Antea USA, Inc.
205 SE Spokane Street, Suite 300
Portland, OR 97202 USA

MEMORANDUM

DATE: May 12, 2025

TO: Sam Meng, Washington Department of Ecology

CC: Stephanie Bosze Salisbury, GeoEngineers
Richard Roche, Parametrix
Richard Sherman, Kinder Morgan
Laura Shira, Yakama Nation
Mary Mattix, Port of Vancouver
Victoria Wark, NuStar

FROM: Antea Group

SUBJECT: Supplemental Remedial Investigation – 2024 Additional Investigative Results Memorandum

1.0 INTRODUCTION

Antea®Group (Antea Group) is pleased to present this revised memorandum describing results of field activities conducted in September of 2024 in support of the ongoing Supplemental Remedial Investigation (SRI) at the Port of Vancouver (Port). Soil samples were collected along the riverbank at and near the NuStar Leasehold (NuStar was purchased by Sunoco in May of 2024) and former Kinder Morgan Bulk Terminal (KMBT) Operations Area within the Port property (Site). The former KMBT Operations Area is now operated by Vancouver Bulk Terminals (VBT) under a management agreement with the Port. KMBT ceased operations at the Site on December 31, 2021. Antea Group presented the original outline of the 2024 workplan at an in-person group meeting at the Port on May 9, 2024. A revised Workplan (Workplan) dated September 13, 2024, included adjustments discussed during a Site visit on July 17, 2024. Representatives of Antea Group, Washington Department of Ecology (Ecology), the Port, Parametrix, and Kinder Morgan participated in the Site visit and discussions related to the proposed bank sampling. Additionally, the Workplan incorporated select suggestions provided by representatives of the Yakama Nation via email on August 9th, 2024. The Workplan is provided as **Appendix A** of this memorandum.

2.0 OBJECTIVE

The 2024 investigative sampling efforts were conducted to supplement data collected at the Site during previous SRI sampling events. More specifically, 2024 data collection was initiated to further assess horizontal and vertical total metals concentrations in key areas of both the riverbank and upland zone adjacent to the riverbank, near the Berth 7 Loading Dock. This information will be used in assessing potential remedial strategies for the riverbank area.

3.0 SUMMARY OF FIELD INVESTIGATION

Soil sampling activities began on September 23, 2024. Upland soil borings were advanced by a subcontracted, licensed well driller (Cascade Drilling) using sonic drilling technology. Riverbank sampling efforts were conducted by Antea Group field personnel. Sampling efforts continued through September 25, 2026. Soil sampling methods implemented in 2024 replicated those of previous investigative work. With minor exceptions, Antea Group was able to collect samples at or near locations proposed within the Workplan. Some locations were moved slightly to avoid obstructions. Sample locations PNK-RBG44 and PNK-RBG46 were abandoned completely as soil at the proposed sampling intervals was not present at or immediately near those proposed locations due to extensive riprap at ground surface. At many proposed riverbank sample locations, Antea Group was not able to reach the proposed depth of 30-inches below ground surface due sloughing soil conditions or the presence of riprap or large rocks. Multiple attempts were made at each location before refusal was determined. Examples of riverbank sample locations and the conditions encountered are documented within the photo log attached as **Appendix B**. The photo log generally documents conditions found as the sampling crew moved from downriver to upriver sampling locations. All soil samples collected in 2024 were submitted to and analyzed by Eurofins Seattle Specialty Metals (Eurofins) for total metals identified as Contaminants of Potential Concern (COPCs) at the Site. Metals COPCs for the Site are arsenic, cadmium, copper, lead, mercury, and zinc. As outlined within the Workplan, all samples collected below the Ordinary High-Water Mark (OHWM) were analyzed only for total copper. All other samples were analyzed for metals COPCs listed above. Additionally, grain size analysis was performed on a representative subset of riverbank samples selected by field technicians based on conditions encountered during the investigation. Samples were selected to provide a representative range of grain size within sampleable material on the riverbank. Representatives of both Ecology and the Yakama Nation requested grain size analysis be added to the scope of the riverbank investigation to establish a more complete understanding of sediment distribution, chemical fractionation, identification of source material, evaluation of spatial trends, and identification of habitat characteristics of riverbank material.

Laboratory results of investigative samples collected in September of 2024 are discussed within the following sections of this memorandum. Please note, it is recognized that although all soil samples were delivered to Eurofins on September 26, 2024, Eurofins did not prepare or analyze total mercury within the specified recommended hold time listed within the implemented analytical method. Therefore, all sample data for total mercury has been flagged. In response, Antea Group requested additional information, and the laboratory re-ran the mercury analysis at our request to see if concentrations of mercury changed with increased time between sampling date and analysis date. Upon review of both data sets, the laboratory concluded the results were not significantly affected by being prepared and analyzed outside the method recommended hold time for method EPA 7471B. This oversight by Eurofins and subsequent caveat within their reports was communicated to Ecology and consultants representing NuStar, KMBT, and the Port upon discovery. It was agreed that although total mercury is listed as a COPC for the Site, concentrations of mercury within soil at the Site generally occur at low levels, do not drive investigations, and will likely not influence any potential remedial actions necessary at the Site. Collectively the group determined additional sampling and mercury analysis beyond the samples collected in September 2024 was not necessary.

4.0 UPLAND SOIL SAMPLE RESULTS

Four upland soil borings (SRI-176 through SRI-179) were installed near boring location SRI-169 (monitoring well KMW-6), near the top of riverbank, on the upland portion of the Site at Berth 7. These soil borings were installed to further assess metals COPC concentrations within soil at this isolated area, as SRI-169 soil sample results included abnormally elevated concentrations of some metals COPCs at the depths of 10, 20, 25, and 40 feet (ft) below ground surface (bgs). These reported concentrations at SRI-169 were compared to naturally occurring background concentrations for each analyte, as listed in Ecology's "Natural Background Soil Metals Concentrations in Washington State". Although reported metals COPCs within SRI-169 soil samples decreased to values below listed background concentrations at the deeper sample intervals, it was determined that further sampling was warranted to assess the lateral extent of the elevated concentrations seen at shallower sample intervals. The area of boring SRI-169 is known to contain fill material of unknown origin and multiple underground utilities.

Soil borings were installed near proposed locations. Minimal adjustments were required to avoid utilities and account for drill rig positioning. SRI-176 is approximately 14 feet and 4 inches northeast of SRI-169. SRI-177 is approximately 13 feet and 6 inches east of SRI-169. SRI-178 is approximately 4 feet and 2 inches southwest of SRI-169. SRI-179 is approximately 9 feet and 0 inches west of SRI-169. Boring locations are displayed on **Figure 1**.

Soil borings SRI-176 through SRI-179 were installed to a total depth of 25 ft bgs utilizing sonic drilling technology to provide continuous core soil samples. Antea group personnel logged soil borings utilizing the Unified Soil Classification System. From each boring soil sample material from 5, 10, 15, 20, and 25 ft bgs were placed in laboratory provided containers and sent to Eurofins for analysis and reporting. Boring Logs are presented in **Appendix C**. Laboratory analytical reports are presented in **Appendix D**. Soil sample results from SRI-176 through SRI-179, and SRI-169 are presented in **Table 1**.

As within historic reports, data reported from upland soil samples collected near the riverbank have been compared to listed naturally occurring background concentrations. Exceedances of background concentrations were reported in each of the four soil borings advanced during the 2024 investigation. However, exceedances in samples collected below 10 ft bgs were limited to mercury concentrations reported in SRI-178 at 15 feet bgs and SRI-179 at 20 ft bgs. Both samples contained a reported mercury concentration of 0.047 milligrams per kilogram (mg/kg), slightly exceeding the listed background concentration of 0.040 mg/kg. All additional exceedances of background concentrations were reported in samples collected at 5 and 10 ft bgs, indicating elevated metals concentrations immediately near SRI-169 decrease with depth and background exceedances are generally limited to the upper 10 feet of soil, approximately 15-18 ft above groundwater elevations documented at this location during monitoring events. Observations documented in boring logs from this investigation indicate a mix of fill material including concrete and asphalt is present underneath the current, paved ground surface. It is likely the elevated concentrations are associated with fill material from unknown sources, rather than infiltration through the current, paved ground surface.

5.0 RIVERBANK SOIL SAMPLE RESULTS

Antea Group collected a total of 75 samples from 32 locations on the riverbank. Samples were collected at locations adjacent to Berth 7, extending to approximately 775 yards downriver from Berth 7, and extending approximately 560 yards upriver from Berth 7. Sample locations were selected both above and below the OHWM. Sample locations are presented on **Figure 2**.

5.1 ABOVE OHWM

During the 2024 investigation, 33 samples were collected at 16 riverbank locations above the OHWM. These samples were analyzed for metals COPCs to fill data gaps identified after previous investigations and further document metals concentrations within the upper section of the riverbank. At the request of Ecology as documented in email dated June 18, 2024, and as with previous investigation data, laboratory reported concentrations of metals COPCs from 2024 samples have been compared to naturally occurring background concentrations as published within Ecology's *Natural Background Soil Metals Concentrations in Washington State* (Publication 94-115).

Locations of riverbank samples collected in 2024 from above the OHWM are presented on **Figure 3**. Laboratory reported concentrations of metals COPCs are presented on both **Table 2** and **Figure 3**. Laboratory analytical reports are attached as **Appendix D**. As noted in the Workplan all sample locations were proposed to be sampled to a depth of 30-inches bgs. However, refusal was often met prior to the proposed depth, most often due to encountering large rocks and riprap. Multiple attempts to collect samples to the proposed depth were made at locations prior to terminating the attempt due to refusal. Laboratory documented concentrations of metals COPCs from samples collected from the upper riverbank zone exceed listed background concentrations at many sample locations. These results are similar to results of previous investigations. Although exceedances of listed background concentrations occur in sample intervals below 6-inches bgs, most often laboratory reported concentrations of metals COPCs decrease with depth at individual sample locations. PNK-RBG63 and PNK-RBG61 are the farthest sample locations downriver from Berths 7, 8, and 9. At each of these locations, samples were successfully collected at three depths and no laboratory reported concentrations of metals COPCs exceeded listed background concentrations of those analytes. Samples at location PNK-RBG31 represent the farthest upriver data set collected in 2024. Three sample depth intervals were collected. Laboratory reported concentrations of metals COPCs from the deepest sample (24 to 30-inches) did not exceed listed background concentrations. Within the intermediate sample interval (12 to 18-inches), the reported concentration of total copper exceeded the listed naturally occurring background concentration. Within laboratory reported concentrations from the shallow sample interval (0 to 6-inches), background concentrations of metals COPCs were exceeded for total mercury, arsenic, cadmium, copper, lead, and zinc. Metals concentrations reported from sample location PNK-RBG31 decrease with depth and are vertically delineated at this location. Upstream from sample location PNK-RBG31, the riverbank is covered by a dock comprised of impervious surface material. The dock is approximately 580 yards long and utilized for storage and loading of scrap metal.

5.2 BELOW OHWM

During the 2024 investigation, a total of 42 samples from 18 sample locations were collected from material below the OHWM and submitted to Eurofins for analysis of total copper concentrations. As noted in the Workplan, laboratory reported concentrations of metals COPCs from historical samples on the riverbank below the ordinary high-water mark, and from surface sediment within the river, have been compared to Sediment Cleanup Objectives (SCOs) and Cleanup Screening Levels (CSLs) listed in Ecology's *Sediment Cleanup User's Manual* (SCUM). With the exception of results for total copper, concentrations of metals COPCs from samples

collected at riverbank locations below the ordinary high-water mark have been vertically and laterally delineated by previous investigations. Therefore, and as noted in the Workplan, 2024 samples collected from areas below the OHWM were only analyzed for total copper.

Locations of samples collected below the OHWM during the third quarter 2024 are displayed on **Figure 4**. Twenty-one sample locations were proposed to be investigated to a depth of 30-inches bgs. As anticipated, refusal to reach the proposed depth occurred at many locations due to encountering riprap or fill material, sloughing of boreholes, and inaccessibility due to vegetation. Multiple attempts to reach the proposed depths were made at each location. At two proposed locations (PNK-RBG44 and PNKRBG46) no samples were collected due to the presence of extensive and large rip rap covering the ground surface. A third proposed location (PNK-RBG42) was moved above the OHWM due to lack of sampleable material. The sample was then analyzed for constituents applicable to the new location.

Laboratory analytical results reported in samples collected in 2024 from riverbank locations below the OHWM are displayed on **Figure 4** and additionally presented on **Table 3**. Laboratory analytical reports are attached as **Appendix D**. Laboratory reported concentrations of total copper exceeded the copper SCO at three boring locations (PNK-RBG38, PNK-RBG48, and PNK-RBG56). At each of these boring locations, the shallow sample collected at the 0 to 6-inch bgs interval exceeded the SCO. A deeper sample was collected at each of these locations (12 to 18-inch, 12 to 16-inch, and 12 to 18-inch respectively). Only at location PNK-RBG48 did the deeper sample also exceed the SCO for total copper. At location PNK-RBG48, riprap was encountered, and sampling below 16-inches was not possible. Laboratory reported concentrations of total copper from 2024 sample locations below the OHWM do not indicate SCO exceedances are prevalent. Furthermore, these exceedances occur at sporadic and geographically isolated locations near Berths 7, 8, and 9.

6.0 GRAIN SIZE ANALYSIS

Antea Group field personnel selected a subset of the riverbank samples collected in September 2024 to be analyzed for grain size distribution. Samples were selected to document the distribution of sampleable soil material encountered within the study area. Eleven samples were submitted to and analyzed by Eurofins. Results are presented in **Table 4** and the laboratory analytical reports are attached as **Appendix D**. Within the sample set, reported percentages of clay were consistent, ranging from 2.2 to 3.7 percent of sample volume. The percentage of silt varied from zero to 16.7. The percentage of fine sand ranged from 13.3 to 82.7. The percentage of medium sand ranged from 13.1 to 54.3. The percentage of coarse sand ranged from 0.3 to 17.3. The percentage of gravel ranged from zero to 43.2. Results of grain size analysis will be incorporated into any potential interim remedial action design.

7.0 CONCLUSIONS

Investigative efforts conducted by Antea Group in September of 2024 were implemented to further assess metals COPCs in areas on or adjacent to the riverbank at the Port, near Berths 7, 8, and 9. Four soil borings were advanced to further define metals COPCs above the riverbank near Berth 7, surrounding previously advanced boring SRI-169. Laboratory analytical results from soil borings SRI-176 through 179 were compared to background concentrations listed for those analytes. Exceedances of background concentrations generally occur within the sample intervals of 5 and 10 ft bgs, approximately 16-18 ft above the groundwater elevation at this location. Data from samples collected at deeper sample intervals generally are reported at concentrations below listed background levels except for mercury. Thirty-three samples collected along the riverbank above the OHWM were analyzed for metals COPCs and compared to background concentrations. Results from riverbank

samples collected above the OHWM near Berths 7, 8, and 9 often exceeded background concentrations. Metals concentrations within samples at a given location generally decrease as sample depth increases. The farthest downriver sample locations (PNK-RBG63 and PNK-RBG61) did not contain concentrations of metals COPCs above listed background concentrations. The farthest sample locations upriver (PNK-RBG31) contained concentrations of metals above background levels at sample interval 0 to 6-inch bgs and 12 to 18-inch bgs. Sample interval 24 to 30-inch bgs did not contain concentrations of metals above background levels. Antea Group collected 42 samples at locations along the riverbank below the OHWM. Total copper concentrations within the samples were compared to the SCO for total copper. An exceedance of the SCO was reported within samples from three locations centrally located within the sample set. Copper concentrations above the SCO are not prevalent within the data set. After reviewing data collected in 2024, Antea Group believes metals concentrations on and near the riverbank have been sufficiently established and is not proposing further collection of soil or sediment samples at the Site.

Enclosure

Table 1 – Soil Analytical Data Upland Zone 1
Table 2 – Riverbank Analytical Data Above the Ordinary High-Water Mark
Table 3 – Riverbank Analytical Data Below the Ordinary High-Water Mark
Table 4 – Grain Size Analytical Results

Figure 1 – 2024 Upland Soil Analytical Results
Figure 2 – 2024 Riverbank Sample Locations
Figure 3 – Riverbank Sample Results – Above Ordinary High-Water Mark
Figure 4 – Riverbank Sample Results – Below Ordinary High-Water Mark

Appendix A – Supplemental Remedial Investigation – 2024 Additional Investigative Workplan (Revised)
Appendix B – Photo Log
Appendix C – Boring Logs
Appendix B – Laboratory Analytical Reports

Sam Meng
Department of Ecology
May 12, 2025

Tables

TABLE 1
SOIL ANALYTICAL DATA
UPLAND ZONE 1
METALS COPCs
PHASE 3 SUPPLEMENTAL REMEDIAL INVESTIGATION
PORT OF VANCOUVER, WA

Sample ID	Date	Sample Depth (ft)	Arsenic (mg/kg)	Cadmium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Zinc (mg/kg)
Fraction			**T**	**T**	**T**	**T**	**T**	**T**
SRI-169	11/6/2023	5	5.1	0.46	25 B^2	**89**	**0.19**	**120 B**
SRI-169	11/7/2023	10	2.4	0.2	**110 B^2**	4.9	< 0.0073	58 B
SRI-169	11/7/2023	15	1.5	0.14	7.4 B	2.9	< 0.0066	44 B
SRI-169	11/7/2023	20	**7.2**	0.54	**730 B**	**35**	**0.05**	**170 B**
SRI-169	11/7/2023	25	1.8	0.08	**47 B**	8.1	< 0.0067	45 B
SRI-169	11/7/2023	30	1.5	0.11	9.8 B	2.4	< 0.0069	39 B
SRI-169	11/7/2023	35	1.6	0.37	11 B	4.3 ^2	< 0.0094	68 B
SRI-169	11/7/2023	40	3.2	0.6	18 B	15	< 0.0090	**150 B**
SRI-169	11/7/2023	45	2.2	0.16	9.1 B	4	< 0.0080	51 B
SRI-169	11/7/2023	50	2	0.17	9.2 B	4.5	< 0.0089	50 B
SRI-169	11/7/2023	55	2.6	0.13	30 B	6	< 0.010	72 B
SRI-169	11/7/2023	60	2.1	0.077	23 B	3.9	< 0.0092	56 B
SRI-169	11/8/2023	65	2.9	0.1	22 B	5	< 0.0085	68 B
SRI-169	11/8/2023	70	1.8	0.065	21 B	3.6	< 0.010	49 B
SRI-169	11/8/2023	74	1.6	0.046	20 F1B^2	2.3 ^2	< 0.0072	36 F1B
SRI-176	9/24/2024	5	1.5	0.089 J	7.1	3.0	**0.18 H**	37
SRI-176	9/24/2024	10	1.7	0.22 J	7.4	2.8	**0.11 H**	42
SRI-176	9/24/2024	15	1.6	0.18 J	6.8	2.5	0.018 J H	40
SRI-176	9/24/2024	20	2.0	0.19 J	6.8	3.8	0.030 H	56
SRI-176	9/24/2024	25	2.4	0.13 J	11	6.0	0.040 H	48
SRI-177	9/24/2024	5	**6.2**	0.29 J	**170**	**28**	0.035 H	**140**
SRI-177	9/24/2024	10	**6.0**	0.16 J	26	**36**	0.037 H	87
SRI-177	9/24/2024	15	1.5	0.14 J	7.1	2.7	0.020 J H	40
SRI-177	9/24/2024	20	2.1	0.19 J	8.8	3.3	0.015 J H	51
SRI-177	9/24/2024	25	2.3	0.11 J	9.1	5.8	0.0080 J H	46
SRI-178	9/24/2024	5	4.1	0.46 J	**450**	**75**	**0.18 H**	**140**
SRI-178	9/24/2024	10	5.7	0.46 J	**40**	**92**	**0.077 H**	**150**
SRI-178	9/24/2024	15	1.7	0.13 J	7.4	2.9	**0.047 H**	40
SRI-178	9/24/2024	20	2.0	0.15 J	19	9.9	0.018 J H	50
SRI-178	9/24/2024	25	2.1	0.087 J	13	7.3	0.021 J H	42
SRI-179	9/24/2024	5	4.1	0.19 J	36	**34**	0.0079 J H	**120**
SRI-179	9/24/2024	10	5.2	0.35 J	21	**56**	0.016 J H	**120**
SRI-179	9/24/2024	15	1.3	0.13 J	6.7	2.4	0.017 J H	40
SRI-179	9/24/2024	20	1.7	0.20 J	8.3	2.7	**0.047 H**	47
SRI-179	9/24/2024	25	2.7	0.098 J	13	7.9	0.019 J H	60
Soil Screening Levels								
Method A Unrestricted Land Use			**20**	**2**	**--**	**250**	**2**	**--**
Method A Industrial Properties			**20**	**2**	**--**	**1,000**	**2**	**--**
Method B Noncancer			**24**	**80**	**3,200**	**--**	**8 (k)**	**24,000**
Method B Cancer			**0.67**	**--**	**--**	**--**	**--**	**--**
Method C Noncancer			**1,100**	**3500**	**140,000**	**--**	**350 (k)**	**1,100,000**
Method C Cancer			**88**	**--**	**--**	**--**	**--**	**--**
Soil Protective of Groundwater Vadose @ 13 degrees C			**2.9**	**0.69**	**280**	**3,000**	**2.1**	**6,000**
Soil Protective of Groundwater Saturated			**0.15**	**0.035**	**14**	**150**	**0.01**	**300**
Soil Protective of Groundwater to Surface Water Vadose @ 13 degrees C Freshwater			**2.9**	**0.099**	**4.9**	**500**	**0.013**	**120**
Soil Protective of Groundwater to Surface Water Saturated Freshwater			**0.15**	**0.005**	**0.25**	**25**	**0.00063**	**6.2**
Naturally Occurring Background Concentration [a]			**5.81**	**0.9**	**34.4**	**24**	**0.04**	**95.5**

Notes:
Bold = Exceeds naturally occuring background concentrations.
mg/kg = milligrams/kilograms
-- = Not established, Not analyzed, or Not applicable
< = Not detected at or above the laboratory method detection limit.
J = The result is an estimated value.
ft = Feet
T = Total
H = Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.
B = Compound was found in the blank and sample.
^2 = Calibration Blank (ICB and/or CCB) is outside acceptance limits.
Total Mercury analyzed by EPA Method 7471A.
Total Arsenic, Cadmium, Copper, Lead and Zinc analyzed by EPA Method 6020A.
[a] = Background concentrations 90th percentile for Clark County from Washington State Department of Ecology's "Natural Background Soil Metals Concentrations in Washington State" Publication

(k) Methyl Mercury CAS# 22967-92-6; formed from inorganic mercury by the actions of microbes that live in aquatic systems, primarily attributed to anaerobic bacteria in sediments

TABLE 2
RIVERBANK ANALYTICAL DATA
ABOVE THE ORDINARY HIGH-WATER MARK
METALS COPCs
PHASE 3 SUPPLEMENTAL REMEDIAL
INVESTIGATION PORT OF VANCOUVER, WA

Sample ID	Date	Sample Depth (inches)	Sample Depth (centimeters)	Arsenic (mg/kg)	Cadmium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Zinc (mg/kg)
Fraction				**T**	**T**	**T**	**T**	**T**	**T**
PNK-RBG31	9/25/2024	0-6	0-15.24	**5.9**	**1.1**	**440**	**29**	0.024 H	**270**
PNK-RBG31	9/25/2024	12-18	30.48-45.72	2.5	0.18 J	**44**	6.1	0.0078 J H	71
PNK-RBG31	9/25/2024	24-30	60.96-76.2	2.1	0.21 J	22	4.5	0.0073 J H	76
PNK-RBG33	9/25/2024	0-6	0-15.24	27	0.6	**500**	**73**	0.036 H	**330**
PNK-RBG35	9/25/2024	0-6	0-15.24	5.8	0.4 J	**790**	**28**	0.015 J H	**140**
PNK-RBG35	9/25/2024	12-18	30.48-45.72	2.9	0.28 J	**320**	12	0.012 J H	**120**
PNK-RBG39	9/25/2024	0-6	0-15.24	**150**	**3.4**	**9,800**	**410**	0.0071 J H	**1,000**
PNK-RBG39	9/25/2024	12-15	30.48-38.1	**49**	**1.4**	**3,700**	**160**	0.0077 J H	**390**
PNK-RBG41	9/24/2024	0-6	0-15.24	**6.2**	0.55	**920**	**51**	0.0056 J H	**120**
PNK-RBG41	9/24/2024	12-17	30.48-4318	**23**	0.38 J	**170**	**41**	0.016 J H	**170**
PNK-RBG42	9/24/2024	0-6	0-15.24	**16**	**0.97**	**2,000**	**62**	**0.064 H**	**270**
PNK-RBG43	9/24/2024	0-6	0-15.24	**12**	0.71	**1,100**	**120**	0.027 H	**180**
PNK-RBG43	9/24/2024	18-22	45.72-55.88	2.7	0.25 J	**35**	14	**0.074 H**	**260**
PNK-RBG45	9/24/2024	0-6	0-15.24	4.4	0.32 J	**450**	22	**0.14 H**	**110**
PNK-RBG45	9/24/2024	12-16	30.48-40.64	4.3	0.25 J	**190**	**30**	0.0065 J H	93
PNK-RBG47	9/24/2024	0-6	0-15.24	5.7	0.36 J	**200**	**56**	0.0070 J H	**110**
PNK-RBG51	9/24/2024	0-6	0-15.24	2.8	0.13 J	**110**	8.9	0.018 J H	66
PNK-RBG53	9/24/2024	0-6	0-15.24	**8.3**	**1.1**	**470**	**40**	0.027 H	**240**
PNK-RBG53	9/24/2024	12-16	30.48-40.64	**7.6**	0.73	**180**	**42**	**0.23 H**	**180**
PNK-RBG55	9/23/2024	0-6	0-15.24	**15**	0.88	**1,500**	**61**	0.0093 J H	**250**
PNK-RBG55	9/23/2024	12-18	30.48-45.72	3.4	0.23 J	**170**	20	0.011 J H	86
PNK-RBG55	9/23/2024	24-27	60.96-68.58	3.2	0.22 J	**140**	21	0.0077 J H	71
PNK-RBG57	9/23/2024	0-6	0-15.24	1.7	0.13	33	3.4	**0.041 H**	49
PNK-RBG57	9/23/2024	12-17	30.48-4318	1.8	0.10 J	32	3.5	**0.068 H**	51
PNK-RBG59	9/23/2024	0-6	0-15.24	<0.076	<0.059	<1.5	<0.38	<0.021 H	<3.9
PNK-RBG59	9/23/2024	12-18	30.48-45.72	4.8	0.24	**94 F1**	**25**	0.0093 J H	**100 F1**
PNK-RBG59	9/23/2024	24-28	60.96-71.12	<0.076	<0.058	<1.5	<0.38	0.015 J H	<3.9
PNK-RBG61	9/23/2024	0-6	0-15.24	<0.067	<0.052	<1.3	<0.34	0.028 H	<3.4
PNK-RBG61	9/23/2024	12-18	30.48-45.72	<0.060	<0.046	<1.2	<0.30	0.017 J H ^-	<3.1
PNK-RBG61	9/23/2024	24-28	60.96-71.12	<0.066	<0.051	<1.3	<0.33	0.0061 J H ^-	<3.4
PNK-RBG63	9/23/2024	0-6	0-15.24	1.6	0.15 J	23	4.0	0.0054 J H ^-	49
PNK-RBG63	9/23/2024	12-18	30.48-45.72	2.9	0.16 J	26	5.4	0.0064 J H ^-	62
PNK-RBG63	9/23/2024	24-30	60.96-76.2	2	0.11 J	13	4.2	0.0054 J H ^-	49
Sediment Cleanup Objectives									
Sediment Cleanup Objective				**14**	**2.1**	**400**	**360**	**0.66**	**3,200**
Cleanup Screening Level				**120**	**5.4**	**1,200**	**1300 R**	**0.8**	**>4,200**
Soil Screening Levels									
Method A Unrestricted Land Use				**20**	**2**	**--**	**250**	**2**	**--**
Method A Industrial Properties				**20**	**2**	**--**	**1,000**	**2**	**--**
Method B Noncancer				**24**	**80**	**3,200**	**--**	**8 (k)**	**24,000**
Method B Cancer				**0.67**	**--**	**--**	**--**	**--**	**--**
Method C Noncancer				**1,100**	**3500**	**140,000**	**--**	**350 (k)**	**1,100,000**
Method C Cancer				**88**	**--**	**--**	**--**	**--**	**--**
Soil Protective of Groundwater Vadose @ 13 degrees C				**2.9**	**0.69**	**280**	**3,000**	**2.1**	**6,000**
Soil Protective of Groundwater Saturated				**0.15**	**0.035**	**14**	**150**	**0.01**	**300**
Soil Protective of Groundwater to Surface Water Vadose @ 13 degrees C Freshwater				**2.9**	**0.099**	**4.9**	**500**	**0.013**	**120**
Soil Protective of Groundwater to Surface Water Saturated Freshwater				**0.15**	**0.005**	**0.25**	**25**	**0.00063**	**6.2**
Naturally Occurring Background Concentration [a]				**5.81**	**0.9**	**34.4**	**24**	**0.04**	**95.5**

Notes

Bold = Concentration exceeding the Naturally Occuring Background Concentration
MTCA Method A, Method B and Method C cleanup levels are taken from the Washington State Department of Ecology CLARC Tables 740-1, 740-2 and 745-1.
B = Compound was found in the blank and sample
H = Sample was preparred or analyzed beyond the specified holding time. This does not meet regulatory requirements.
J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1 = MS and/or MSD recovery exceeds control limits
F2 = MS/MSD RPD exceeds control limits
ft bgs = feet below ground surface
mg/kg = milligrams per kilogram
Total Arsenic, Cadmium, Copper, Lead, and Zinc analyzed by EPA Method 1638/6020B.
Total Mercury analyzed by EPA Method 7471A
* = reporting limit value
** = sample was not analyzed by method EPA 1631E
^- = Continuing Calibration Verification (CCV) is outside acceptance limits, low biased
a = Background concentrations 90th percentile for Clark County from Washington State Department of Ecology's "Natural Background Soil Metals Concentrations in Washington State" Publication

TABLE 3
RIVERBANK ANALYTICAL DATA
BELOW THE ORDINARY HIGH-WATER MARK
METALS COPCs
PHASE 3 SUPPLEMENTAL REMEDIAL
INVESTIGATION PORT OF VANCOUVER, WA

Sample ID	Date	Sample Depth (inches)	Sample Depth (centimeters)	Arsenic (mg/kg)	Cadmium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Zinc (mg/kg)
Fraction				**T**	**T**	**T**	**T**	**T**	**T**
PNK-RBG32	9/25/2024	0-6	0-15.24	--	--	13	--	--	--
PNK-RBG32	9/25/2024	12-18	30.48-45.72	--	--	9.8	--	--	--
PNK-RBG32	9/25/2024	24-30	60.96-76.2	--	--	12	--	--	--
PNK-RBG34	9/25/2024	0-6	0-15.24	--	--	32	--	--	--
PNK-RBG34	9/25/2024	12-18	30.48-45.72	--	--	8.6	--	--	--
PNK-RBG34	9/25/2024	24-30	60.96-76.2	--	--	16	--	--	--
PNK-RBG36	9/25/2024	0-6	0-15.24	--	--	82	--	--	--
PNK-RBG36	9/25/2024	12-18	30.48-45.72	--	--	130	--	--	--
PNK-RBG36	9/25/2024	24-30	60.96-76.2	--	--	220	--	--	--
PNK-RBG37	9/25/2024	0-6	0-15.24	--	--	170	--	--	--
PNK-RBG37	9/25/2024	12-18	30.48-45.72	--	--	120	--	--	--
PNK-RBG37	9/25/2024	24-30	60.96-76.2	--	--	260	--	--	--
PNK-RBG38	9/25/2024	0-6	0-15.24	--	--	**730**	--	--	--
PNK-RBG38	9/25/2024	12-18	30.48-45.72	--	--	90 F1	--	--	--
PNK-RBG38	9/25/2024	22-28	55.88-71.12	--	--	69	--	--	--
PNK-RBG40	9/25/2024	0-6	0-15.24	--	--	94	--	--	--
PNK-RBG40	9/25/2024	12-18	30.48-45.72	--	--	11	--	--	--
PNK-RBG48	9/24/2024	0-6	0-15.24	--	--	**1,300**	--	--	--
PNK-RBG48	9/24/2024	12-16	30.48-40.64	--	--	**1,200**	--	--	--
PNK-RBG49	9/24/2024	0-6	0-15.24	--	--	65	--	--	--
PNK-RBG49	9/24/2024	12-18	30.48-45.72	--	--	23	--	--	--
PNK-RBG50	9/24/2024	0-6	0-15.24	--	--	36	--	--	--
PNK-RBG50	9/24/2024	14-17	35.56-43.18	--	--	23	--	--	--
PNK-RBG52	9/24/2024	0-6	0-15.24	--	--	400	--	--	--
PNK-RBG52	9/24/2024	12-18	30.48-45.72	--	--	130 F1	--	--	--
PNK-RBG54	9/24/2024	0-6	0-15.24	--	--	82	--	--	--
PNK-RBG54	9/24/2024	12-17	30.48-43.18	--	--	34	--	--	--
PNK-RBG56	9/24/2024	0-6	0-15.24	--	--	**520**	--	--	--
PNK-RBG56	9/24/2024	12-14	30.48-35.56	--	--	330	--	--	--
PNK-RBG58	9/23/2024	0-6	0-15.24	--	--	<1.4	--	--	--
PNK-RBG58	9/23/2024	12-17	30.48-43.18	--	--	<1.7	--	--	--
PNK-RBG60	9/23/2024	0-6	0-15.24	--	--	<1.4	--	--	--
PNK-RBG62	9/23/2024	0-6	0-15.24	--	--	<1.3	--	--	--
PNK-RBG62	9/23/2024	12-18	30.48-45.72	--	--	38	--	--	--
PNK-RBG64	9/23/2024	0-6	0-15.24	--	--	27	--	--	--
PNK-RBG64	9/23/2024	12-18	30.48-45.72	--	--	11	--	--	--
PNK-RBG64	9/23/2024	24-30	60.96-76.2	--	--	10	--	--	--
PNK-RBG65	9/25/2024	0-6	0-15.24	--	--	8.7	--	--	--
PNK-RBG65	9/25/2024	12-16	30.48-40.64	--	--	10	--	--	--
PNK-RBG66	9/25/2024	0-6	0-15.24	--	--	14	--	--	--
PNK-RBG66	9/25/2024	12-18	30.48-45.72	--	--	17	--	--	--
PNK-RBG66	9/25/2024	22-28	55.88-71.12	--	--	15	--	--	--
Sediment Cleanup Objectives									
Sediment Cleanup Objective				**14**	**2.1**	**400**	**360**	**0.66**	**3,200**
Cleanup Screening Level				**120**	**5.4**	**1,200**	**1300 R**	**0.8**	**>4,200**
Soil Screening Levels									
Method A Unrestricted Land Use				**20**	**2**	**--**	**250**	**2**	**--**
Method A Industrial Properties				**20**	**2**	**--**	**1,000**	**2**	**--**
Method B Noncancer				**24**	**80**	**3,200**	**--**	**8 (k)**	**24,000**
Method B Cancer				**0.67**	**--**	**--**	**--**	**--**	**--**
Method C Noncancer				**1,100**	**3500**	**140,000**	**--**	**350 (k)**	**1,100,000**
Method C Cancer				**88**	**--**	**--**	**--**	**--**	**--**
Soil Protective of Groundwater Vadose @ 13 degrees C				**2.9**	**0.69**	**280**	**3,000**	**2.1**	**6,000**
Soil Protective of Groundwater Saturated				**0.15**	**0.035**	**14**	**150**	**0.01**	**300**
Soil Protective of Groundwater to Surface Water Vadose @ 13 degrees C Freshwater				**2.9**	**0.099**	**4.9**	**500**	**0.013**	**120**
Soil Protective of Groundwater to Surface Water Saturated Freshwater				**0.15**	**0.005**	**0.25**	**25**	**0.00063**	**6.2**
Naturally Occurring Background Concentration [a]				**5.81**	**0.9**	**34.4**	**24**	**0.04**	**95.5**

Notes

Bold = Concentration exceeding the SMS Freshwater Sediment Cleanup Objective as listed in table 8.1 of WA State Dept. of Ecology Sediment User's Cleanup Manual

MTCA Method A, Method B and Method C cleanup levels are taken from the Washington State Department of Ecology CLARC Tables 740-1, 740-2 and 745-1.

