0	mg/kg	0.0159 U	0.00957 U	0.0085 U	0.00781 U
SW8270E	Fluorene	86-73-7	mg/kg	0.0143 U	0.00863 U	0.00767 U	0.00704 U
SW8270E	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0249 U	0.015 U	0.0133 U	0.0122 U
SW8270E	Naphthalene	91-20-3	mg/kg	0.0221 U	0.0133 U	0.0118 U	0.0109 U
SW8270E	Pentachlorophenol	87-86-5	mg/kg	0.0237 U	0.0143 U	0.0127 U	0.0116 U
SW8270E	Phenanthrene	85-01-8	mg/kg	0.0175 U	0.0105 U	0.00935 U	0.00859 U
SW8270E	Phenol	108-95-2	mg/kg	0.0354 U	0.0213 U	0.019 U	0.0174 U
SW8270E	Pyrene	129-00-0	mg/kg	0.0172 U	0.0103 U	0.00917 U	0.00842 U
SW9030B	Sulfide	18496-25-8	mg/kg	39.7 U	<b>167</b>	42.4 U	39 U
SW9060A	Total Organic Carbon	TOC	mg/kg	<b>1600 J</b>	<b>19000</b>	<b>6500</b>	<b>530 B</b>

Notes:

cPAHs = carcinogenic polycyclic aromatic hydrocarbon

cPAHs include benzo[a]pyrene, benzo[a]anthracene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, dibenzo[a,h]anthracene, indeno[1,2,3-cd]pyrene

PCB = polychlorinated biphenyls

TPH = total petroleum hydrocarbons

Attachment A: Analytical Data Tables, Step 1

		Location ID Sample ID Sample Type Code Sample Date		BG17 BNSF-BG17-042722-0-10 N 4/27/2022	BG17 FD02-042722-0-10 FD 4/27/2022	BG18 BNSF-BG18-042722-0-10 N 4/27/2022	BG19 BNSF-BG19-042722-0-10 N 4/27/2022	BG20 BNSF-BG20-042922-0-10 N 4/29/2022
Method	Analyte	CAS	Units					
ASTM D422	Coarse Gravel	PSD_GV-C	%					0
ASTM D422	Coarse Sand (0.5 to 1mm), Wentworth	PSD_SD-C	%					0.1
ASTM D422	Cobbles	PSD_COB	%					0
ASTM D422	Fine Gravel	PSD_GV-F	%					0
ASTM D422	Fine Sand (0.125 to 0.25mm), Wentworth	PSD_SD-F	%					86
ASTM D422	Fines	PSD_F	%					13
ASTM D422	Gravel (greater than 2mm), Wentworth	PSD_GV	%					0
ASTM D422	Hydrometer Reading after 1 min - Percent Finer	HYD_1	%					1.2
ASTM D422	Hydrometer Reading after 1440 min - Percent Finer	HYD_1440	%					0
ASTM D422	Hydrometer Reading after 15 min - Percent Finer	HYD_15	%					0.5
ASTM D422	Hydrometer Reading after 240 min - Percent Finer	HYD_240	%					0.1
ASTM D422	Hydrometer Reading after 30 min - Percent Finer	HYD_30	%					0.4
ASTM D422	Hydrometer Reading after 60 min - Percent Finer	HYD_60	%					0.2
ASTM D422	Medium Sand (0.25 to 0.5mm), Wentworth	PSD_SD-M	%					0.3
ASTM D422	Particle Size Distribution (Clay: less than 0.00391mm), Wentworth	PSD_CL	%					0.2
ASTM D422	Particle Size Distribution (Sand: 0.0625 to 2mm), Wentworth	PSD_SD	%					87
ASTM D422	Particle Size Distribution (Silt: 0.00391 to 0.0625mm), Wentworth	PSD_ST	%					13
ASTM D422	Sieve 0.375 mm percent passing	SIEVE 0.375mm	%					100
ASTM D422	Sieve 0.50 mm percent passing	SIEVE 0.50mm	%					100
ASTM D422	Sieve 1.0 mm percent passing	SIEVE 1.0mm	%					100
ASTM D422	Sieve 1.5 mm percent passing	SIEVE 1.5mm	%					100
ASTM D422	Sieve 2.0 mm percent passing	SIEVE 2.0mm	%					100
ASTM D422	Sieve 3.0 mm percent passing	SIEVE 3.0mm	%					100
ASTM D422	Sieve Analysis - 75 microns	SIEVE200	%					13
ASTM D422	Sieve, #10	SIEVE10	%					100
ASTM D422	Sieve, #100	SIEVE100	%					74
ASTM D422	Sieve, #4	SIEVE4	%					100
ASTM D422	Sieve, #40	SIEVE40	%					100
ASTM D422	Sieve, #60	SIEVE60	%					96
E1613B	1,2,3,4,6,7,8-HpCDD	35822-46-9	ng/kg	12 J	1.5 J	4.3 J	0.49 U	0.65 UJ
E1613B	1,2,3,4,6,7,8-HpCDF	67562-39-4	ng/kg	1.1 J	0.63 U	0.65 U	0.62 U	0.82 UJ
E1613B	1,2,3,4,7,8,9-HpCDF	55673-89-7	ng/kg	0.43 U	0.43 U	0.44 U	0.42 U	0.56 UJ
E1613B	1,2,3,4,7,8-HxCDD	39227-28-6	ng/kg	0.41 U	0.41 U	0.42 U	0.4 U	0.54 UJ
E1613B	1,2,3,4,7,8-HxCDF	70648-26-9	ng/kg	0.4 U	0.4 U	0.42 U	0.4 U	0.53 UJ
E1613B	1,2,3,6,7,8-HxCDD	57653-85-7	ng/kg	0.45 U	0.45 U	0.47 U	0.45 U	0.59 UJ
E1613B	1,2,3,6,7,8-HxCDF	57117-44-9	ng/kg	0.38 U	0.38 U	0.39 U	0.37 U	0.49 UJ
E1613B	1,2,3,7,8,9-HxCDD	19408-74-3	ng/kg	0.39 U	0.39 U	0.4 U	0.38 U	0.51 UJ
E1613B	1,2,3,7,8,9-HxCDF	72918-21-9	ng/kg	0.47 U	0.47 U	0.48 U	0.46 U	0.61 UJ
E1613B	1,2,3,7,8-PeCDD	40321-76-4	ng/kg	0.2 U	0.2 U	0.21 U	0.2 U	0.26 UJ
E1613B	1,2,3,7,8-PeCDF	57117-41-6	ng/kg	0.21 U	0.21 U	0.22 U	0.21 U	0.27 UJ
E1613B	2,3,4,6,7,8-HxCDF	60851-34-5	ng/kg	0.4 U	0.4 U	0.41 U	0.4 U	0.53 UJ
E1613B	2,3,4,7,8-PeCDF	57117-31-4	ng/kg	0.22 U	0.22 U	0.22 U	0.21 U	0.28 UJ
E1613B	2,3,7,8-TCDD	1746-01-6	ng/kg	0.19 U	0.19 U	0.19 U	0.18 U	0.24 UJ
E1613B	2,3,7,8-TCDF	51207-31-9	ng/kg	0.21 U	0.21 U	0.21 U	0.2 U	0.27 UJ

Attachment A: Analytical Data Tables, Step 1

		Location ID Sample ID Sample Type Code Sample Date		BG17 BNSF-BG17-042722-0-10 N 4/27/2022	BG17 FD02-042722-0-10 FD 4/27/2022	BG18 BNSF-BG18-042722-0-10 N 4/27/2022	BG19 BNSF-BG19-042722-0-10 N 4/27/2022	BG20 BNSF-BG20-042922-0-10 N 4/29/2022
Method	Analyte	CAS	Units					
E1613B	OCDD	3268-87-9	ng/kg	<b>200 J</b>	<b>12 J</b>	<b>50</b>	1.9 U	2.5 UJ
E1613B	OCDF	39001-02-0	ng/kg	1.4 U	1.4 U	1.4 U	1.4 U	1.8 UJ
E1613B	Total HpCDD	37871-00-4	ng/kg	<b>24 J</b>	<b>4.1 J</b>	<b>11</b>	0.49 U	0.65 UJ
E1613B	Total HpCDF	38998-75-3	ng/kg	<b>3.6 J</b>	0.43 U	0.44 U	0.42 U	0.56 UJ
E1613B	Total HxCDD	34465-46-8	ng/kg	<b>0.48 J</b>	0.39 U	0.4 U	0.38 U	0.51 UJ
E1613B	Total HxCDF	55684-94-1	ng/kg	<b>2.6 J</b>	0.38 U	0.39 U	0.37 U	0.49 UJ
E1613B	Total PeCDD	36088-22-9	ng/kg	0.2 U	0.2 U	0.21 U	0.2 U	0.26 UJ
E1613B	Total PeCDF	30402-15-4	ng/kg	<b>0.35 J</b>	0.21 U	0.22 U	0.21 U	0.27 UJ
E1613B	Total TCDD	41903-57-5	ng/kg	0.19 U	0.19 U	0.19 U	0.18 U	0.24 UJ
E1613B	Total TCDF	30402-14-3	ng/kg	0.21 U	0.21 U	0.21 U	0.2 U	0.27 UJ
E1668C	2,3,3',4,4',5'-Hexachlorobiphenyl	69782-90-7	ng/kg	0.825 U	0.822 U	0.828 U	0.828 U	0.819 UJ
E1668C	2,3,3',4,4',5'-Hexachlorobiphenyl	38380-08-4	ng/kg	1.93 U	1.93 U	1.94 U	1.94 U	1.92 UJ
E1668C	PCB-105	32598-14-4	ng/kg	2.84 U	2.83 U	2.85 U	2.85 U	<b>4.5 J</b>
E1668C	PCB-114	74472-37-0	ng/kg	0.632 U	0.63 U	0.634 U	0.634 U	0.627 UJ
E1668C	PCB-118	31508-00-6	ng/kg	5.31 U	5.3 U	5.33 U	5.33 U	<b>8.56 J</b>
E1668C	PCB-123	65510-44-3	ng/kg	0.588 U	0.587 U	0.591 U	0.591 U	0.584 UJ
E1668C	PCB-126	57465-28-8	ng/kg	0.327 U	0.326 U	0.329 U	0.329 U	0.325 UJ
E1668C	PCB-167	52663-72-6	ng/kg	1.25 U	1.25 U	1.26 U	1.26 U	1.24 UJ
E1668C	PCB-169	32774-16-6	ng/kg	0.314 U	0.313 U	0.316 U	0.316 U	0.312 UJ
E1668C	PCB-189	39635-31-9	ng/kg	0.745 U	0.743 U	0.748 U	0.748 U	0.739 UJ
E1668C	PCB-77	32598-13-3	ng/kg	2.1 U	2.1 U	2.11 U	2.11 U	<b>2.88 J</b>
E1668C	PCB-81	70362-50-4	ng/kg	0.465 U	0.464 U	0.467 U	0.467 U	0.462 UJ
E350.1	Ammonia as N	NH3N	mg/kg	<b>67</b>	<b>72</b>	<b>56</b>	11 U	<b>30 B</b>
NWTPH-Dx	Diesel Fuel	68334-30-5	mg/kg	<b>64.4</b>	<b>52</b>	<b>20.6 J</b>	<b>10.5 J</b>	10.2 UJ
NWTPH-Dx	TPH as Motor Oil	TPHMO	mg/kg	<b>363</b>	<b>273</b>	<b>179</b>	<b>30.6</b>	<b>31.6 J</b>
SM2540G	Total Solids	SOLID	%	<b>58.1</b>	<b>54.7</b>	<b>58.9</b>	<b>77</b>	<b>70.4 J</b>
SW6020B	Arsenic	7440-38-2	mg/kg	<b>0.41 J</b>	<b>0.53 J</b>	<b>0.54 J</b>	<b>2.5</b>	<b>2.6</b>
SW6020B	Cadmium	7440-43-9	mg/kg	0.059 U	0.062 U	0.054 U	<b>0.11</b>	<b>0.29</b>
SW6020B	Chromium	7440-47-3	mg/kg	<b>3.9</b>	<b>4.8</b>	<b>5.2</b>	<b>8.5</b>	<b>15.7</b>
SW6020B	Copper	7440-50-8	mg/kg	<b>8.4</b>	<b>10.3</b>	<b>8.3</b>	<b>7</b>	<b>12.7</b>
SW6020B	Lead	7439-92-1	mg/kg	<b>0.59 J</b>	<b>0.73 J</b>	<b>0.98</b>	<b>3.6</b>	<b>5.9</b>
SW6020B	Nickel	7440-02-0	mg/kg	<b>2.8</b>	<b>3.5</b>	<b>3.6</b>	<b>9.5</b>	<b>15</b>
SW6020B	Selenium	7782-49-2	mg/kg	0.16 U	<b>0.2 J</b>	<b>0.18 J</b>	<b>0.12 J</b>	<b>0.31 J</b>
SW6020B	Silver	7440-22-4	mg/kg	0.27 U	0.28 U	0.25 U	0.19 U	0.22 U
SW6020B	Zinc	7440-66-6	mg/kg	<b>9.4</b>	<b>12</b>	<b>13.6</b>	<b>52.3</b>	<b>81.6</b>
SW7471B	Mercury	7439-97-6	mg/kg	<b>0.058</b>	0.016 U	0.015 U	0.011 U	<b>0.012 J</b>
SW8270E	1-Methylnaphthalene	90-12-0	mg/kg	0.00733 U	0.00779 U	0.00723 U	0.0276 U	0.0121 UJ
SW8270E	2-Methylnaphthalene	91-57-6	mg/kg	0.00744 U	0.00789 U	0.00733 U	0.028 U	0.0123 UJ
SW8270E	3 & 4-Methylphenol (m,p-Cresols)	65794-96-9	mg/kg	<b>0.127 J</b>	<b>0.387 J</b>	0.0177 U	0.0675 U	0.0296 UJ
SW8270E	Acenaphthene	83-32-9	mg/kg	0.00928 U	0.00985 U	0.00915 U	0.0349 U	0.0154 UJ
SW8270E	Acenaphthylene	208-96-8	mg/kg	0.00807 U	0.00857 U	0.00796 U	0.0304 U	0.0133 UJ
SW8270E	Anthracene	120-12-7	mg/kg	0.0102 U	0.0108 U	0.0101 U	0.0385 U	0.0169 UJ
SW8270E	Benzo(a)anthracene	56-55-3	mg/kg	0.0101 U	0.0107 U	0.00997 U	0.038 U	0.0166 UJ
SW8270E	Benzo(a)pyrene	50-32-8	mg/kg	0.0107 U	0.0113 U	0.0105 U	0.0401 U	0.0176 UJ

Attachment A: Analytical Data Tables, Step 1

Location ID Sample ID Sample Type Code Sample Date				BG17 BNSF-BG17-042722-0-10 N 4/27/2022	BG17 FD02-042722-0-10 FD 4/27/2022	BG18 BNSF-BG18-042722-0-10 N 4/27/2022	BG19 BNSF-BG19-042722-0-10 N 4/27/2022	BG20 BNSF-BG20-042922-0-10 N 4/29/2022
Method	Analyte	CAS	Units					
SW8270E	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0107 U	0.0113 U	0.0105 U	0.0404 U	0.0176 UJ
SW8270E	Benzo(g,h,i)perylene	191-24-2	mg/kg	0.0105 U	0.0111 U	0.0103 U	0.0396 U	0.0173 UJ
SW8270E	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0102 U	0.0108 U	0.0101 U	0.0384 U	0.0168 UJ
SW8270E	Benzoic Acid	65-85-0	mg/kg	0.203 U	<b>0.327 J</b>	0.2 U	0.766 U	0.335 UJ
SW8270E	Bis (2-ethylhexyl) phthalate	117-81-7	mg/kg	0.0726 U	0.0771 U	0.0716 U	0.274 U	0.12 UJ
SW8270E	Carbazole	86-74-8	mg/kg	0.0177 U	0.0188 U	0.0175 U	0.0668 U	0.0293 UJ
SW8270E	Chrysene	218-01-9	mg/kg	0.0114 U	0.0121 U	0.0112 U	0.043 U	0.0188 UJ
SW8270E	Dibenzo(a,h)anthracene	53-70-3	mg/kg	0.0159 U	0.0169 U	0.0157 U	0.06 U	0.0263 UJ
SW8270E	Dibenzofuran	132-64-9	mg/kg	0.0188 U	0.0199 U	0.0185 U	0.0707 U	0.031 UJ
SW8270E	Di-N-Butylphthalate	84-74-2	mg/kg	0.0196 U	0.0208 U	0.0194 U	0.074 U	0.0324 UJ
SW8270E	Di-n-octyl phthalate	117-84-0	mg/kg	0.0387 U	0.0411 U	0.0382 U	0.147 U	0.064 UJ
SW8270E	Fluoranthene	206-44-0	mg/kg	0.0103 U	0.011 U	0.0102 U	0.0391 U	0.0171 UJ
SW8270E	Fluorene	86-73-7	mg/kg	0.00933 U	0.00991 U	0.0092 U	0.0352 U	0.0154 UJ
SW8270E	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0162 U	0.0172 U	0.016 U	0.0611 U	0.0267 UJ
SW8270E	Naphthalene	91-20-3	mg/kg	0.0144 U	0.0153 U	0.0142 U	0.0543 U	0.0237 UJ
SW8270E	Pentachlorophenol	87-86-5	mg/kg	0.0154 U	0.0164 U	0.0152 U	0.0581 U	0.0254 UJ
SW8270E	Phenanthrene	85-01-8	mg/kg	0.0114 U	0.0121 U	0.0112 U	0.043 U	0.0188 UJ
SW8270E	Phenol	108-95-2	mg/kg	0.0231 U	<b>0.0534 J</b>	0.0227 U	0.087 U	0.0381 UJ
SW8270E	Pyrene	129-00-0	mg/kg	0.0112 U	0.0118 U	0.011 U	0.0421 U	0.0185 UJ
SW9030B	Sulfide	18496-25-8	mg/kg	51.6 U	54.8 U	<b>76.4 J</b>	38.9 U	<b>179 J</b>
SW9060A	Total Organic Carbon	TOC	mg/kg	<b>31000</b>	<b>30000</b>	<b>19000</b>	<b>1600 J</b>	<b>7000 J</b>