-- = Not applicable, not analyzed, not sampled or no given value

B = Compound was found in the blank and sample

H = Sample was preparred or analyzed beyond the specified holding time. This does not meet regulatory requirements

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

F1 = MS and/or MSD recovery exceeds control limits

F2 = MS/MSD RPD exceeds control limits

^2 = Calibration Blank (ICB and/or CCB) is outside accepetance limits.

ft bgs = feet below ground surface

mg/kg = milligrams per kilogram

Total Arsenic, Cadmium, Copper, Lead, and Zinc analyzed by EPA Method 1638/6020B.

Total Mercury analyzed by EPA Method 7471A

a = Background concentrations 90th percentile for Clark County from Washington State Department of Ecology's "Natural Background Soil Metals Concentrations in Washington State" Publication Number 94-115. pg.60

TABLE 4
GRAIN SIZE ANALYTICAL RESULTS
PHASE 3 SUPPLEMENTAL REMEDIAL INVESTIGATION
PORT OF VANCOUVER, WA

Sample ID	Date	Sample Depth (inches)	Gravel	Coarse Sand	Medium Sand	Fine Sand	Silt	Clay
Fraction			%	%	%	%	%	%
PNKRBG-31	9/25/2024	12-18	8.6	6.4	26.1	38.7	16.7	3.5
PNKRBG-35	9/25/2024	12-18	43.2	14.5	18.1	14.3	7.1	2.9
PNKRBG-36	9/25/2024	0-6	0.0	0.3	13.1	82.7	1.0	2.9
PNKRBG-43	9/24/2024	0-6	23.2	12.8	25.8	22.5	12.8	2.9
PNKRBG-47	9/24/2024	0-6	25.6	13.7	27.0	25.6	4.5	3.7
PNKRBG-52	9/24/2024	12-18	40.2	17.3	26.2	13.3	0.0	3.1
PNKRBG-55	9/24/2024	0-6	16.4	13.9	23.7	34.0	9.1	2.9
PNKRBG-58	9/23/2024	12-17	2.3	8.6	54.3	31.3	0.0	3.5
PNKRBG-63	9/23/2024	0-6	11.0	10.6	38.0	37.5	0.0	3.0
PNKRBG-63	9/23/2024	12-18	18.9	6.6	25.1	45.8	1.3	2.2
PNKRBG-63	9/23/2024	24-30	5.7	6.7	14.9	56.3	14.2	2.3

Notes:

% = percentage

Analysis performed = ASTM D422

Sam Meng
Department of Ecology
May 12, 2025

Figure

Figure 1 – 2024 Upland Soil Analytical Results

Figure 2 – 2024 Riverbank Sample Locations

Figure 3 – Riverbank Sample Results – Above Ordinary High-Water Mark

Figure 4 – Riverbank Sample Results – Below Ordinary High-Water Mark

SRI-176

Date	Depth	Arsenic	Cadmium	Copper	Lead	Mercury	Zinc
9/24/2024	5	1.5	0.089 J	7.1	3	**0.18 H**	37
9/24/2024	10	1.7	0.22 J	7.4	2.8	**0.11 H**	42
9/24/2024	15	1.6	0.18 J	6.8	2.5	0.018 J H	40
9/24/2024	20	2	0.19 J	6.8	3.8	0.030 H	56
9/24/2024	25	2.4	0.13 J	11	6	0.040 H	48

SRI-169

Date	Depth	Arsenic	Cadmium	Copper	Lead	Mercury	Zinc
11/6/2023	5	5.1	0.46	25 B^2	**89**	**0.19**	**120 B**
11/7/2023	10	2.4	0.2	**110 B^2**	4.9	< 0.0073	58 B
11/7/2023	15	1.5	0.14	7.4 B	2.9	< 0.0066	44 B
11/7/2023	20	**7.2**	0.54	**730 B**	**35**	**0.05**	**170 B**
11/7/2023	25	1.8	0.08	**47 B**	8.1	< 0.0067	45 B
11/7/2023	30	1.5	0.11	9.8 B	2.4	< 0.0069	39 B
11/7/2023	35	1.6	0.37	11 B	4.3 ^2	< 0.0094	68 B
11/7/2023	40	3.2	0.6	18 B	15	< 0.0090	**150 B**
11/7/2023	45	2.2	0.16	9.1 B	4	< 0.0080	51 B
11/7/2023	50	2	0.17	9.2 B	4.5	< 0.0089	50 B
11/7/2023	55	2.6	0.13	30 B	6	< 0.010	72 B
11/7/2023	60	2.1	0.077	23 B	3.9	< 0.0092	56 B
11/8/2023	65	2.9	0.1	22 B	5	< 0.0085	68 B
11/8/2023	70	1.8	0.065	21 B	3.6	< 0.010	49 B
11/8/2023	74	1.6	0.046	20 F1B^2	2.3 ^2	< 0.0072	36 F1B

SRI-177

Date	Depth	Arsenic	Cadmium	Copper	Lead	Mercury	Zinc
9/24/2024	5	**6.2**	0.29 J	**170**	**28**	0.035 H	**140**
9/24/2024	10	**6**	0.16 J	26	**36**	0.037 H	87
9/24/2024	15	1.5	0.14 J	7.1	2.7	0.020 J H	40
9/24/2024	20	2.1	0.19 J	8.8	3.3	0.015 J H	51
9/24/2024	25	2.3	0.11 J	9.1	5.8	0.0080 J H	46

SRI-179

Date	Depth	Arsenic	Cadmium	Copper	Lead	Mercury	Zinc
9/24/2024	5	4.1	0.19 J	**36**	**34**	0.0079 J H	**120**
9/24/2024	10	5.2	0.35 J	21	**56**	0.016 J H	**120**
9/24/2024	15	1.3	0.13 J	6.7	2.4	0.017 J H	40
9/24/2024	20	1.7	0.20 J	8.3	2.7	**0.047 H**	47
9/24/2024	25	2.7	0.098 J	13	7.9	0.019 J H	60

SRI-178

Date	Depth	Arsenic	Cadmium	Copper	Lead	Mercury	Zinc
9/24/2024	5	4.1	0.46 J	**450**	**75**	**0.18 H**	**140**
9/24/2024	10	5.7	0.46 J	**40**	**92**	**0.077 H**	**150**
9/24/2024	15	1.7	0.13 J	7.4	2.9	**0.047 H**	40
9/24/2024	20	2	0.15 J	19	9.9	0.018 J H	50
9/24/2024	25	2.1	0.087 J	13	7.3	0.021 J H	42

S-2
S-1
SRI-16
SRI-17
MW-17
SRI-176
SRI-169/KMW-6
SRI-167/KMW-4
SRI-177
SRI-178
SRI-179
SRI-168/KMW-5
2655
MW-

Legend

- 2024 Upland Sample Location
- Phase I Groundwater Sample
- Phase I Groundwater/Soil Sample
- Monitoring Well

Notes:
Bold = Exceeds naturally occuring background concentrations.
mg/kg = milligrams/kilograms
-- = Not established, Not analyzed, or Not applicable
< = Not detected at or above the laboratory method detection limit
J = The result is an estimated value.
Depth in feet below ground surface.
H = Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.
B = Compound was found in the blank and sample.
^2 = Calibration Blank (ICB and/or CCB) is outside acceptance limits.
Total Mercury analyzed by EPA Method 7471A.
Total Arsenic, Cadmium, Copper, Lead and Zinc analyzed by EPA Method 6020A.
a = Background concentrations 90th percentile for Clark County from Washington State Department of Ecology's "Natural Background Soil Metals Concentrations in Washington State" Publication Number 94-115. pg.60

N

0 7.5 15 22.5 30 60 90 Feet

FIGURE 1

2024 UPLAND SOIL ANALYTICAL RESULTS
PORT OF VANCOUVER, NUSTAR, AND KINDER MORGAN
VANCOUVER, WASHINGTON

PROJECT NO.	PREPARED BY	REF SCALE
Kinder Morgan	*SAA*	*1:360*
DATE	**REVIEWED BY**	**MAP SCALE**
2/7/2025	*BJ*	*1 INCH = 30 FEET*

anteagroup

Z:\!GIS Projects\Kinder Morgan - Replacement\Kinder Morgan Vancouver Bulk Terminal\Layout\2024 Upland Analytical Results.mxd

Legend

- 2024 Riverbank Sample Location
- Riverbank Sample Location
- Columbia River Ordinary High Water Mark

0 67.5 135 270 405 540 Feet

N

FIGURE 2

2024 RIVERBANK SAMPLE LOCATIONS
PORT OF VANCOUVER, NUSTAR, AND KINDER MORGAN
VANCOUVER, WASHINGTON

PROJECT NO.	PREPARED BY	REF SCALE	
Kinder Morgan	*SAA*	*1:3,240*	anteagroup
DATE	REVIEWED BY	MAP SCALE	
2/7/2025	*NL*	*1 INCH = 270 FEET*	

Z:\!GIS Projects\Kinder Morgan - Replacement\Kinder Morgan Vancouver Bulk Terminal\Layout\2024 Riverbank Analytical Map.mxd

PNK-RBG63			
Date	9/23/2024	9/23/2024	9/23/2024
Depth	0-6 in	12-18 in	24-30 in
Arsenic	1.6	2.9	2
Cadmium	0.15 J	0.16 J	0.11 J
Copper	23	26	13
Lead	4	5.4	4.2
Mercury	0.0054 J H ^-	0.0064 J H ^-	0.0054 J H ^-
Zinc	49	62	49

PNK-RBG61			
Date	9/23/2024	9/23/2024	9/23/2024
Depth	0-6 in	12-18 in	24-28 in
Arsenic	<0.067	<0.060	<0.066
Cadmium	<0.052	<0.046	<0.051
Copper	<1.3	<1.2	<1.3
Lead	<0.34	<0.30	<0.33
Mercury	0.028 H	0.017 J H ^-	0.0061 J H ^-
Zinc	<3.4	<3.1	<3.4

PNK-RBG59			
Date	9/23/2024	9/23/2024	9/23/2024
Depth	0-6 in	12-18 in	24-28 in
Arsenic	<0.076	4.8	<0.076
Cadmium	<0.059	0.24	<0.058
Copper	<1.5	**94 F1**	<1.5
Lead	<0.38	**25**	<0.38
Mercury	<0.021 H	0.0093 J H	0.015 J H
Zinc	<3.9	**100 F1**	<3.9

PNK-RBG55			
Date	9/23/2024	9/23/2024	9/23/2024
Depth	0-6 in	12-18 in	24-27 in
Arsenic	**15**	3.4	3.2
Cadmium	0.88	0.23 J	0.22 J
Copper	**1,500**	**170**	**140**
Lead	**61**	20	21
Mercury	0.0093 J H	0.011 J H	0.0077 J H
Zinc	**250**	86	71

PNK-RBG47		
Date	9/24/2024	
Depth	0-6 in	
Arsenic	5.7	
Cadmium	0.36 J	
Copper	**200**	
Lead	**56**	
Mercury	0.0070 J H	
Zinc	**110**	

PNK-RBG43		
Date	9/24/2024	9/24/2024
Depth	0-6 in	18-22 in
Arsenic	**12**	2.7
Cadmium	0.71	0.25 J
Copper	**1,100**	**35**
Lead	**120**	14
Mercury	0.027 H	**0.074 H**
Zinc	**180**	**260**

PNK-RBG39		
Date	9/25/2024	9/25/2024
Depth	0-6 in	12-15 in
Arsenic	**150**	**49**
Cadmium	**3.4**	**1.4**
Copper	**9,800**	**3,700**
Lead	**410**	**160**
Mercury	0.0071 J H	0.0077 J H
Zinc	**1,000**	**390**

PNK-RBG35		
Date	9/25/2024	9/25/2024
Depth	0-6 in	12-18 in
Arsenic	5.8	2.9
Cadmium	0.4 J	0.28 J
Copper	**790**	**320**
Lead	**28**	12
Mercury	0.015 J H	0.012 J H
Zinc	**140**	**120**

PNK-RBG33	
Date	9/25/2024
Depth	0-6 in
Arsenic	**27**
Cadmium	0.6
Copper	**500**
Lead	**73**
Mercury	0.036 H
Zinc	**330**

PNK-RBG57		
Date	9/23/2024	9/23/2024
Depth	0-6 in	12-17 in
Arsenic	1.7	1.8
Cadmium	0.13	0.10 J
Copper	33	32
Lead	3.4	3.5
Mercury	**0.041 H**	**0.068 H**
Zinc	49	51

PNK-RBG53		
Date	9/24/2024	9/24/2024
Depth	0-6 in	12-16 in
Arsenic	**8.3**	**7.6**
Cadmium	**1.1**	0.73
Copper	**470**	**180**
Lead	**40**	**42**
Mercury	0.027 H	**0.23 H**
Zinc	**240**	**180**

PNK-RBG51		
Date	9/24/2024	
Depth	0-6 in	
Arsenic	2.8	
Cadmium	0.13 J	
Copper	**110**	
Lead	8.9	
Mercury	0.018 J H	
Zinc	66	

PNK-RBG45		
Date	9/24/2024	9/24/2024
Depth	0-6 in	12-16 in
Arsenic	4.4	4.3
Cadmium	0.32 J	0.25 J
Copper	**450**	**190**
Lead	22	**30**
Mercury	**0.14 H**	0.0065 J H
Zinc	**110**	93

PNK-RBG42		
Date	9/24/2024	
Depth	0-6 in	
Arsenic	**16**	
Cadmium	**0.97**	
Copper	**2,000**	
Lead	**62**	
Mercury	**0.064 H**	
Zinc	**270**	

PNK-RBG41		
Date	9/24/2024	9/24/2024
Depth	0-6 in	12-17 in
Arsenic	**6.2**	**23**
Cadmium	0.55	0.38 J
Copper	**920**	**170**
Lead	**51**	**41**
Mercury	0.0056 J H	0.016 J H
Zinc	**120**	**170**

PNK-RBG31			
Date	9/25/2024	9/25/2024	9/25/2024
Depth	0-6 in	12-18 in	24-30 in
Arsenic	**5.9**	2.5	2.1
Cadmium	**1.1**	0.18 J	0.21 J
Copper	**440**	**44**	22
Lead	**29**	6.1	4.5
Mercury	0.024 H	0.0078 J H	0.0073 J H
Zinc	**270**	71	76

Legend

- Shallow Interval
- Middle Interval
- Lower Interval
- All Metals COPC Results Below Naturally Occuring Background Concentration
- A Metals COPC Results Above Naturally Occuring Background Concentration
- ▲ Riverbank Sample Location
- Columbia River Ordinary High Water Mark

Notes:
Bold = Concentration exceeding the Naturally Occuring Background Concentration (a)
H = Sample was preparred or analyzed beyond the specified holding time. This does not meet regulatory requirements.
J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1 = MS and/or MSD recovery exceeds control limits; F2 = MS/MSD RPD exceeds control limits
Results in mg/kg = milligrams per kilogram
Total Arsenic, Cadmium, Copper, Lead, and Zinc analyzed by EPA Method 1638/6020B.
Total Mercury analyzed by EPA Method 7471A
^- = Continuing Calibration Verification (CCV) is outside acceptance limits, low biased
(a) = Background concentrations 90th percentile for Clark County from Washington State Department of Ecology's "Natural Background Soil Metals Concentrations in Washington State" Publication Number 94-115. pg.60

0 67.5 135 270 405 540 Feet

N

FIGURE 3

RIVERBANK SAMPLE RESULTS - ABOVE ORDINARY HIGH WATER MARK
PORT OF VANCOUVER, NUSTAR, AND KINDER MORGAN
VANCOUVER, WASHINGTON

PROJECT NO.	PREPARED BY	REF SCALE
Kinder Morgan	*SAA*	*1:3,240*
DATE	REVIEWED BY	MAP SCALE
2/7/2025	*NL*	*1 INCH = 270 FEET*

anteagroup

Z:\!GIS Projects\Kinder Morgan - Replacement\Kinder Morgan Vancouver Bulk Terminal\Layout\Riverbank Analytical Results 2024- Above High Water level_analytical.mxd

PNK-RBG64		
Date	Depth	Copper
9/23/2024	0-6 in	27
9/23/2024	12-18 in	11
9/23/2024	24-30 in	10

PNK-RBG62		
Date	Depth	Copper
9/23/2024	0-6 in	<1.3
9/23/2024	12-18 in	38

PNK-RBG54		
Date	Depth	Copper
9/24/2024	0-6 in	82
9/24/2024	12-17 in	34

PNK-RBG48		
Date	Depth	Copper
9/24/2024	0-6 in	**1,300**
9/24/2024	12-16 in	**1,200**

PNK-RBG38		
Date	Depth	Copper
9/25/2024	0-6 in	**730**
9/25/2024	12-18 in	90 F1
9/25/2024	22-28 in	69

PNK-RBG37		
Date	Depth	Copper
9/25/2024	0-6 in	170
9/25/2024	12-18 in	120
9/25/2024	24-30 in	260

PNK-RBG34		
Date	Depth	Copper
9/25/2024	0-6 in	32
9/25/2024	12-18 in	8.6
9/25/2024	24-30 in	16

PNK-RBG65		
Date	Depth	Copper
9/25/2024	0-6 in	8.7
9/25/2024	12-16 in	10

PNK-RBG32		
Date	Depth	Copper
9/25/2024	0-6 in	13
9/25/2024	12-18 in	9.8
9/25/2024	24-30 in	12

PNK-RBG60		
Date	Depth	Copper
9/23/2024	0-6 in	<1.4

PNK-RBG58		
Date	Depth	Copper
9/23/2024	0-6 in	<1.4
9/23/2024	12-17 in	<1.7

PNK-RBG56		
Date	Depth	Copper
9/24/2024	0-6 in	**520**
9/24/2024	12-14 in	330

PNK-RBG52		
Date	Depth	Copper
9/24/2024	0-6 in	400
9/24/2024	12-18 in	130 F1

PNK-RBG50		
Date	Depth	Copper
9/24/2024	0-6 in	36
9/24/2024	14-17 in	23

PNK-RBG49		
Date	Depth	Copper
9/24/2024	0-6 in	65
9/24/2024	12-18 in	23

PNK-RBG40		
Date	Depth	Copper
9/25/2024	0-6 in	94
9/25/2024	12-18 in	11

PNK-RBG36		
Date	Depth	Copper
9/25/2024	0-6 in	82
9/25/2024	12-18 in	130
9/25/2024	24-30 in	220

PNK-RBG66		
Date	Depth	Copper
9/25/2024	0-6 in	14
9/25/2024	12-18 in	17
9/25/2024	22-28 in	15

PNK-RBG64 PNK-RBG62 PNK-RBG60 PNK-RBG58 PNK-RBG56 PNK-RBG54 PNK-RBG52 PNK-RBG50 PNK-RBG49 PNK-RBG48 PNK-RBG40 PNK-RBG38 PNK-RBG37 PNK-RBG36 PNK-RBG34 PNK-RBG65 PNK-RBG66 PNK-RBG32

Berth 9
Berth 8
Berth 7
2805
2645
2625
NW Harborside Dr

Legend

- Shallow Interval
- Middle Interval
- Lower Interval
- All Metals COPC Results Below Sediment Cleanup Objective
- A Metal COPC Results Above Sediment Cleanup Objective
- Riverbank Sample Location
- Columbia River Ordinary High Water Mark

Notes:
Bold = Concentration exceeding Sediment Cleanup Objective (a)
F1 = MS and/or MSD recovery exceeds control limits Results in mg/kg = milligrams per kilogram
Copper analyzed by EPA Method 1638/6020B.
(a)=Sediment Cleanup Objective from Washington Department of Ecology's Sediment Cleanup User's Manual (SCUM), Table 8-1

0 67.5 135 270 405 540 Feet

FIGURE 4

RIVERBANK SAMPLE RESULTS - BELOW ORDINARY HIGH WATER MARK
PORT OF VANCOUVER, NUSTAR, AND KINDER MORGAN
VANCOUVER, WASHINGTON

PROJECT NO.	PREPARED BY	REF SCALE
Kinder Morgan	*SAA*	*1:3,240*
DATE	REVIEWED BY	MAP SCALE
2/7/2025	*NL*	*1 INCH = 270 FEET*

anteagroup

Z:\!GIS Projects\Kinder Morgan - Replacement\Kinder Morgan Vancouver Bulk Terminal\Layout\Riverbank Analytical Results 2024- Below High Water level_analytical.mxd

Sam Meng
Department of Ecology
May 12, 2025

Appendix A – Supplemental Remedial Investigation – 2024 Additional Investigative Workplan (Revised)

MEMORANDUM

TO: Sam Meng, Washington Department of Ecology

CC: Stephanie Bosze Salisbury, GeoEngineers
Richard Roche, Parametrix
Richard Sherman, Kinder Morgan
Laura Shira, Yakama Nation

FROM: Antea Group

DATE: September 13, 2024

SUBJECT: Supplemental Remedial Investigation – 2024 Additional Investigative Workplan (Revised)

1.0 INTRODUCTION

Antea®Group (Antea Group) is pleased to present this revised memorandum detailing the proposed 2024 sampling and field activities in support of the Supplemental Remedial Investigation (SRI) effort being conducted at and near the Nustar Leasehold and former Kinder Morgan Bulk Terminal (KMBT) Operations Area at the Port of Vancouver (Port). The former KMBT Operations Area is now operated by Vancouver Bulk Terminals (VBT) under a management agreement with the Port. KMBT ceased operations at the Site on December 31, 2021. The proposed 2024 investigative work outlined in this memorandum will be conducted to supplement data collected at the Site during previous sampling events. Specifically, Antea Group will collect samples to further assess total metals concentrations in key areas of both the riverbank and upland zone adjacent to the riverbank to further delineate horizontal and vertical extents of elevated concentrations. Sampling methods will mirror those of previous investigative work. Antea Group presented the outline of this additional data collection at an in-person group meeting at the Port on May 9, 2024. However, this revised workplan includes adjustments discussed during a Site visit on July 17, 2024. Representatives of Antea Group, Washington Department of Ecology (Ecology), the Port, Parametrix, and Kinder Morgan participated in the Site visit and discussions related to the proposed bank sampling. Additionally, this revision incorporates select suggestions provided by representatives of the Yakama Nation via email on August 9th, 2024.

Samples as described below are proposed to be collected in the third quarter of 2024 and will be analyzed for total metals identified as Contaminants of Potential Concern (COPCs) at the Site. Metals COPCs for the Site are arsenic, cadmium, copper, lead, mercury, and zinc. Please note, individual samples will only be analyzed for the metals COPCs data needed at that sample location. A representative subset of riverbank samples will also be analyzed for grain size. This subset will be chosen based on conditions encountered in the field. Location and depth of samples will be considered during selection for grain size analysis. The goal of sample selection is to provide a representative range of grain size in material within the study area. Representatives of both Ecology and the Yakama Nation have requested grain size analysis as part of the riverbank investigation in order to provide a more complete understanding of sediment distribution, chemical fractionation, identification of source material, evaluation of spatial trends, and identification of habitat characteristics of riverbank material.

Proposed sampling locations, target sampling depths, and location specific laboratory analysis are presented in **Figure 1, Figure 2, and Table 1**. As noted during the multi-party Site visit, and documented within the Photolog attached as **Appendix A,** the majority of the riverbank in the study area is armored and, in some cases, comprised entirely of a protective layer of riprap.

Four sampling locations proposed in the original workplan, dated June 3, 2024, under the Berth 8 and 9 dock were removed from a revised workplan dated August 7, 2024. These locations were in areas of riprap and were eliminated after inspection and during the July multi-party Site visit. This area can be seen in photos 7 and 10 of **Appendix A**. The August 7th workplan revision included 13 new sample locations to better define the existing data set. These locations were proposed based on identification of sampleable materials during the Site visit and areas without vertical delineation. This latest workplan revision includes those 13 locations, and an additional two sampling locations identified as PNKRBG-65 and PNKRBG-66 and located between the sea wall and the river east of Berth 7.

Final sample locations will likely need to be adjusted in the field based on conditions encountered at each proposed location. Sampleable material is variable and discontinuous. Some locations may not be sampleable. Additionally, it is anticipated that target depths will likely not be reached at many sample locations due to riprap both at and under the ground surface. Examples of riprap interference are shown in the attached photo log (**Appendix A**).

2.0 RIVERBANK SAMPLING

Historical riverbank sampling data is presented on **Table 2** (samples below the ordinary high-water mark) and **Table 3** (samples above the ordinary high-water mark). Historical riverbank sample locations are shown on **Figure 3**. Additionally included as **Appendices B and C** are Table 3 and Figure 5 of the *Phase I Supplemental Remedial Investigation Sediment Investigation Results Report*, submitted to Ecology on November 22, 2022, and detailing sample locations and data collected from surface sediment within the river near Berths 7, 8, and 9.

Laboratory reported concentrations of metals COPCs from historical samples on the riverbank below the ordinary high-water mark, and from surface sediment within the river, have been compared to Sediment Cleanup Objectives (SCOs) and Cleanup Screening Levels (CSLs) listed in Ecology's *Sediment Cleanup User's Manual* (SCUM). With the exception of the results for total copper, concentrations of metals COPCs from samples collected at riverbank locations below the ordinary high-water mark exceed SCOs at only five sample locations, all near the Berth 7 loading area. These five sample locations are surrounded by samples that do not exceed non-copper SCOs, indicating horizontal delineation of arsenic, cadmium, lead, mercury, and zinc. These five samples contained material collected only within the first 0.5 feet below ground surface (bgs) at each location. Material collected greater than 0.5 feet bgs did not exceed SCOs for arsenic, cadmium, lead, mercury, or zinc indicating vertical delineation of those metals. Additionally, surface sediment collected within the river (**Appendix B and C**) adjacent to Berths 7, 8, and 9 did not contain concentrations of metals COPCs exceeding SCOs. Therefore, proposed samples collected on the riverbank below the ordinary high-water mark will only be analyzed for total copper concentrations. These additional data points will be utilized to further characterize copper concentrations on the riverbank within the study area. A representative subset of these samples will be submitted to the laboratory for grain size analysis in addition to total copper.

Historical sample data from riverbank soil samples collected above the ordinary high-water mark is presented on **Table 3**. Laboratory results of metals COPCs from samples collected above the ordinary high-water mark have been compared to naturally occurring background concentrations as published within Ecology's *Natural*

Background Soil Metals Concentrations in Washington State (Publication 94-115). Results from historical riverbank samples collected above the ordinary high-water mark are often reported at concentrations in excess of natural occurring background concentrations listed for metals COPCs. Antea Group is proposing additional sample collection along the riverbank above the ordinary high-water mark line to assess data gaps and where possible and sample deeper material for vertical delineation of metals COPCs. Proposed sample locations are displayed on **Figure 1** and the rationale for proposed sample locations are provided within **Table 1**. A representative subset of these samples will be submitted for grain size analysis in addition to total metals COPCs as described above.

3.0 UPLAND SOIL SAMPLING

Four soil borings (SRI-176 through SRI-179) will be installed in the vicinity of boring location SRI-169 (monitoring well KMW-6). Soil samples collected during installation of boring SRI-169 contained abnormally elevated concentrations of some COPCs at the depths of 10, 20, 25, and 40 feet (ft) bgs. Further sampling data is warranted to assess the lateral extent of these anomalous concentrations. The area of boring SRI-169 is known to contain fill of unknown origin and numerous underground utilities. Proposed boring locations may need to be adjusted based on utility mark outs, access limitations, and subsurface conditions. However, the goal is to advance four borings around SRI-169 to a depth of 25 ft bgs to delineate metals concentrations. Samples will be collected every five feet and analyzed for total arsenic, cadmium, copper, lead, mercury, and zinc. Although a concentration of zinc in excess of the naturally occurring background value was reported from the sample collected at 40 ft bgs in SRI-169, Antea Group is not proposing to advance the proposed borings to that depth. The 40 ft bgs sample did not contain other metals COPCs above naturally occurring background levels and zinc concentrations in groundwater samples collected at KMW-6 do not exceed surface water quality screening levels. Proposed boring locations are presented on **Figure 2**.