Notes:

cPAHs = carcinogenic polycyclic aromatic hydrocarbon

cPAHs include benzo[a]pyrene, benzo[a]anthracene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, dibenzo[a,h]anthracene, indeno[1,2,3-cd]pyrene

PCB = polychlorinated biphenyls

TPH = total petroleum hydrocarbons

Attachment A: Analytical Data Tables, Step 1

		Location ID Sample ID Sample Type Code Sample Date		D160 BNSF-D160-042822-0-5 N 4/28/2022	E320 BNSF-E320-042822-0-4 N 4/28/2022	E380 BNSF-E380-042822-0-4 N 4/28/2022	E460 BNSF-E460-042922-0-4 N 4/29/2022	H360 BNSF-H360-042922-0-8 N 4/29/2022
Method	Analyte	CAS	Units					
ASTM D422	Coarse Gravel	PSD_GV-C	%			0		
ASTM D422	Coarse Sand (0.5 to 1mm), Wentworth	PSD_SD-C	%			0.1		
ASTM D422	Cobbles	PSD_COB	%			0		
ASTM D422	Fine Gravel	PSD_GV-F	%			0		
ASTM D422	Fine Sand (0.125 to 0.25mm), Wentworth	PSD_SD-F	%			92		
ASTM D422	Fines	PSD_F	%			7.3		
ASTM D422	Gravel (greater than 2mm), Wentworth	PSD_GV	%			0		
ASTM D422	Hydrometer Reading after 1 min - Percent Finer	HYD_1	%			0.2		
ASTM D422	Hydrometer Reading after 1440 min - Percent Finer	HYD_1440	%			-0.2		
ASTM D422	Hydrometer Reading after 15 min - Percent Finer	HYD_15	%			0.1		
ASTM D422	Hydrometer Reading after 240 min - Percent Finer	HYD_240	%			-0.1		
ASTM D422	Hydrometer Reading after 30 min - Percent Finer	HYD_30	%			0		
ASTM D422	Hydrometer Reading after 60 min - Percent Finer	HYD_60	%			0		
ASTM D422	Medium Sand (0.25 to 0.5mm), Wentworth	PSD_SD-M	%			0.4		
ASTM D422	Particle Size Distribution (Clay: less than 0.00391mm), Wentworth	PSD_CL	%			0		
ASTM D422	Particle Size Distribution (Sand: 0.0625 to 2mm), Wentworth	PSD_SD	%			93		
ASTM D422	Particle Size Distribution (Silt: 0.00391 to 0.0625mm), Wentworth	PSD_ST	%			0		
ASTM D422	Sieve 0.375 mm percent passing	SIEVE 0.375mm	%			100		
ASTM D422	Sieve 0.50 mm percent passing	SIEVE 0.50mm	%			100		
ASTM D422	Sieve 1.0 mm percent passing	SIEVE 1.0mm	%			100		
ASTM D422	Sieve 1.5 mm percent passing	SIEVE 1.5mm	%			100		
ASTM D422	Sieve 2.0 mm percent passing	SIEVE 2.0mm	%			100		
ASTM D422	Sieve 3.0 mm percent passing	SIEVE 3.0mm	%			100		
ASTM D422	Sieve Analysis - 75 microns	SIEVE200	%			7.3		
ASTM D422	Sieve, #10	SIEVE10	%			100		
ASTM D422	Sieve, #100	SIEVE100	%			58		
ASTM D422	Sieve, #4	SIEVE4	%			100		
ASTM D422	Sieve, #40	SIEVE40	%			100		
ASTM D422	Sieve, #60	SIEVE60	%			95		
E1613B	1,2,3,4,6,7,8-HpCDD	35822-46-9	ng/kg	7.5 J	24 J	2.4 J	1.9 J	0.94 J
E1613B	1,2,3,4,6,7,8-HpCDF	67562-39-4	ng/kg	1 J	11 J	0.64 UJ	0.7 UJ	0.61 J
E1613B	1,2,3,4,7,8,9-HpCDF	55673-89-7	ng/kg	0.46 UJ	0.41 UJ	0.44 UJ	0.48 UJ	0.41 UJ
E1613B	1,2,3,4,7,8-HxCDD	39227-28-6	ng/kg	0.46 J	0.7 J	0.42 UJ	0.46 UJ	0.39 UJ
E1613B	1,2,3,4,7,8-HxCDF	70648-26-9	ng/kg	0.43 UJ	0.39 UJ	0.41 UJ	0.45 UJ	0.39 UJ
E1613B	1,2,3,6,7,8-HxCDD	57653-85-7	ng/kg	0.69 J	3.7 J	0.46 UJ	0.5 UJ	0.43 UJ
E1613B	1,2,3,6,7,8-HxCDF	57117-44-9	ng/kg	0.4 UJ	0.36 UJ	0.38 UJ	0.42 UJ	0.36 UJ
E1613B	1,2,3,7,8,9-HxCDD	19408-74-3	ng/kg	0.42 UJ	1.6 J	0.4 UJ	0.43 UJ	0.37 UJ
E1613B	1,2,3,7,8,9-HxCDF	72918-21-9	ng/kg	0.5 UJ	0.45 UJ	0.48 UJ	0.52 UJ	0.45 UJ
E1613B	1,2,3,7,8-PeCDD	40321-76-4	ng/kg	0.22 UJ	0.74 J	0.2 UJ	0.22 UJ	0.19 UJ
E1613B	1,2,3,7,8-PeCDF	57117-41-6	ng/kg	0.23 UJ	4.6 J	0.21 UJ	0.23 UJ	0.2 UJ
E1613B	2,3,4,6,7,8-HxCDF	60851-34-5	ng/kg	0.43 UJ	0.42 J	0.41 UJ	0.45 UJ	0.39 UJ
E1613B	2,3,4,7,8-PeCDF	57117-31-4	ng/kg	0.23 UJ	0.21 UJ	0.22 UJ	0.24 UJ	0.21 UJ
E1613B	2,3,7,8-TCDD	1746-01-6	ng/kg	0.2 UJ	2.2 J	0.19 UJ	0.21 UJ	0.18 UJ
E1613B	2,3,7,8-TCDF	51207-31-9	ng/kg	0.39 J	0.23 J	0.21 UJ	0.25 J	0.21 J