Attachments:

Table 1 – Workplan
Table 2 – Riverbank Analytical Data Below the Ordinary High-Water Mark
Table 3 – Riverbank Analytical Data Above the Ordinary High-Water Mark

Figure 1 – Proposed 2024 Riverbank Sample Locations
Figure 2 – Proposed 2024 Upland Sample Locations
Figure 3 – Historical Riverbank Sample Locations

Appendix A – Photo Log - Site Visit conducted on July 17, 2024
Appendix B – Figure 5 from 2022, Phase I Supplemental Remedial Investigation Sediment Investigation Results
Appendix C – Table 3 from 2022, Phase I Supplemental Remedial Investigation Sediment Investigation Results

Sam Meng
Department of Ecology
September 13, 2024

Table

Table 1
Workplan
Port of Vancouver RIFS 2024
Riverbank and Upland Sampling
Metals COPCs

Proposed Soil Boring ID	Proposed Total Depth (ft)	Screen Interval	Diameter (in)	Drill Method	Sampling Intervals (in feet for Soil Borings and inches for Riverbank Samples)	Above or Below Ordinary High Water Mark	Laboratory Analysis Soil	Rationale
PROPOSED SOIL BORINGS								
SRI-176	25	NA	6"	SONIC	5, 10, 15, 20, 25	Above	arsenic, cadmium, copper, lead, mercury, zinc	Assess Metals Concentrations near SRI-169
SRI-177	25	NA	6"	SONIC	5, 10, 15, 20, 25	Above	arsenic, cadmium, copper, lead, mercury, zinc	Assess Metals Concentrations near SRI-169
SRI-178	25	NA	6"	SONIC	5, 10, 15, 20, 25	Above	arsenic, cadmium, copper, lead, mercury, zinc	Assess Metals Concentrations near SRI-169
SRI-179	25	NA	6"	SONIC	5, 10, 15, 20, 25	Above	arsenic, cadmium, copper, lead, mercury, zinc	Assess Metals Concentrations near SRI-169
PROPOSED RIVERBANK SAMPLES								
PNKRBG-31	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Above	arsenic, cadmium, copper, lead, mercury, zinc	Additional Data Point East of Historic Sample SS-6 Location
PNKRBG-32	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Below	copper	Additional Data to Further Characterize Total Copper Concentrations Below the Ordinary High-Water Mark
PNKRBG-33	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Above	arsenic, cadmium, copper, lead, mercury, zinc	Re-sample Historic Sample SS-6 Location And Provide Deeper Data
PNKRBG-34	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Below	copper	Re-sample Historic Sample SS-5 Location And Provide Deeper Data
PNKRBG-35	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Above	arsenic, cadmium, copper, lead, mercury, zinc	Additional Data to Further Characterize Total Metals COPCs Above the Ordinary High-Water Mark And Provide Deeper Data
PNKRBG-36	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Below	copper	Re-sample Historic Sample KMBT Bank H Location And Provide Deeper Data
PNKRBG-37	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Below	copper	Re-sample Historic Sample KMBT Bank A Location And Provide Deeper Data
PNKRBG-38	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Below	copper	Re-sample Historic Sample KMBT Bank G Location And Provide Deeper Data
PNKRBG-39	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Above	arsenic, cadmium, copper, lead, mercury, zinc	Additional Data to Further Characterize Total Metals COPCs Above the Ordinary High-Water Mark And Provide Deeper Data
PNKRBG-40	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Below	copper	Re-sample Historic Sample SS-4 Location And Provide Deeper Data
PNKRBG-41	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Above	arsenic, cadmium, copper, lead, mercury, zinc	Additional Data to Further Characterize Total Metals COPCs Above the Ordinary High-Water Mark And Provide Deeper Data
PNKRBG-42	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Below	copper	Additional Data to Further Characterize Total Copper Concentrations Below the Ordinary High-Water Mark And Provide Deeper Data
PNKRBG-43	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Above	arsenic, cadmium, copper, lead, mercury, zinc	Additional Data to Further Characterize Total Metals COPCs Above the Ordinary High-Water Mark And Provide Deeper Data
PNKRBG-44	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Below	copper	Additional Data to Further Characterize Total Copper Concentrations Below the Ordinary High-Water Mark And Provide Deeper Data
PNKRBG-45	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Above	arsenic, cadmium, copper, lead, mercury, zinc	Additional Data to Further Characterize Total Metals COPCs Above the Ordinary High-Water Mark And Provide Deeper Data
PNKRBG-46	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Below	copper	Re-sample Historic Sample SS-8 Location And Provide Deeper Data
PNKRBG-47	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Above	arsenic, cadmium, copper, lead, mercury, zinc	Additional Data to Further Characterize Total Metals COPCs Above the Ordinary High-Water Mark and Provide Deeper Data At the Western Edge of the Berth 8 Window
PNKRBG-48	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Below	copper	Additional Data to Further Characterize Total Copper Concentrations Below the Ordinary High-Water Mark And Provide Deeper Data
PNKRBG-49	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Below	copper	Data Collection at Water Line to Supplent Characterization of Total Copper Under Dock
PNKRBG-50	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Below	copper	Data Collection at Water Line to Supplent Characterization of Total Copper Under Dock
PNKRBG-51	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Above	arsenic, cadmium, copper, lead, mercury, zinc	Additional Data to Further Characterize Total Metals COPCs Above the Ordinary High-Water Mark And Provide Deeper Data At the Eastern Edge of the Berth 9 Window
PNKRBG-52	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Below	copper	Additional Data to Further Characterize Total Copper Concentrations Below the Ordinary High-Water Mark And Provide Deeper Data
PNKRBG-53	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Above	arsenic, cadmium, copper, lead, mercury, zinc	Additional Data to Further Characterize Total Metals COPCs Above the Ordinary High-Water Mark And Provide Deeper Data Within the Berth 9 Window
PNKRBG-54	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Below	copper	Additional Data to Further Characterize Total Copper Concentrations Below the Ordinary High-Water Mark And Provide Deeper Data
PNKRBG-55	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Above	arsenic, cadmium, copper, lead, mercury, zinc	Additional Data to Further Characterize Total Metals COPCs Above the Ordinary High-Water Mark and provide Deeper Data within the Berth 9 Window
PNKRBG-56	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Below	copper	Re-sample Historic Sample SS-9 Location and Provide Deeper Data
PNKRBG-57	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Above	arsenic, cadmium, copper, lead, mercury, zinc	Additional Data to Further Characterize Total Metals COPCs Above the Ordinary High-Water Mark and Provide Deepr Data on the West End of Berth 9
PNKRBG-58	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Below	copper	Additional Data to Further Characterize Total Copper Concentrations Below the Ordinary High-Water Mark and Provide Deeper Data
PNKRBG-59	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Above	arsenic, cadmium, copper, lead, mercury, zinc	Additional Data to Further Characterize Total Metals COPCs Above the Ordinary High-Water Mark and Provide Deeper Data Downstream of Previous Sample B9-01
PNKRBG-60	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Below	copper	Additional Data to Further Characterize Total Copper Concentrations Below the Ordinary High-Water Mark and Provide Deeper Data Downstream of Previous Sample B9-02
PNKRBG-61	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Above	arsenic, cadmium, copper, lead, mercury, zinc	Additional Data to Further Characterize Total Metals COPCs Above the Ordinary High-Water Mark and Provide Deeper Data Downstream of Previous Sample B9-01
PNKRBG-62	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Below	copper	Additional Data to Further Characterize Total Copper Concentrations Below the Ordinary High-Water Mark and Provide Deeper Data Downstream of Previous Sample B9-02
PNKRBG-63	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Above	arsenic, cadmium, copper, lead, mercury, zinc	Re-sample Historic Sample SS-10 Location and Provide Deeper Data
PNKRBG-64	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Below	copper	Additional Data to Further Characterize Total Copper Concentrations Below the Ordinary High-Water Mark and Provide Deeper Data between SS-11 and B9-02
PNKRBG-65	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Below	copper	Additional Data to Further Characterize Total Copper Concentrations Below the Ordinary High-Water Mark and Provide Deeper Data in front of the sea wall
PNKRBG-66	2.5	NA	<3.5"	Hand Auger / Trowel	0-6, 12-18, 24-30	Below	copper	Additional Data to Further Characterize Total Copper Concentrations Below the Ordinary High-Water Mark and Provide Deeper Data in front of the sea wall

Homogenize sample interval called out for all riverbank samples. Collect soil from the sample internal listed in the Table above. Place in decontaminated stainless steel bowl or plastic container. Homogenize the media. Place appropriate portion of media in laboratory supplied containers. Decontaminate sampling equipment between samples with alcanox and rinse water.

TABLE 2
RIVERBANK ANALYTICAL DATA
BELOW THE ORDINARY HIGH-WATER MARK
METALS COPCs
SUPPLEMENTAL REMDIAL INVESTIGATION
PORT OF VANCOUVER, WA

Sample ID	Date	Sample Depth (inches)	Arsenic (mg/kg)	Cadmium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Zinc (mg/kg)
Fraction			**T**	**T**	**T**	**T**	**T**	**T**
B8-03	6/30/2023	0-4	1.9	0.384	268	7.6	0.0452	102
B9-02	6/30/2023	0-4	1.75	0.12	13.3	4.59	0.048	46.4
B9-03	6/30/2023	0-4	1.41	0.105	11.6	3.3	0.042	38.4
B9-04	6/30/2023	0-4	2.03	0.134	16.3	3.87	0.0534	41.8
KMBT Bank A	7/1/2021	0-6	**209**	**12.7**	**32,700**	**626**	0.35	**4,050**
KMBT Bank B	7/1/2021	0-6	2.67	0.295	119	8.91	0.057	65.9
KMBT Bank C	7/1/2021	0-6	2.55	0.372	150	10.1	0.029	69.5
KMBT Bank D	7/1/2021	0-6	2.09	0.305	132	9.76	0.013 J	62.9
KMBT Bank E	7/1/2021	0-6	2.37	0.205	124	10.4	0.024	61.8
KMBT Bank F	7/1/2021	0-6	2.35	0.235	94.2	7.87	0.014 J	58.8
KMBT Bank G	7/1/2021	0-6	9.5	0.879	**2,070**	36.2	0.113	228
KMBT Bank H	7/1/2021	0-6	**40.4**	**2.53**	**7,870**	127	0.152	647
PNK-RBG01	12/8/2021	0-4	1.9	0.118 J	165	6.84	< 0.0452	56.3
PNK-RBG02	12/8/2021	0-4	2.24	< 0.117	68.9	6.02	< 0.0466	35.9
PNK-RBG08	12/8/2021	0-4	**35.8**	**2.73**	**8,880**	157	0.155	667
PNK-RBG15	12/8/2021	0-4	**36.1**	1.23	**2,260**	41	< 0.0450	483
PNK-RBG16	11/9/2023	0-6	4.6	0.33	**420 B**	53	0.028	120 B
PNK-RBG16	11/9/2023	12-18	5.2 F1	0.19	120 B	21 F2F1	< 0.0060H	100 B
PNK-RBG17	11/8/2023	0-6	8.3	2.1	**2300 B**	120	0.079	480 B
PNK-RBG18	11/8/2023	0-6	13	1.3	**2800 B**	62	0.16	300 B
PNK-RBG23	11/9/2023	0-6	5.6	1	**1300 B**	48	0.033	290 B
PNK-RBG23	11/9/2023	12-18	1.9	0.17	8.4 B	3.9	< 0.0064H	51 B
PNK-RBG28	11/9/2023	0-6	3.3	0.21	150 B	17	< 0.0070	150 B
PNK-RBG28	11/9/2023	12-18	2.1	0.042	20 B	5.5	< 0.0064HF1	39 B
PNK-RBG30	11/9/2023	0-6	3.1	0.37	63 B^2	8.8	0.06	110 B
PNK-RBG30	11/9/2023	12-18	7.8	0.29	52 B	14	< 0.0099H	130 B
SS-4	11/16/2021	0-4	**173**	**5.52**	**12,700**	**4,380**	0.335	1,570
SS-5	11/16/2021	0-4	8.87	0.543	**960**	38.9	< 0.0455	152
SS-8	11/16/2021	0-4	12.8	0.8	**857**	56	0.222	225
SS-9	11/16/2021	0-4	8.39	0.614	**810**	45.8	< 0.0442	223
SS-11	11/16/2021	0-4	2.01	0.191 J	50.1	7.28	< 0.0401	66.5
SS-12	11/16/2021	0-4	1.95	0.164 J	9.11	4.42	< 0.0412	45.2
Sediment Cleanup Objectives								
Sediment Cleanup Objective			**14**	**2.1**	**400**	**360**	**0.66**	**3,200**
Cleanup Screening Level			**120**	**5.4**	**1,200**	**1300 R**	**0.8**	**>4,200**
Soil Screening Levels								
Method A Unrestricted Land Use			**20**	**2**	**--**	**250**	**2**	**--**
Method A Industrial Properties			**20**	**2**	**--**	**1,000**	**2**	**--**
Method B Noncancer			**24**	**80**	**3,200**	**--**	**8 (k)**	**24,000**
Method B Cancer			**0.67**	**--**	**--**	**--**	**--**	**--**
Method C Noncancer			**1,100**	**3500**	**140,000**	**--**	**350 (k)**	**1,100,000**
Method C Cancer			**88**	**--**	**--**	**--**	**--**	**--**
Soil Protective of Groundwater Vadose @ 13 degrees C			**2.9**	**0.69**	**280**	**3,000**	**2.1**	**6,000**
Soil Protective of Groundwater Saturated			**0.15**	**0.035**	**14**	**150**	**0.01**	**300**
Soil Protective of Groundwater to Surface Water Vadose @ 13 degrees C Freshwater			**2.9**	**0.099**	**4.9**	**500**	**0.013**	**120**
Soil Protective of Groundwater to Surface Water Saturated Freshwater			**0.15**	**0.005**	**0.25**	**25**	**0.00063**	**6.2**
Naturally Occurring Background Concentration [a]			**5.81**	**0.9**	**34.4**	**24**	**0.04**	**95.5**

Notes

Bold = Concentration exceeding the SMS Freshwater Sediment Cleanup Objective as listed in table 8.1 of WA State Dept. of Ecology Sediment User's Cleanup Manual

MTCA Method A, Method B and Method C cleanup levels are taken from the Washington State Department of Ecology CLARC Tables 740-1, 740-2 and 745-1.

-- = Not applicable, not analyzed, not sampled or no given value

B = Compound was found in the blank and sample

H = Sample was preparred or analyzed beyond the specified holding time. This does not meet regulatory requirements

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

F1 = MS and/or MSD recovery exceeds control limits

F2 = MS/MSD RPD exceeds control limits

^2 = Calibration Blank (ICB and/or CCB) is outside accepetance limits.

ft bgs = feet below ground surface

mg/kg = milligrams per kilogram

Total Arsenic, Cadmium, Copper, Lead, and Zinc analyzed by EPA Method 1638/6020B.

Total Mercury analyzed by EPA Method 7471A

a = Background concentrations 90th percentile for Clark County from Washington State Department of Ecology's "Natural Background Soil Metals Concentrations in Washington State" Publication Number 94-115. pg.60

TABLE 3
RIVERBANK ANALYTICAL DATA
ABOVE THE ORDINARY HIGH-WATER MARK
METALS COPCs
PHASE 2 SUPPLEMENTAL REMDIAL INVESTIGATION
PORT OF VANCOUVER, WA

Sample ID	Date	Sample Depth (inches)	Arsenic (mg/kg)	Cadmium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Zinc (mg/kg)
Fraction			T	T	T	T	T	T
B8-01	6/30/2023	0-4	**8.99**	**1.35**	**2,120**	**44.3**	**0.191**	**401**
B8-02	6/30/2023	0-4	**44.2**	**2.72**	**5,720**	**242**	**0.19**	**820**
B8-02	8/3/2023	6-12	**8.31**	0.377	**457**	**50.4**	0.0358	**131**
B8-04	6/30/2023	0-4	**21.8**	**1.57**	**2,950**	**70.7**	**0.0895**	**459**
B8-04	8/3/2023	6-12	**45.9**	**2.2**	**4,260**	**166**	**0.178 ****	**643**
B9-01	6/30/2023	0-4	5.8	0.76	**1,220**	**36.1**	**0.0844**	**231**
B9-01	8/3/2023	6-12	1.69	< 0.219 *	**82.5**	5.77	< 0.0326 *	45.3
B9-05	6/30/2023	0-4	4.41	0.887	**1,320**	**26.5**	**0.0838**	**200**
B9-05	8/3/2023	6-12	3	0.268	**181**	11.9	< 0.031 *	75
B9-06	6/30/2023	0-4	**6.67**	**2.1**	**3,110**	**59.3**	**0.141**	**673**
B9-06	8/3/2023	6-12	4.21	0.733	**2,080**	**33.7**	**0.0698**	**249**
B9-07	6/30/2023	0-4	2.87	0.246	**115**	11.6	**0.0836**	**97.6**
B9-07	8/3/2023	6-12	3.01	0.361	**225**	14.6	< 0.0305 *	**122**
B9-08	6/30/2023	0-4	**10.8**	**1.37**	**1,870**	**90.2**	**0.129**	**362**
B9-08	8/3/2023	6-12	2.87	0.271	**525**	15.7	< 0.0323 *	88.9
B9-09	6/30/2023	0-4	**7.71**	0.519	**817**	**44.3**	**0.0806**	**179**
B9-09	8/3/2023	6-12	4.5	0.304	**492**	**31.5**	**0.0446**	**111**
PNK-RBG03	12/8/2021	0-4	2.94	0.318	**553**	11.3	**0.0845 J**	88.7
PNK-RBG04	12/8/2021	0-4	**76.7**	**2.66**	**12,200**	**224**	**0.137**	**830**
PNK-RBG05	12/8/2021	0-4	**29.6**	0.807	**1,540**	**113**	**0.0906**	**264**
PNK-RBG06	12/8/2021	0-4	**24.6**	0.779	**1,590**	**101**	**0.0844 J**	**273**
PNK-RBG07	12/8/2021	0-4	**21.4**	0.892	**1,150**	**87.2**	**0.07 J**	**305**
PNK-RBG09	12/8/2021	0-4	**257**	**3.74**	**11,000**	**935**	**0.457**	**1,080**
PNK-RBG10	12/8/2021	0-4	**68.3**	**1.21**	**2,090**	**236**	**0.176**	**408**
PNK-RBG11	12/8/2021	0-4	**60.3**	**1.04**	**1,220**	**209**	**0.143**	**334**
PNK-RBG12	12/8/2021	0-4	**22.5**	**0.957**	**3,820**	**78.6**	**0.048 J**	**299**
PNK-RBG13	12/8/2021	0-4	**8.11**	0.566	**866**	**26.9**	**< 0.0494**	**177**
PNK-RBG14	12/8/2021	0-4	**12.1**	**37.8**	**15,000**	**130**	**0.0922**	**7,730**
PNK-RBG19	11/8/2023	0-4	**9.2**	0.67	**980 B**	**47**	0.029	**210 B**
PNK-RBG19	11/8/2023	12-18	**6.9**	0.67	**420 B**	**30**	**0.070 H**	**200 B**
PNK-RBG20	11/9/2023	0-4	**34**	0.85	**1500 B**	**120**	**0.093**	**310 B**
PNK-RBG21	11/9/2023	0-4	**30**	**1.4**	**2700 B**	**81**	**0.082**	**370 B**
PNK-RBG22	11/9/2023	0-6	**16 F2F1**	**10**	**7500 B**	**78 F2**	**0.044**	**2600 F2B**
PNK-RBG22	11/9/2023	12-18	**36**	**2.6**	**2500 B**	**190**	0.031 H	**650 B**
PNK-RBG24	11/9/2023	0-6	**12**	**1.2**	**2400 B**	**82**	**0.055**	**320 B**
PNK-RBG24	11/9/2023	0-6	4.6	0.61	**750 B**	8.8	< 0.0080H	**100 B**
PNK-RBG25	11/9/2023	0-6	**51**	**1.3**	**4600 B**	**210**	**0.1**	**430 B**
PNK-RBG25	11/9/2023	12-18	**19**	0.57	**790 B**	**99**	**0.067 H**	**150 B**
PNK-RBG26	11/9/2023	0-6	**15**	0.46	**770 B**	**66**	**0.08**	**180 B**
PNK-RBG26	11/9/2023	12-18	2.7	0.17	**270 B**	10	< 0.0068H	63 B
PNK-RBG27	11/9/2023	0-6	**9.4**	0.53	**770 B**	**180**	**0.049**	**230 B**
PNK-RBG27	11/9/2023	12-18	3.3	0.58	**680 B**	22	< 0.0064H	**150 B**
PNK-RBG29	11/9/2023	0-6	5.1	0.6	**650 F2B**	24	0.026	**200 B**
PNK-RBG29	11/9/2023	12-18	4.6	0.2	**170 B**	12	< 0.0068H	**110 B**
SS-6	11/16/2021	0-4	17.2	0.619	**308**	**122**	**0.0954**	**229**
SS-10	11/16/2021	0-4	2.26	0.186 J	**113**	21.9	**< 0.0437**	56.8
Sediment Cleanup Objectives								
Sediment Cleanup Objective			**14**	**2.1**	**400**	**360**	**0.66**	**3,200**
Cleanup Screening Level			**120**	**5.4**	**1,200**	**1300 R**	**0.8**	**>4,200**
Soil Screening Levels								
Method A Unrestricted Land Use			**20**	**2**	**--**	**250**	**2**	**--**
Method A Industrial Properties			**20**	**2**	**--**	**1,000**	**2**	**--**
Method B Noncancer			**24**	**80**	**3,200**	**--**	**8 (k)**	**24,000**
Method B Cancer			**0.67**	**--**	**--**	**--**	**--**	**--**
Method C Noncancer			**1,100**	**3500**	**140,000**	**--**	**350 (k)**	**1,100,000**
Method C Cancer			**88**	**--**	**--**	**--**	**--**	**--**
Soil Protective of Groundwater Vadose @ 13 degrees C			**2.9**	**0.69**	**280**	**3,000**	**2.1**	**6,000**
Soil Protective of Groundwater Saturated			**0.15**	**0.035**	**14**	**150**	**0.01**	**300**
Soil Protective of Groundwater to Surface Water Vadose @ 13 degrees C Freshwater			**2.9**	**0.099**	**4.9**	**500**	**0.013**	**120**
Soil Protective of Groundwater to Surface Water Saturated Freshwater			**0.15**	**0.005**	**0.25**	**25**	**0.00063**	**6.2**
Naturally Occurring Background Concentration [a]			**5.81**	**0.9**	**34.4**	**24**	**0.04**	**95.5**

Notes
Bold = Concentration exceeding the Naturally Occuring Background Concentration
MTCA Method A, Method B and Method C cleanup levels are taken from the Washington State Department of Ecology CLARC Tables 740-1, 740-2 and 745-1.
B = Compound was found in the blank and sample
H = Sample was preparred or analyzed beyond the specified holding time. This does not meet regulatory requirements.
J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1 = MS and/or MSD recovery exceeds control limits
F2 = MS/MSD RPD exceeds control limits
ft bgs = feet below ground surface
mg/kg = milligrams per kilogram
Total Arsenic, Cadmium, Copper, Lead, and Zinc analyzed by EPA Method 1638/6020B.
Total Mercury analyzed by EPA Method 7471A
* = reporting limit value
** = sample was not analyzed by method EPA 1631E
a = Background concentrations 90th percentile for Clark County from Washington State Department of Ecology's "Natural Background Soil Metals Concentrations in Washington State" Publication Number 94-115. pg.60

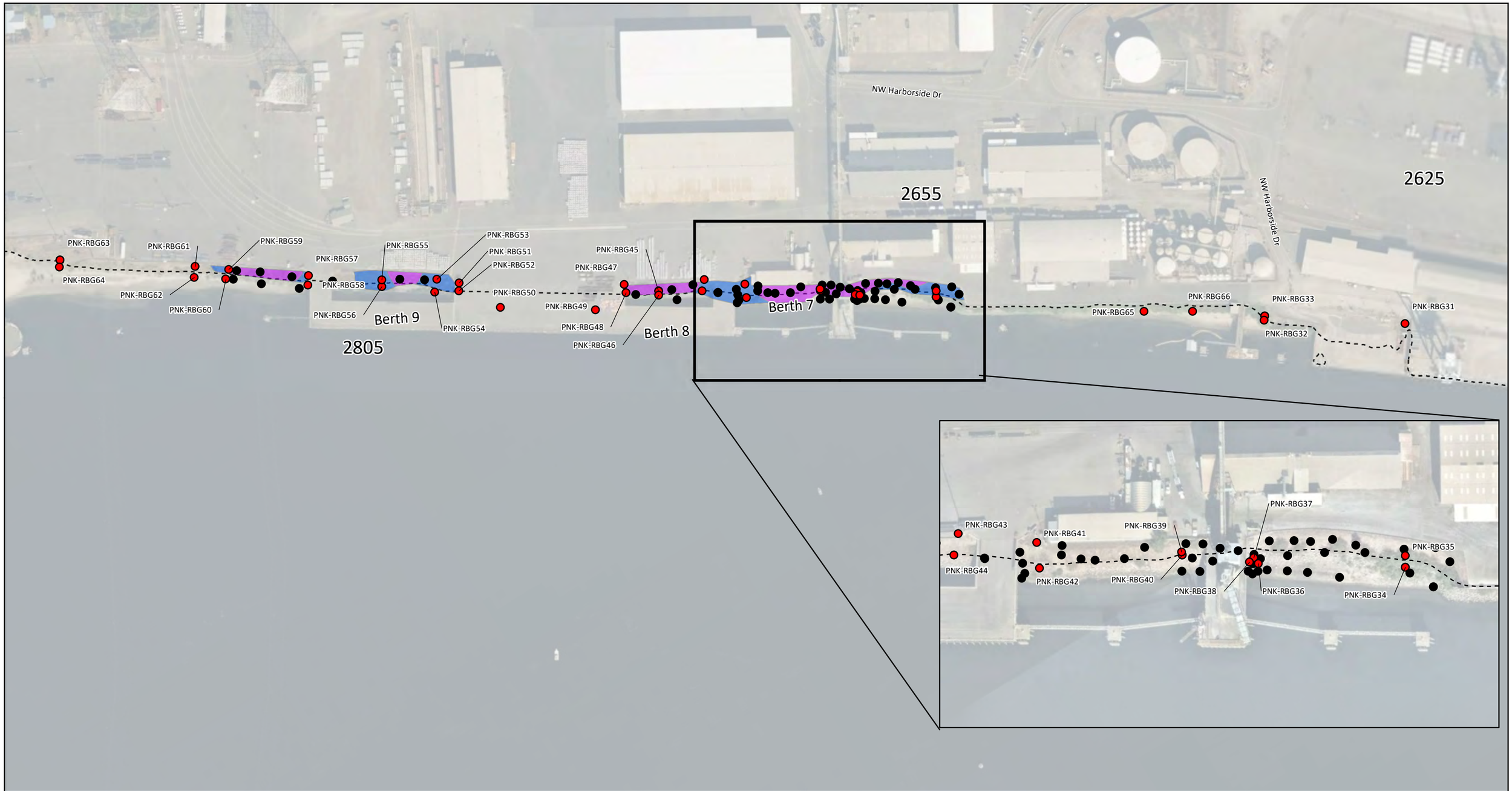
Sam Meng
Department of Ecology
September 13, 2024

Figure

Figure 1 – Proposed 2024 Riverbank Sample Locations

Figure 2 – Proposed 2024 Upland Sample Locations

Figure 3 – Historical Riverbank Sample Locations



Legend

- 2024 Proposed Riverbank Sample Location
- Riverbank Sample Location
- Exceedance of Copper Cleanup Screening Level
- Exceedance of Copper Sediment Cleanup Objective
- Columbia River Ordinary High Water Mark

N

0 70 140 280 420 560 Feet

FIGURE 1

RIVERBANK SAMPLE LOCATION
PORT OF VANCOUVER, NUSTAR, AND KINDER MORGAN
VANCOUVER, WASHINGTON

PROJECT NO.	PREPARED BY	REF SCALE
Kinder Morgan	*SAA*	*1:3,240*
DATE	**REVIEWED BY**	**MAP SCALE**
9/5/2024	*BJ*	*1 INCH = 270 FEET*

antea group

Z:\!GIS Projects\Kinder Morgan\Kinder Morgan Vancouver Bulk Terminal\Layout\Riverbank Sample Locations_20240726.mxd

Legend

- Proposed 2024 Upland Sample Location
- Phase I Groundwater Sample
- Phase I Groundwater/Soil Sample
- Monitoring Well
- Historical Groundwater Extraction Well

Bold concentrations are above Naturally Occuring Background Concentrations

0 35 70 105 140 280 420 Feet

FIGURE 2

PROPOSED 2024 UPLAND SAMPLE LOCATIONS
PORT OF VANCOUVER, NUSTAR, AND KINDER MORGAN
VANCOUVER, WASHINGTON

PROJECT NO.	PREPARED BY	REF SCALE
Kinder Morgan	*SAA*	*1:1,080*
DATE	REVIEWED BY	MAP SCALE
5/30/2024	*BL*	*1 INCH = 90 FEET*

anteagroup

Z:\!GIS Projects\Kinder Morgan\Kinder Morgan Vancouver Bulk Terminal\Layout\Proposed 2024 Upland Sample Locations.mxd

Legend

- Historical Riverbank Sample Location
- Columbia River Ordinary High Water Mark

0 80 160 320 480 640 Feet

FIGURE 3

HISTORICAL RIVERBANK SAMPLE LOCATION
PORT OF VANCOUVER, NUSTAR, AND KINDER MORGAN
VANCOUVER, WASHINGTON

PROJECT NO.	PREPARED BY	REF SCALE
Kinder Morgan	*SAA*	*1:3,720*
DATE	**REVIEWED BY**	**MAP SCALE**
8/1/2024	*BJ*	*1 INCH = 310 FEET*

anteagroup

Z:\!GIS Projects\Kinder Morgan\Kinder Morgan Vancouver Bulk Terminal\Layout\Riverbank Sample Locations_20240412.mxd

Sam Meng
Department of Ecology
September 13, 2024

Appendix A – Photo Log - Site Visit conducted on July 17, 2024

Photo log

Photo 1 – Low dock at east end of study area.

Photo 2 – Soil evident at northeast corner of low dock. Proposed sampling location.

Photo 3 – Proposed sample location below SS-6 location. East of Nu-Star dock.

Photo 4 – Sandy beach west of Nu-Star dock.

Photo 5 – Heavy riprap and blackberries below seawall West of Nu-Star dock.

Photo 6 – Bank between Seawall and Berth 7.

Photo 7 – Under dock between Berth 8 and Berth 9. Looking west.

Photo 8 – East end of Berth 8 in “window”.

Photo 9 –Looking west at Berth 9 in “window”.

Photo 10 – Under dock at east end of Berth 9.

Photo 11 – At Berth 9 looking east towards Berth 8.

Photo 12 – At Berth 9 looking west towards sandy beach.

Photo 13 – At Sandy Beach looking west.

Photo 1 – Low dock at east end of study area.		
Photo 2 – Soil evident at northeast corner of low dock. Proposed sampling location.		

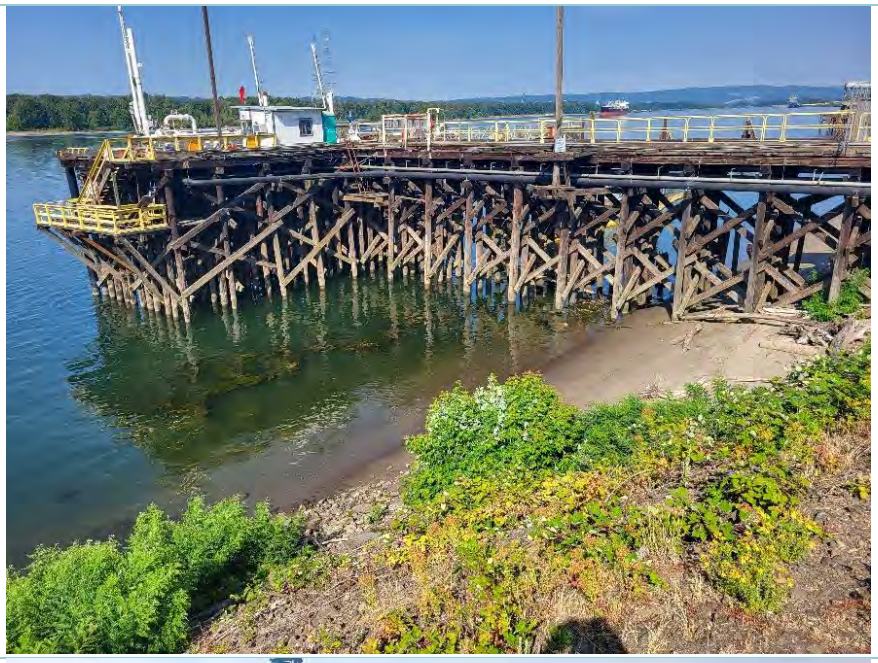
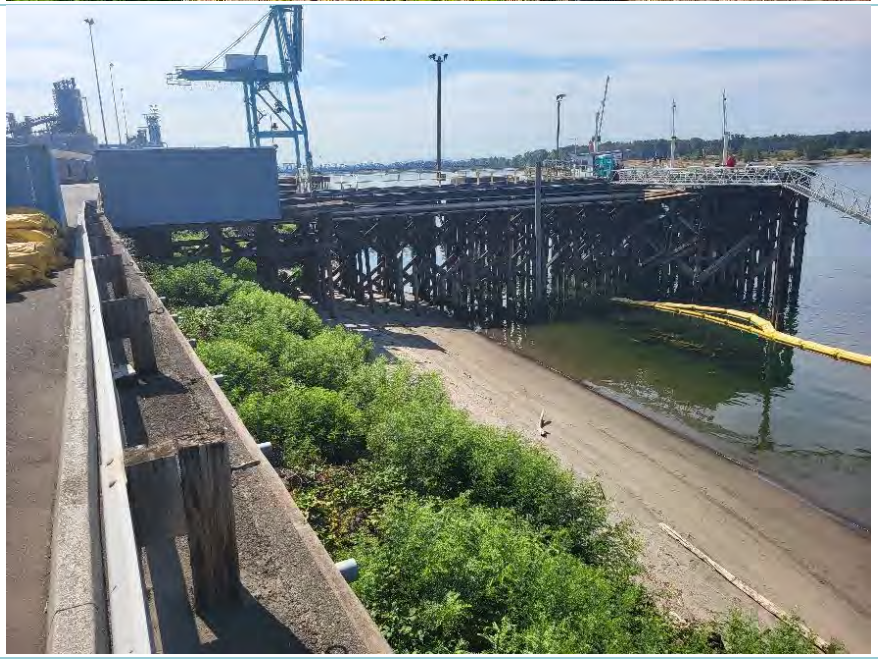
Photo 3 – Proposed sample location below SS-6 location. East of Nu-Star dock.		
Photo 4 – Sandy beach west of Nu-Star dock.		

Photo 5 – Heavy riprap and blackberries below seawall West of Nu-Star dock.		
Photo 6 – Bank between Seawall and Berth 7.		

Photo 7 – Under dock between Berth 8 and Berth 9. Looking west.		
Photo 8 – East end of Berth 8 in “window”.		

Photo 9 – Looking west at Berth 9 in “window”.		
Photo 10 – Under dock at east end of Berth 9.		