Attachment A: Analytical Data Tables, Step 1

		Location ID Sample ID Sample Type Code Sample Date		D160 BNSF-D160-042822-0-5 N 4/28/2022	E320 BNSF-E320-042822-0-4 N 4/28/2022	E380 BNSF-E380-042822-0-4 N 4/28/2022	E460 BNSF-E460-042922-0-4 N 4/29/2022	H360 BNSF-H360-042922-0-8 N 4/29/2022
Method	Analyte	CAS	Units					
E1613B	OCDD	3268-87-9	ng/kg	<b>36 J</b>	<b>130 J</b>	<b>13 J</b>	<b>10 J</b>	<b>6.7 J</b>
E1613B	OCDF	39001-02-0	ng/kg	1.5 UJ	<b>7.1 J</b>	1.4 UJ	1.6 UJ	1.3 UJ
E1613B	Total HpCDD	37871-00-4	ng/kg	<b>15 J</b>	<b>50 J</b>	<b>5.5 J</b>	<b>3.8 J</b>	<b>1.1 J</b>
E1613B	Total HpCDF	38998-75-3	ng/kg	<b>1 J</b>	<b>22 J</b>	0.44 UJ	<b>0.5 J</b>	<b>0.61 J</b>
E1613B	Total HxCDD	34465-46-8	ng/kg	<b>2.1 J</b>	<b>28 J</b>	<b>0.81 J</b>	0.43 UJ	0.37 UJ
E1613B	Total HxCDF	55684-94-1	ng/kg	<b>0.62 J</b>	<b>7.9 J</b>	0.38 UJ	0.42 UJ	0.36 UJ
E1613B	Total PeCDD	36088-22-9	ng/kg	0.22 UJ	<b>0.74 J</b>	0.2 UJ	0.22 UJ	0.19 UJ
E1613B	Total PeCDF	30402-15-4	ng/kg	<b>0.83 J</b>	<b>1.6 J</b>	0.21 UJ	<b>0.28 J</b>	<b>0.28 J</b>
E1613B	Total TCDD	41903-57-5	ng/kg	0.2 UJ	<b>2.2 J</b>	0.19 UJ	0.21 UJ	0.18 UJ
E1613B	Total TCDF	30402-14-3	ng/kg	<b>0.7 J</b>	<b>0.23 J</b>	0.21 UJ	<b>0.58 J</b>	<b>0.21 J</b>
E1668C	2,3,3',4,4',5'-Hexachlorobiphenyl	69782-90-7	ng/kg	0.854 UJ	0.832 UJ	0.709 UJ	1.01 UJ	<b>1.33 J</b>
E1668C	2,3,3',4,4',5'-Hexachlorobiphenyl	38380-08-4	ng/kg	<b>2.58 J</b>	<b>3.54 J</b>	1.66 UJ	2.36 UJ	<b>4.77 J</b>
E1668C	PCB-105	32598-14-4	ng/kg	<b>9.22 J</b>	<b>12.5 J</b>	2.44 UJ	<b>5.83 J</b>	<b>14 J</b>
E1668C	PCB-114	74472-37-0	ng/kg	<b>0.887 J</b>	<b>0.802 J</b>	0.543 UJ	0.771 UJ	<b>1.77 J</b>
E1668C	PCB-118	31508-00-6	ng/kg	<b>28.9 J</b>	<b>26.6 J</b>	<b>4.95 J</b>	<b>11.6 J</b>	<b>40.1 J</b>
E1668C	PCB-123	65510-44-3	ng/kg	0.609 UJ	<b>0.97 J</b>	0.506 UJ	0.718 UJ	<b>1.38 J</b>
E1668C	PCB-126	57465-28-8	ng/kg	0.339 UJ	0.33 UJ	0.281 UJ	0.399 UJ	0.367 UJ
E1668C	PCB-167	52663-72-6	ng/kg	1.3 UJ	<b>1.7 J</b>	1.08 UJ	1.53 UJ	<b>2.26 J</b>
E1668C	PCB-169	32774-16-6	ng/kg	0.326 UJ	0.317 UJ	0.27 UJ	0.384 UJ	0.353 UJ
E1668C	PCB-189	39635-31-9	ng/kg	0.772 UJ	0.752 UJ	0.641 UJ	0.909 UJ	0.836 UJ
E1668C	PCB-77	32598-13-3	ng/kg	<b>2.54 J</b>	<b>3.56 J</b>	1.81 UJ	<b>3.28 J</b>	<b>3.71 J</b>
E1668C	PCB-81	70362-50-4	ng/kg	0.482 UJ	0.469 UJ	0.4 UJ	0.568 UJ	0.522 UJ
E350.1	Ammonia as N	NH3N	mg/kg	<b>20 B</b>	<b>17 J</b>	<b>20 B</b>	<b>30 B</b>	<b>20 B</b>
NWTPH-Dx	Diesel Fuel	68334-30-5	mg/kg	<b>52.1 J</b>	<b>223 J</b>	9.7 UJ	<b>38.8 J</b>	<b>31 J</b>
NWTPH-Dx	TPH as Motor Oil	TPHMO	mg/kg	<b>215 J</b>	<b>630 J</b>	<b>25.1 J</b>	<b>112 J</b>	<b>107 J</b>
SM2540G	Total Solids	SOLID	%	<b>70.7 J</b>	<b>72.2 J</b>	<b>75.4 J</b>	<b>71.1 J</b>	<b>77.7 J</b>
SW6020B	Arsenic	7440-38-2	mg/kg	<b>2.7</b>	<b>2.1</b>	<b>2.2</b>	<b>2.6</b>	<b>4.7</b>
SW6020B	Cadmium	7440-43-9	mg/kg	<b>0.64</b>	<b>0.47</b>	<b>0.36</b>	<b>0.35</b>	<b>0.35</b>
SW6020B	Chromium	7440-47-3	mg/kg	<b>15.7</b>	<b>14.7</b>	<b>15.1</b>	<b>16.1</b>	<b>17.2</b>
SW6020B	Copper	7440-50-8	mg/kg	<b>15.8</b>	<b>12 J</b>	<b>10.9</b>	<b>14.5</b>	<b>18.3</b>
SW6020B	Lead	7439-92-1	mg/kg	<b>8.9</b>	<b>8.6</b>	<b>6.9</b>	<b>8.6</b>	<b>14.3</b>
SW6020B	Nickel	7440-02-0	mg/kg	<b>13.9</b>	<b>14.6</b>	<b>13.4</b>	<b>14.8</b>	<b>16.2</b>
SW6020B	Selenium	7782-49-2	mg/kg	<b>0.34 J</b>	<b>0.29</b>	<b>0.22 J</b>	<b>0.31</b>	<b>0.27 J</b>
SW6020B	Silver	7440-22-4	mg/kg	0.19 U	0.18 U	0.19 U	0.21 U	0.21 U
SW6020B	Zinc	7440-66-6	mg/kg	<b>102</b>	<b>95.9</b>	<b>85.9</b>	<b>99.2</b>	<b>107</b>
SW7471B	Mercury	7439-97-6	mg/kg	<b>0.027</b>	<b>0.024 J</b>	<b>0.016 J</b>	<b>0.021 J</b>	<b>0.017 J</b>
SW8270E	1-Methylnaphthalene	90-12-0	mg/kg	0.0603 UJ	0.059 UJ	0.00565 UJ	0.0599 UJ	0.00549 UJ
SW8270E	2-Methylnaphthalene	91-57-6	mg/kg	0.0611 UJ	0.0599 UJ	<b>0.00894 J</b>	0.0607 UJ	0.00556 UJ
SW8270E	3 & 4-Methylphenol (m,p-Cresols)	65794-96-9	mg/kg	0.147 UJ	0.144 UJ	0.0138 UJ	0.146 UJ	0.0134 UJ
SW8270E	Acenaphthene	83-32-9	mg/kg	0.0762 UJ	0.0747 UJ	0.00715 UJ	0.0758 UJ	0.00694 UJ
SW8270E	Acenaphthylene	208-96-8	mg/kg	0.0663 UJ	0.065 UJ	0.00622 UJ	0.0659 UJ	0.00604 UJ
SW8270E	Anthracene	120-12-7	mg/kg	0.0839 UJ	0.0822 UJ	0.00786 UJ	0.0834 UJ	0.00764 UJ
SW8270E	Benzo(a)anthracene	56-55-3	mg/kg	0.083 UJ	0.0813 UJ	0.00779 UJ	0.0825 UJ	0.00756 UJ
SW8270E	Benzo(a)pyrene	50-32-8	mg/kg	0.0876 UJ	<b>0.103 J</b>	0.00821 UJ	0.087 UJ	0.00797 UJ



Attachment A: Analytical Data Tables, Step 1

				Location ID Sample ID Sample Type Code Sample Date		D160 BNSF-D160-042822-0-5 N 4/28/2022		E320 BNSF-E320-042822-0-4 N 4/28/2022		E380 BNSF-E380-042822-0-4 N 4/28/2022		E460 BNSF-E460-042922-0-4 N 4/29/2022		H360 BNSF-H360-042922-0-8 N 4/29/2022	
Method	Analyte	CAS	Units												
SW8270E	Benzo(b)fluoranthene	205-99-2	mg/kg	0.0878	UJ	0.086	UJ	0.00824	UJ	0.0873	UJ	0.008	UJ		
SW8270E	Benzo(g,h,i)perylene	191-24-2	mg/kg	0.0861	UJ	0.0844	UJ	0.00808	UJ	0.0856	UJ	0.00784	UJ		
SW8270E	Benzo(k)fluoranthene	207-08-9	mg/kg	0.0837	UJ	0.082	UJ	0.00785	UJ	0.0832	UJ	0.00762	UJ		
SW8270E	Benzoic Acid	65-85-0	mg/kg	1.67	UJ	1.63	UJ	0.157	UJ	1.66	UJ	<b>0.158 J</b>			
SW8270E	Bis (2-ethylhexyl) phthalate	117-81-7	mg/kg	0.597	UJ	0.585	UJ	0.056	UJ	0.593	UJ	0.0543	UJ		
SW8270E	Carbazole	86-74-8	mg/kg	0.146	UJ	0.143	UJ	0.0137	UJ	0.145	UJ	0.0133	UJ		
SW8270E	Chrysene	218-01-9	mg/kg	0.0936	UJ	0.0917	UJ	0.00878	UJ	0.0931	UJ	0.00853	UJ		
SW8270E	Dibenzo(a,h)anthracene	53-70-3	mg/kg	0.131	UJ	0.128	UJ	0.0122	UJ	0.13	UJ	0.0119	UJ		
SW8270E	Dibenzofuran	132-64-9	mg/kg	0.154	UJ	0.151	UJ	0.0145	UJ	0.153	UJ	0.014	UJ		
SW8270E	Di-N-Butylphthalate	84-74-2	mg/kg	0.161	UJ	0.158	UJ	0.0151	UJ	0.16	UJ	0.0147	UJ		
SW8270E	Di-n-octyl phthalate	117-84-0	mg/kg	0.318	UJ	0.312	UJ	0.0298	UJ	0.316	UJ	0.029	UJ		
SW8270E	Fluoranthene	206-44-0	mg/kg	0.085	UJ	0.0833	UJ	0.00797	UJ	0.0845	UJ	0.00774	UJ		
SW8270E	Fluorene	86-73-7	mg/kg	0.0767	UJ	0.0751	UJ	0.00719	UJ	0.0762	UJ	0.00698	UJ		
SW8270E	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.133	UJ	0.13	UJ	0.0125	UJ	0.132	UJ	0.0121	UJ		
SW8270E	Naphthalene	91-20-3	mg/kg	0.118	UJ	0.116	UJ	0.0111	UJ	0.118	UJ	0.0108	UJ		
SW8270E	Pentachlorophenol	87-86-5	mg/kg	0.127	UJ	0.124	UJ	0.0119	UJ	0.126	UJ	0.0115	UJ		
SW8270E	Phenanthrene	85-01-8	mg/kg	0.0935	UJ	0.0916	UJ	0.00877	UJ	0.0929	UJ	0.00851	UJ		
SW8270E	Phenol	108-95-2	mg/kg	0.19	UJ	0.186	UJ	0.0178	UJ	0.188	UJ	0.0173	UJ		
SW8270E	Pyrene	129-00-0	mg/kg	0.0917	UJ	<b>0.184 J</b>		0.00859	UJ	<b>0.0973 J</b>		0.00835	UJ		
SW9030B	Sulfide	18496-25-8	mg/kg	<b>220 J</b>		<b>318 J</b>		39.8	UJ	<b>101 J</b>		38.6	UJ		
SW9060A	Total Organic Carbon	TOC	mg/kg	<b>8000 J</b>		<b>15000 J</b>		<b>3000 J</b>		<b>7000 J</b>		<b>20000 J</b>			

Notes:

cPAHs = carcinogenic polycyclic aromatic hydrocarbon

cPAHs include benzo[a]pyrene, benzo[a]anthracene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, dibenzo[a,h]anthracene, indeno[1,2,3-cd]pyrene

PCB = polychlorinated biphenyls

TPH = total petroleum hydrocarbons

Attachment A: Analytical Data Tables, Step 1

		Location ID		I120	L320	SG01	SG01	SG02
		Sample ID		BNSF-I120-042922-0-6	BNSF-L320-042922-0-2	BNSF-SG01-041922-0-10	FD01-041922-0-10	BNSF-SG02-041922-0-10
		Sample Type Code		N	N	N	FD	N
		Sample Date		4/29/2022	4/29/2022	4/19/2022	4/19/2022	4/19/2022
Method	Analyte	CAS	Units					
ASTM D422	Coarse Gravel	PSD_GV-C	%	0	0.8	0	0	0
ASTM D422	Coarse Sand (0.5 to 1mm), Wentworth	PSD_SD-C	%	0	1.9	0.1	0.1	0.7
ASTM D422	Cobbles	PSD_COB	%	0	0	0	0	0
ASTM D422	Fine Gravel	PSD_GV-F	%	0	11	0.3	0	0.9
ASTM D422	Fine Sand (0.125 to 0.25mm), Wentworth	PSD_SD-F	%	88	73	82	83	54
ASTM D422	Fines	PSD_F	%	12	7.2	17	16	43
ASTM D422	Gravel (greater than 2mm), Wentworth	PSD_GV	%	0	12	0.3	0	0.9
ASTM D422	Hydrometer Reading after 1 min - Percent Finer	HYD_1	%	0.8	0.4	1.7	1.5	15.5
ASTM D422	Hydrometer Reading after 1440 min - Percent Finer	HYD_1440	%	-0.1	-0.1	0.1	0.1	4
ASTM D422	Hydrometer Reading after 15 min - Percent Finer	HYD_15	%	0.3	0.2	0.7	0.7	10.8
ASTM D422	Hydrometer Reading after 240 min - Percent Finer	HYD_240	%	0	0.1	0.4	0.4	5.7
ASTM D422	Hydrometer Reading after 30 min - Percent Finer	HYD_30	%	0.3	0.1	0.6	0.6	9
ASTM D422	Hydrometer Reading after 60 min - Percent Finer	HYD_60	%	0.1	0.1	0.5	0.5	7.3
ASTM D422	Medium Sand (0.25 to 0.5mm), Wentworth	PSD_SD-M	%	0.6	5.6	0.6	0.4	1
ASTM D422	Particle Size Distribution (Clay: less than 0.00391mm), Wentworth	PSD_CL	%	0.1	0.1	0.5	0.4	6.5
ASTM D422	Particle Size Distribution (Sand: 0.0625 to 2mm), Wentworth	PSD_SD	%	88	81	83	84	56
ASTM D422	Particle Size Distribution (Silt: 0.00391 to 0.0625mm), Wentworth	PSD_ST	%	12	7.1	16	16	37
ASTM D422	Sieve 0.375 mm percent passing	SIEVE 0.375mm	%	100	90	100	100	99
ASTM D422	Sieve 0.50 mm percent passing	SIEVE 0.50mm	%	100	97	100	100	100
ASTM D422	Sieve 1.0 mm percent passing	SIEVE 1.0mm	%	100	100	100	100	100
ASTM D422	Sieve 1.5 mm percent passing	SIEVE 1.5mm	%	100	100	100	100	100
ASTM D422	Sieve 2.0 mm percent passing	SIEVE 2.0mm	%	100	100	100	100	100
ASTM D422	Sieve 3.0 mm percent passing	SIEVE 3.0mm	%	100	100	100	100	100
ASTM D422	Sieve Analysis - 75 microns	SIEVE200	%	12	7.2	17	16	43
ASTM D422	Sieve, #10	SIEVE10	%	100	86	100	100	98
ASTM D422	Sieve, #100	SIEVE100	%	47	18	74	74	55
ASTM D422	Sieve, #4	SIEVE4	%	100	88	100	100	99
ASTM D422	Sieve, #40	SIEVE40	%	99	80	99	100	97
ASTM D422	Sieve, #60	SIEVE60	%	91	45	97	98	78
E1613B	1,2,3,4,6,7,8-HpCDD	35822-46-9	ng/kg	1.9 J	2.3 J	1.5 J	3 J	8.2
E1613B	1,2,3,4,6,7,8-HpCDF	67562-39-4	ng/kg	0.64 UJ	1.5 J	0.7 J	1 J	2.2 J
E1613B	1,2,3,4,7,8,9-HpCDF	55673-89-7	ng/kg	0.44 UJ	0.41 UJ	0.45 U	0.43 U	0.45 U
E1613B	1,2,3,4,7,8-HxCDD	39227-28-6	ng/kg	0.42 UJ	0.39 UJ	0.42 U	0.41 U	0.42 U
E1613B	1,2,3,4,7,8-HxCDF	70648-26-9	ng/kg	0.41 UJ	0.39 UJ	0.42 U	0.4 U	0.42 U
E1613B	1,2,3,6,7,8-HxCDD	57653-85-7	ng/kg	0.46 UJ	0.44 UJ	0.47 U	0.45 U	0.47 U
E1613B	1,2,3,6,7,8-HxCDF	57117-44-9	ng/kg	0.38 UJ	0.36 UJ	0.39 U	0.37 U	0.39 U
E1613B	1,2,3,7,8,9-HxCDD	19408-74-3	ng/kg	0.39 UJ	0.38 UJ	0.4 U	0.39 U	0.42 J
E1613B	1,2,3,7,8,9-HxCDF	72918-21-9	ng/kg	0.47 UJ	0.45 UJ	0.48 U	0.47 U	0.48 U
E1613B	1,2,3,7,8-PeCDD	40321-76-4	ng/kg	0.2 UJ	0.19 UJ	0.21 U	0.2 U	0.22 J
E1613B	1,2,3,7,8-PeCDF	57117-41-6	ng/kg	0.21 UJ	0.2 UJ	0.22 U	0.21 U	0.22 U
E1613B	2,3,4,6,7,8-HxCDF	60851-34-5	ng/kg	0.41 UJ	0.39 UJ	0.42 U	0.4 U	0.42 U
E1613B	2,3,4,7,8-PeCDF	57117-31-4	ng/kg	0.22 UJ	0.21 UJ	0.22 U	0.22 U	0.25 J
E1613B	2,3,7,8-TCDD	1746-01-6	ng/kg	0.19 UJ	0.18 UJ	0.19 U	0.19 U	0.19 U
E1613B	2,3,7,8-TCDF	51207-31-9	ng/kg	0.21 UJ	0.2 UJ	0.21 U	0.3 J	0.71 J