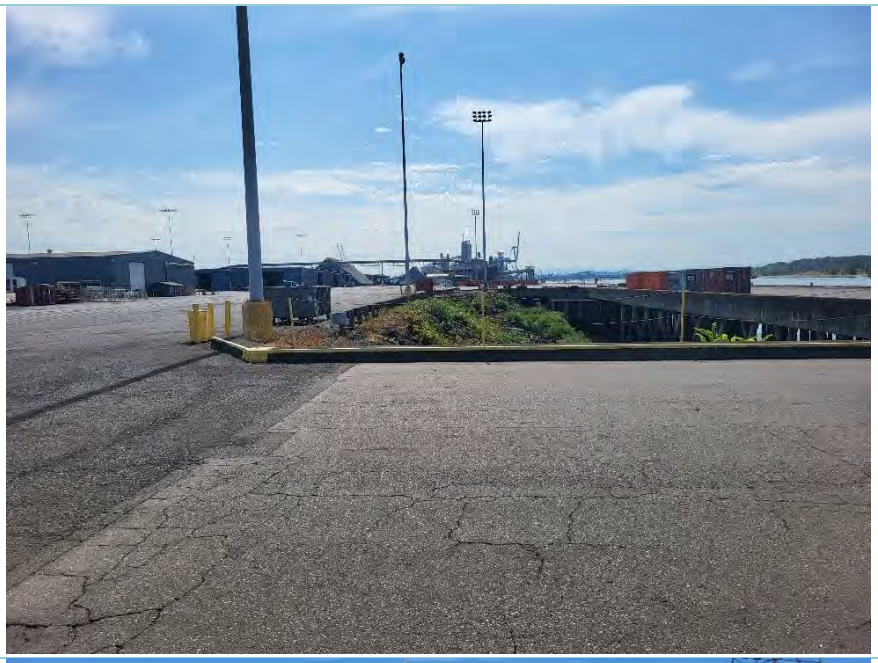
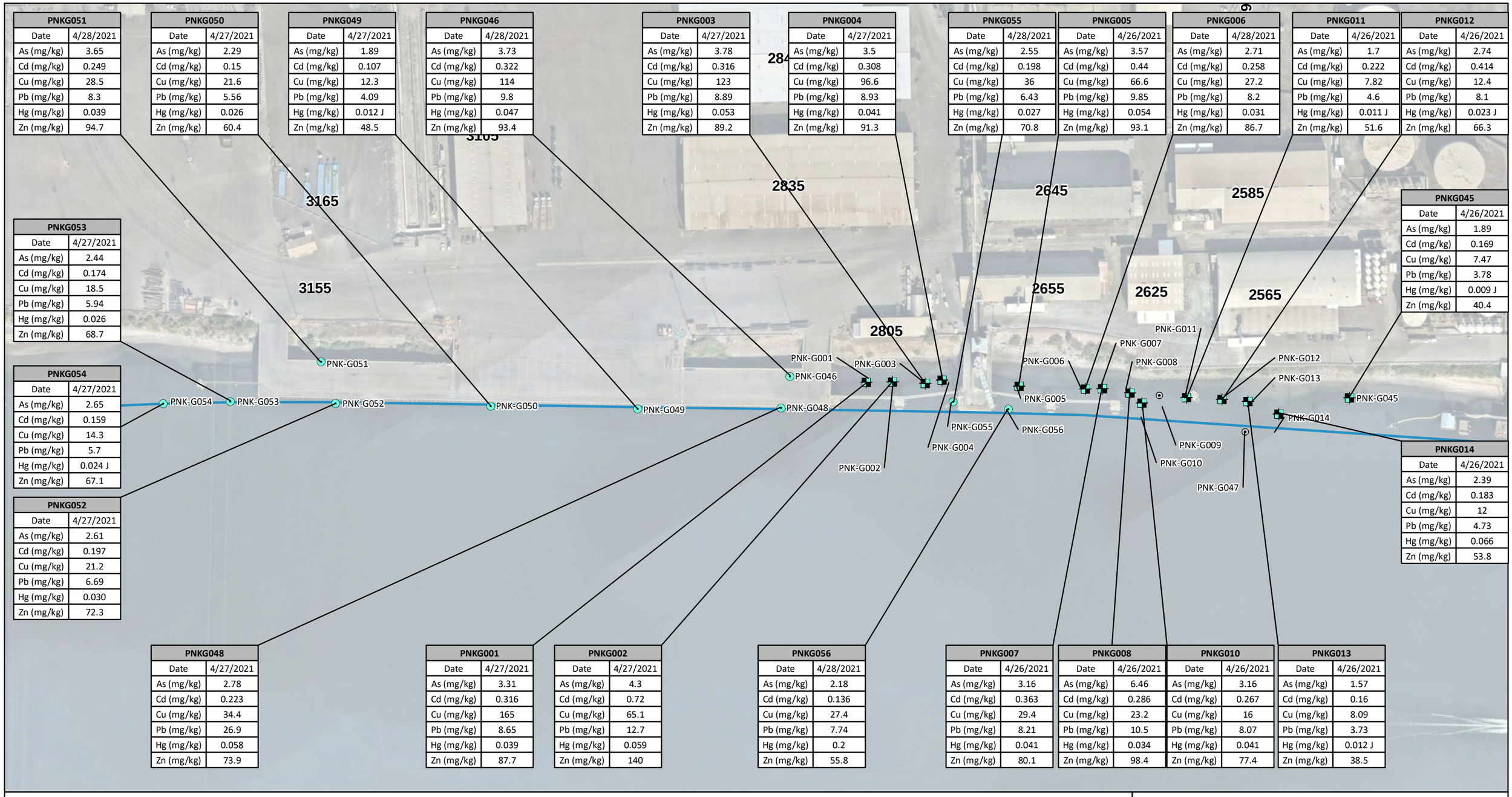
Photo 11 – At Berth 9 looking east towards Berth 8.		
Photo 12 – At Berth 9 looking west towards sandy beach.		

Photo 13 – At Sandy Beach looking west.		

Sam Meng
Department of Ecology
September 13, 2024

Appendix B – Figure 5 from 2022, Phase I Supplemental Remedial Investigation Sediment Investigation Results



PNKG051	
Date	4/28/2021
As (mg/kg)	3.65
Cd (mg/kg)	0.249
Cu (mg/kg)	28.5
Pb (mg/kg)	8.3
Hg (mg/kg)	0.039
Zn (mg/kg)	94.7

PNKG050	
Date	4/27/2021
As (mg/kg)	2.29
Cd (mg/kg)	0.15
Cu (mg/kg)	21.6
Pb (mg/kg)	5.56
Hg (mg/kg)	0.026
Zn (mg/kg)	60.4

PNKG049	
Date	4/27/2021
As (mg/kg)	1.89
Cd (mg/kg)	0.107
Cu (mg/kg)	12.3
Pb (mg/kg)	4.09
Hg (mg/kg)	0.012 J
Zn (mg/kg)	48.5

PNKG046	
Date	4/28/2021
As (mg/kg)	3.73
Cd (mg/kg)	0.322
Cu (mg/kg)	114
Pb (mg/kg)	9.8
Hg (mg/kg)	0.047
Zn (mg/kg)	93.4

PNKG003	
Date	4/27/2021
As (mg/kg)	3.78
Cd (mg/kg)	0.316
Cu (mg/kg)	123
Pb (mg/kg)	8.89
Hg (mg/kg)	0.053
Zn (mg/kg)	89.2

PNKG004	
Date	4/27/2021
As (mg/kg)	3.5
Cd (mg/kg)	0.308
Cu (mg/kg)	96.6
Pb (mg/kg)	8.93
Hg (mg/kg)	0.041
Zn (mg/kg)	91.3

PNKG055	
Date	4/28/2021
As (mg/kg)	2.55
Cd (mg/kg)	0.198
Cu (mg/kg)	36
Pb (mg/kg)	6.43
Hg (mg/kg)	0.027
Zn (mg/kg)	70.8

PNKG005	
Date	4/26/2021
As (mg/kg)	3.57
Cd (mg/kg)	0.44
Cu (mg/kg)	66.6
Pb (mg/kg)	9.85
Hg (mg/kg)	0.054
Zn (mg/kg)	93.1

PNKG006	
Date	4/28/2021
As (mg/kg)	2.71
Cd (mg/kg)	0.258
Cu (mg/kg)	27.2
Pb (mg/kg)	8.2
Hg (mg/kg)	0.031
Zn (mg/kg)	86.7

PNKG011	
Date	4/26/2021
As (mg/kg)	1.7
Cd (mg/kg)	0.222
Cu (mg/kg)	7.82
Pb (mg/kg)	4.6
Hg (mg/kg)	0.011 J
Zn (mg/kg)	51.6

PNKG012	
Date	4/26/2021
As (mg/kg)	2.74
Cd (mg/kg)	0.414
Cu (mg/kg)	12.4
Pb (mg/kg)	8.1
Hg (mg/kg)	0.023 J
Zn (mg/kg)	66.3

PNKG053	
Date	4/27/2021
As (mg/kg)	2.44
Cd (mg/kg)	0.174
Cu (mg/kg)	18.5
Pb (mg/kg)	5.94
Hg (mg/kg)	0.026
Zn (mg/kg)	68.7

PNKG045	
Date	4/26/2021
As (mg/kg)	1.89
Cd (mg/kg)	0.169
Cu (mg/kg)	7.47
Pb (mg/kg)	3.78
Hg (mg/kg)	0.009 J
Zn (mg/kg)	40.4

PNKG054	
Date	4/27/2021
As (mg/kg)	2.65
Cd (mg/kg)	0.159
Cu (mg/kg)	14.3
Pb (mg/kg)	5.7
Hg (mg/kg)	0.024 J
Zn (mg/kg)	67.1

PNKG014	
Date	4/26/2021
As (mg/kg)	2.39
Cd (mg/kg)	0.183
Cu (mg/kg)	12
Pb (mg/kg)	4.73
Hg (mg/kg)	0.066
Zn (mg/kg)	53.8

PNKG052	
Date	4/27/2021
As (mg/kg)	2.61
Cd (mg/kg)	0.197
Cu (mg/kg)	21.2
Pb (mg/kg)	6.69
Hg (mg/kg)	0.030
Zn (mg/kg)	72.3

PNKG048	
Date	4/27/2021
As (mg/kg)	2.78
Cd (mg/kg)	0.223
Cu (mg/kg)	34.4
Pb (mg/kg)	26.9
Hg (mg/kg)	0.058
Zn (mg/kg)	73.9

PNKG001	
Date	4/27/2021
As (mg/kg)	3.31
Cd (mg/kg)	0.316
Cu (mg/kg)	165
Pb (mg/kg)	8.65
Hg (mg/kg)	0.039
Zn (mg/kg)	87.7

PNKG002	
Date	4/27/2021
As (mg/kg)	4.3
Cd (mg/kg)	0.72
Cu (mg/kg)	65.1
Pb (mg/kg)	12.7
Hg (mg/kg)	0.059
Zn (mg/kg)	140

PNKG056	
Date	4/28/2021
As (mg/kg)	2.18
Cd (mg/kg)	0.136
Cu (mg/kg)	27.4
Pb (mg/kg)	7.74
Hg (mg/kg)	0.2
Zn (mg/kg)	55.8

PNKG007	
Date	4/26/2021
As (mg/kg)	3.16
Cd (mg/kg)	0.363
Cu (mg/kg)	29.4
Pb (mg/kg)	8.21
Hg (mg/kg)	0.041
Zn (mg/kg)	80.1

PNKG008	
Date	4/26/2021
As (mg/kg)	6.46
Cd (mg/kg)	0.286
Cu (mg/kg)	23.2
Pb (mg/kg)	10.5
Hg (mg/kg)	0.034
Zn (mg/kg)	98.4

PNKG010	
Date	4/26/2021
As (mg/kg)	3.16
Cd (mg/kg)	0.267
Cu (mg/kg)	16
Pb (mg/kg)	8.07
Hg (mg/kg)	0.041
Zn (mg/kg)	77.4

PNKG013	
Date	4/26/2021
As (mg/kg)	1.57
Cd (mg/kg)	0.16
Cu (mg/kg)	8.09
Pb (mg/kg)	3.73
Hg (mg/kg)	0.012 J
Zn (mg/kg)	38.5

Legend

- Surface grab and subsurface samples (max 7 ft core)
- Surface grab sample only
- Sample not collected due to poor sediment recovery
- Dredge Line

Notes:
J - The identification of the analyte is acceptable; the report value is an estimate

Analytical results were compared to the SMS Freshwater SCO and CSL.
No exceedances were reported

As - Arsenic
Cd - Cadmium
Cu - Copper
Pb - Lead
Zn - Zinc
Hg - Mercury

0 50 100 200 300 400 Feet

FIGURE 5
SURFACE SEDIMENT ANALYTICAL DATA METALS
KINDER MORGAN - VAN RIFS 2020
SHORE TERMINALS, LLC. VANCOUVER FACILITY
VANCOUVER, WASHINGTON

PROJECT NO.	PREPARED BY	REF SCALE
Kinder Morgan	*MB*	*1:2,400*
DATE	REVIEWED BY	MAP SCALE
7/28/2022	*BJ*	*1 INCH = 200 FEET*

anteagroup

C:\Users\Saraa2\Antea USA, Inc\NCGH-Digital Solutions2021 - Geospatial - private - !TEMP GIS Files\Kinder Morgan\Kinder Morgan Vancouver Bulk Terminal\Layout\Fig4_GrabGroundwaterSample.mxd

Sam Meng
Department of Ecology
September 13, 2024

Appendix C – Table 3 from 2022, Phase I Supplemental Remedial Investigation Sediment Investigation Results

TABLE 3

Surface Sediment Analytical Data - Metals COPCs

Supplemental Remedial Investigation

Port of Vancouver, Washington

Well ID	Date	SURFACE SEDIMENT ANALYTICAL DATA					
		Arsenic (mg/kg)	Cadmium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Zinc (mg/kg)
Fraction		T	T	T	T	T	T
PNK-G001	4/27/2021	3.31	0.316	165	8.65	0.039	87.7
PNK-G002	4/27/2021	4.30	0.720	65.1	12.7	0.059	140
PNK-G003	4/27/2021	3.78	0.316	123	8.89	0.053	89.2
PNK-G004	4/27/2021	3.50	0.308	96.6	8.93	0.041	91.3
PNK-G005	4/26/2021	3.57	0.440	66.6	9.85	0.054	93.1
PNK-G006	4/28/2021	2.71	0.258	27.2	8.2	0.031	86.7
PNK-G007	4/26/2021	3.16	0.363	29.4	8.21	0.041	80.1
PNK-G008	4/26/2021	6.46	0.286	23.2	10.5	0.034	98.4
PNK-G010	4/26/2021	3.16	0.267	16.0	8.07	0.041	77.4
PNK-G011	4/26/2021	1.70	0.222	7.82	4.60	0.011 J	51.6
PNK-G012	4/26/2021	2.74	0.414	12.4	8.10	0.023 J	66.3
PNK-G013	4/26/2021	1.57	0.160	8.09	3.73	0.012 J	38.5
PNK-G014	4/26/2021	2.39	0.183	12.0	4.73	0.066	53.8
PNK-G045	4/26/2021	1.89	0.169	7.47	3.78	0.009 J	40.4
PNK-G046	4/28/2021	3.73	0.322	114	9.8	0.047	93.4
PNK-G048	4/27/2021	2.78	0.223	34.4	26.9	0.058	73.9
PNK-G049	4/27/2021	1.89	0.107	12.3	4.09	0.012 J	48.5
PNK-G050	4/27/2021	2.29	0.150	21.6	5.56	0.026	60.4
PNK-G051	4/28/2021	3.65	0.249	28.5	8.3	0.039	94.7
PNK-G052	4/27/2021	2.61	0.197	21.2	6.69	0.030	72.3
PNK-G053	4/27/2021	2.44	0.174	18.5	5.94	0.026	68.7
PNK-G054	4/27/2021	2.65	0.159	14.3	5.70	0.024 J	67.1
PNK-G055	4/28/2021	2.55	0.198	36.0	6.43	0.027	70.8
PNK-G056	4/28/2021	2.18	0.136	27.4	7.74	0.2	55.8
Sediment Cleanup Objective		14	2.1	400	360	0.66	3200
Cleanup Screening Level		120	5.4	1200	1300 R	0.8	>4200 R

Notes:

J = The result is an estimated value.

mg/kg = milligrams per kilograms

T = Total

Sediment Cleanup Objective and Cleanup Screening Level for SMS Freshwater Sediment taken from SCUM Table 8-1

R = value indicates that the toxic level is unknown, but above the concentration shown

Total Mercury analyzed by EPA Method 7471A.

Total Arsenic, Cadmium, Copper, Lead and Zinc analyzed by EPA Method 6020A.

Sam Meng
Department of Ecology
May 12, 2025

Appendix B – Photo Log

Photolog

Photo 1 – Landscape overview of bank sample PNK-RBG64. Furthest downriver sample location. Looking Northwest.
Photo 2 – Hand Augered soil of PNK-RBG64.
Photo 3 – Landscape overview of PNK-RBG63. Looking Northwest.
Photo 4 – Hand augered soil sample from PNK-RBG63. Furthest downriver sample above OHWM.
Photo 5 – Sample location PNK-RBG62.
Photo 6 – Sample location PNK-RBG60. Looking Northwest.
Photo 7 – Proposed sample location PNK-RBG58. Soil not visible. Predominantly large rip rap.
Photo 8 – Actual sample location PNK-RBG58. Moved slightly towards river due to large riprap. Looking Northwest.
Photo 9 – Sample location PNK-RBG61. Looking Northeast.
Photo 10 – Landscape overview of sample location PNK-RBG59. Looking North.
Photo 11 – Hand augered soil from PNK-RBG59. Looking North.
Photo 12 – Landscape overview of sample location of PNK-RBG57. Looking South.
Photo 13 – Sample location PNK-RBG55. Looking Southeast.
Photo 14 – Land surface near PNK-RBG54. Looking North.
Photo 15 – Sample location PNK-RBG54.
Photo 16 – Sample location PNK-RBG53. Looking Northeast.
Photo 17 – Bramble and riprap near sample location PNK-RBG45.
Photo 18 – Sample location PNK-RBG45. Vegetation removal prior to sampling. Looking Southeast.
Photo 19 – Hand augered soil from PNK-RBG45.
Photo 20 – Riprap near sample location PNK-RBG43.
Photo 21 – Surface conditions near PNK-RBG42. Looking North.
Photo 22 – Sample location PNK-RBG52. Concrete and woody debris amongst riprap. Looking Northeast.
Photo 23 – Sample location PNK-RBG50. Looking Southeast.
Photo 24 – Sample location PNK-RBG40. Looking North.
Photo 25 – Sample location and hand augered soil at PNK-RBG35. Metallic debris present.
Photo 26 – Ground surface near location PNK-RBG38. Looking Northeast.
Photo 27 – Sample location PNK-RBG37.
Photo 28 – Sample location PNK-RBG34.
Photo 29 – Sample location PNK-RBG31. Looking Southeast.
Photo 30 – Landscape overview at sample location PNK-RBG66. Looking Southeast.
Photo 31 – Sample location PNK-RBG66.

Photo 1 – Landscape overview of bank sample PNK-RBG64. Furthest downriver sample location. Looking Northwest.		

Photo 2 – Hand Augered soil of PNK-RBG64.	

Photo 3 – Landscape overview of PNK-RBG63. Looking Northwest.		

Photo 4 – Hand augered soil sample from PNK-RBG63. Furthest downriver sample above OHWM.	

Photo 5 – Sample location PNK-RBG62.	

Photo 6 – Sample location PNK-RBG60. Looking Northwest.		

Photo 7 – Proposed sample location PNK-RBG58. Soil not visible. Predominantly large rip rap.		

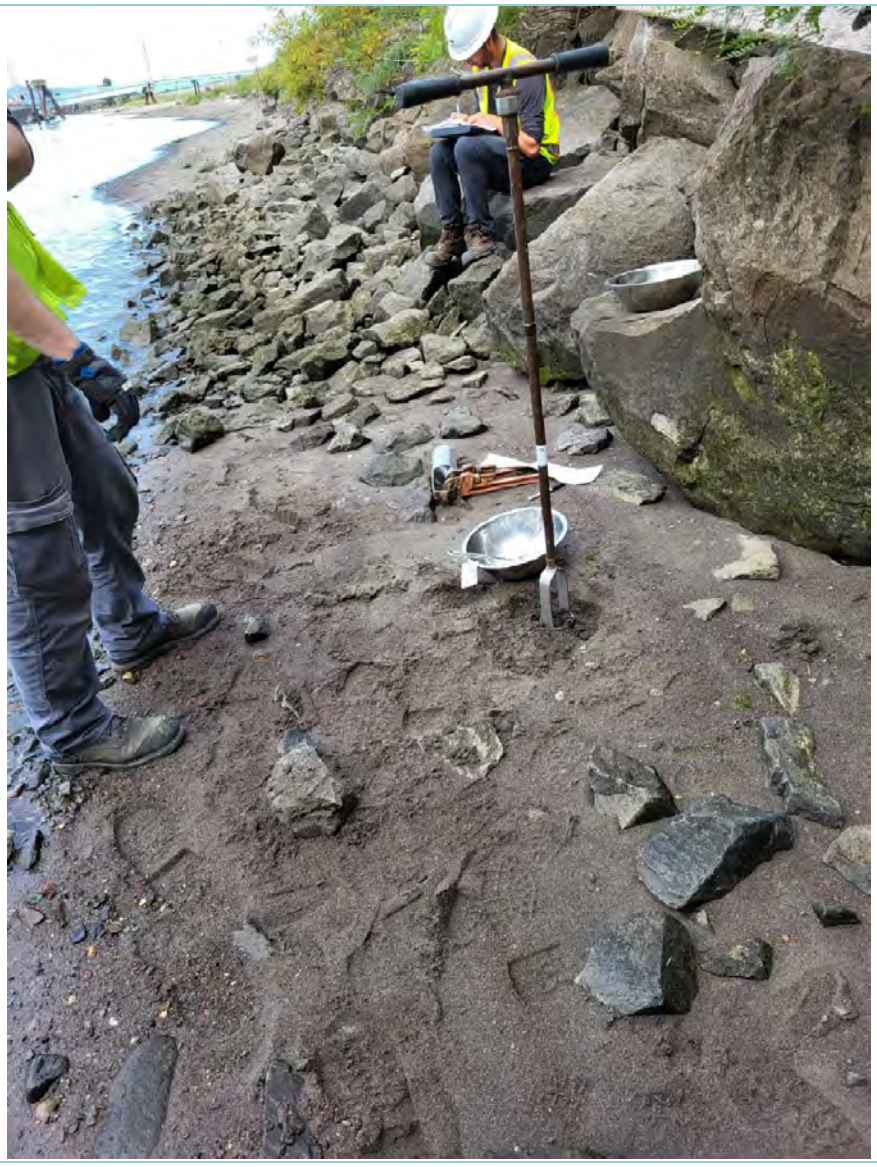
Photo 8 – Actual **sample** location PNK-RBG58. Moved slightly towards river due to large riprap. Looking Northwest.	

Photo 9 – Sample location PNK-RBG61. Looking Northeast.		

Photo 10 – Landscape overview of sample location PNK-RBG59. Looking North.	

Photo 11 – Hand augered soil from PNK-RBG59. Looking North.		

Photo 12 – Landscape overview of sample location of PNK-RBG57. Looking South.		

Photo 13 – Sample location PNK-RBG55. Looking Southeast.		

Photo 14 – Land surface near PNK-RBG54. Looking North.		

Photo 15 – Sample location PNK-RBG54.	

Photo 16 – Sample location PNK-RBG53. Looking Northeast.		

Photo 17 – Bramble and riprap near sample location PNK-RBG45.	

Photo 18 – Sample location PNK-RBG45. Vegetation removal prior to sampling. Looking Southeast.		

Photo 19 – Hand augered soil from PNK-RBG45.	

Photo 20 – Riprap near sample location PNK-RBG43.	

Photo 21 – Surface conditions near PNK-RBG42. Looking North.		

Photo 22 – Sample location PNK-RBG52. Concrete and woody debris amongst riprap. Looking Northeast.		

Photo 23 – Sample location PNK-RBG50. Looking Southeast.	

Photo 24 – Sample location PNK-RBG40. Looking North.	

Photo 25 – Sample location and hand augered soil at PNK-RBG35. Metallic debris present.	

Photo 26 – Ground surface near location PNK-RBG38. Looking Northeast.		

Photo 27 – Sample location PNK-RBG37.		

Photo 28 – Sample location PNK-RBG34.		

Photo 29 – Sample location PNK-RBG31. Looking Southeast.	

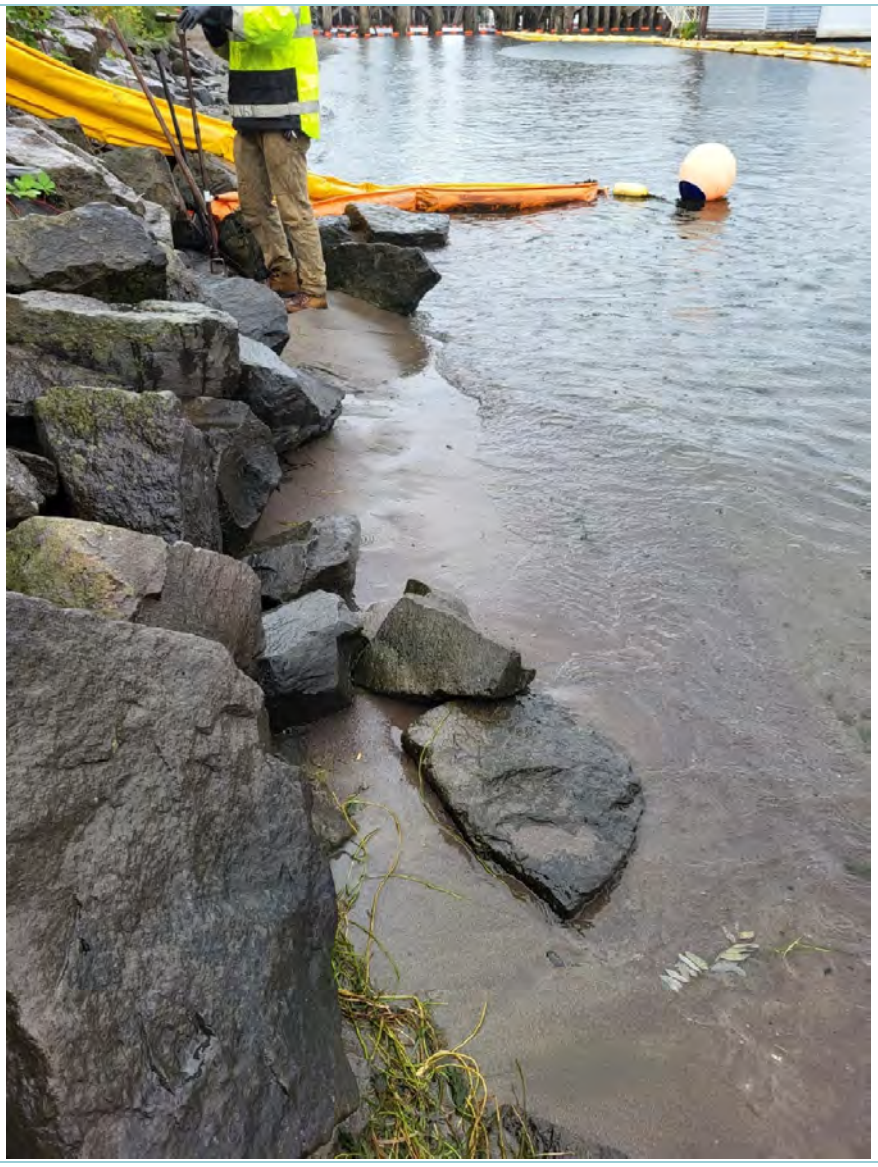
Photo 30 – Landscape overview at sample location PNK-RBG66. Looking Southeast.		

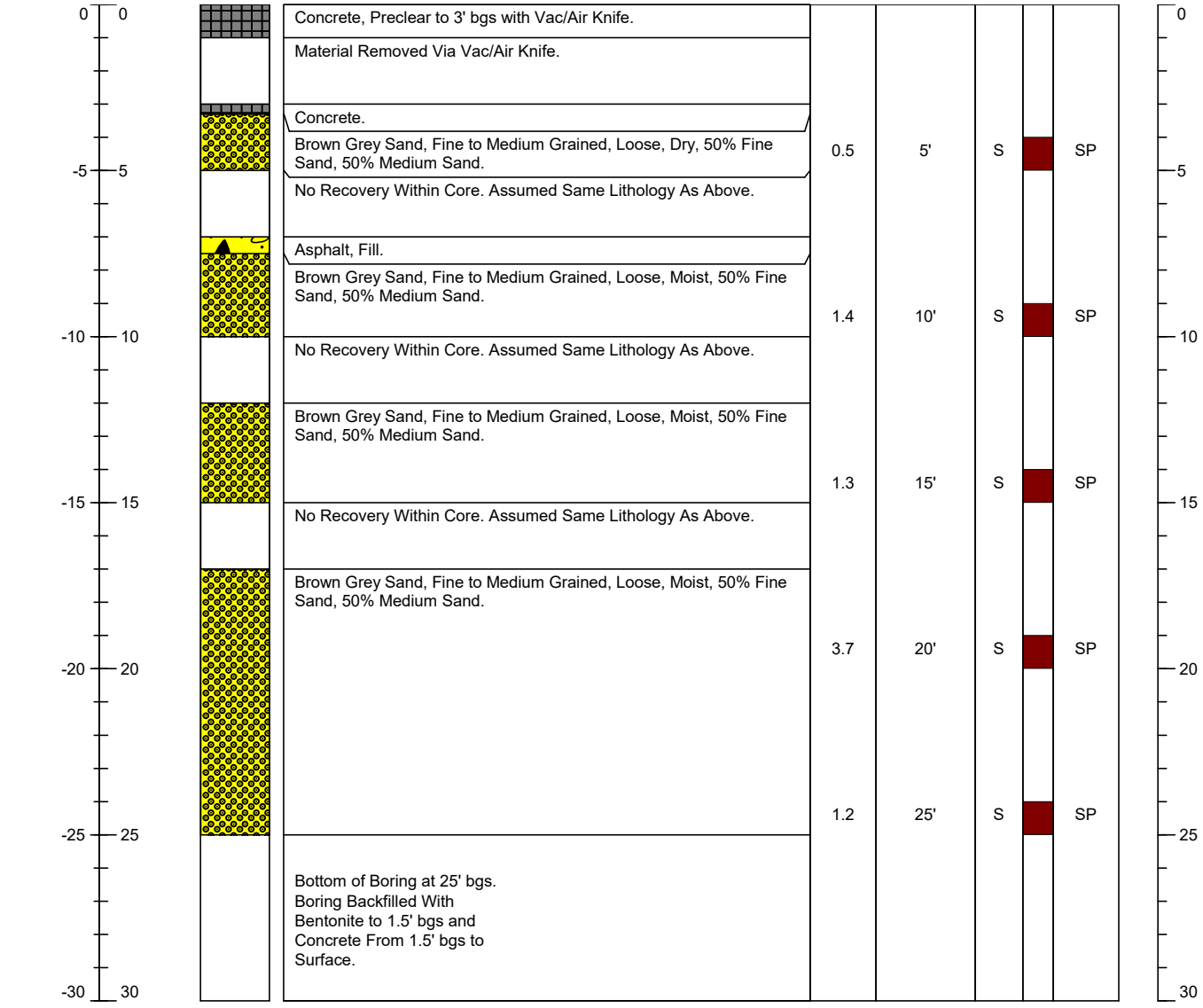
Photo 31 – Sample location PNK-RBG66.	