Attachment A: Analytical Data Tables, Step 1

		Location ID		I120		L320		SG01		SG01		SG02	
		Sample ID		BNSF-I120-042922-0-6		BNSF-L320-042922-0-2		BNSF-SG01-041922-0-10		FD01-041922-0-10		BNSF-SG02-041922-0-10	
		Sample Type Code		N		N		N		FD		N	
		Sample Date		4/29/2022		4/29/2022		4/19/2022		4/19/2022		4/19/2022	
Method	Analyte	CAS	Units										
E1613B	OCDD	3268-87-9	ng/kg	<b>14 J</b>		<b>8.8 J</b>		<b>11 J</b>		<b>22 J</b>		<b>69</b>	
E1613B	OCDF	39001-02-0	ng/kg	1.4 UJ		1.4 UJ		1.5 U		1.4 U		<b>4.8 J</b>	
E1613B	Total HpCDD	37871-00-4	ng/kg	<b>4.4 J</b>		<b>2.3 J</b>		<b>3.2 J</b>		<b>6.4 J</b>		<b>21</b>	
E1613B	Total HpCDF	38998-75-3	ng/kg	<b>0.7 J</b>		0.41 UJ		<b>1.5 J</b>		<b>2.3 J</b>		<b>5.2</b>	
E1613B	Total HxCDD	34465-46-8	ng/kg	0.39 UJ		<b>8.2 J</b>		<b>0.82 J</b>		0.39 U		<b>4.2 J</b>	
E1613B	Total HxCDF	55684-94-1	ng/kg	0.38 UJ		<b>2.2 J</b>		0.39 U		<b>0.54 J</b>		<b>2.6 J</b>	
E1613B	Total PeCDD	36088-22-9	ng/kg	0.2 UJ		<b>3.2 J</b>		0.21 U		<b>0.25 J</b>		<b>0.71 J</b>	
E1613B	Total PeCDF	30402-15-4	ng/kg	0.21 UJ		0.2 UJ		0.22 U		<b>0.84 J</b>		<b>2.4 J</b>	
E1613B	Total TCDD	41903-57-5	ng/kg	0.19 UJ		0.18 UJ		<b>0.23 J</b>		<b>0.52 J</b>		<b>0.89 J</b>	
E1613B	Total TCDF	30402-14-3	ng/kg	0.21 UJ		0.2 UJ		0.21 U		<b>0.52 J</b>		<b>3.5</b>	
E1668C	2,3,3',4,4',5'-Hexachlorobiphenyl	69782-90-7	ng/kg	0.974 UJ		0.942 UJ		0.817 U		0.81 U		<b>1.72 J</b>	
E1668C	2,3,3',4,4',5'-Hexachlorobiphenyl	38380-08-4	ng/kg	2.28 UJ		2.2 UJ		1.91 U		1.9 U		<b>6.03</b>	
E1668C	PCB-105	32598-14-4	ng/kg	<b>5.77 J</b>		3.24 UJ		<b>4.32 J</b>		<b>4.56 J</b>		<b>23.2 J</b>	
E1668C	PCB-114	74472-37-0	ng/kg	0.746 UJ		0.721 UJ		0.626 U		0.62 U		<b>1.19 J</b>	
E1668C	PCB-118	31508-00-6	ng/kg	<b>12.2 J</b>		<b>8.39 J</b>		<b>10 J</b>		<b>9.96 J</b>		<b>51.8</b>	
E1668C	PCB-123	65510-44-3	ng/kg	0.695 UJ		<b>0.792 J</b>		0.583 U		<b>0.607 J</b>		<b>1.54 J</b>	
E1668C	PCB-126	57465-28-8	ng/kg	0.386 UJ		0.373 UJ		0.324 U		0.321 U		<b>0.387 J</b>	
E1668C	PCB-167	52663-72-6	ng/kg	1.48 UJ		1.43 UJ		1.24 U		1.23 U		<b>3.97 J</b>	
E1668C	PCB-169	32774-16-6	ng/kg	0.371 UJ		0.359 UJ		0.311 U		0.309 U		0.311 U	
E1668C	PCB-189	39635-31-9	ng/kg	0.88 UJ		0.85 UJ		0.738 U		0.732 U		0.737 U	
E1668C	PCB-77	32598-13-3	ng/kg	2.48 UJ		2.4 UJ		2.08 U		<b>2.21 J</b>		<b>4.71 J</b>	
E1668C	PCB-81	70362-50-4	ng/kg	0.549 UJ		0.531 UJ		0.461 U		0.457 U		0.46 U	
E350.1	Ammonia as N	NH3N	mg/kg	<b>20 B</b>		<b>10 B</b>		11 U		<b>15 J</b>		<b>40 J</b>	
NWTPH-Dx	Diesel Fuel	68334-30-5	mg/kg	<b>32.2 J</b>		<b>136 J</b>		<b>25.4 J</b>		<b>56.9 J</b>		<b>53.1</b>	
NWTPH-Dx	TPH as Motor Oil	TPHMO	mg/kg	<b>70 J</b>		<b>503 J</b>		<b>106 J</b>		<b>167 J</b>		<b>291</b>	
SM2540G	Total Solids	SOLID	%	<b>74.7 J</b>		<b>80.2 J</b>		<b>73.9</b>		<b>73.9</b>		<b>50.4</b>	
SW6020B	Arsenic	7440-38-2	mg/kg	<b>2.9</b>		<b>2.6</b>		<b>2.1</b>		<b>2</b>		<b>3.8</b>	
SW6020B	Cadmium	7440-43-9	mg/kg	<b>0.27</b>		<b>0.18</b>		<b>0.43</b>		<b>0.43</b>		<b>0.53</b>	
SW6020B	Chromium	7440-47-3	mg/kg	<b>15.6</b>		<b>12</b>		<b>13.8</b>		<b>14</b>		<b>17.3</b>	
SW6020B	Copper	7440-50-8	mg/kg	<b>12.3</b>		<b>11.9</b>		<b>9.9</b>		<b>10.7</b>		<b>19.5</b>	
SW6020B	Lead	7439-92-1	mg/kg	<b>8.3</b>		<b>8.2</b>		<b>7</b>		<b>7.4</b>		<b>12.3</b>	
SW6020B	Nickel	7440-02-0	mg/kg	<b>15.3</b>		<b>13.5</b>		<b>12.5</b>		<b>13</b>		<b>16.8</b>	
SW6020B	Selenium	7782-49-2	mg/kg	<b>0.24 J</b>		<b>0.22 J</b>		<b>0.18 J</b>		<b>0.14 J</b>		<b>0.47 J</b>	
SW6020B	Silver	7440-22-4	mg/kg	0.22 U		<b>0.4 J</b>		<b>0.27 J</b>		0.2 U		0.3 U	
SW6020B	Zinc	7440-66-6	mg/kg	<b>90.6</b>		<b>69</b>		<b>94.9</b>		<b>100</b>		<b>120</b>	
SW7471B	Mercury	7439-97-6	mg/kg	<b>0.016 J</b>		<b>0.016 J</b>		<b>0.021 J</b>		<b>0.022 J</b>		<b>0.035 J</b>	
SW8270E	1-Methylnaphthalene	90-12-0	mg/kg	0.0057 UJ		0.0106 UJ		0.0115 U		0.00577 U		0.0169 U	
SW8270E	2-Methylnaphthalene	91-57-6	mg/kg	<b>0.00706 J</b>		0.0108 UJ		0.0117 U		0.00585 U		0.0171 U	
SW8270E	3 & 4-Methylphenol (m,p-Cresols)	65794-96-9	mg/kg	0.0139 UJ		0.0259 UJ		0.0281 U		0.0141 U		0.0413 U	
SW8270E	Acenaphthene	83-32-9	mg/kg	0.00721 UJ		0.0135 UJ		0.0146 U		0.0073 U		0.0214 U	
SW8270E	Acenaphthylene	208-96-8	mg/kg	0.00627 UJ		0.0117 UJ		0.0127 U		0.00635 U		0.0186 U	
SW8270E	Anthracene	120-12-7	mg/kg	0.00793 UJ		0.0148 UJ		0.0161 U		0.00803 U		0.0236 U	
SW8270E	Benzo(a)anthracene	56-55-3	mg/kg	0.00785 UJ		0.0146 UJ		0.0158 U		0.00795 U		0.0232 U	
SW8270E	Benzo(a)pyrene	50-32-8	mg/kg	0.00828 UJ		0.0155 UJ		<b>0.0185 J</b>		0.00838 U		0.0246 U	

Attachment A: Analytical Data Tables, Step 1

				Location ID Sample ID Sample Type Code Sample Date		I120 BNSF-I120-042922-0-6 N 4/29/2022		L320 BNSF-L320-042922-0-2 N 4/29/2022		SG01 BNSF-SG01-041922-0-10 N 4/19/2022		SG01 FD01-041922-0-10 FD 4/19/2022		SG02 BNSF-SG02-041922-0-10 N 4/19/2022	
Method	Analyte	CAS	Units												
SW8270E	Benzo(b)fluoranthene	205-99-2	mg/kg	0.00831	UJ	0.0155	UJ	0.0168	U	0.00841	U	0.0246	U		
SW8270E	Benzo(g,h,i)perylene	191-24-2	mg/kg	0.00815	UJ	0.0152	UJ	<b>0.0187</b>	<b>J</b>	0.00825	U	0.0242	U		
SW8270E	Benzo(k)fluoranthene	207-08-9	mg/kg	0.00792	UJ	0.0147	UJ	0.016	U	0.00802	U	0.0234	U		
SW8270E	Benzoic Acid	65-85-0	mg/kg	0.158	UJ	0.294	UJ	0.319	U	0.16	U	0.468	U		
SW8270E	Bis (2-ethylhexyl) phthalate	117-81-7	mg/kg	0.0565	UJ	0.105	UJ	0.114	U	0.0571	U	0.167	U		
SW8270E	Carbazole	86-74-8	mg/kg	0.0138	UJ	0.0257	UJ	0.0279	U	0.0139	U	0.0409	U		
SW8270E	Chrysene	218-01-9	mg/kg	0.00886	UJ	0.0165	UJ	0.0179	U	0.00896	U	0.0262	U		
SW8270E	Dibenzo(a,h)anthracene	53-70-3	mg/kg	0.0123	UJ	0.0231	UJ	0.025	U	0.0125	U	0.0367	U		
SW8270E	Dibenzofuran	132-64-9	mg/kg	0.0146	UJ	0.0272	UJ	0.0295	U	0.0148	U	0.0433	U		
SW8270E	Di-N-Butylphthalate	84-74-2	mg/kg	0.0153	UJ	0.0284	UJ	0.0308	U	0.0154	U	0.0452	U		
SW8270E	Di-n-octyl phthalate	117-84-0	mg/kg	0.0301	UJ	0.0561	UJ	0.0609	U	0.0305	U	0.0893	U		
SW8270E	Fluoranthene	206-44-0	mg/kg	0.00804	UJ	0.015	UJ	0.0162	U	0.00814	U	0.0238	U		
SW8270E	Fluorene	86-73-7	mg/kg	0.00725	UJ	0.0135	UJ	0.0146	U	0.00734	U	0.0214	U		
SW8270E	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.0126	UJ	0.0234	UJ	0.0254	U	0.0127	U	0.0373	U		
SW8270E	Naphthalene	91-20-3	mg/kg	0.0112	UJ	0.0208	UJ	0.0226	U	0.0113	U	0.0331	U		
SW8270E	Pentachlorophenol	87-86-5	mg/kg	0.012	UJ	0.0223	UJ	0.0242	U	0.0121	U	0.0355	U		
SW8270E	Phenanthrene	85-01-8	mg/kg	0.00884	UJ	0.0165	UJ	0.0179	U	0.00895	U	0.0262	U		
SW8270E	Phenol	108-95-2	mg/kg	0.0179	UJ	0.0334	UJ	0.0363	U	0.0181	U	0.0532	U		
SW8270E	Pyrene	129-00-0	mg/kg	0.00867	UJ	0.0162	UJ	0.0176	U	0.00877	U	0.0258	U		
SW9030B	Sulfide	18496-25-8	mg/kg	<b>51.7</b>	<b>J</b>	37.4	UJ	40.6	UJ	40.6	UJ	59.5	UJ		
SW9060A	Total Organic Carbon	TOC	mg/kg	<b>5000</b>	<b>J</b>	<b>30000</b>	<b>J</b>	<b>4700</b>		<b>5500</b>		<b>23000</b>			

Notes:

cPAHs = carcinogenic polycyclic aromatic hydrocarbon

cPAHs include benzo[a]pyrene, benzo[a]anthracene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, dibenzo[a,h]anthracene, indeno[1,2,3-cd]pyrene

PCB = polychlorinated biphenyls

TPH = total petroleum hydrocarbons

Attachment A: Analytical Data Tables, Step 1

		Location ID		SG03	SG11	SG13	SG23
		Sample ID		BNSF-SG03-042722-0-5.5	BNSF-SG11-042822-0-5	BNSF-SG13-042522-0-1.5	BNSF-SG23-042122-0-6
		Sample Type Code		N	N	N	N
		Sample Date		4/27/2022	4/28/2022	4/25/2022	4/21/2022
Method	Analyte	CAS	Units				
ASTM D422	Coarse Gravel	PSD_GV-C	%		0	0.3	0.5
ASTM D422	Coarse Sand (0.5 to 1mm), Wentworth	PSD_SD-C	%		0.1	0.3	3.1
ASTM D422	Cobbles	PSD_COB	%		0	0	0
ASTM D422	Fine Gravel	PSD_GV-F	%		0	1.8	11
ASTM D422	Fine Sand (0.125 to 0.25mm), Wentworth	PSD_SD-F	%		91	94	78
ASTM D422	Fines	PSD_F	%		8.8	2.2	3.4
ASTM D422	Gravel (greater than 2mm), Wentworth	PSD_GV	%		0	2.1	12
ASTM D422	Hydrometer Reading after 1 min - Percent Finer	HYD_1	%		0.4	0	0.1
ASTM D422	Hydrometer Reading after 1440 min - Percent Finer	HYD_1440	%		-0.1	0	0
ASTM D422	Hydrometer Reading after 15 min - Percent Finer	HYD_15	%		0.2	0	0.1
ASTM D422	Hydrometer Reading after 240 min - Percent Finer	HYD_240	%		0	0	0
ASTM D422	Hydrometer Reading after 30 min - Percent Finer	HYD_30	%		0.1	0	0
ASTM D422	Hydrometer Reading after 60 min - Percent Finer	HYD_60	%		0	0	0
ASTM D422	Medium Sand (0.25 to 0.5mm), Wentworth	PSD_SD-M	%		0.3	1.2	4
ASTM D422	Particle Size Distribution (Clay: less than 0.00391mm), Wentworth	PSD_CL	%		0	0	0
ASTM D422	Particle Size Distribution (Sand: 0.0625 to 2mm), Wentworth	PSD_SD	%		91	96	85
ASTM D422	Particle Size Distribution (Silt: 0.00391 to 0.0625mm), Wentworth	PSD_ST	%		8.8	0	3.4
ASTM D422	Sieve 0.375 mm percent passing	SIEVE 0.375mm	%		100	99	94
ASTM D422	Sieve 0.50 mm percent passing	SIEVE 0.50mm	%		100	99	98
ASTM D422	Sieve 1.0 mm percent passing	SIEVE 1.0mm	%		100	100	100
ASTM D422	Sieve 1.5 mm percent passing	SIEVE 1.5mm	%		100	100	100
ASTM D422	Sieve 2.0 mm percent passing	SIEVE 2.0mm	%		100	100	100
ASTM D422	Sieve 3.0 mm percent passing	SIEVE 3.0mm	%		100	100	100
ASTM D422	Sieve Analysis - 75 microns	SIEVE200	%		8.8	2.2	3.4
ASTM D422	Sieve, #10	SIEVE10	%		100	98	85
ASTM D422	Sieve, #100	SIEVE100	%		50	12	7
ASTM D422	Sieve, #4	SIEVE4	%		100	98	88
ASTM D422	Sieve, #40	SIEVE40	%		100	96	81
ASTM D422	Sieve, #60	SIEVE60	%		91	54	32
E1613B	1,2,3,4,6,7,8-HpCDD	35822-46-9	ng/kg	0.52 U	0.75 J	0.52 U	0.51 U
E1613B	1,2,3,4,6,7,8-HpCDF	67562-39-4	ng/kg	0.65 U	0.66 UJ	0.65 U	0.64 U
E1613B	1,2,3,4,7,8,9-HpCDF	55673-89-7	ng/kg	0.45 U	0.45 UJ	0.45 U	0.44 U
E1613B	1,2,3,4,7,8-HxCDD	39227-28-6	ng/kg	0.42 U	0.43 UJ	0.43 U	0.42 U
E1613B	1,2,3,4,7,8-HxCDF	70648-26-9	ng/kg	0.42 U	0.42 UJ	0.42 U	0.41 U
E1613B	1,2,3,6,7,8-HxCDD	57653-85-7	ng/kg	0.47 U	0.47 UJ	0.47 U	0.46 U
E1613B	1,2,3,6,7,8-HxCDF	57117-44-9	ng/kg	0.39 U	0.39 UJ	0.39 U	0.38 U
E1613B	1,2,3,7,8,9-HxCDD	19408-74-3	ng/kg	0.4 U	0.41 UJ	0.4 U	0.4 U
E1613B	1,2,3,7,8,9-HxCDF	72918-21-9	ng/kg	0.48 U	0.49 UJ	0.49 U	0.48 U
E1613B	1,2,3,7,8-PeCDD	40321-76-4	ng/kg	0.21 U	0.21 UJ	0.21 U	0.2 U
E1613B	1,2,3,7,8-PeCDF	57117-41-6	ng/kg	0.22 U	0.22 UJ	0.22 U	0.21 U
E1613B	2,3,4,6,7,8-HxCDF	60851-34-5	ng/kg	0.42 U	0.42 UJ	0.42 U	0.41 U
E1613B	2,3,4,7,8-PeCDF	57117-31-4	ng/kg	0.22 U	0.23 UJ	0.23 U	0.22 U
E1613B	2,3,7,8-TCDD	1746-01-6	ng/kg	0.19 U	0.2 UJ	0.19 U	0.19 U
E1613B	2,3,7,8-TCDF	51207-31-9	ng/kg	0.21 U	0.22 UJ	0.21 U	0.21 U