Sam Meng
Department of Ecology
May 12, 2025

Appendix C – Boring Logs

Project Name	Soil Boring Log	Soil Boring Number
Port of Vancouver, Nustar and Kinder Morgan		SRI-176

Address **2565 NW Harborside Drive** **Vancouver** **WA**	Drilling Contractor/License **Cascade**	Headspace Monitoring Device **PID**	Boring Depth **25'**
	Drilling Method **Sonic**	Sampling Method **Continuous**	Boring Diameter **6"**
Logged By / Approved By **J. Karambelas** / **K. McCarthy**	Drilling Equipment **Sonic**	Sampling Equipment **Plastic Sheath**	Backfill Material / Surface Finish **Bentonite / Concrete**
Antea Group Project Number **Kinder Morgan-VanRIFS2020**	Driller Name **C. Baker**	Date Drilling Started **9/24/2024**	Date Drilling Completed **9/24/2024**



S - Sonic

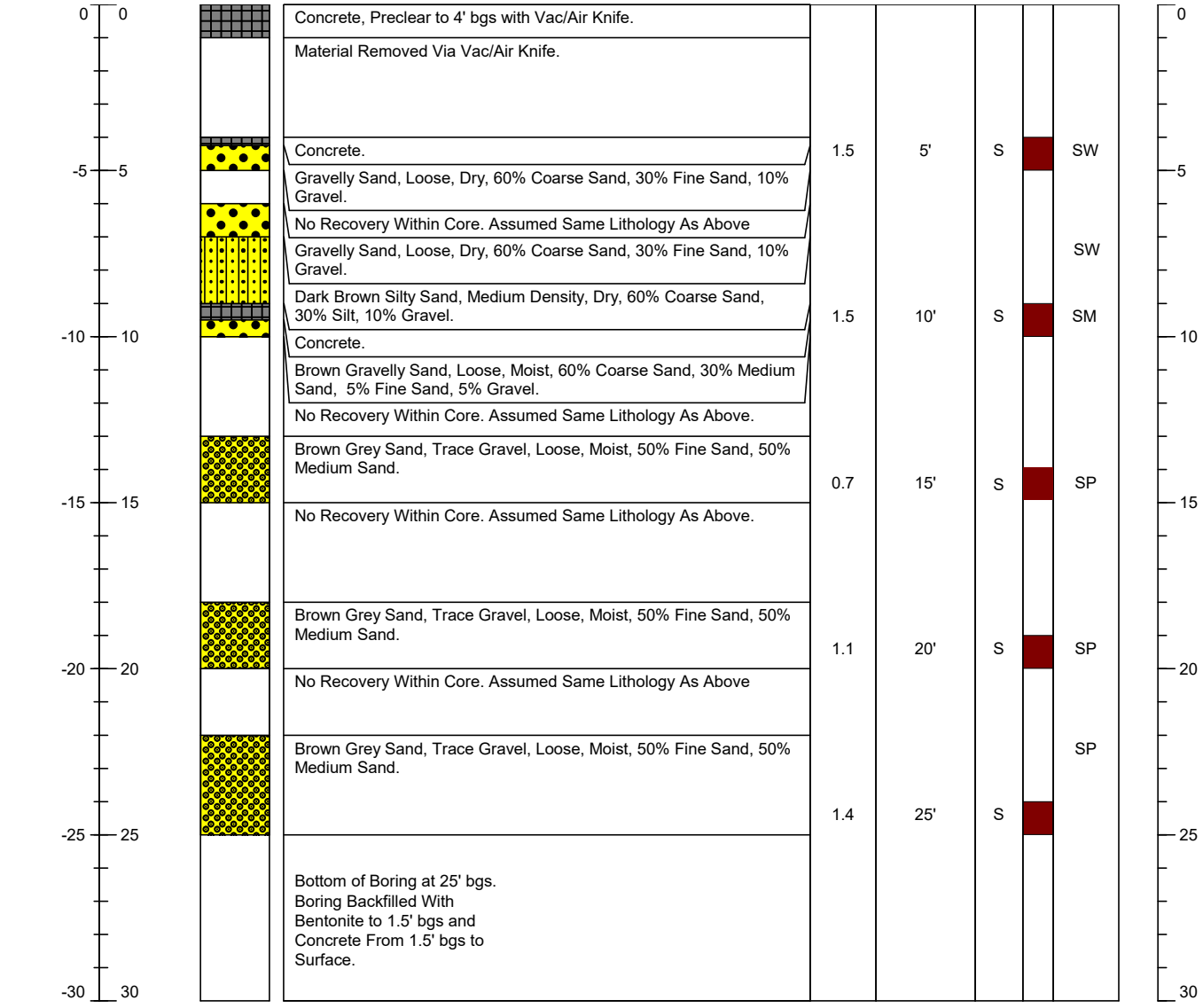
Water Level During Drilling

antea group

INOGEN ALLIANCE

Project Name	Soil Boring Log	Soil Boring Number
Port of Vancouver, Nustar and Kinder Morgan		SRI-177

Address **2565 NW Harborside Drive** **Vancouver** **WA**	Drilling Contractor/License **Cascade**	Headspace Monitoring Device **PID**	Boring Depth **25'**
	Drilling Method **Sonic**	Sampling Method **Continuous**	Boring Diameter **6"**
Logged By **J. Karambelas** Approved By **K. McCarthy**	Drilling Equipment **Sonic**	Sampling Equipment **Plastic Sheath**	Backfill Material / Surface Finish **Bentonite / Concrete**
Antea Group Project Number **Kinder Morgan-VanRIFS2020**	Driller Name **C. Baker**	Date Drilling Started **9/24/2024**	Date Drilling Completed **9/24/2024**

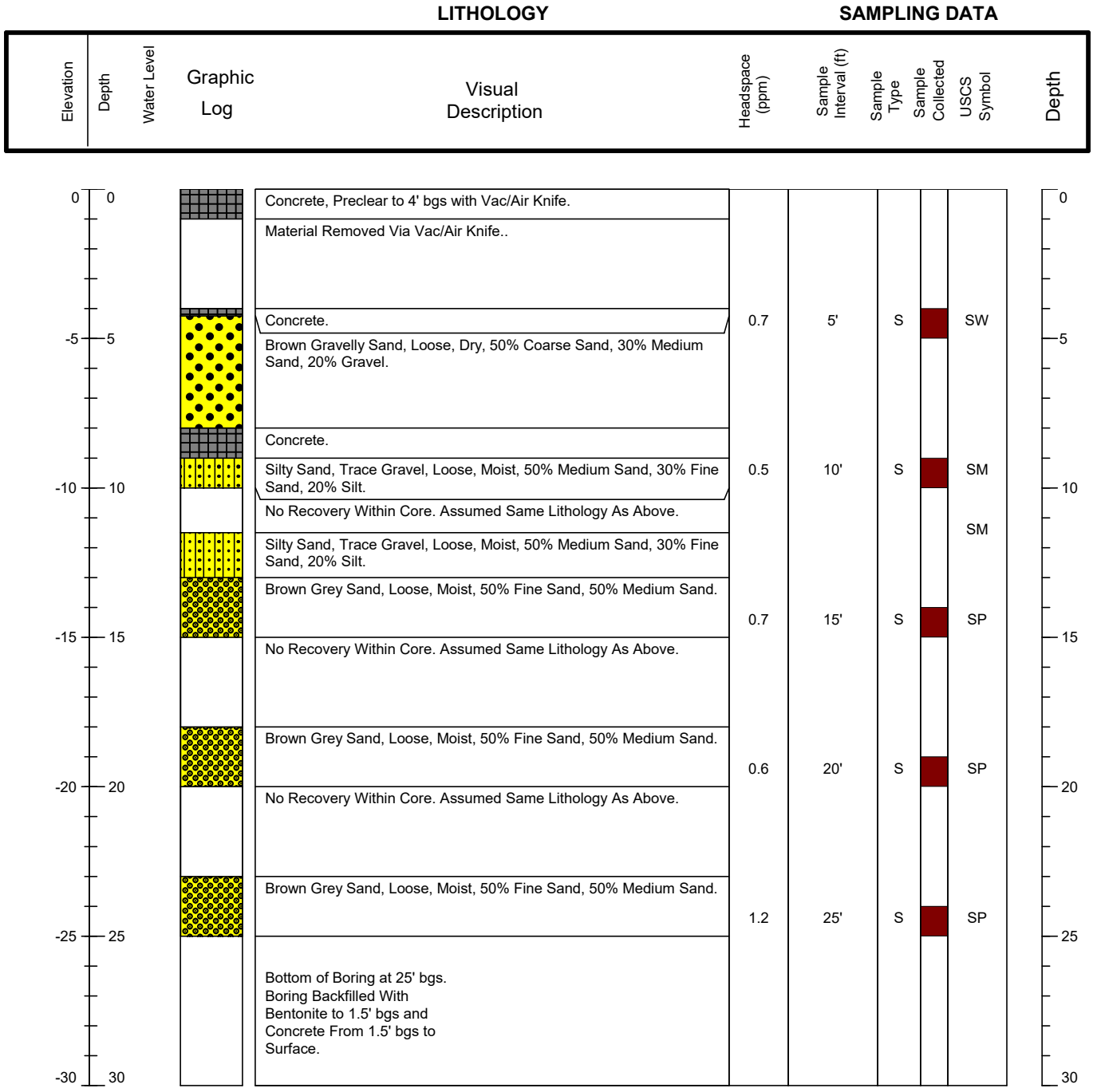


S - Sonic

Water Level During Drilling

Project Name	Soil Boring Log	Soil Boring Number
Port of Vancouver, Nustar and Kinder Morgan		SRI-178

Address **2565 NW Harborside Drive** **Vancouver** **WA**	Drilling Contractor/License **Cascade**	Headspace Monitoring Device **PID**	Boring Depth **25'**
	Drilling Method **Sonic**	Sampling Method **Continuous**	Boring Diameter **6"**
Logged By / Approved By **J. Karambelas** / **K. McCarthy**	Drilling Equipment **Sonic**	Sampling Equipment **Plastic Sheath**	Backfill Material / Surface Finish **Bentonite / Concrete**
Antea Group Project Number **Kinder Morgan-VanRIFS2020**	Driller Name **C. Baker**	Date Drilling Started **9/24/2024**	Date Drilling Completed **9/24/2024**



S - Sonic

Water Level During Drilling

Project Name	Soil Boring Log	Soil Boring Number
Port of Vancouver, Nustar and Kinder Morgan		SRI-179

Address **2565 NW Harborside Drive** **Vancouver** **WA**	Drilling Contractor/License **Cascade**	Headspace Monitoring Device **PID**	Boring Depth **25'**
	Drilling Method **Sonic**	Sampling Method **Continuous**	Boring Diameter **6"**
Logged By **J. Karambelas** Approved By **K. McCarthy**	Drilling Equipment **Sonic**	Sampling Equipment **Plastic Sheath**	Backfill Material / Surface Finish **Bentonite / Concrete**
Antea Group Project Number **Kinder Morgan-VanRIFS2020**	Driller Name **C. Baker**	Date Drilling Started **9/24/2024**	Date Drilling Completed **9/24/2024**

LITHOLOGY **SAMPLING DATA**

Elevation	Depth	Water Level	Graphic Log	Visual Description	Headspace (ppm)	Sample Interval (ft)	Sample Type	Sample Collected	USCS Symbol	Depth
0	0			Concrete, Preclear to 5' bgs with Vac/Air Knife.						0
				Material Removed Via Vac/Air Knife.						
-5	5			Brown Sand with Gravel, Loose, Dry, 60% Coarse Sand, 25% Medium Sand, 10% Gravel, 5% Fine Sand.	0.1	5'	S		SW	5
				Concrete.					SW	
-10	10			Brown Sand with Gravel, Loose, Dry, 60% Coarse Sand, 25% Medium Sand, 10% Gravel, 5% Fine Sand.	0.3	10'	S		SM	10
				Brown Silty Sand, Dense, Moist, 70% Fine Sand, 20% Medium Sand, 10% Silt.						
				No Recovery Within Core. Assumed Same Lithology As Above.					SM	
				Brown Silty Sand, Dense, Moist, 70% Fine Sand, 20% Medium Sand, 10% Silt.						
-15	15			Brown Grey Sand, Loose, Moist, 50% Fine Sand, 50% Medium Sand.	0.3	15'	S		SP	15
				No Recovery Within Core. Assumed Same Lithology As Above.						
-20	20			Brown Grey Sand, Loose, Moist, 50% Fine Sand, 50% Medium Sand.	0.6	20'	S		SP	20
				No Recovery Within Core. Assumed Same Lithology As Above.						
-25	25			Brown Grey Sand, Loose, Moist, 50% Fine Sand, 50% Medium Sand.	0.7	25'	S		SP	25
				Bottom of Boring at 25' bgs. Boring Backfilled With Bentonite to 1.5' bgs and Concrete From 1.5' bgs to Surface.						
-30	30									30

S - Sonic

Water Level During Drilling

antea group

INOGEN ALLIANCE

Sam Meng
Department of Ecology
May 12, 2025

Appendix D – Laboratory Analytical Reports

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Brad Jackson
Antea USA Inc.
205 SE Spokane Street
Suite 300
Portland, Oregon 97202

Generated 10/28/2024 7:02:07 AM

JOB DESCRIPTION

NuStar Split GWM / KM Van RIFS

JOB NUMBER

350-1015-1

Eurofins Seattle Specialty Metals
5755 8th Street East
Tacoma WA 98424

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northwest, LLC Project Manager.

Authorization

Generated
10/28/2024 7:02:07 AM

Authorized for release by
Lilly-Anna LaCount, Project Manager
Lilly-Anna.Lacount@et.eurofinsus.com
(253)922-2310

Table of Contents

Definitions/Glossary

Client: Antea USA Inc. Job ID: 350-1015-1
Project/Site: NuStar Split GWM / KM Van RIFS

Qualifiers

Metals

Qualifier	Qualifier Description
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL, and the absolute difference between results is < the upper reporting limits for both.
H	Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 350-1015-1 Eurofins Seattle Specialty Metals

Job Narrative
350-1015-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 9/26/2024 12:20 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.2°C.

Metals
Method 7471B: The following samples were prepared outside of preparation holding time due to being received outside of hold time : SRI-176-5 (350-1015-1), SRI-176-10 (350-1015-2), SRI-176-15 (350-1015-3), SRI-176-20 (350-1015-4), SRI-176-25 (350-1015-5), SRI-177-5 (350-1015-6), SRI-177-10 (350-1015-7), SRI-177-15 (350-1015-8), SRI-177-20 (350-1015-9), SRI-177-25 (350-1015-10), SRI-178-5 (350-1015-11), SRI-178-10 (350-1015-12), SRI-178-15 (350-1015-13), SRI-178-20 (350-1015-14), SRI-178-25 (350-1015-15), SRI-179-5 (350-1015-16), SRI-179-10 (350-1015-17), SRI-179-15 (350-1015-18), SRI-179-20 (350-1015-19), SRI-179-25 (350-1015-20), (350-1015-A-1 MS) and (350-1015-A-1 MSD).

Method 7471B: The following samples were analyzed outside of analytical holding time due to being received outside of holding time: SRI-176-5 (350-1015-1), SRI-176-10 (350-1015-2), SRI-176-15 (350-1015-3), SRI-176-20 (350-1015-4), SRI-176-25 (350-1015-5), SRI-177-5 (350-1015-6), SRI-177-10 (350-1015-7), SRI-177-15 (350-1015-8), SRI-177-20 (350-1015-9), SRI-177-25 (350-1015-10), SRI-178-5 (350-1015-11), SRI-178-10 (350-1015-12), SRI-178-15 (350-1015-13), SRI-178-20 (350-1015-14), SRI-178-25 (350-1015-15), SRI-179-5 (350-1015-16), SRI-179-10 (350-1015-17), SRI-179-15 (350-1015-18), SRI-179-20 (350-1015-19), SRI-179-25 (350-1015-20), (350-1015-A-1-G MS), (350-1015-A-1-H MSD) and (350-1015-A-1-F SD ^5).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1015-1

Client Sample ID: SRI-176-5 — Lab Sample ID: 350-1015-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.5		0.36	0.073	mg/Kg	10	☼	6020B	Total/NA
Lead	3.0		0.36	0.077	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.089	J	0.58	0.056	mg/Kg	10	☼	6020B	Total/NA
Copper	7.1		1.5	0.37	mg/Kg	10	☼	6020B	Total/NA
Zinc	37		3.7	1.2	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.18	H	0.021	0.0049	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: SRI-176-10 — Lab Sample ID: 350-1015-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.7		0.37	0.074	mg/Kg	10	☼	6020B	Total/NA
Lead	2.8		0.37	0.078	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.22	J	0.59	0.057	mg/Kg	10	☼	6020B	Total/NA
Copper	7.4		1.5	0.37	mg/Kg	10	☼	6020B	Total/NA
Zinc	42		3.8	1.2	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.11	H	0.022	0.0050	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: SRI-176-15 — Lab Sample ID: 350-1015-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.6		0.35	0.070	mg/Kg	10	☼	6020B	Total/NA
Lead	2.5		0.35	0.075	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.18	J	0.56	0.054	mg/Kg	10	☼	6020B	Total/NA
Copper	6.8		1.4	0.36	mg/Kg	10	☼	6020B	Total/NA
Zinc	40		3.6	1.1	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.018	J H	0.021	0.0048	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: SRI-176-20 — Lab Sample ID: 350-1015-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	2.0		0.37	0.075	mg/Kg	10	☼	6020B	Total/NA
Lead	3.8		0.37	0.079	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.19	J	0.60	0.058	mg/Kg	10	☼	6020B	Total/NA
Copper	6.8		1.5	0.38	mg/Kg	10	☼	6020B	Total/NA
Zinc	56		3.8	1.2	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.030	H	0.021	0.0049	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: SRI-176-25 — Lab Sample ID: 350-1015-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	2.4		0.39	0.078	mg/Kg	10	☼	6020B	Total/NA
Lead	6.0		0.39	0.083	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.13	J	0.63	0.060	mg/Kg	10	☼	6020B	Total/NA
Copper	11		1.6	0.40	mg/Kg	10	☼	6020B	Total/NA
Zinc	48		4.0	1.3	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.040	H	0.022	0.0051	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: SRI-177-5 — Lab Sample ID: 350-1015-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	6.2		0.42	0.084	mg/Kg	10	☼	6020B	Total/NA
Lead	28		0.42	0.089	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.29	J	0.67	0.065	mg/Kg	10	☼	6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1015-1

Client Sample ID: SRI-177-5 (Continued) — Lab Sample ID: 350-1015-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	170		1.7	0.43	mg/Kg	10	☼	6020B	Total/NA
Zinc	140		4.3	1.4	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.035	H	0.021	0.0049	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: SRI-177-10 — Lab Sample ID: 350-1015-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	6.0		0.43	0.087	mg/Kg	10	☼	6020B	Total/NA
Lead	36		0.43	0.092	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.16	J	0.69	0.067	mg/Kg	10	☼	6020B	Total/NA
Copper	26		1.7	0.44	mg/Kg	10	☼	6020B	Total/NA
Zinc	87		4.4	1.4	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.037	H	0.022	0.0050	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: SRI-177-15 — Lab Sample ID: 350-1015-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.5		0.37	0.074	mg/Kg	10	☼	6020B	Total/NA
Lead	2.7		0.37	0.078	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.14	J	0.59	0.057	mg/Kg	10	☼	6020B	Total/NA
Copper	7.1		1.5	0.37	mg/Kg	10	☼	6020B	Total/NA
Zinc	40		3.8	1.2	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.020	J H	0.022	0.0050	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: SRI-177-20 — Lab Sample ID: 350-1015-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	2.1		0.35	0.070	mg/Kg	10	☼	6020B	Total/NA
Lead	3.3		0.35	0.074	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.19	J	0.56	0.054	mg/Kg	10	☼	6020B	Total/NA
Copper	8.8		1.4	0.35	mg/Kg	10	☼	6020B	Total/NA
Zinc	51		3.5	1.1	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.015	J H	0.021	0.0048	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: SRI-177-25 — Lab Sample ID: 350-1015-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	2.3		0.39	0.079	mg/Kg	10	☼	6020B	Total/NA
Lead	5.8		0.39	0.084	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.11	J	0.63	0.061	mg/Kg	10	☼	6020B	Total/NA
Copper	9.1		1.6	0.40	mg/Kg	10	☼	6020B	Total/NA
Zinc	46		4.0	1.3	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.0080	J H	0.021	0.0048	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: SRI-178-5 — Lab Sample ID: 350-1015-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	4.1		0.42	0.083	mg/Kg	10	☼	6020B	Total/NA
Lead	75		0.42	0.088	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.46	J	0.67	0.064	mg/Kg	10	☼	6020B	Total/NA
Copper	450		1.7	0.42	mg/Kg	10	☼	6020B	Total/NA
Zinc	140		4.3	1.3	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.18	H	0.022	0.0051	mg/Kg	1	☼	7471B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1015-1

Client Sample ID: SRI-178-10 — Lab Sample ID: 350-1015-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	5.7		0.45	0.089	mg/Kg	10	☼	6020B	Total/NA
Lead	92		0.45	0.095	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.46	J	0.71	0.069	mg/Kg	10	☼	6020B	Total/NA
Copper	40		1.8	0.45	mg/Kg	10	☼	6020B	Total/NA
Zinc	150		4.6	1.4	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.077	H	0.022	0.0051	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: SRI-178-15 — Lab Sample ID: 350-1015-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.7		0.36	0.071	mg/Kg	10	☼	6020B	Total/NA
Lead	2.9		0.36	0.075	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.13	J	0.57	0.055	mg/Kg	10	☼	6020B	Total/NA
Copper	7.4		1.4	0.36	mg/Kg	10	☼	6020B	Total/NA
Zinc	40		3.6	1.1	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.047	H	0.021	0.0048	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: SRI-178-20 — Lab Sample ID: 350-1015-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	2.0		0.38	0.076	mg/Kg	10	☼	6020B	Total/NA
Lead	9.9		0.38	0.081	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.15	J	0.61	0.059	mg/Kg	10	☼	6020B	Total/NA
Copper	19		1.5	0.38	mg/Kg	10	☼	6020B	Total/NA
Zinc	50		3.9	1.2	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.018	J H	0.021	0.0049	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: SRI-178-25 — Lab Sample ID: 350-1015-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	2.1		0.34	0.067	mg/Kg	10	☼	6020B	Total/NA
Lead	7.3		0.34	0.072	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.087	J	0.54	0.052	mg/Kg	10	☼	6020B	Total/NA
Copper	13		1.3	0.34	mg/Kg	10	☼	6020B	Total/NA
Zinc	42		3.4	1.1	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.021	J H	0.022	0.0050	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: SRI-179-5 — Lab Sample ID: 350-1015-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	4.1		0.35	0.070	mg/Kg	10	☼	6020B	Total/NA
Lead	34		0.35	0.074	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.19	J	0.56	0.054	mg/Kg	10	☼	6020B	Total/NA
Copper	36		1.4	0.35	mg/Kg	10	☼	6020B	Total/NA
Zinc	120		3.6	1.1	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.0079	J H	0.021	0.0048	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: SRI-179-10 — Lab Sample ID: 350-1015-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	5.2		0.39	0.077	mg/Kg	10	☼	6020B	Total/NA
Lead	56		0.39	0.082	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.35	J	0.62	0.060	mg/Kg	10	☼	6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1015-1

Client Sample ID: SRI-179-10 (Continued)

Lab Sample ID: 350-1015-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	21		1.5	0.39	mg/Kg	10	☼	6020B	Total/NA
Zinc	120		3.9	1.2	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.016	J H	0.024	0.0055	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: SRI-179-15

Lab Sample ID: 350-1015-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.3		0.31	0.062	mg/Kg	10	☼	6020B	Total/NA
Lead	2.4		0.31	0.066	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.13	J	0.50	0.048	mg/Kg	10	☼	6020B	Total/NA
Copper	6.7		1.2	0.32	mg/Kg	10	☼	6020B	Total/NA
Zinc	40		3.2	1.0	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.017	J H	0.021	0.0048	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: SRI-179-20

Lab Sample ID: 350-1015-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.7		0.31	0.062	mg/Kg	10	☼	6020B	Total/NA
Lead	2.7		0.31	0.065	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.20	J	0.49	0.047	mg/Kg	10	☼	6020B	Total/NA
Copper	8.3		1.2	0.31	mg/Kg	10	☼	6020B	Total/NA
Zinc	47		3.1	0.99	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.047	H	0.022	0.0050	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: SRI-179-25

Lab Sample ID: 350-1015-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	2.7		0.35	0.070	mg/Kg	10	☼	6020B	Total/NA
Lead	7.9		0.35	0.075	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.098	J	0.56	0.054	mg/Kg	10	☼	6020B	Total/NA
Copper	13		1.4	0.36	mg/Kg	10	☼	6020B	Total/NA
Zinc	60		3.6	1.1	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.019	J H	0.022	0.0050	mg/Kg	1	☼	7471B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: SRI-176-5
Lab Sample ID: 350-1015-1
Date Collected: 09/24/24 14:10 **Matrix: Solid**
Date Received: 09/26/24 12:20 **Percent Solids: 96.4**

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.5		0.36	0.073	mg/Kg	☼	10/16/24 06:44	10/18/24 21:00	10
Lead	3.0		0.36	0.077	mg/Kg	☼	10/16/24 06:44	10/18/24 21:00	10
Cadmium	0.089	J	0.58	0.056	mg/Kg	☼	10/16/24 06:44	10/18/24 21:00	10
Copper	7.1		1.5	0.37	mg/Kg	☼	10/16/24 06:44	10/18/24 21:00	10
Zinc	37		3.7	1.2	mg/Kg	☼	10/16/24 06:44	10/18/24 21:00	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.18	H	0.021	0.0049	mg/Kg	☼	10/25/24 09:07	10/25/24 13:00	1

Client Sample ID: SRI-176-10
Lab Sample ID: 350-1015-2
Date Collected: 09/24/24 14:40 **Matrix: Solid**
Date Received: 09/26/24 12:20 **Percent Solids: 95.7**

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.7		0.37	0.074	mg/Kg	☼	10/16/24 06:44	10/18/24 21:22	10
Lead	2.8		0.37	0.078	mg/Kg	☼	10/16/24 06:44	10/18/24 21:22	10
Cadmium	0.22	J	0.59	0.057	mg/Kg	☼	10/16/24 06:44	10/18/24 21:22	10
Copper	7.4		1.5	0.37	mg/Kg	☼	10/16/24 06:44	10/18/24 21:22	10
Zinc	42		3.8	1.2	mg/Kg	☼	10/16/24 06:44	10/18/24 21:22	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.11	H	0.022	0.0050	mg/Kg	☼	10/25/24 09:07	10/25/24 13:09	1

Client Sample ID: SRI-176-15
Lab Sample ID: 350-1015-3
Date Collected: 09/24/24 15:00 **Matrix: Solid**
Date Received: 09/26/24 12:20 **Percent Solids: 96.0**

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.6		0.35	0.070	mg/Kg	☼	10/16/24 06:44	10/18/24 21:24	10
Lead	2.5		0.35	0.075	mg/Kg	☼	10/16/24 06:44	10/18/24 21:24	10
Cadmium	0.18	J	0.56	0.054	mg/Kg	☼	10/16/24 06:44	10/18/24 21:24	10
Copper	6.8		1.4	0.36	mg/Kg	☼	10/16/24 06:44	10/18/24 21:24	10
Zinc	40		3.6	1.1	mg/Kg	☼	10/16/24 06:44	10/18/24 21:24	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.018	J H	0.021	0.0048	mg/Kg	☼	10/25/24 09:07	10/25/24 13:10	1

Client Sample ID: SRI-176-20
Lab Sample ID: 350-1015-4
Date Collected: 09/24/24 15:10 **Matrix: Solid**
Date Received: 09/26/24 12:20 **Percent Solids: 95.8**

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.0		0.37	0.075	mg/Kg	☼	10/16/24 06:44	10/18/24 21:27	10
Lead	3.8		0.37	0.079	mg/Kg	☼	10/16/24 06:44	10/18/24 21:27	10
Cadmium	0.19	J	0.60	0.058	mg/Kg	☼	10/16/24 06:44	10/18/24 21:27	10
Copper	6.8		1.5	0.38	mg/Kg	☼	10/16/24 06:44	10/18/24 21:27	10

Client Sample ID: SRI-176-20 — Lab Sample ID: 350-1015-4

Date Collected: 09/24/24 15:10 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 95.8

Method: SW846 6020B - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	56		3.8	1.2	mg/Kg	☼	10/16/24 06:44	10/18/24 21:27	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.030	H	0.021	0.0049	mg/Kg	☼	10/25/24 09:07	10/25/24 13:11	1

Client Sample ID: SRI-176-25 — Lab Sample ID: 350-1015-5

Date Collected: 09/24/24 16:46 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 92.8

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.4		0.39	0.078	mg/Kg	☼	10/16/24 06:44	10/18/24 21:29	10
Lead	6.0		0.39	0.083	mg/Kg	☼	10/16/24 06:44	10/18/24 21:29	10
Cadmium	0.13	J	0.63	0.060	mg/Kg	☼	10/16/24 06:44	10/18/24 21:29	10
Copper	11		1.6	0.40	mg/Kg	☼	10/16/24 06:44	10/18/24 21:29	10
Zinc	48		4.0	1.3	mg/Kg	☼	10/16/24 06:44	10/18/24 21:29	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.040	H	0.022	0.0051	mg/Kg	☼	10/25/24 09:07	10/25/24 13:13	1

Client Sample ID: SRI-177-5 — Lab Sample ID: 350-1015-6

Date Collected: 09/24/24 11:40 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 91.3

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	6.2		0.42	0.084	mg/Kg	☼	10/16/24 06:44	10/18/24 21:31	10
Lead	28		0.42	0.089	mg/Kg	☼	10/16/24 06:44	10/18/24 21:31	10
Cadmium	0.29	J	0.67	0.065	mg/Kg	☼	10/16/24 06:44	10/18/24 21:31	10
Copper	170		1.7	0.43	mg/Kg	☼	10/16/24 06:44	10/18/24 21:31	10
Zinc	140		4.3	1.4	mg/Kg	☼	10/16/24 06:44	10/18/24 21:31	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.035	H	0.021	0.0049	mg/Kg	☼	10/25/24 09:07	10/25/24 13:14	1

Client Sample ID: SRI-177-10 — Lab Sample ID: 350-1015-7

Date Collected: 09/24/24 12:00 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 90.1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	6.0		0.43	0.087	mg/Kg	☼	10/16/24 06:44	10/18/24 21:33	10
Lead	36		0.43	0.092	mg/Kg	☼	10/16/24 06:44	10/18/24 21:33	10
Cadmium	0.16	J	0.69	0.067	mg/Kg	☼	10/16/24 06:44	10/18/24 21:33	10
Copper	26		1.7	0.44	mg/Kg	☼	10/16/24 06:44	10/18/24 21:33	10
Zinc	87		4.4	1.4	mg/Kg	☼	10/16/24 06:44	10/18/24 21:33	10

Client Sample ID: SRI-177-10 — Lab Sample ID: 350-1015-7

Date Collected: 09/24/24 12:00 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 90.1

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.037	H	0.022	0.0050	mg/Kg	☼	10/25/24 09:07	10/25/24 13:15	1

Client Sample ID: SRI-177-15 — Lab Sample ID: 350-1015-8

Date Collected: 09/24/24 12:15 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 95.8

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.5		0.37	0.074	mg/Kg	☼	10/16/24 06:44	10/18/24 21:35	10
Lead	2.7		0.37	0.078	mg/Kg	☼	10/16/24 06:44	10/18/24 21:35	10
Cadmium	0.14	J	0.59	0.057	mg/Kg	☼	10/16/24 06:44	10/18/24 21:35	10
Copper	7.1		1.5	0.37	mg/Kg	☼	10/16/24 06:44	10/18/24 21:35	10
Zinc	40		3.8	1.2	mg/Kg	☼	10/16/24 06:44	10/18/24 21:35	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.020	J H	0.022	0.0050	mg/Kg	☼	10/25/24 09:07	10/25/24 13:17	1

Client Sample ID: SRI-177-20 — Lab Sample ID: 350-1015-9

Date Collected: 09/24/24 12:30 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 95.6

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.1		0.35	0.070	mg/Kg	☼	10/16/24 06:44	10/18/24 21:38	10
Lead	3.3		0.35	0.074	mg/Kg	☼	10/16/24 06:44	10/18/24 21:38	10
Cadmium	0.19	J	0.56	0.054	mg/Kg	☼	10/16/24 06:44	10/18/24 21:38	10
Copper	8.8		1.4	0.35	mg/Kg	☼	10/16/24 06:44	10/18/24 21:38	10
Zinc	51		3.5	1.1	mg/Kg	☼	10/16/24 06:44	10/18/24 21:38	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.015	J H	0.021	0.0048	mg/Kg	☼	10/25/24 09:07	10/25/24 13:18	1

Client Sample ID: SRI-177-25 — Lab Sample ID: 350-1015-10

Date Collected: 09/24/24 12:45 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 93.9

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.3		0.39	0.079	mg/Kg	☼	10/16/24 06:44	10/18/24 21:44	10
Lead	5.8		0.39	0.084	mg/Kg	☼	10/16/24 06:44	10/18/24 21:44	10
Cadmium	0.11	J	0.63	0.061	mg/Kg	☼	10/16/24 06:44	10/18/24 21:44	10
Copper	9.1		1.6	0.40	mg/Kg	☼	10/16/24 06:44	10/18/24 21:44	10
Zinc	46		4.0	1.3	mg/Kg	☼	10/16/24 06:44	10/18/24 21:44	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0080	J H	0.021	0.0048	mg/Kg	☼	10/25/24 09:07	10/25/24 13:19	1

Client Sample ID: SRI-178-5
Lab Sample ID: 350-1015-11
Date Collected: 09/24/24 10:10 **Matrix: Solid**
Date Received: 09/26/24 12:20 **Percent Solids: 94.4**

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.1		0.42	0.083	mg/Kg	☼	10/16/24 06:44	10/18/24 21:47	10
Lead	75		0.42	0.088	mg/Kg	☼	10/16/24 06:44	10/18/24 21:47	10
Cadmium	0.46	J	0.67	0.064	mg/Kg	☼	10/16/24 06:44	10/18/24 21:47	10
Copper	450		1.7	0.42	mg/Kg	☼	10/16/24 06:44	10/18/24 21:47	10
Zinc	140		4.3	1.3	mg/Kg	☼	10/16/24 06:44	10/18/24 21:47	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.18	H	0.022	0.0051	mg/Kg	☼	10/25/24 09:07	10/25/24 13:23	1

Client Sample ID: SRI-178-10
Lab Sample ID: 350-1015-12
Date Collected: 09/24/24 10:20 **Matrix: Solid**
Date Received: 09/26/24 12:20 **Percent Solids: 87.0**

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.7		0.45	0.089	mg/Kg	☼	10/16/24 06:44	10/18/24 21:49	10
Lead	92		0.45	0.095	mg/Kg	☼	10/16/24 06:44	10/18/24 21:49	10
Cadmium	0.46	J	0.71	0.069	mg/Kg	☼	10/16/24 06:44	10/18/24 21:49	10
Copper	40		1.8	0.45	mg/Kg	☼	10/16/24 06:44	10/18/24 21:49	10
Zinc	150		4.6	1.4	mg/Kg	☼	10/16/24 06:44	10/18/24 21:49	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.077	H	0.022	0.0051	mg/Kg	☼	10/25/24 09:07	10/25/24 13:24	1

Client Sample ID: SRI-178-15
Lab Sample ID: 350-1015-13
Date Collected: 09/24/24 10:30 **Matrix: Solid**
Date Received: 09/26/24 12:20 **Percent Solids: 95.9**

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.7		0.36	0.071	mg/Kg	☼	10/16/24 06:44	10/18/24 21:51	10
Lead	2.9		0.36	0.075	mg/Kg	☼	10/16/24 06:44	10/18/24 21:51	10
Cadmium	0.13	J	0.57	0.055	mg/Kg	☼	10/16/24 06:44	10/18/24 21:51	10
Copper	7.4		1.4	0.36	mg/Kg	☼	10/16/24 06:44	10/18/24 21:51	10
Zinc	40		3.6	1.1	mg/Kg	☼	10/16/24 06:44	10/18/24 21:51	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.047	H	0.021	0.0048	mg/Kg	☼	10/25/24 09:07	10/25/24 13:26	1

Client Sample ID: SRI-178-20
Lab Sample ID: 350-1015-14
Date Collected: 09/24/24 10:45 **Matrix: Solid**
Date Received: 09/26/24 12:20 **Percent Solids: 95.6**

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.0		0.38	0.076	mg/Kg	☼	10/16/24 07:22	10/18/24 21:53	10
Lead	9.9		0.38	0.081	mg/Kg	☼	10/16/24 07:22	10/18/24 21:53	10
Cadmium	0.15	J	0.61	0.059	mg/Kg	☼	10/16/24 07:22	10/18/24 21:53	10
Copper	19		1.5	0.38	mg/Kg	☼	10/16/24 07:22	10/18/24 21:53	10

Client Sample ID: SRI-178-20 — Lab Sample ID: 350-1015-14

Date Collected: 09/24/24 10:45 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 95.6

Method: SW846 6020B - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	50		3.9	1.2	mg/Kg	☼	10/16/24 07:22	10/18/24 21:53	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.018	J H	0.021	0.0049	mg/Kg	☼	10/25/24 09:07	10/25/24 13:27	1

Client Sample ID: SRI-178-25 — Lab Sample ID: 350-1015-15

Date Collected: 09/24/24 11:00 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 94.7

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.1		0.34	0.067	mg/Kg	☼	10/16/24 08:16	10/18/24 00:31	10
Lead	7.3		0.34	0.072	mg/Kg	☼	10/16/24 08:16	10/18/24 00:31	10
Cadmium	0.087	J	0.54	0.052	mg/Kg	☼	10/16/24 08:16	10/18/24 00:31	10
Copper	13		1.3	0.34	mg/Kg	☼	10/16/24 08:16	10/18/24 00:31	10
Zinc	42		3.4	1.1	mg/Kg	☼	10/16/24 08:16	10/18/24 00:31	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.021	J H	0.022	0.0050	mg/Kg	☼	10/25/24 09:07	10/25/24 13:28	1

Client Sample ID: SRI-179-5 — Lab Sample ID: 350-1015-16

Date Collected: 09/24/24 10:30 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 92.5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.1		0.35	0.070	mg/Kg	☼	10/16/24 08:16	10/18/24 00:40	10
Lead	34		0.35	0.074	mg/Kg	☼	10/16/24 08:16	10/18/24 00:40	10
Cadmium	0.19	J	0.56	0.054	mg/Kg	☼	10/16/24 08:16	10/18/24 00:40	10
Copper	36		1.4	0.35	mg/Kg	☼	10/16/24 08:16	10/18/24 00:40	10
Zinc	120		3.6	1.1	mg/Kg	☼	10/16/24 08:16	10/18/24 00:40	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0079	J H	0.021	0.0048	mg/Kg	☼	10/25/24 09:07	10/25/24 13:30	1

Client Sample ID: SRI-179-10 — Lab Sample ID: 350-1015-17

Date Collected: 09/24/24 09:00 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 85.9

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.2		0.39	0.077	mg/Kg	☼	10/16/24 08:16	10/18/24 00:43	10
Lead	56		0.39	0.082	mg/Kg	☼	10/16/24 08:16	10/18/24 00:43	10
Cadmium	0.35	J	0.62	0.060	mg/Kg	☼	10/16/24 08:16	10/18/24 00:43	10
Copper	21		1.5	0.39	mg/Kg	☼	10/16/24 08:16	10/18/24 00:43	10
Zinc	120		3.9	1.2	mg/Kg	☼	10/16/24 08:16	10/18/24 00:43	10

Client Sample ID: SRI-179-10
Lab Sample ID: 350-1015-17
Date Collected: 09/24/24 09:00
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 85.9

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.016	J H	0.024	0.0055	mg/Kg	☼	10/25/24 09:07	10/25/24 13:31	1

Client Sample ID: SRI-179-15
Lab Sample ID: 350-1015-18
Date Collected: 09/24/24 09:15
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 96.7

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.3		0.31	0.062	mg/Kg	☼	10/16/24 08:16	10/18/24 00:46	10
Lead	2.4		0.31	0.066	mg/Kg	☼	10/16/24 08:16	10/18/24 00:46	10
Cadmium	0.13	J	0.50	0.048	mg/Kg	☼	10/16/24 08:16	10/18/24 00:46	10
Copper	6.7		1.2	0.32	mg/Kg	☼	10/16/24 08:16	10/18/24 00:46	10
Zinc	40		3.2	1.0	mg/Kg	☼	10/16/24 08:16	10/18/24 00:46	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.017	J H	0.021	0.0048	mg/Kg	☼	10/25/24 09:07	10/25/24 13:32	1

Client Sample ID: SRI-179-20
Lab Sample ID: 350-1015-19
Date Collected: 09/24/24 09:30
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 95.0

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.7		0.31	0.062	mg/Kg	☼	10/16/24 08:16	10/18/24 00:49	10
Lead	2.7		0.31	0.065	mg/Kg	☼	10/16/24 08:16	10/18/24 00:49	10
Cadmium	0.20	J	0.49	0.047	mg/Kg	☼	10/16/24 08:16	10/18/24 00:49	10
Copper	8.3		1.2	0.31	mg/Kg	☼	10/16/24 08:16	10/18/24 00:49	10
Zinc	47		3.1	0.99	mg/Kg	☼	10/16/24 08:16	10/18/24 00:49	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.047	H	0.022	0.0050	mg/Kg	☼	10/25/24 09:07	10/25/24 13:34	1

Client Sample ID: SRI-179-25
Lab Sample ID: 350-1015-20
Date Collected: 09/24/24 09:45
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 94.1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.7		0.35	0.070	mg/Kg	☼	10/16/24 08:16	10/18/24 00:52	10
Lead	7.9		0.35	0.075	mg/Kg	☼	10/16/24 08:16	10/18/24 00:52	10
Cadmium	0.098	J	0.56	0.054	mg/Kg	☼	10/16/24 08:16	10/18/24 00:52	10
Copper	13		1.4	0.36	mg/Kg	☼	10/16/24 08:16	10/18/24 00:52	10
Zinc	60		3.6	1.1	mg/Kg	☼	10/16/24 08:16	10/18/24 00:52	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.019	J H	0.022	0.0050	mg/Kg	☼	10/25/24 09:07	10/25/24 13:35	1

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 580-474857/22-A
Matrix: Solid
Analysis Batch: 475388

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 474857

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.25	0.050	mg/Kg		10/16/24 07:22	10/18/24 20:53	5
Lead	ND		0.25	0.053	mg/Kg		10/16/24 07:22	10/18/24 20:53	5
Cadmium	ND		0.40	0.039	mg/Kg		10/16/24 07:22	10/18/24 20:53	5
Copper	ND		1.0	0.25	mg/Kg		10/16/24 07:22	10/18/24 20:53	5
Zinc	ND		2.6	0.81	mg/Kg		10/16/24 07:22	10/18/24 20:53	5

Lab Sample ID: LCS 580-474857/23-A
Matrix: Solid
Analysis Batch: 475388

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 474857

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Arsenic			50.0	48.5		mg/Kg		97	80 - 120		
Lead			50.0	51.6		mg/Kg		103	80 - 120		
Cadmium			50.0	51.1		mg/Kg		102	80 - 120		
Copper			50.0	48.5		mg/Kg		97	80 - 120		
Zinc			50.0	49.0		mg/Kg		98	80 - 120		

Lab Sample ID: LCSD 580-474857/24-A
Matrix: Solid
Analysis Batch: 475388

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 474857

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic			50.0	46.4		mg/Kg		93	80 - 120	4	20
Lead			50.0	49.0		mg/Kg		98	80 - 120	5	20
Cadmium			50.0	48.8		mg/Kg		98	80 - 120	5	20
Copper			50.0	46.3		mg/Kg		93	80 - 120	5	20
Zinc			50.0	46.8		mg/Kg		94	80 - 120	5	20

Lab Sample ID: 350-1015-1 MS
Matrix: Solid
Analysis Batch: 475388

Client Sample ID: SRI-176-5
Prep Type: Total/NA
Prep Batch: 474857

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Arsenic	1.5		36.3	36.3		mg/Kg	☼	96	80 - 120		
Lead	3.0		36.3	40.0		mg/Kg	☼	102	80 - 120		
Cadmium	0.089	J	36.3	36.9		mg/Kg	☼	101	80 - 120		
Copper	7.1		36.3	43.4		mg/Kg	☼	100	80 - 120		
Zinc	37		36.3	73.4		mg/Kg	☼	100	80 - 120		

Lab Sample ID: 350-1015-1 MSD
Matrix: Solid
Analysis Batch: 475388

Client Sample ID: SRI-176-5
Prep Type: Total/NA
Prep Batch: 474857

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	1.5		36.4	36.0		mg/Kg	☼	95	80 - 120	1	20
Lead	3.0		36.4	39.5		mg/Kg	☼	100	80 - 120	1	20
Cadmium	0.089	J	36.4	36.1		mg/Kg	☼	99	80 - 120	2	20
Copper	7.1		36.4	42.4		mg/Kg	☼	97	80 - 120	2	20
Zinc	37		36.4	73.8		mg/Kg	☼	101	80 - 120	1	20

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 350-1015-1 DU
Matrix: Solid
Analysis Batch: 475388

Client Sample ID: SRI-176-5
Prep Type: Total/NA
Prep Batch: 474857

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	1.5		1.62		mg/Kg	☼	10	20
Lead	3.0		3.12		mg/Kg	☼	3	20
Cadmium	0.089	J	0.110	J F5	mg/Kg	☼	21	20
Copper	7.1		8.14		mg/Kg	☼	14	20
Zinc	37		39.8		mg/Kg	☼	7	20

Lab Sample ID: MB 580-474870/22-A
Matrix: Solid
Analysis Batch: 475289

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 474870

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.50	0.10	mg/Kg		10/16/24 08:16	10/18/24 00:05	10
Lead	ND		0.50	0.11	mg/Kg		10/16/24 08:16	10/18/24 00:05	10
Cadmium	ND		0.80	0.077	mg/Kg		10/16/24 08:16	10/18/24 00:05	10
Copper	ND		2.0	0.51	mg/Kg		10/16/24 08:16	10/18/24 00:05	10
Zinc	ND		5.1	1.6	mg/Kg		10/16/24 08:16	10/18/24 00:05	10

Lab Sample ID: LCS 580-474870/23-A
Matrix: Solid
Analysis Batch: 475289

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 474870

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	50.0	49.2		mg/Kg		98	80 - 120
Lead	50.0	48.1		mg/Kg		96	80 - 120
Cadmium	50.0	51.4		mg/Kg		103	80 - 120
Copper	50.0	49.1		mg/Kg		98	80 - 120
Zinc	50.0	51.7		mg/Kg		103	80 - 120

Lab Sample ID: LCSD 580-474870/24-A
Matrix: Solid
Analysis Batch: 475289

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 474870

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	50.0	46.3		mg/Kg		93	80 - 120	6	20
Lead	50.0	45.9		mg/Kg		92	80 - 120	5	20
Cadmium	50.0	48.3		mg/Kg		97	80 - 120	6	20
Copper	50.0	45.8		mg/Kg		92	80 - 120	7	20
Zinc	50.0	48.6		mg/Kg		97	80 - 120	6	20

Method: 7471B - Mercury (CVAA)

Lab Sample ID: MB 480-729639/1-A
Matrix: Solid
Analysis Batch: 729877

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 729639

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.020	0.0047	mg/Kg		10/25/24 09:07	10/25/24 12:57	1

Method: 7471B - Mercury (CVAA) (Continued)

Lab Sample ID: LCSSRM 480-729639/2-A ^10
Matrix: Solid
Analysis Batch: 729877

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 729639

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			11.9	10.6		mg/Kg		89.3	59.8 - 139.5		

Lab Sample ID: 350-1015-1 MS
Matrix: Solid
Analysis Batch: 729877

Client Sample ID: SRI-176-5
Prep Type: Total/NA
Prep Batch: 729639

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.18	H	0.333	0.503		mg/Kg	☼	98	80 - 120		

Lab Sample ID: 350-1015-1 MSD
Matrix: Solid
Analysis Batch: 729877

Client Sample ID: SRI-176-5
Prep Type: Total/NA
Prep Batch: 729639

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.18	H	0.348	0.528		mg/Kg	☼	101	80 - 120	5	20

Metals

Prep Batch: 474857

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1015-1	SRI-176-5	Total/NA	Solid	3050B	
350-1015-2	SRI-176-10	Total/NA	Solid	3050B	
350-1015-3	SRI-176-15	Total/NA	Solid	3050B	
350-1015-4	SRI-176-20	Total/NA	Solid	3050B	
350-1015-5	SRI-176-25	Total/NA	Solid	3050B	
350-1015-6	SRI-177-5	Total/NA	Solid	3050B	
350-1015-7	SRI-177-10	Total/NA	Solid	3050B	
350-1015-8	SRI-177-15	Total/NA	Solid	3050B	
350-1015-9	SRI-177-20	Total/NA	Solid	3050B	
350-1015-10	SRI-177-25	Total/NA	Solid	3050B	
350-1015-11	SRI-178-5	Total/NA	Solid	3050B	
350-1015-12	SRI-178-10	Total/NA	Solid	3050B	
350-1015-13	SRI-178-15	Total/NA	Solid	3050B	
350-1015-14	SRI-178-20	Total/NA	Solid	3050B	
MB 580-474857/22-A	Method Blank	Total/NA	Solid	3050B	
LCS 580-474857/23-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 580-474857/24-A	Lab Control Sample Dup	Total/NA	Solid	3050B	
350-1015-1 MS	SRI-176-5	Total/NA	Solid	3050B	
350-1015-1 MSD	SRI-176-5	Total/NA	Solid	3050B	
350-1015-1 DU	SRI-176-5	Total/NA	Solid	3050B	

Prep Batch: 474870

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1015-15	SRI-178-25	Total/NA	Solid	3050B	
350-1015-16	SRI-179-5	Total/NA	Solid	3050B	
350-1015-17	SRI-179-10	Total/NA	Solid	3050B	
350-1015-18	SRI-179-15	Total/NA	Solid	3050B	
350-1015-19	SRI-179-20	Total/NA	Solid	3050B	
350-1015-20	SRI-179-25	Total/NA	Solid	3050B	
MB 580-474870/22-A	Method Blank	Total/NA	Solid	3050B	
LCS 580-474870/23-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 580-474870/24-A	Lab Control Sample Dup	Total/NA	Solid	3050B	

Analysis Batch: 475289

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1015-15	SRI-178-25	Total/NA	Solid	6020B	474870
350-1015-16	SRI-179-5	Total/NA	Solid	6020B	474870
350-1015-17	SRI-179-10	Total/NA	Solid	6020B	474870
350-1015-18	SRI-179-15	Total/NA	Solid	6020B	474870
350-1015-19	SRI-179-20	Total/NA	Solid	6020B	474870
350-1015-20	SRI-179-25	Total/NA	Solid	6020B	474870
MB 580-474870/22-A	Method Blank	Total/NA	Solid	6020B	474870
LCS 580-474870/23-A	Lab Control Sample	Total/NA	Solid	6020B	474870
LCSD 580-474870/24-A	Lab Control Sample Dup	Total/NA	Solid	6020B	474870

Analysis Batch: 475388

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1015-1	SRI-176-5	Total/NA	Solid	6020B	474857
350-1015-2	SRI-176-10	Total/NA	Solid	6020B	474857
350-1015-3	SRI-176-15	Total/NA	Solid	6020B	474857
350-1015-4	SRI-176-20	Total/NA	Solid	6020B	474857

Metals (Continued)

Analysis Batch: 475388 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1015-5	SRI-176-25	Total/NA	Solid	6020B	474857
350-1015-6	SRI-177-5	Total/NA	Solid	6020B	474857
350-1015-7	SRI-177-10	Total/NA	Solid	6020B	474857
350-1015-8	SRI-177-15	Total/NA	Solid	6020B	474857
350-1015-9	SRI-177-20	Total/NA	Solid	6020B	474857
350-1015-10	SRI-177-25	Total/NA	Solid	6020B	474857
350-1015-11	SRI-178-5	Total/NA	Solid	6020B	474857
350-1015-12	SRI-178-10	Total/NA	Solid	6020B	474857
350-1015-13	SRI-178-15	Total/NA	Solid	6020B	474857
350-1015-14	SRI-178-20	Total/NA	Solid	6020B	474857
MB 580-474857/22-A	Method Blank	Total/NA	Solid	6020B	474857
LCS 580-474857/23-A	Lab Control Sample	Total/NA	Solid	6020B	474857
LCSD 580-474857/24-A	Lab Control Sample Dup	Total/NA	Solid	6020B	474857
350-1015-1 MS	SRI-176-5	Total/NA	Solid	6020B	474857
350-1015-1 MSD	SRI-176-5	Total/NA	Solid	6020B	474857
350-1015-1 DU	SRI-176-5	Total/NA	Solid	6020B	474857

Prep Batch: 729639

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1015-1	SRI-176-5	Total/NA	Solid	7471B	
350-1015-2	SRI-176-10	Total/NA	Solid	7471B	
350-1015-3	SRI-176-15	Total/NA	Solid	7471B	
350-1015-4	SRI-176-20	Total/NA	Solid	7471B	
350-1015-5	SRI-176-25	Total/NA	Solid	7471B	
350-1015-6	SRI-177-5	Total/NA	Solid	7471B	
350-1015-7	SRI-177-10	Total/NA	Solid	7471B	
350-1015-8	SRI-177-15	Total/NA	Solid	7471B	
350-1015-9	SRI-177-20	Total/NA	Solid	7471B	
350-1015-10	SRI-177-25	Total/NA	Solid	7471B	
350-1015-11	SRI-178-5	Total/NA	Solid	7471B	
350-1015-12	SRI-178-10	Total/NA	Solid	7471B	
350-1015-13	SRI-178-15	Total/NA	Solid	7471B	
350-1015-14	SRI-178-20	Total/NA	Solid	7471B	
350-1015-15	SRI-178-25	Total/NA	Solid	7471B	
350-1015-16	SRI-179-5	Total/NA	Solid	7471B	
350-1015-17	SRI-179-10	Total/NA	Solid	7471B	
350-1015-18	SRI-179-15	Total/NA	Solid	7471B	
350-1015-19	SRI-179-20	Total/NA	Solid	7471B	
350-1015-20	SRI-179-25	Total/NA	Solid	7471B	
MB 480-729639/1-A	Method Blank	Total/NA	Solid	7471B	
LCSSRM 480-729639/2-A ^1	Lab Control Sample	Total/NA	Solid	7471B	
350-1015-1 MS	SRI-176-5	Total/NA	Solid	7471B	
350-1015-1 MSD	SRI-176-5	Total/NA	Solid	7471B	

Analysis Batch: 729877

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1015-1	SRI-176-5	Total/NA	Solid	7471B	729639
350-1015-2	SRI-176-10	Total/NA	Solid	7471B	729639
350-1015-3	SRI-176-15	Total/NA	Solid	7471B	729639
350-1015-4	SRI-176-20	Total/NA	Solid	7471B	729639
350-1015-5	SRI-176-25	Total/NA	Solid	7471B	729639

Metals (Continued)

Analysis Batch: 729877 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1015-6	SRI-177-5	Total/NA	Solid	7471B	729639
350-1015-7	SRI-177-10	Total/NA	Solid	7471B	729639
350-1015-8	SRI-177-15	Total/NA	Solid	7471B	729639
350-1015-9	SRI-177-20	Total/NA	Solid	7471B	729639
350-1015-10	SRI-177-25	Total/NA	Solid	7471B	729639
350-1015-11	SRI-178-5	Total/NA	Solid	7471B	729639
350-1015-12	SRI-178-10	Total/NA	Solid	7471B	729639
350-1015-13	SRI-178-15	Total/NA	Solid	7471B	729639
350-1015-14	SRI-178-20	Total/NA	Solid	7471B	729639
350-1015-15	SRI-178-25	Total/NA	Solid	7471B	729639
350-1015-16	SRI-179-5	Total/NA	Solid	7471B	729639
350-1015-17	SRI-179-10	Total/NA	Solid	7471B	729639
350-1015-18	SRI-179-15	Total/NA	Solid	7471B	729639
350-1015-19	SRI-179-20	Total/NA	Solid	7471B	729639
350-1015-20	SRI-179-25	Total/NA	Solid	7471B	729639
MB 480-729639/1-A	Method Blank	Total/NA	Solid	7471B	729639
LCSSRM 480-729639/2-A ^1	Lab Control Sample	Total/NA	Solid	7471B	729639
350-1015-1 MS	SRI-176-5	Total/NA	Solid	7471B	729639
350-1015-1 MSD	SRI-176-5	Total/NA	Solid	7471B	729639

General Chemistry

Analysis Batch: 473650

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1015-1	SRI-176-5	Total/NA	Solid	2540G	
350-1015-2	SRI-176-10	Total/NA	Solid	2540G	
350-1015-3	SRI-176-15	Total/NA	Solid	2540G	
350-1015-4	SRI-176-20	Total/NA	Solid	2540G	
350-1015-5	SRI-176-25	Total/NA	Solid	2540G	
350-1015-6	SRI-177-5	Total/NA	Solid	2540G	
350-1015-7	SRI-177-10	Total/NA	Solid	2540G	
350-1015-8	SRI-177-15	Total/NA	Solid	2540G	
350-1015-9	SRI-177-20	Total/NA	Solid	2540G	
350-1015-10	SRI-177-25	Total/NA	Solid	2540G	
350-1015-11	SRI-178-5	Total/NA	Solid	2540G	
350-1015-12	SRI-178-10	Total/NA	Solid	2540G	
350-1015-13	SRI-178-15	Total/NA	Solid	2540G	
350-1015-14	SRI-178-20	Total/NA	Solid	2540G	
350-1015-15	SRI-178-25	Total/NA	Solid	2540G	
350-1015-16	SRI-179-5	Total/NA	Solid	2540G	
350-1015-17	SRI-179-10	Total/NA	Solid	2540G	
350-1015-1 DU	SRI-176-5	Total/NA	Solid	2540G	

Analysis Batch: 473758

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1015-18	SRI-179-15	Total/NA	Solid	2540G	
350-1015-19	SRI-179-20	Total/NA	Solid	2540G	
350-1015-20	SRI-179-25	Total/NA	Solid	2540G	
350-1015-18 DU	SRI-179-15	Total/NA	Solid	2540G	

Lab Chronicle

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1015-1

Client Sample ID: SRI-176-5
Date Collected: 09/24/24 14:10
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1015-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473650	CSS	EET SEA	10/03/24 22:10

Client Sample ID: SRI-176-5
Date Collected: 09/24/24 14:10
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1015-1
Matrix: Solid
Percent Solids: 96.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			474857	MCMS	EET SEA	10/16/24 06:44
Total/NA	Analysis	6020B		10	475388	CA	EET SEA	10/18/24 21:00
Total/NA	Prep	7471B			729639	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 13:00

Client Sample ID: SRI-176-10
Date Collected: 09/24/24 14:40
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1015-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473650	CSS	EET SEA	10/03/24 22:10

Client Sample ID: SRI-176-10
Date Collected: 09/24/24 14:40
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1015-2
Matrix: Solid
Percent Solids: 95.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			474857	MCMS	EET SEA	10/16/24 06:44
Total/NA	Analysis	6020B		10	475388	CA	EET SEA	10/18/24 21:22
Total/NA	Prep	7471B			729639	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 13:09

Client Sample ID: SRI-176-15
Date Collected: 09/24/24 15:00
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1015-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473650	CSS	EET SEA	10/03/24 22:10

Client Sample ID: SRI-176-15
Date Collected: 09/24/24 15:00
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1015-3
Matrix: Solid
Percent Solids: 96.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			474857	MCMS	EET SEA	10/16/24 06:44
Total/NA	Analysis	6020B		10	475388	CA	EET SEA	10/18/24 21:24
Total/NA	Prep	7471B			729639	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 13:10

Lab Chronicle

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1015-1

Client Sample ID: SRI-176-20
Date Collected: 09/24/24 15:10
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1015-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473650	CSS	EET SEA	10/03/24 22:10

Client Sample ID: SRI-176-20
Date Collected: 09/24/24 15:10
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1015-4
Matrix: Solid
Percent Solids: 95.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			474857	MCMS	EET SEA	10/16/24 06:44
Total/NA	Analysis	6020B		10	475388	CA	EET SEA	10/18/24 21:27
Total/NA	Prep	7471B			729639	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 13:11

Client Sample ID: SRI-176-25
Date Collected: 09/24/24 16:46
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1015-5
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473650	CSS	EET SEA	10/03/24 22:10

Client Sample ID: SRI-176-25
Date Collected: 09/24/24 16:46
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1015-5
Matrix: Solid
Percent Solids: 92.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			474857	MCMS	EET SEA	10/16/24 06:44
Total/NA	Analysis	6020B		10	475388	CA	EET SEA	10/18/24 21:29
Total/NA	Prep	7471B			729639	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 13:13

Client Sample ID: SRI-177-5
Date Collected: 09/24/24 11:40
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1015-6
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473650	CSS	EET SEA	10/03/24 22:10

Client Sample ID: SRI-177-5
Date Collected: 09/24/24 11:40
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1015-6
Matrix: Solid
Percent Solids: 91.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			474857	MCMS	EET SEA	10/16/24 06:44
Total/NA	Analysis	6020B		10	475388	CA	EET SEA	10/18/24 21:31
Total/NA	Prep	7471B			729639	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 13:14

Client Sample ID: SRI-177-10
Lab Sample ID: 350-1015-7
Date Collected: 09/24/24 12:00
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473650	CSS	EET SEA	10/03/24 22:10

Client Sample ID: SRI-177-10
Lab Sample ID: 350-1015-7
Date Collected: 09/24/24 12:00
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 90.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			474857	MCMS	EET SEA	10/16/24 06:44
Total/NA	Analysis	6020B		10	475388	CA	EET SEA	10/18/24 21:33
Total/NA	Prep	7471B			729639	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 13:15

Client Sample ID: SRI-177-15
Lab Sample ID: 350-1015-8
Date Collected: 09/24/24 12:15
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473650	CSS	EET SEA	10/03/24 22:10

Client Sample ID: SRI-177-15
Lab Sample ID: 350-1015-8
Date Collected: 09/24/24 12:15
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 95.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			474857	MCMS	EET SEA	10/16/24 06:44
Total/NA	Analysis	6020B		10	475388	CA	EET SEA	10/18/24 21:35
Total/NA	Prep	7471B			729639	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 13:17

Client Sample ID: SRI-177-20
Lab Sample ID: 350-1015-9
Date Collected: 09/24/24 12:30
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473650	CSS	EET SEA	10/03/24 22:10

Client Sample ID: SRI-177-20
Lab Sample ID: 350-1015-9
Date Collected: 09/24/24 12:30
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 95.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			474857	MCMS	EET SEA	10/16/24 06:44
Total/NA	Analysis	6020B		10	475388	CA	EET SEA	10/18/24 21:38
Total/NA	Prep	7471B			729639	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 13:18

Lab Chronicle

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1015-1

Client Sample ID: SRI-177-25
Date Collected: 09/24/24 12:45
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1015-10
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473650	CSS	EET SEA	10/03/24 22:10

Client Sample ID: SRI-177-25
Date Collected: 09/24/24 12:45
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1015-10
Matrix: Solid
Percent Solids: 93.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			474857	MCMS	EET SEA	10/16/24 06:44
Total/NA	Analysis	6020B		10	475388	CA	EET SEA	10/18/24 21:44
Total/NA	Prep	7471B			729639	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 13:19

Client Sample ID: SRI-178-5
Date Collected: 09/24/24 10:10
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1015-11
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473650	CSS	EET SEA	10/03/24 22:10

Client Sample ID: SRI-178-5
Date Collected: 09/24/24 10:10
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1015-11
Matrix: Solid
Percent Solids: 94.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			474857	MCMS	EET SEA	10/16/24 06:44
Total/NA	Analysis	6020B		10	475388	CA	EET SEA	10/18/24 21:47
Total/NA	Prep	7471B			729639	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 13:23

Client Sample ID: SRI-178-10
Date Collected: 09/24/24 10:20
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1015-12
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473650	CSS	EET SEA	10/03/24 22:10

Client Sample ID: SRI-178-10
Date Collected: 09/24/24 10:20
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1015-12
Matrix: Solid
Percent Solids: 87.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			474857	MCMS	EET SEA	10/16/24 06:44
Total/NA	Analysis	6020B		10	475388	CA	EET SEA	10/18/24 21:49
Total/NA	Prep	7471B			729639	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 13:24

Lab Chronicle

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1015-1

Client Sample ID: SRI-178-15
Date Collected: 09/24/24 10:30
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1015-13
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473650	CSS	EET SEA	10/03/24 22:10

Client Sample ID: SRI-178-15
Date Collected: 09/24/24 10:30
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1015-13
Matrix: Solid
Percent Solids: 95.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			474857	MCMS	EET SEA	10/16/24 06:44
Total/NA	Analysis	6020B		10	475388	CA	EET SEA	10/18/24 21:51
Total/NA	Prep	7471B			729639	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 13:26

Client Sample ID: SRI-178-20
Date Collected: 09/24/24 10:45
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1015-14
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473650	CSS	EET SEA	10/03/24 22:10

Client Sample ID: SRI-178-20
Date Collected: 09/24/24 10:45
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1015-14
Matrix: Solid
Percent Solids: 95.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			474857	MCMS	EET SEA	10/16/24 07:22
Total/NA	Analysis	6020B		10	475388	CA	EET SEA	10/18/24 21:53
Total/NA	Prep	7471B			729639	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 13:27

Client Sample ID: SRI-178-25
Date Collected: 09/24/24 11:00
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1015-15
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473650	CSS	EET SEA	10/03/24 22:10

Client Sample ID: SRI-178-25
Date Collected: 09/24/24 11:00
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1015-15
Matrix: Solid
Percent Solids: 94.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			474870	MCMS	EET SEA	10/16/24 08:16
Total/NA	Analysis	6020B		10	475289	CA	EET SEA	10/18/24 00:31
Total/NA	Prep	7471B			729639	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 13:28

Lab Chronicle

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1015-1

Client Sample ID: SRI-179-5
Date Collected: 09/24/24 10:30
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1015-16
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473650	CSS	EET SEA	10/03/24 22:10

Client Sample ID: SRI-179-5
Date Collected: 09/24/24 10:30
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1015-16
Matrix: Solid
Percent Solids: 92.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			474870	MCMS	EET SEA	10/16/24 08:16
Total/NA	Analysis	6020B		10	475289	CA	EET SEA	10/18/24 00:40
Total/NA	Prep	7471B			729639	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 13:30

Client Sample ID: SRI-179-10
Date Collected: 09/24/24 09:00
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1015-17
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473650	CSS	EET SEA	10/03/24 22:23

Client Sample ID: SRI-179-10
Date Collected: 09/24/24 09:00
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1015-17
Matrix: Solid
Percent Solids: 85.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			474870	MCMS	EET SEA	10/16/24 08:16
Total/NA	Analysis	6020B		10	475289	CA	EET SEA	10/18/24 00:43
Total/NA	Prep	7471B			729639	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 13:31

Client Sample ID: SRI-179-15
Date Collected: 09/24/24 09:15
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1015-18
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473758	SCS	EET SEA	10/04/24 17:57

Client Sample ID: SRI-179-15
Date Collected: 09/24/24 09:15
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1015-18
Matrix: Solid
Percent Solids: 96.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			474870	MCMS	EET SEA	10/16/24 08:16
Total/NA	Analysis	6020B		10	475289	CA	EET SEA	10/18/24 00:46
Total/NA	Prep	7471B			729639	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 13:32

Lab Chronicle

Client: Antea USA Inc.
Job ID: 350-1015-1
Project/Site: NuStar Split GWM / KM Van RIFS

Client Sample ID: SRI-179-20
Lab Sample ID: 350-1015-19
Date Collected: 09/24/24 09:30
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473758	SCS	EET SEA	10/04/24 17:57

Client Sample ID: SRI-179-20
Lab Sample ID: 350-1015-19
Date Collected: 09/24/24 09:30
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 95.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			474870	MCMS	EET SEA	10/16/24 08:16
Total/NA	Analysis	6020B		10	475289	CA	EET SEA	10/18/24 00:49
Total/NA	Prep	7471B			729639	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 13:34