Attachment A: Analytical Data Tables, Step 1

		Location ID		SG03	SG11	SG13	SG23
		Sample ID		BNSF-SG03-042722-0-5.5	BNSF-SG11-042822-0-5	BNSF-SG13-042522-0-1.5	BNSF-SG23-042122-0-6
		Sample Type Code		N	N	N	N
		Sample Date		4/27/2022	4/28/2022	4/25/2022	4/21/2022
Method	Analyte	CAS	Units				
E1613B	OCDD	3268-87-9	ng/kg	<b>2.4 J</b>	<b>4.6 J</b>	2 U	<b>5.2 B</b>
E1613B	OCDF	39001-02-0	ng/kg	1.5 U	1.5 UJ	1.5 U	1.4 U
E1613B	Total HpCDD	37871-00-4	ng/kg	0.52 U	<b>1.6 J</b>	0.52 U	0.51 U
E1613B	Total HpCDF	38998-75-3	ng/kg	0.45 U	0.45 UJ	0.45 U	0.44 U
E1613B	Total HxCDD	34465-46-8	ng/kg	0.4 U	0.41 UJ	0.4 U	0.4 U
E1613B	Total HxCDF	55684-94-1	ng/kg	0.39 U	0.39 UJ	0.39 U	0.38 U
E1613B	Total PeCDD	36088-22-9	ng/kg	0.21 U	0.21 UJ	0.21 U	0.2 U
E1613B	Total PeCDF	30402-15-4	ng/kg	0.22 U	0.22 UJ	0.22 U	0.21 U
E1613B	Total TCDD	41903-57-5	ng/kg	<b>0.22 J</b>	0.2 UJ	0.19 U	0.19 U
E1613B	Total TCDF	30402-14-3	ng/kg	0.21 U	0.22 UJ	0.21 U	0.21 U
E1668C	2,3,3',4,4',5'-Hexachlorobiphenyl	69782-90-7	ng/kg	0.822 U	0.876 UJ	0.818 U	0.813 U
E1668C	2,3,3',4,4',5'-Hexachlorobiphenyl	38380-08-4	ng/kg	1.92 U	2.05 UJ	1.91 U	1.9 U
E1668C	PCB-105	32598-14-4	ng/kg	<b>2.85 J</b>	<b>3.51 J</b>	<b>3.15 J</b>	<b>6.8 J</b>
E1668C	PCB-114	74472-37-0	ng/kg	0.629 U	0.671 UJ	0.626 U	<b>0.724 J</b>
E1668C	PCB-118	31508-00-6	ng/kg	<b>7.01 J</b>	<b>8.87 J</b>	<b>6.45 J</b>	<b>16.6 J</b>
E1668C	PCB-123	65510-44-3	ng/kg	0.586 U	0.625 UJ	0.583 U	0.58 U
E1668C	PCB-126	57465-28-8	ng/kg	0.326 U	0.347 UJ	0.324 U	0.322 U
E1668C	PCB-167	52663-72-6	ng/kg	1.25 U	1.33 UJ	1.24 U	<b>1.39 J</b>
E1668C	PCB-169	32774-16-6	ng/kg	0.313 U	0.334 UJ	0.312 U	0.31 U
E1668C	PCB-189	39635-31-9	ng/kg	0.742 U	0.791 UJ	0.739 U	0.734 U
E1668C	PCB-77	32598-13-3	ng/kg	2.1 U	2.23 UJ	2.09 U	<b>3.56 J</b>
E1668C	PCB-81	70362-50-4	ng/kg	0.463 U	0.494 UJ	0.461 U	0.458 U
E350.1	Ammonia as N	NH3N	mg/kg	<b>14 J</b>	<b>20 B</b>	<b>12 J</b>	<b>24 J</b>
NWTPH-Dx	Diesel Fuel	68334-30-5	mg/kg	<b>21.4</b>	<b>9.9 J</b>	9.5 U	<b>12.9 J</b>
NWTPH-Dx	TPH as Motor Oil	TPHMO	mg/kg	<b>77.6</b>	<b>35.4 J</b>	<b>28.5</b>	<b>37.4 B</b>
SM2540G	Total Solids	SOLID	%	<b>75.5</b>	<b>77 J</b>	<b>79.4</b>	<b>79.1</b>
SW6020B	Arsenic	7440-38-2	mg/kg	<b>3.4</b>	<b>2.6</b>	<b>2.1</b>	<b>2.4</b>
SW6020B	Cadmium	7440-43-9	mg/kg	<b>0.28</b>	<b>0.28</b>	<b>0.089 J</b>	<b>0.17</b>
SW6020B	Chromium	7440-47-3	mg/kg	<b>12.9</b>	<b>14.6</b>	<b>8.2</b>	<b>9.9</b>
SW6020B	Copper	7440-50-8	mg/kg	<b>18.9</b>	<b>12.2</b>	<b>7.7</b>	<b>9</b>
SW6020B	Lead	7439-92-1	mg/kg	<b>8.8</b>	<b>7.4</b>	<b>3.6 J</b>	<b>5.2</b>
SW6020B	Nickel	7440-02-0	mg/kg	<b>15.3</b>	<b>14.8</b>	<b>9.3</b>	<b>11.1</b>
SW6020B	Selenium	7782-49-2	mg/kg	<b>0.21 J</b>	<b>0.25 J</b>	0.11 U	<b>0.12 J</b>
SW6020B	Silver	7440-22-4	mg/kg	0.2 U	<b>0.41 J</b>	<b>0.26 J</b>	<b>0.22 J</b>
SW6020B	Zinc	7440-66-6	mg/kg	<b>60.2</b>	<b>83.2</b>	<b>32.3</b>	<b>65.3</b>
SW7471B	Mercury	7439-97-6	mg/kg	<b>0.028</b>	<b>0.013 J</b>	0.011 U	0.011 U
SW8270E	1-Methylnaphthalene	90-12-0	mg/kg	<b>0.0064 J</b>	<b>0.00623 J</b>	0.00536 U	0.00538 U
SW8270E	2-Methylnaphthalene	91-57-6	mg/kg	<b>0.00871 J</b>	<b>0.00945 J</b>	0.00544 U	0.00546 U
SW8270E	3 & 4-Methylphenol (m,p-Cresols)	65794-96-9	mg/kg	0.0138 U	0.0135 UJ	0.0131 U	<b>0.0195 J</b>
SW8270E	Acenaphthene	83-32-9	mg/kg	<b>0.0604</b>	0.007 UJ	0.00679 U	0.00681 U
SW8270E	Acenaphthylene	208-96-8	mg/kg	0.00621 U	0.00609 UJ	0.0059 U	0.00593 U
SW8270E	Anthracene	120-12-7	mg/kg	<b>0.126</b>	0.0077 UJ	0.00746 U	0.00749 U
SW8270E	Benzo(a)anthracene	56-55-3	mg/kg	<b>0.384</b>	0.00762 UJ	0.00739 U	0.00742 U
SW8270E	Benzo(a)pyrene	50-32-8	mg/kg	<b>0.434</b>	0.00804 UJ	0.00779 U	0.00782 U

Attachment A: Analytical Data Tables, Step 1

Location ID Sample ID Sample Type Code Sample Date				SG03 BNSF-SG03-042722-0-5.5 N 4/27/2022	SG11 BNSF-SG11-042822-0-5 N 4/28/2022	SG13 BNSF-SG13-042522-0-1.5 N 4/25/2022	SG23 BNSF-SG23-042122-0-6 N 4/21/2022
Method	Analyte	CAS	Units				
SW8270E	Benzo(b)fluoranthene	205-99-2	mg/kg	<b>0.463</b>	0.00806 UJ	0.00782 U	0.00785 U
SW8270E	Benzo(g,h,i)perylene	191-24-2	mg/kg	<b>0.236</b>	0.00791 UJ	0.00767 U	0.0077 U
SW8270E	Benzo(k)fluoranthene	207-08-9	mg/kg	<b>0.168</b>	0.00769 UJ	0.00745 U	0.00748 U
SW8270E	Benzoic Acid	65-85-0	mg/kg	0.156 U	<b>0.238 J</b>	0.149 U	0.149 U
SW8270E	Bis (2-ethylhexyl) phthalate	117-81-7	mg/kg	0.0559 U	0.0548 UJ	0.0531 U	0.0533 U
SW8270E	Carbazole	86-74-8	mg/kg	<b>0.08 J</b>	0.0134 UJ	0.013 U	0.013 U
SW8270E	Chrysene	218-01-9	mg/kg	<b>0.4</b>	<b>0.0101 J</b>	0.00833 U	0.00837 U
SW8270E	Dibenzo(a,h)anthracene	53-70-3	mg/kg	<b>0.0588</b>	0.012 UJ	0.0116 U	0.0117 U
SW8270E	Dibenzofuran	132-64-9	mg/kg	<b>0.0365 J</b>	0.0142 UJ	0.0137 U	0.0138 U
SW8270E	Di-N-Butylphthalate	84-74-2	mg/kg	0.0151 U	0.0148 UJ	0.0144 U	0.0144 U
SW8270E	Di-n-octyl phthalate	117-84-0	mg/kg	0.0298 U	0.0292 UJ	0.0283 U	0.0284 U
SW8270E	Fluoranthene	206-44-0	mg/kg	<b>0.844</b>	0.0078 UJ	0.00757 U	0.0076 U
SW8270E	Fluorene	86-73-7	mg/kg	<b>0.0528</b>	0.00704 UJ	0.00682 U	0.00685 U
SW8270E	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	<b>0.246</b>	0.0122 UJ	0.0118 U	0.0119 U
SW8270E	Naphthalene	91-20-3	mg/kg	<b>0.0211 J</b>	0.0109 UJ	0.0105 U	0.0106 U
SW8270E	Pentachlorophenol	87-86-5	mg/kg	0.0119 U	0.0116 UJ	0.0113 U	0.0113 U
SW8270E	Phenanthrene	85-01-8	mg/kg	<b>0.507</b>	0.00858 UJ	0.00832 U	0.00835 U
SW8270E	Phenol	108-95-2	mg/kg	0.0177 U	0.0174 UJ	0.0169 U	0.0169 U
SW8270E	Pyrene	129-00-0	mg/kg	<b>0.624</b>	<b>0.0142 J</b>	0.00816 U	0.00819 U
SW9030B	Sulfide	18496-25-8	mg/kg	39.7 U	39 UJ	37.8 U	37.9 U
SW9060A	Total Organic Carbon	TOC	mg/kg	<b>13000</b>	<b>4000 J</b>	<b>670 B</b>	<b>11000</b>

Notes:

cPAHs = carcinogenic polycyclic aromatic hydrocarbon

cPAHs include benzo[a]pyrene, benzo[a]anthracene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, dibenzo[a,h]anthracene, indeno[1,2,3-cd]pyrene

PCB = polychlorinated biphenyls

TPH = total petroleum hydrocarbons