Client Sample ID: SRI-179-25
Lab Sample ID: 350-1015-20
Date Collected: 09/24/24 09:45
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473758	SCS	EET SEA	10/04/24 17:57

Client Sample ID: SRI-179-25
Lab Sample ID: 350-1015-20
Date Collected: 09/24/24 09:45
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 94.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			474870	MCMS	EET SEA	10/16/24 08:16
Total/NA	Analysis	6020B		10	475289	CA	EET SEA	10/18/24 00:52
Total/NA	Prep	7471B			729639	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 13:35

Laboratory References:

EET BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Antea USA Inc.
Job ID: 350-1015-1
Project/Site: NuStar Split GWM / KM Van RIFS

Laboratory: Eurofins Buffalo

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	88-00686	07-06-25
Connecticut	State	PH-0807	03-31-25
Georgia	State	10026 (NY)	03-31-25
Georgia	State Program	N/A	03-31-09 *
Illinois	NELAP	200003	09-30-25
Iowa	State	374	03-01-25
Iowa	State Program	374	03-01-09 *
Kansas	NELAP	E-10187	02-01-25
Kentucky (UST)	State	108092	04-01-25
Kentucky (WW)	State	KY90029	12-31-24
Maine	State	NY00044	12-04-24
Maryland	State	294	06-30-25
Massachusetts	State	M-NY044	07-01-25
Michigan	State	9937	03-31-25
Michigan	State Program	9937	04-01-09 *
New Hampshire	NELAP	2973	09-11-19 *
New Hampshire	NELAP	2337	11-17-24
New Jersey	NELAP	NY455	07-02-25
New York	NELAP	10026	03-31-25
Pennsylvania	NELAP	68-00281	08-31-25
Rhode Island	State	LAO00378	12-30-24
Virginia	NELAP	460185	09-14-25
Washington	State	C784	02-10-25
Wisconsin	State	998310390	08-31-25

Laboratory: Eurofins Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2540G		Solid	Percent Moisture
2540G		Solid	Percent Solids

ANAB	Dept. of Defense ELAP	L2236	01-19-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2540G		Solid	Percent Moisture
2540G		Solid	Percent Solids

ANAB	Dept. of Energy	L2236	01-19-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2540G		Solid	Percent Moisture
2540G		Solid	Percent Solids
6020B	3050B	Solid	Arsenic

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Laboratory: Eurofins Seattle (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020B	3050B	Solid	Cadmium
6020B	3050B	Solid	Copper
6020B	3050B	Solid	Lead
6020B	3050B	Solid	Zinc

ANAB	ISO/IEC 17025	L2236	01-19-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2540G		Solid	Percent Moisture
2540G		Solid	Percent Solids

California	State	2954	07-07-24 *

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2540G		Solid	Percent Moisture
2540G		Solid	Percent Solids

Florida	NELAP	E87575	06-30-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2540G		Solid	Percent Moisture
2540G		Solid	Percent Solids
6020B	3050B	Solid	Arsenic
6020B	3050B	Solid	Cadmium
6020B	3050B	Solid	Copper
6020B	3050B	Solid	Lead
6020B	3050B	Solid	Zinc

Louisiana (All)	NELAP	03073	06-30-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2540G		Solid	Percent Moisture
2540G		Solid	Percent Solids
6020B	3050B	Solid	Arsenic
6020B	3050B	Solid	Cadmium
6020B	3050B	Solid	Copper
6020B	3050B	Solid	Lead
6020B	3050B	Solid	Zinc

Maine	State	WA01273	05-02-26

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Antea USA Inc. Job ID: 350-1015-1
Project/Site: NuStar Split GWM / KM Van RIFS

Laboratory: Eurofins Seattle (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2540G		Solid	Percent Moisture
2540G		Solid	Percent Solids
6020B	3050B	Solid	Arsenic
6020B	3050B	Solid	Cadmium
6020B	3050B	Solid	Copper
6020B	3050B	Solid	Lead
6020B	3050B	Solid	Zinc

Montana (UST)	State	NA	04-14-27

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2540G		Solid	Percent Moisture
2540G		Solid	Percent Solids
6020B	3050B	Solid	Arsenic
6020B	3050B	Solid	Cadmium
6020B	3050B	Solid	Copper
6020B	3050B	Solid	Lead
6020B	3050B	Solid	Zinc

New Jersey	NELAP	WA014	06-30-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2540G		Solid	Percent Moisture
2540G		Solid	Percent Solids
6020B	3050B	Solid	Arsenic
6020B	3050B	Solid	Cadmium
6020B	3050B	Solid	Copper
6020B	3050B	Solid	Lead
6020B	3050B	Solid	Zinc

New York	NELAP	11662	04-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2540G		Solid	Percent Moisture
2540G		Solid	Percent Solids
6020B	3050B	Solid	Arsenic
6020B	3050B	Solid	Cadmium
6020B	3050B	Solid	Copper
6020B	3050B	Solid	Lead
6020B	3050B	Solid	Zinc

Oregon	NELAP	4167	07-07-25

Laboratory: Eurofins Seattle (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
US Fish & Wildlife	US Federal Programs	A20571	06-30-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2540G		Solid	Percent Solids

Authority	Program	Identification Number	Expiration Date
USDA	US Federal Programs	525-23-4-22573	01-04-26

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2540G		Solid	Percent Moisture
2540G		Solid	Percent Solids
6020B	3050B	Solid	Arsenic
6020B	3050B	Solid	Cadmium
6020B	3050B	Solid	Copper
6020B	3050B	Solid	Lead
6020B	3050B	Solid	Zinc

Authority	Program	Identification Number	Expiration Date
Washington	State	C788-24	07-13-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2540G		Solid	Percent Solids

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	399133460	09-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2540G		Solid	Percent Moisture
2540G		Solid	Percent Solids
6020B	3050B	Solid	Arsenic
6020B	3050B	Solid	Cadmium
6020B	3050B	Solid	Copper
6020B	3050B	Solid	Lead
6020B	3050B	Solid	Zinc

Method Summary

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1015-1

Method	Method Description	Protocol	Laboratory
6020B	Metals (ICP/MS)	SW846	EET SEA
7471B	Mercury (CVAA)	SW846	EET BUF
2540G	SM 2540G	SM22	EET SEA
3050B	Preparation, Metals	SW846	EET SEA
7471B	Preparation, Mercury	SW846	EET BUF

Protocol References:

SM22 = Standard Methods For The Examination Of Water And Wastewater, 22nd Edition

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1015-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
350-1015-1	SRI-176-5	Solid	09/24/24 14:10	09/26/24 12:20
350-1015-2	SRI-176-10	Solid	09/24/24 14:40	09/26/24 12:20
350-1015-3	SRI-176-15	Solid	09/24/24 15:00	09/26/24 12:20
350-1015-4	SRI-176-20	Solid	09/24/24 15:10	09/26/24 12:20
350-1015-5	SRI-176-25	Solid	09/24/24 16:46	09/26/24 12:20
350-1015-6	SRI-177-5	Solid	09/24/24 11:40	09/26/24 12:20
350-1015-7	SRI-177-10	Solid	09/24/24 12:00	09/26/24 12:20
350-1015-8	SRI-177-15	Solid	09/24/24 12:15	09/26/24 12:20
350-1015-9	SRI-177-20	Solid	09/24/24 12:30	09/26/24 12:20
350-1015-10	SRI-177-25	Solid	09/24/24 12:45	09/26/24 12:20
350-1015-11	SRI-178-5	Solid	09/24/24 10:10	09/26/24 12:20
350-1015-12	SRI-178-10	Solid	09/24/24 10:20	09/26/24 12:20
350-1015-13	SRI-178-15	Solid	09/24/24 10:30	09/26/24 12:20
350-1015-14	SRI-178-20	Solid	09/24/24 10:45	09/26/24 12:20
350-1015-15	SRI-178-25	Solid	09/24/24 11:00	09/26/24 12:20
350-1015-16	SRI-179-5	Solid	09/24/24 10:30	09/26/24 12:20
350-1015-17	SRI-179-10	Solid	09/24/24 09:00	09/26/24 12:20
350-1015-18	SRI-179-15	Solid	09/24/24 09:15	09/26/24 12:20
350-1015-19	SRI-179-20	Solid	09/24/24 09:30	09/26/24 12:20
350-1015-20	SRI-179-25	Solid	09/24/24 09:45	09/26/24 12:20

Eurofins Specialty Metals Testing
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310

Chain of Custody Record

eurofins | Environment Testing

10/28/2024

Client Information	Sampler: Jeff Karandzelos	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s):	COC No: 350-261-138.1
Client Contact: Nolan Lewis	Phone: 503 550 3703	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: WA	Page: Page 1 of 2
Company: Antea USA Inc.	PWSID:	Analysis Requested		Job #: VBT RIFS
Address: 205 SE Spokane Street Suite 300	Due Date Requested:			Preservation Codes: N - None
City: Portland	TAT Requested (days): Standard			
State, Zip: OR, 97202	Compliance Project: Δ Yes Δ No			
Phone: 503 550 3703	PO #: WD1093775			
Email: nolan.lewis@anteagroup.us	WO #:			
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			
Site: VBT	SSOW#:			Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	D422 - D422 Grain Size	200.8 Total arsenic, cadmium, copper, lead, mercury, zinc	200.8 Total copper	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N				
SRI-176-5	9/24/24	1410	G	Solid				X			
SRI-176-10	9/24/24	1440	G	Solid				X			
SRI-176-15	9/24/24	1500	G	Solid				X			
SRI-176-20	9/24/24	1510	G	Solid				X			
SRI-176-25	9/24/24	1646	G	Solid				X			
SRI-177-5	9/24/24	1140	G	Solid				X			
SRI-177-10	9/24/24	1200	G	Solid				X			
SRI-177-15	9/24/24	1215	G	Solid				X			
SRI-177-20	9/24/24	1230	G	Solid				X			
SRI-177-25	9/24/24	1245	G	Solid				X			
SRI-178-5	9/24/24	1010	G	Solid				X			

350-1015 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		9/26/24 1220			9/26/24 1220	ET
2		9/26/24 1740	ET			
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 0.3 #2 PDK SC FH

Ver: 05/06/2024

Eurofins Specialty Metals Testing
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: Jeff Kuramitsu	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s):	COC No: 350-261-138.1
Client Contact: Nolan Lewis	Phone: 503 550 3703	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: USA	Page: Page 2 of 2
Company: Antea USA Inc.	PWSID:	Analysis Requested		Job #: VBT RIFS
Address: 205 SE Spokane Street Suite 300	Due Date Requested:			Preservation Codes: N - None
City: Portland	TAT Requested (days):			
State, Zip: OR, 97202	Compliance Project: Δ Yes Δ No			
Phone: 503 550 3703	PO #: WD1093775			
Email: nolan.lewis@anteagroup.us	WO #:			Other:
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			
Site: VBT	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	D422 - D422 Grain Size	200.8 Total arsenic, cadmium, copper, lead, mercury, zinc	200.8 Total copper	Total Number of containers	Special Instructions/Note:
			Preservation Code:			N					
SRI-178-10	9/24/24	1020	G	Solid				X			
SRI-178-15	9/24/24	1050	G	Solid				X			
SRI-178-20	9/24/24	1045	G	Solid				X			
SRI-178-25	9/24/24	1100	G	Solid				X			
SRI-179-5	9/23/24	1030	G	Solid				X			
SRI-179-10	9/24/24	0900	G	Solid				X			
SRI-179-15	9/24/24	0915	G	Solid				X			
SRI-179-20	9/24/24	0930	G	Solid				X			
SRI-179-25	9/24/24	0945	G	Solid				X			
				Solid							
				Solid							

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		9/26/24 1220			9/26/24 1220	ET
2		9/26/24 1700	ET			
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 0.3/0.2 PDX SC TA

Ver: 05/06/2024

10/28/2024

5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s): N/A	COC No: 350-3035.1
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: Oregon	Page: Page 1 of 3
Company: Eurofins Environment Testing Northeast L		Accreditations Required (See note): Dept. of Defense ELAP - ANAB; Dept. of Energy - ANAB; I ...		Job #: 350-1015-1
Address: 10 Hazelwood Drive, ,	Due Date Requested: 10/16/2024	Analysis Requested		Preservation Codes: -
City: Amherst	TAT Requested (days): N/A			
State, Zip: NY, 14228-2298				
Phone: 716-691-2600(Tel) 716-691-7991(Fax)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			
Site: N/A	SSOW#: N/A			Other: N/A

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	7471B/7471B_Prep	Total Number of containers	Special Instructions/Note:
				Preservation Code:					
SRI-176-5 (350-1015-1)	9/24/24	14:10 Pacific	G	Solid			X	1	
SRI-176-10 (350-1015-2)	9/24/24	14:40 Pacific	G	Solid			X	1	
SRI-176-15 (350-1015-3)	9/24/24	15:00 Pacific	G	Solid			X	1	
SRI-176-20 (350-1015-4)	9/24/24	15:10 Pacific	G	Solid			X	1	
SRI-176-25 (350-1015-5)	9/24/24	16:46 Pacific	G	Solid			X	1	
SRI-177-5 (350-1015-6)	9/24/24	11:40 Pacific	G	Solid			X	1	
SRI-177-10 (350-1015-7)	9/24/24	12:00 Pacific	G	Solid			X	1	
SRI-177-15 (350-1015-8)	9/24/24	12:15 Pacific	G	Solid			X	1	
SRI-177-20 (350-1015-9)	9/24/24	12:30 Pacific	G	Solid			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Northwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Northwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Northwest, LLC.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ______ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) | Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 10/23/24 13:00	Company: EETN	Received by: [signature]	Date/Time: 10-24-24 1000	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 2.3 IR#5C Ice

Ver: 10/10/2024

Page 37 of 47

10/28/2024

5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s): N/A	COC No: 350-3035.2
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: Oregon	Page: Page 2 of 3
Company: Eurofins Environment Testing Northeast L		Accreditations Required (See note): Dept. of Defense ELAP - ANAB; Dept. of Energy - ANAB; I ...		Job #: 350-1015-1
Address: 10 Hazelwood Drive, ,	Due Date Requested: 10/16/2024			
City: Amherst	TAT Requested (days): N/A			
State, Zip: NY, 14228-2298				
Phone: 716-691-2600(Tel) 716-691-7991(Fax)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			
Site: N/A	SSOW#: N/A			

Analysis Requested

Preservation Codes: -

Other: N/A

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	7471B/7471B_Prep	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
SRI-177-25 (350-1015-10)	9/24/24	12:45 Pacific	G	Solid			X	1	
SRI-178-5 (350-1015-11)	9/24/24	10:10 Pacific	G	Solid			X	1	
SRI-178-10 (350-1015-12)	9/24/24	10:20 Pacific	G	Solid			X	1	
SRI-178-15 (350-1015-13)	9/24/24	10:30 Pacific	G	Solid			X	1	
SRI-178-20 (350-1015-14)	9/24/24	10:45 Pacific	G	Solid			X	1	
SRI-178-25 (350-1015-15)	9/24/24	11:00 Pacific	G	Solid			X	1	
SRI-179-5 (350-1015-16)	9/24/24	10:30 Pacific	G	Solid			X	1	
SRI-179-10 (350-1015-17)	9/24/24	09:00 Pacific	G	Solid			X	1	
SRI-179-15 (350-1015-18)	9/24/24	09:15 Pacific	G	Solid			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Northwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Northwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Northwest, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by:	Date/Time: 10/23/24 13:10	Company: ETN	Received by: See pg1
Relinquished by:	Date/Time:	Company:	Received by:
Relinquished by:	Date/Time:	Company:	Received by:

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 10/10/2024

Eurofins Specialty Metals Testing
5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s): N/A	COC No: 350-3035.3
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: Oregon	Page: Page 3 of 3
Company: Eurofins Environment Testing Northeast L		Accreditations Required (See note): Dept. of Defense ELAP - ANAB; Dept. of Energy - ANAB; I ...		Job #: 350-1015-1
Address: 10 Hazelwood Drive, ,	Due Date Requested: 10/16/2024			
City: Amherst	TAT Requested (days): N/A			
State, Zip: NY, 14228-2298				
Phone: 716-691-2600(Tel) 716-691-7991(Fax)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			
Site: N/A	SSOW#: N/A			

Analysis Requested

Preservation Codes: -

Other: N/A

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	7471B/7471B_Prep	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
SRI-179-20 (350-1015-19)	9/24/24	09:30 Pacific	G	Solid			X	1	
SRI-179-25 (350-1015-20)	9/24/24	09:45 Pacific	G	Solid			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Northwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Northwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Northwest, LLC.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:
Relinquished by:	Date/Time: 10/23/24 13:10	Company: ETN	Received by: See pg 1	Date/Time: / Company:
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: / Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: / Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 10/10/2024

Eurofins Specialty Metals Testing
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: Jeff Karandeles	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s):		COC No: 350-261-138.1
Client Contact: Nolan Lewis	Phone: 503 550 3703	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: WA		Page: Page 1 of 2
Company: Antea USA Inc.	PWSID:				Job #: VBT RIFS
Address: 205 SE Spokane Street Suite 300	Due Date Requested:				Preservation Codes: N - None
City: Portland	TAT Requested (days): Standard				
State, Zip: OR, 97202	Compliance Project: Δ Yes Δ No				
Phone: 503 550 3703	PO #: WD1093775				
Email: nolan.lewis@anteagroup.us	WO #:				
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008				
Site: VBT	SSOW#:				Other:

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	D422 - D422 Grain Size	200.8 Total arsenic, cadmium, copper, lead, mercury, zinc	200.8 Total copper	Total Number of containers	Special Instructions/Note:
				Preservation Code:			N				
SRI-176-5	9/24/24	1410	G	Solid				X			
SRI-176-10	9/24/24	1440	G	Solid				X			
SRI-176-15	9/24/24	1500	G	Solid				X			
SRI-176-20	9/24/24	1510	G	Solid				X			
SRI-176-25	9/24/24	1646	G	Solid				X			
SRI-177-5	9/24/24	1140	G	Solid				X			
SRI-177-10	9/24/24	1200	G	Solid				X			
SRI-177-15	9/24/24	1215	G	Solid				X			
SRI-177-20	9/24/24	1230	G	Solid				X			
SRI-177-25	9/24/24	1245	G	Solid				X			
SRI-178-5	9/24/24	1010	G	Solid				X			

Therm. ID: SC0__ Cust. Seal: Y / N
Uncorr./Corr. Temp: ___/___ °C
Delivery: UPS / FedEx / Other: ____
Ice Type: Blue / Dry / Wet / None
Label Ver.: ______ Packing: ____

350-1015 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ________ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	9/26/24 1220		[signature]	9/26/24 1220	EET
[signature]	9/26/24 1700	EET	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 0.3/0.2 FDX SC FN

Ver: 05/06/2024

Eurofins Specialty Metals Testing
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310

Chain of Custody Record

eurofins | Environment Testing

10/28/2024

Client Information	Sampler: Jeff Kuramoles	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s):	COC No: 350-261-138.1
Client Contact: Nolan Lewis	Phone: 505 550 3703	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: WA	Page: Page 2 of 2
Company: Antea USA Inc.	PWSID:			Job #: VBT RIFS
Address: 205 SE Spokane Street Suite 300	Due Date Requested:			
City: Portland	TAT Requested (days):			
State, Zip: OR, 97202	Compliance Project: Δ Yes Δ No			
Phone: 503 530 3703	PO #: WD1093775			
Email: nolan.lewis@anteagroup.us	WO #:			
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			
Site: VBT	SSOW#:			

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	D422 - D422 Grain Size	200.8 Total arsenic, cadmium, copper, lead, mercury, zinc	200.8 Total copper	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N				
SRI-178-10	9/24/24	1020	G	Solid				X			
SRI-178-15	9/24/24	1050	G	Solid				X			
SRI-178-20	9/24/24	1045	G	Solid				X			
SRI-178-25	9/24/24	1100	G	Solid				X			
SRI-179-5	9/23/24	1030	G	Solid				X			
SRI-179-10	9/24/24	0900	G	Solid				X			
SRI-179-15	9/24/24	0915	G	Solid				X			
SRI-179-20	9/24/24	0930	G	Solid				X			
SRI-179-25	9/24/24	0945	G	Solid				X			
				Solid							
				Solid							

Preservation Codes: N - None
Other:

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		9/26/24 1220			9/26/24 1220	ET
2		9/26/24 1700	ET			
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 0.3/0.2 PDX SC TA

Ver: 05/06/2024

Eurofins Specialty Metals Testing
5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310

Chain of Custody Record

eurofins | Environment Testing

10/28/2024

Client Information (Sub Contract Lab)	Sampler:	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s):	COC No: 350-2623.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: Oregon	Page: Page 1 of 3
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): Dept. of Defense ELAP - ANAB; Dept. of Energy - ANAB; I ...		Job #: 350-1015-1
Address: 5755 8th Street East, ,	Due Date Requested: 10/16/2024	Analysis Requested		Preservation Codes: -
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			
Site:	SSOW#:			Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020B/3050B (MOD) As, Cd, Cu, Pb, Zn	7471B/7471B_Prep	Moisture	Total Number of co	Special Instructions/Note:
			Preservation Code:								
SRI-176-5 (350-1015-1)	9/24/24	14:10 Pacific	G	Solid			X	X	X	1	
SRI-176-10 (350-1015-2)	9/24/24	14:40 Pacific	G	Solid			X	X	X	1	
SRI-176-15 (350-1015-3)	9/24/24	15:00 Pacific	G	Solid			X	X	X	1	
SRI-176-20 (350-1015-4)	9/24/24	15:10 Pacific	G	Solid			X	X	X	1	
SRI-176-25 (350-1015-5)	9/24/24	16:46 Pacific	G	Solid			X	X	X	1	
SRI-177-5 (350-1015-6)	9/24/24	11:40 Pacific	G	Solid			X	X	X	1	
SRI-177-10 (350-1015-7)	9/24/24	12:00 Pacific	G	Solid			X	X	X	1	
SRI-177-15 (350-1015-8)	9/24/24	12:15 Pacific	G	Solid			X	X	X	1	
SRI-177-20 (350-1015-9)	9/24/24	12:30 Pacific	G	Solid			X	X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Northwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Northwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Northwest, LLC.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For _____ Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 05/06/2024

Eurofins Specialty Metals Testing
5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s):	COC No: 350-2623.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: Oregon	Page: Page 2 of 3
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): Dept. of Defense ELAP - ANAB; Dept. of Energy - ANAB; I ...		Job #: 350-1015-1
Address: 5755 8th Street East, ,	Due Date Requested: 10/16/2024			Preservation Codes: -
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			
Site:	SSOW#:			Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020B/3050B (MOD) As, Cd, Cu, Pb, Zn	7471B/7471B_Prep	Moisture	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
SRI-177-25 (350-1015-10)	9/24/24	12:45 Pacific	G	Solid			X	X	X	1	
SRI-178-5 (350-1015-11)	9/24/24	10:10 Pacific	G	Solid			X	X	X	1	
SRI-178-10 (350-1015-12)	9/24/24	10:20 Pacific	G	Solid			X	X	X	1	
SRI-178-15 (350-1015-13)	9/24/24	10:30 Pacific	G	Solid			X	X	X	1	
SRI-178-20 (350-1015-14)	9/24/24	10:45 Pacific	G	Solid			X	X	X	1	
SRI-178-25 (350-1015-15)	9/24/24	11:00 Pacific	G	Solid			X	X	X	1	
SRI-179-5 (350-1015-16)	9/24/24	10:30 Pacific	G	Solid			X	X	X	1	
SRI-179-10 (350-1015-17)	9/24/24	09:00 Pacific	G	Solid			X	X	X	1	
SRI-179-15 (350-1015-18)	9/24/24	09:15 Pacific	G	Solid			X	X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Northwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Northwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Northwest, LLC.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	9/26/24 16:37	EET			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 05/06/2024

Eurofins Specialty Metals Testing
5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310

Chain of Custody Record

eurofins | Environment Testing

10/28/2024

Client Information (Sub Contract Lab)	Sampler:	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s):	COC No: 350-2623.3
Client Contact: Shipping/Receiving	Phone:	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: Oregon	Page: Page 3 of 3
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): Dept. of Defense ELAP - ANAB; Dept. of Energy - ANAB; I ...		Job #: 350-1015-1
Address: 5755 8th Street East, ,	Due Date Requested: 10/16/2024	Analysis Requested		Preservation Codes: -
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			Other:
Site:	SSOW#:			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020B/3050B (MOD) As, Cd, Cu, Pb, Zn	7471B/7471B_Prep	Moisture	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
SRI-179-20 (350-1015-19)	9/24/24	09:30 Pacific	G	Solid			X	X	X	1	
SRI-179-25 (350-1015-20)	9/24/24	09:45 Pacific	G	Solid			X	X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Northwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Northwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Northwest, LLC.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	9/26/24 16:37	EET			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 05/06/2024

Login Sample Receipt Checklist

Client: Antea USA Inc.

Job Number: 350-1015-1

Login Number: 1015
List Number: 1
Creator: O'Connell, Jason I

List Source: Eurofins Seattle Specialty Metals

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Antea USA Inc.

Job Number: 350-1015-1

Login Number: 1015
List Number: 3
Creator: Stapleton, Kaitlyn

List Source: Eurofins Buffalo
List Creation: 10/24/24 10:48 AM

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.3 IR#SC ice
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

Login Sample Receipt Checklist

Client: Antea USA Inc.

Job Number: 350-1015-1

Login Number: 1015
List Number: 2
Creator: Russell, Meagann

List Source: Eurofins Seattle
List Creation: 09/27/24 04:22 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	False	Cooler temperature outside required temperature criteria.
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Brad Jackson
Antea USA Inc.
205 SE Spokane Street
Suite 300
Portland, Oregon 97202

Generated 11/19/2024 9:42:42 AM Revision 3

JOB DESCRIPTION

NuStar Split GWM / KM Van RIFS

JOB NUMBER

350-1017-1

Eurofins Seattle Specialty Metals
5755 8th Street East
Tacoma WA 98424

See page two for job notes and contact information.

Eurofins Seattle Specialty Metals

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northwest, LLC Project Manager.

Authorization

Generated
11/19/2024 9:42:42 AM
Revision 3

Authorized for release by
Lilly-Anna LaCount, Project Manager
Lilly-Anna.Lacount@et.eurofinsus.com
(253)922-2310

Table of Contents

Definitions/Glossary

Client: Antea USA Inc. Job ID: 350-1017-1
Project/Site: NuStar Split GWM / KM Van RIFS

Qualifiers

Metals

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
F3	Duplicate RPD exceeds the control limit
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL, and the absolute difference between results is < the upper reporting limits for both.
H	Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 350-1017-1 Eurofins Seattle Specialty Metals

Job Narrative
350-1017-1

REVISION

The report being provided is a revision of the original report sent on 11/7/2024. The report (revision 2) is being revised due to Sample 350-1017-28 request to add additional metals and analyze for mercury..

Report revision history
Revision 1 - 11/8/2024 - Reason - Flag on 7471 data needed verification. Report revised.

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

In an attempt to demonstrate that results for the first set were still valid even though outside holding time, the lab prepared and analyzed these samples all again to demonstrate the concentrations of mercury in them were relatively stable. If this could be shown, then the data outside holding time could be justified. For both datasets, the average difference between results for both datasets was less than 0.06 mg/kg. As this difference is of similar magnitude to the reporting limit, we believe this to be reasonable evidence that the mercury concentrations in these sets as a whole were not significantly affected by being prepared and analyzed outside the method recommended holding time for EPA 7471B.

Receipt
The samples were received on 9/26/2024 12:20 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.1°C and 0.4°C.

Receipt Exceptions
The container label for the following samples did not match the information listed on the Chain-of-Custody (COC): PNKRBG-36-24-30 (350-1017-15), PNKRBG-38-22-28 (350-1017-21) and PNKRBG-55-12-18 (350-1017-48). The container labels list PNKRBG-36-22-30, PNKRBG-38-24-30, while the COC lists PNKRBG-36-24-30, PNKRBG-38-22-38>. The sample tiime for PNKRBG-55-12-18 was listed as 16:25 on the COC, but listed as 16:35 on the container label. The samples were logged in according to the COC.

Metals
Method 7471B: The following samples were prepared outside of preparation holding time due to being received out of hold time : PNKRBG-39-0-6 (350-1017-22), PNKRBG-39-12-15 (350-1017-23), PNKRBG-41-0-6 (350-1017-26), PNKRBG-41-12-17 (350-1017-27), PNKRBG-43-0-6 (350-1017-29), PNKRBG-43-18-22 (350-1017-30), PNKRBG-45-0-6 (350-1017-31), PNKRBG-45-12-16 (350-1017-32), PNKRBG-47-0-6 (350-1017-33), PNKRBG-51-0-6 (350-1017-40), PNKRBG-53-0-6 (350-1017-43), PNKRBG-53-12-16 (350-1017-44), PNKRBG-55-0-6 (350-1017-47), PNKRBG-55-12-18 (350-1017-48), PNKRBG-55-24-27 (350-1017-49), PNKRBG-57-0-6 (350-1017-52), PNKRBG-57-12-17 (350-1017-53), PNKRBG-59-0-6 (350-1017-56), PNKRBG-59-12-18 (350-1017-57), PNKRBG-59-24-28 (350-1017-58), (350-1017-A-22 MS) and (350-1017-A-22 MSD).

Method 7471B: The following samples were prepared outside of preparation holding time due to being received outside of hold time : PNKRBG-61-0-6 (350-1017-60), PNKRBG-61-12-18 (350-1017-61), PNKRBG-61-24-28 (350-1017-62), PNKRBG-63-0-6 (350-1017-65), PNKRBG-63-12-18 (350-1017-66), PNKRBG-63-24-30 (350-1017-67), (350-1017-A-60 MS) and (350-1017-A-60 MSD).

Job ID: 350-1017-1 (Continued) Eurofins Seattle Specialty Metals

Method 7471B: The following samples were analyzed outside of analytical holding time due to being received outside of hold time: PNKRBG-31-0-6 (350-1017-1), PNKRBG-31-12-18 (350-1017-2), PNKRBG-31-24-30 (350-1017-3), PNKRBG-33-0-6 (350-1017-7), PNKRBG-35-0-6 (350-1017-11) and PNKRBG-35-12-18 (350-1017-12).

Method 7471B: The following samples were analyzed outside of analytical holding time due to being received outside of holding time: PNKRBG-31-12-18 (350-1017-2), PNKRBG-31-24-30 (350-1017-3), PNKRBG-33-0-6 (350-1017-7), PNKRBG-35-0-6 (350-1017-11), PNKRBG-35-12-18 (350-1017-12), PNKRBG-39-0-6 (350-1017-22), PNKRBG-39-12-15 (350-1017-23), PNKRBG-41-0-6 (350-1017-26), PNKRBG-41-12-17 (350-1017-27), PNKRBG-43-0-6 (350-1017-29), PNKRBG-43-18-22 (350-1017-30), PNKRBG-45-0-6 (350-1017-31), PNKRBG-45-12-16 (350-1017-32), PNKRBG-47-0-6 (350-1017-33), PNKRBG-51-0-6 (350-1017-40), PNKRBG-53-0-6 (350-1017-43), PNKRBG-53-12-16 (350-1017-44), PNKRBG-55-0-6 (350-1017-47), PNKRBG-55-12-18 (350-1017-48), PNKRBG-55-24-27 (350-1017-49), PNKRBG-57-0-6 (350-1017-52), PNKRBG-57-12-17 (350-1017-53), PNKRBG-59-0-6 (350-1017-56), PNKRBG-59-12-18 (350-1017-57), PNKRBG-59-24-28 (350-1017-58), PNKRBG-61-0-6 (350-1017-60), PNKRBG-61-12-18 (350-1017-61), PNKRBG-61-24-28 (350-1017-62), PNKRBG-63-0-6 (350-1017-65), PNKRBG-63-12-18 (350-1017-66), PNKRBG-63-24-30 (350-1017-67), (350-1017-A-22-D MS), (350-1017-A-22-E MSD), (350-1017-A-22-C SD ^5), (350-1017-A-60-C MS), (350-1017-A-60-D MSD) and (350-1017-A-60-B SD ^5).

Method 7471B: The following sample was prepared outside of preparation holding time due to being received outside of holding time : PNKRBG-42-0-6 (350-1017-28).

Method 7471B: The following sample was analyzed outside of analytical holding time due to being received outside of holding time: PNKRBG-42-0-6 (350-1017-28).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Geotechnical
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1017-1

Client Sample ID: PNKRBG-31-0-6 — Lab Sample ID: 350-1017-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	5.9		0.33	0.067	mg/Kg	10	☼	6020B	Total/NA
Lead	29		0.33	0.071	mg/Kg	10	☼	6020B	Total/NA
Cadmium	1.1		0.53	0.051	mg/Kg	10	☼	6020B	Total/NA
Copper	440		1.3	0.34	mg/Kg	10	☼	6020B	Total/NA
Zinc	270		3.4	1.1	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.024	H	0.020	0.0046	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: PNKRBG-31-12-18 — Lab Sample ID: 350-1017-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	2.5		0.32	0.063	mg/Kg	10	☼	6020B	Total/NA
Lead	6.1		0.32	0.067	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.18	J	0.50	0.049	mg/Kg	10	☼	6020B	Total/NA
Copper	44		1.3	0.32	mg/Kg	10	☼	6020B	Total/NA
Zinc	71		3.2	1.0	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.0078	J H	0.021	0.0048	mg/Kg	1	☼	7471B	Total/NA
Gravel	8.6				%	1		D422	Total/NA
Coarse Sand	6.4				%	1		D422	Total/NA
Medium Sand	26.1				%	1		D422	Total/NA
Fine Sand	38.7				%	1		D422	Total/NA
Silt	16.7				%	1		D422	Total/NA
Clay	3.5				%	1		D422	Total/NA

Client Sample ID: PNKRBG-31-24-30 — Lab Sample ID: 350-1017-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	2.1		0.34	0.068	mg/Kg	10	☼	6020B	Total/NA
Lead	4.5		0.34	0.072	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.16	J	0.54	0.052	mg/Kg	10	☼	6020B	Total/NA
Copper	22		1.4	0.34	mg/Kg	10	☼	6020B	Total/NA
Zinc	76		3.5	1.1	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.0073	J H	0.020	0.0046	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: PNKRBG-32-0-6 — Lab Sample ID: 350-1017-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	13		1.4	0.34	mg/Kg	10	☼	6020B	Total/NA

Client Sample ID: PNKRBG-32-12-18 — Lab Sample ID: 350-1017-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	9.8		1.5	0.38	mg/Kg	10	☼	6020B	Total/NA

Client Sample ID: PNKRBG-32-24-30 — Lab Sample ID: 350-1017-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	12		1.4	0.36	mg/Kg	10	☼	6020B	Total/NA

Client Sample ID: PNKRBG-33-0-6 — Lab Sample ID: 350-1017-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	27		0.35	0.069	mg/Kg	10	☼	6020B	Total/NA
Lead	73		0.35	0.073	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.60		0.55	0.053	mg/Kg	10	☼	6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PNKRBG-33-0-6 (Continued) — Lab Sample ID: 350-1017-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	500		1.4	0.35	mg/Kg	10	☼	6020B	Total/NA
Zinc	330		3.5	1.1	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.036	H	0.020	0.0047	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: PNKRBG-34-0-6 — Lab Sample ID: 350-1017-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	32		1.4	0.35	mg/Kg	10	☼	6020B	Total/NA

Client Sample ID: PNKRBG-34-12-18 — Lab Sample ID: 350-1017-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	8.6		1.4	0.36	mg/Kg	10	☼	6020B	Total/NA

Client Sample ID: PNKRBG-34-24-30 — Lab Sample ID: 350-1017-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	16		1.3	0.33	mg/Kg	10	☼	6020B	Total/NA

Client Sample ID: PNKRBG-35-0-6 — Lab Sample ID: 350-1017-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	5.8		0.34	0.069	mg/Kg	10	☼	6020B	Total/NA
Lead	28		0.34	0.073	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.40	J	0.55	0.053	mg/Kg	10	☼	6020B	Total/NA
Copper	790		2.8	0.70	mg/Kg	20	☼	6020B	Total/NA
Zinc	140		3.5	1.1	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.015	J H	0.022	0.0050	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: PNKRBG-35-12-18 — Lab Sample ID: 350-1017-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	2.9		0.35	0.070	mg/Kg	10	☼	6020B	Total/NA
Lead	12		0.35	0.074	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.28	J	0.56	0.054	mg/Kg	10	☼	6020B	Total/NA
Copper	320		1.4	0.35	mg/Kg	10	☼	6020B	Total/NA
Zinc	120		3.6	1.1	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.012	J H	0.021	0.0048	mg/Kg	1	☼	7471B	Total/NA
Gravel	43.2				%	1		D422	Total/NA
Coarse Sand	14.5				%	1		D422	Total/NA
Medium Sand	18.1				%	1		D422	Total/NA
Fine Sand	14.3				%	1		D422	Total/NA
Silt	7.1				%	1		D422	Total/NA
Clay	2.9				%	1		D422	Total/NA

Client Sample ID: PNKRBG-36-0-6 — Lab Sample ID: 350-1017-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	82		1.4	0.35	mg/Kg	10	☼	6020B	Total/NA
Gravel	0.0				%	1		D422	Total/NA
Coarse Sand	0.3				%	1		D422	Total/NA
Medium Sand	13.1				%	1		D422	Total/NA
Fine Sand	82.7				%	1		D422	Total/NA
Silt	1.0				%	1		D422	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PNKRBG-36-0-6 (Continued) — Lab Sample ID: 350-1017-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Clay	2.9				%	1		D422	Total/NA

Client Sample ID: PNKRBG-36-12-18 — Lab Sample ID: 350-1017-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	130		1.4	0.36	mg/Kg	10	☼	6020B	Total/NA

Client Sample ID: PNKRBG-36-24-30 — Lab Sample ID: 350-1017-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	220		2.0	0.50	mg/Kg	10	☼	6020B	Total/NA

Client Sample ID: PNKRBG-37-0-6 — Lab Sample ID: 350-1017-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	170		1.2	0.31	mg/Kg	10	☼	6020B	Total/NA

Client Sample ID: PNKRBG-37-12-18 — Lab Sample ID: 350-1017-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	120		1.3	0.34	mg/Kg	10	☼	6020B	Total/NA

Client Sample ID: PNKRBG-37-24-30 — Lab Sample ID: 350-1017-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	260		1.6	0.40	mg/Kg	10	☼	6020B	Total/NA

Client Sample ID: PNKRBG-38-0-6 — Lab Sample ID: 350-1017-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	730		1.5	0.38	mg/Kg	10	☼	6020B	Total/NA

Client Sample ID: PNKRBG-38-12-18 — Lab Sample ID: 350-1017-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	90	F1	1.3	0.32	mg/Kg	10	☼	6020B	Total/NA

Client Sample ID: PNKRBG-38-22-28 — Lab Sample ID: 350-1017-21

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	69		1.5	0.39	mg/Kg	10	☼	6020B	Total/NA

Client Sample ID: PNKRBG-39-0-6 — Lab Sample ID: 350-1017-22

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	150		0.34	0.068	mg/Kg	10	☼	6020B	Total/NA
Lead	410		0.34	0.072	mg/Kg	10	☼	6020B	Total/NA
Cadmium	3.4		0.54	0.052	mg/Kg	10	☼	6020B	Total/NA
Copper	9800		27	6.9	mg/Kg	200	☼	6020B	Total/NA
Zinc	1000		69	22	mg/Kg	200	☼	6020B	Total/NA
Mercury	0.0071	J H	0.020	0.0046	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: PNKRBG-39-12-15 — Lab Sample ID: 350-1017-23

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	49		0.37	0.073	mg/Kg	10	☼	6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PNKRBG-39-12-15 (Continued) — Lab Sample ID: 350-1017-23

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	160		0.37	0.078	mg/Kg	10	☼	6020B	Total/NA
Cadmium	1.4		0.59	0.056	mg/Kg	10	☼	6020B	Total/NA
Copper	3700		15	3.7	mg/Kg	100	☼	6020B	Total/NA
Zinc	390		3.7	1.2	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.0077	J H	0.021	0.0048	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: PNKRBG-40-0-6 — Lab Sample ID: 350-1017-24

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	94		1.6	0.40	mg/Kg	10	☼	6020B	Total/NA

Client Sample ID: PNKRBG-40-12-18 — Lab Sample ID: 350-1017-25

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	11		1.9	0.48	mg/Kg	10	☼	6020B	Total/NA

Client Sample ID: PNKRBG-41-0-6 — Lab Sample ID: 350-1017-26

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	6.2		0.34	0.067	mg/Kg	10	☼	6020B	Total/NA
Lead	51		0.34	0.071	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.55		0.54	0.052	mg/Kg	10	☼	6020B	Total/NA
Copper	920		13	3.4	mg/Kg	100	☼	6020B	Total/NA
Zinc	120		3.4	1.1	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.0056	J H	0.021	0.0049	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: PNKRBG-41-12-17 — Lab Sample ID: 350-1017-27

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	23		0.38	0.077	mg/Kg	10	☼	6020B	Total/NA
Lead	41		0.38	0.082	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.38	J	0.62	0.059	mg/Kg	10	☼	6020B	Total/NA
Copper	170		1.5	0.39	mg/Kg	10	☼	6020B	Total/NA
Zinc	170		3.9	1.2	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.016	J H	0.023	0.0052	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: PNKRBG-42-0-6 — Lab Sample ID: 350-1017-28

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	16		0.30	0.059	mg/Kg	10	☼	6020B	Total/NA
Copper	2000		12	3.0	mg/Kg	100	☼	6020B	Total/NA
Lead	62		0.30	0.063	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.97		0.47	0.045	mg/Kg	10	☼	6020B	Total/NA
Zinc	270		3.0	0.95	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.064	H	0.021	0.0048	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: PNKRBG-43-0-6 — Lab Sample ID: 350-1017-29

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	12		0.32	0.065	mg/Kg	10	☼	6020B	Total/NA
Lead	120		0.32	0.069	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.71		0.52	0.050	mg/Kg	10	☼	6020B	Total/NA
Copper	1100		13	3.3	mg/Kg	100	☼	6020B	Total/NA
Zinc	180		3.3	1.0	mg/Kg	10	☼	6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PNKRBG-43-0-6 (Continued) — Lab Sample ID: 350-1017-29

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.027	H	0.021	0.0048	mg/Kg	1	☼	7471B	Total/NA
Gravel	23.2				%	1		D422	Total/NA
Coarse Sand	12.8				%	1		D422	Total/NA
Medium Sand	25.8				%	1		D422	Total/NA
Fine Sand	22.5				%	1		D422	Total/NA
Silt	12.8				%	1		D422	Total/NA
Clay	2.9				%	1		D422	Total/NA

Client Sample ID: PNKRBG-43-18-22 — Lab Sample ID: 350-1017-30

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	2.7		0.39	0.077	mg/Kg	10	☼	6020B	Total/NA
Lead	24		0.39	0.082	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.25	J	0.62	0.060	mg/Kg	10	☼	6020B	Total/NA
Copper	35		1.5	0.39	mg/Kg	10	☼	6020B	Total/NA
Zinc	260		3.9	1.2	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.074	H	0.023	0.0053	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: PNKRBG-45-0-6 — Lab Sample ID: 350-1017-31

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	4.4		0.31	0.061	mg/Kg	10	☼	6020B	Total/NA
Lead	22		0.31	0.065	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.32	J	0.49	0.047	mg/Kg	10	☼	6020B	Total/NA
Copper	450		1.2	0.31	mg/Kg	10	☼	6020B	Total/NA
Zinc	110		3.1	0.99	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.14	H	0.021	0.0049	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: PNKRBG-45-12-16 — Lab Sample ID: 350-1017-32

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	4.3		0.34	0.068	mg/Kg	10	☼	6020B	Total/NA
Lead	30		0.34	0.072	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.25	J	0.54	0.052	mg/Kg	10	☼	6020B	Total/NA
Copper	190		1.4	0.34	mg/Kg	10	☼	6020B	Total/NA
Zinc	93		3.5	1.1	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.0065	J H	0.020	0.0046	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: PNKRBG-47-0-6 — Lab Sample ID: 350-1017-33

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	5.7		0.36	0.072	mg/Kg	10	☼	6020B	Total/NA
Lead	56		0.36	0.077	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.36	J	0.58	0.056	mg/Kg	10	☼	6020B	Total/NA
Copper	200		1.4	0.37	mg/Kg	10	☼	6020B	Total/NA
Zinc	110		3.7	1.2	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.0070	J H	0.020	0.0047	mg/Kg	1	☼	7471B	Total/NA
Gravel	25.6				%	1		D422	Total/NA
Coarse Sand	13.7				%	1		D422	Total/NA
Medium Sand	27.0				%	1		D422	Total/NA
Fine Sand	25.6				%	1		D422	Total/NA
Silt	4.5				%	1		D422	Total/NA
Clay	3.7				%	1		D422	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1017-1

Client Sample ID: PNKRBG-48-0-6 — Lab Sample ID: 350-1017-34

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	1300		2.8	0.70	mg/Kg	10	☼	6020B	Total/NA

Client Sample ID: PNKRBG-48-12-16 — Lab Sample ID: 350-1017-35

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	1200		11	2.7	mg/Kg	50	☼	6020B	Total/NA

Client Sample ID: PNKRBG-49-0-6 — Lab Sample ID: 350-1017-36

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	65		1.6	0.40	mg/Kg	10	☼	6020B	Total/NA

Client Sample ID: PNKRBG-49-12-18 — Lab Sample ID: 350-1017-37

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	23		1.5	0.37	mg/Kg	10	☼	6020B	Total/NA

Client Sample ID: PNKRBG-50-0-6 — Lab Sample ID: 350-1017-38

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	36		1.3	0.34	mg/Kg	10	☼	6020B	Total/NA

Client Sample ID: PNKRBG-50-14-17 — Lab Sample ID: 350-1017-39

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	23		1.3	0.34	mg/Kg	10	☼	6020B	Total/NA

Client Sample ID: PNKRBG-51-0-6 — Lab Sample ID: 350-1017-40

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	2.8		0.34	0.067	mg/Kg	10	☼	6020B	Total/NA
Lead	8.9		0.34	0.071	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.13	J	0.54	0.052	mg/Kg	10	☼	6020B	Total/NA
Copper	110		1.3	0.34	mg/Kg	10	☼	6020B	Total/NA
Zinc	66		3.4	1.1	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.018	J H	0.021	0.0049	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: PNKRBG-52-0-6 — Lab Sample ID: 350-1017-41

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	400		1.6	0.40	mg/Kg	10	☼	6020B	Total/NA

Client Sample ID: PNKRBG-52-12-18 — Lab Sample ID: 350-1017-42

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	130	F1	1.5	0.38	mg/Kg	10	☼	6020B	Total/NA
Gravel	40.2				%	1		D422	Total/NA
Coarse Sand	17.3				%	1		D422	Total/NA
Medium Sand	26.2				%	1		D422	Total/NA
Fine Sand	13.3				%	1		D422	Total/NA
Silt	0.0				%	1		D422	Total/NA
Clay	3.1				%	1		D422	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1017-1

Client Sample ID: PNKRBG-53-0-6 — Lab Sample ID: 350-1017-43

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	8.3		0.26	0.052	mg/Kg	10	☼	6020B	Total/NA
Lead	40		0.26	0.055	mg/Kg	10	☼	6020B	Total/NA
Cadmium	1.1		0.42	0.040	mg/Kg	10	☼	6020B	Total/NA
Copper	470		1.0	0.26	mg/Kg	10	☼	6020B	Total/NA
Zinc	240		2.7	0.84	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.027	H	0.020	0.0047	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: PNKRBG-53-12-16 — Lab Sample ID: 350-1017-44

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	7.6		0.36	0.072	mg/Kg	10	☼	6020B	Total/NA
Lead	42		0.36	0.077	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.73		0.58	0.056	mg/Kg	10	☼	6020B	Total/NA
Copper	180		1.4	0.37	mg/Kg	10	☼	6020B	Total/NA
Zinc	180		3.7	1.2	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.23	H	0.021	0.0048	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: PNKRBG-54-0-6 — Lab Sample ID: 350-1017-45

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	82		1.6	0.40	mg/Kg	10	☼	6020B	Total/NA

Client Sample ID: PNKRBG-54-12-17 — Lab Sample ID: 350-1017-46

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	34		1.4	0.36	mg/Kg	10	☼	6020B	Total/NA

Client Sample ID: PNKRBG-55-0-6 — Lab Sample ID: 350-1017-47

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	15		0.33	0.067	mg/Kg	10	☼	6020B	Total/NA
Lead	61		0.33	0.071	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.88		0.54	0.052	mg/Kg	10	☼	6020B	Total/NA
Copper	1500		13	3.4	mg/Kg	100	☼	6020B	Total/NA
Zinc	250		3.4	1.1	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.0093	J H	0.021	0.0049	mg/Kg	1	☼	7471B	Total/NA
Gravel	16.4				%	1		D422	Total/NA
Coarse Sand	13.9				%	1		D422	Total/NA
Medium Sand	23.7				%	1		D422	Total/NA
Fine Sand	34.0				%	1		D422	Total/NA
Silt	9.1				%	1		D422	Total/NA
Clay	2.9				%	1		D422	Total/NA

Client Sample ID: PNKRBG-55-12-18 — Lab Sample ID: 350-1017-48

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	3.4		0.33	0.066	mg/Kg	10	☼	6020B	Total/NA
Lead	20		0.33	0.070	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.23	J	0.53	0.051	mg/Kg	10	☼	6020B	Total/NA
Copper	170		1.3	0.34	mg/Kg	10	☼	6020B	Total/NA
Zinc	86		3.4	1.1	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.011	J H	0.021	0.0048	mg/Kg	1	☼	7471B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1017-1

Client Sample ID: PNKRBG-55-24-27 — Lab Sample ID: 350-1017-49

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	3.2		0.36	0.072	mg/Kg	10	☼	6020B	Total/NA
Lead	21		0.36	0.077	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.22	J	0.58	0.056	mg/Kg	10	☼	6020B	Total/NA
Copper	140		1.4	0.37	mg/Kg	10	☼	6020B	Total/NA
Zinc	71		3.7	1.2	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.0077	J H	0.020	0.0046	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: PNKRBG-56-0-6 — Lab Sample ID: 350-1017-50

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	520		1.8	0.44	mg/Kg	10	☼	6020B	Total/NA

Client Sample ID: PNKRBG-56-12-14 — Lab Sample ID: 350-1017-51

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	330		1.6	0.41	mg/Kg	10	☼	6020B	Total/NA

Client Sample ID: PNKRBG-57-0-6 — Lab Sample ID: 350-1017-52

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.7		0.33	0.066	mg/Kg	10	☼	6020B	Total/NA
Lead	3.4		0.33	0.070	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.13	J	0.53	0.051	mg/Kg	10	☼	6020B	Total/NA
Copper	33		1.3	0.33	mg/Kg	10	☼	6020B	Total/NA
Zinc	49		3.4	1.1	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.041	H	0.020	0.0046	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: PNKRBG-57-12-17 — Lab Sample ID: 350-1017-53

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.8		0.28	0.056	mg/Kg	10	☼	6020B	Total/NA
Lead	3.5		0.28	0.059	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.10	J	0.44	0.043	mg/Kg	10	☼	6020B	Total/NA
Copper	32		1.1	0.28	mg/Kg	10	☼	6020B	Total/NA
Zinc	51		2.8	0.89	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.068	H	0.021	0.0048	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: PNKRBG-58-0-6 — Lab Sample ID: 350-1017-54

No Detections.

Client Sample ID: PNKRBG-58-12-17 — Lab Sample ID: 350-1017-55

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gravel	2.3				%	1		D422	Total/NA
Coarse Sand	8.6				%	1		D422	Total/NA
Medium Sand	54.3				%	1		D422	Total/NA
Fine Sand	31.3				%	1		D422	Total/NA
Silt	0.0				%	1		D422	Total/NA
Clay	3.5				%	1		D422	Total/NA

Client Sample ID: PNKRBG-59-0-6 — Lab Sample ID: 350-1017-56

No Detections.

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1017-1

Client Sample ID: PNKRBG-59-12-18 — Lab Sample ID: 350-1017-57

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	4.8		0.34	0.069	mg/Kg	10	☼	6020B	Total/NA
Lead	25		0.34	0.073	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.24	J	0.55	0.053	mg/Kg	10	☼	6020B	Total/NA
Copper	94	F1	1.4	0.35	mg/Kg	10	☼	6020B	Total/NA
Zinc	100	F1	3.5	1.1	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.0093	J H	0.021	0.0048	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: PNKRBG-59-24-28 — Lab Sample ID: 350-1017-58

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.015	J H	0.024	0.0055	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: PNKRBG-60-0-6 — Lab Sample ID: 350-1017-59

No Detections.

Client Sample ID: PNKRBG-61-0-6 — Lab Sample ID: 350-1017-60

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.028	H	0.022	0.0050	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: PNKRBG-61-12-18 — Lab Sample ID: 350-1017-61

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.017	J H	0.021	0.0048	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: PNKRBG-61-24-28 — Lab Sample ID: 350-1017-62

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.0061	J H	0.021	0.0048	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: PNKRBG-62-0-6 — Lab Sample ID: 350-1017-63

No Detections.

Client Sample ID: PNKRBG-62-12-18 — Lab Sample ID: 350-1017-64

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	38		1.6	0.42	mg/Kg	10	☼	6020B	Total/NA

Client Sample ID: PNKRBG-63-0-6 — Lab Sample ID: 350-1017-65

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.6		0.45	0.090	mg/Kg	10	☼	6020B	Total/NA
Lead	4.0		0.45	0.096	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.15	J	0.72	0.069	mg/Kg	10	☼	6020B	Total/NA
Copper	23		1.8	0.46	mg/Kg	10	☼	6020B	Total/NA
Zinc	49		4.6	1.5	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.0054	J H	0.021	0.0049	mg/Kg	1	☼	7471B	Total/NA
Gravel	11.0				%	1		D422	Total/NA
Coarse Sand	10.6				%	1		D422	Total/NA
Medium Sand	38.0				%	1		D422	Total/NA
Fine Sand	37.5				%	1		D422	Total/NA
Silt	0.0				%	1		D422	Total/NA
Clay	3.0				%	1		D422	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1017-1

Client Sample ID: PNKRBG-63-12-18 — Lab Sample ID: 350-1017-66

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	2.9		0.33	0.066	mg/Kg	10	☼	6020B	Total/NA
Lead	5.4		0.33	0.070	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.16	J	0.53	0.051	mg/Kg	10	☼	6020B	Total/NA
Copper	26		1.3	0.34	mg/Kg	10	☼	6020B	Total/NA
Zinc	62		3.4	1.1	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.0068	J H	0.021	0.0048	mg/Kg	1	☼	7471B	Total/NA
Gravel	18.9				%	1		D422	Total/NA
Coarse Sand	6.6				%	1		D422	Total/NA
Medium Sand	25.1				%	1		D422	Total/NA
Fine Sand	45.8				%	1		D422	Total/NA
Silt	1.3				%	1		D422	Total/NA
Clay	2.2				%	1		D422	Total/NA

Client Sample ID: PNKRBG-63-24-30 — Lab Sample ID: 350-1017-67

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	2.0		0.37	0.075	mg/Kg	10	☼	6020B	Total/NA
Lead	4.2		0.37	0.079	mg/Kg	10	☼	6020B	Total/NA
Cadmium	0.11	J	0.60	0.057	mg/Kg	10	☼	6020B	Total/NA
Copper	13		1.5	0.38	mg/Kg	10	☼	6020B	Total/NA
Zinc	49		3.8	1.2	mg/Kg	10	☼	6020B	Total/NA
Mercury	0.0054	J H	0.020	0.0045	mg/Kg	1	☼	7471B	Total/NA
Gravel	5.7				%	1		D422	Total/NA
Coarse Sand	6.7				%	1		D422	Total/NA
Medium Sand	14.9				%	1		D422	Total/NA
Fine Sand	56.3				%	1		D422	Total/NA
Silt	14.2				%	1		D422	Total/NA
Clay	2.3				%	1		D422	Total/NA

Client Sample ID: PNKRBG-64-0-6 — Lab Sample ID: 350-1017-68

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	27		1.6	0.39	mg/Kg	10	☼	6020B	Total/NA

Client Sample ID: PNKRBG-64-12-18 — Lab Sample ID: 350-1017-69

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	11		2.0	0.52	mg/Kg	10	☼	6020B	Total/NA

Client Sample ID: PNKRBG-64-24-30 — Lab Sample ID: 350-1017-70

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	10		1.3	0.32	mg/Kg	10	☼	6020B	Total/NA

Client Sample ID: PNKRBG-65-0-6 — Lab Sample ID: 350-1017-71

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	8.7		1.4	0.35	mg/Kg	10	☼	6020B	Total/NA

Client Sample ID: PNKRBG-65-12-16 — Lab Sample ID: 350-1017-72

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	9.5		1.3	0.33	mg/Kg	10	☼	6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1017-1

Client Sample ID: PNKRBG-66-0-6 — Lab Sample ID: 350-1017-73

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	14		1.3	0.32	mg/Kg	10	☼	6020B	Total/NA

Client Sample ID: PNKRBG-66-12-18 — Lab Sample ID: 350-1017-74

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	17		1.5	0.38	mg/Kg	10	☼	6020B	Total/NA

Client Sample ID: PNKRBG-66-22-28 — Lab Sample ID: 350-1017-75

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	15		1.4	0.36	mg/Kg	10	☼	6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PNKRBG-31-0-6
Lab Sample ID: 350-1017-1
Date Collected: 09/25/24 11:10
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 98.5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.9		0.33	0.067	mg/Kg	☼	10/16/24 08:16	10/18/24 00:55	10
Lead	29		0.33	0.071	mg/Kg	☼	10/16/24 08:16	10/18/24 00:55	10
Cadmium	1.1		0.53	0.051	mg/Kg	☼	10/16/24 08:16	10/18/24 00:55	10
Copper	440		1.3	0.34	mg/Kg	☼	10/16/24 08:16	10/18/24 00:55	10
Zinc	270		3.4	1.1	mg/Kg	☼	10/16/24 08:16	10/18/24 00:55	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.024	H	0.020	0.0046	mg/Kg	☼	10/25/24 09:07	10/25/24 12:47	1

Client Sample ID: PNKRBG-31-12-18
Lab Sample ID: 350-1017-2
Date Collected: 09/25/24 11:20
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 97.7

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.5		0.32	0.063	mg/Kg	☼	10/16/24 08:16	10/18/24 00:58	10
Lead	6.1		0.32	0.067	mg/Kg	☼	10/16/24 08:16	10/18/24 00:58	10
Cadmium	0.18	J	0.50	0.049	mg/Kg	☼	10/16/24 08:16	10/18/24 00:58	10
Copper	44		1.3	0.32	mg/Kg	☼	10/16/24 08:16	10/18/24 00:58	10
Zinc	71		3.2	1.0	mg/Kg	☼	10/16/24 08:16	10/18/24 00:58	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0078	J H	0.021	0.0048	mg/Kg	☼	10/25/24 09:07	10/25/24 12:51	1

Method: ASTM D422 - Grain Size

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	8.6				%			10/16/24 10:54	1
Coarse Sand	6.4				%			10/16/24 10:54	1
Medium Sand	26.1				%			10/16/24 10:54	1
Fine Sand	38.7				%			10/16/24 10:54	1
Silt	16.7				%			10/16/24 10:54	1
Clay	3.5				%			10/16/24 10:54	1

Client Sample ID: PNKRBG-31-24-30
Lab Sample ID: 350-1017-3
Date Collected: 09/25/24 11:30
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 96.8

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.1		0.34	0.068	mg/Kg	☼	10/16/24 08:16	10/18/24 01:01	10
Lead	4.5		0.34	0.072	mg/Kg	☼	10/16/24 08:16	10/18/24 01:01	10
Cadmium	0.16	J	0.54	0.052	mg/Kg	☼	10/16/24 08:16	10/18/24 01:01	10
Copper	22		1.4	0.34	mg/Kg	☼	10/16/24 08:16	10/18/24 01:01	10
Zinc	76		3.5	1.1	mg/Kg	☼	10/16/24 08:16	10/18/24 01:01	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0073	J H	0.020	0.0046	mg/Kg	☼	10/25/24 09:07	10/25/24 12:52	1

Client Sample ID: PNKRBG-32-0-6 — Lab Sample ID: 350-1017-4

Date Collected: 09/25/24 11:50 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 96.2

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	13		1.4	0.34	mg/Kg	☼	10/16/24 08:16	10/18/24 01:04	10

Client Sample ID: PNKRBG-32-12-18 — Lab Sample ID: 350-1017-5

Date Collected: 09/25/24 11:55 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 93.0

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	9.8		1.5	0.38	mg/Kg	☼	10/16/24 08:16	10/18/24 01:07	10

Client Sample ID: PNKRBG-32-24-30 — Lab Sample ID: 350-1017-6

Date Collected: 09/25/24 12:00 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 93.3

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	12		1.4	0.36	mg/Kg	☼	10/16/24 08:16	10/18/24 01:16	10

Client Sample ID: PNKRBG-33-0-6 — Lab Sample ID: 350-1017-7

Date Collected: 09/25/24 13:45 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 94.1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	27		0.35	0.069	mg/Kg	☼	10/16/24 08:16	10/18/24 01:19	10
Lead	73		0.35	0.073	mg/Kg	☼	10/16/24 08:16	10/18/24 01:19	10
Cadmium	0.60		0.55	0.053	mg/Kg	☼	10/16/24 08:16	10/18/24 01:19	10
Copper	500		1.4	0.35	mg/Kg	☼	10/16/24 08:16	10/18/24 01:19	10
Zinc	330		3.5	1.1	mg/Kg	☼	10/16/24 08:16	10/18/24 01:19	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.036	H	0.020	0.0047	mg/Kg	☼	10/25/24 09:07	10/25/24 12:53	1

Client Sample ID: PNKRBG-34-0-6 — Lab Sample ID: 350-1017-8

Date Collected: 09/25/24 10:10 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 92.7

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	32		1.4	0.35	mg/Kg	☼	10/16/24 08:16	10/18/24 00:14	10

Client Sample ID: PNKRBG-34-12-18 — Lab Sample ID: 350-1017-9

Date Collected: 09/25/24 10:15 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 93.6

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	8.6		1.4	0.36	mg/Kg	☼	10/16/24 08:16	10/18/24 01:21	10

Client Sample ID: PNKRBG-34-24-30 — Lab Sample ID: 350-1017-10

Date Collected: 09/25/24 10:20 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 85.2

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	16		1.3	0.33	mg/Kg	☼	10/16/24 08:16	10/18/24 01:24	10

Client Sample ID: PNKRBG-35-0-6 — Lab Sample ID: 350-1017-11

Date Collected: 09/25/24 10:45 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 96.6

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.8		0.34	0.069	mg/Kg	☼	10/16/24 08:16	10/18/24 01:27	10
Lead	28		0.34	0.073	mg/Kg	☼	10/16/24 08:16	10/18/24 01:27	10
Cadmium	0.40	J	0.55	0.053	mg/Kg	☼	10/16/24 08:16	10/18/24 01:27	10
Copper	790		2.8	0.70	mg/Kg	☼	10/16/24 08:16	10/18/24 18:40	20
Zinc	140		3.5	1.1	mg/Kg	☼	10/16/24 08:16	10/18/24 01:27	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.015	J H	0.022	0.0050	mg/Kg	☼	10/25/24 09:07	10/25/24 12:55	1

Client Sample ID: PNKRBG-35-12-18 — Lab Sample ID: 350-1017-12

Date Collected: 09/25/24 10:55 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 93.7

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.9		0.35	0.070	mg/Kg	☼	10/17/24 20:08	10/23/24 00:52	10
Lead	12		0.35	0.074	mg/Kg	☼	10/17/24 20:08	10/23/24 00:52	10
Cadmium	0.28	J	0.56	0.054	mg/Kg	☼	10/17/24 20:08	10/23/24 00:52	10
Copper	320		1.4	0.35	mg/Kg	☼	10/17/24 20:08	10/23/24 18:58	10
Zinc	120		3.6	1.1	mg/Kg	☼	10/17/24 20:08	10/23/24 00:52	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.012	J H	0.021	0.0048	mg/Kg	☼	10/25/24 09:07	10/25/24 12:56	1

Method: ASTM D422 - Grain Size

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	43.2				%			10/16/24 10:54	1
Coarse Sand	14.5				%			10/16/24 10:54	1
Medium Sand	18.1				%			10/16/24 10:54	1
Fine Sand	14.3				%			10/16/24 10:54	1
Silt	7.1				%			10/16/24 10:54	1
Clay	2.9				%			10/16/24 10:54	1

Client Sample ID: PNKRBG-36-0-6 — Lab Sample ID: 350-1017-13

Date Collected: 09/25/24 09:00 — Matrix: Solid
Date Received: 09/26/24 12:20

Method: ASTM D422 - Grain Size

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			10/16/24 10:54	1
Coarse Sand	0.3				%			10/16/24 10:54	1
Medium Sand	13.1				%			10/16/24 10:54	1

Client Sample ID: PNKRBG-36-0-6 — Lab Sample ID: 350-1017-13
Date Collected: 09/25/24 09:00 — Matrix: Solid
Date Received: 09/26/24 12:20

Method: ASTM D422 - Grain Size (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fine Sand	82.7				%			10/16/24 10:54	1
Silt	1.0				%			10/16/24 10:54	1
Clay	2.9				%			10/16/24 10:54	1

Client Sample ID: PNKRBG-36-0-6 — Lab Sample ID: 350-1017-13
Date Collected: 09/25/24 09:00 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 96.7

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	82		1.4	0.35	mg/Kg	☼	10/16/24 08:16	10/18/24 01:30	10

Client Sample ID: PNKRBG-36-12-18 — Lab Sample ID: 350-1017-14
Date Collected: 09/25/24 09:15 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 92.1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	130		1.4	0.36	mg/Kg	☼	10/17/24 20:08	10/23/24 01:01	10

Client Sample ID: PNKRBG-36-24-30 — Lab Sample ID: 350-1017-15
Date Collected: 09/25/24 09:20 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 71.9

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	220		2.0	0.50	mg/Kg	☼	10/17/24 20:08	10/23/24 01:04	10

Client Sample ID: PNKRBG-37-0-6 — Lab Sample ID: 350-1017-16
Date Collected: 09/25/24 09:45 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 97.9

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	170		1.2	0.31	mg/Kg	☼	10/17/24 20:08	10/23/24 01:07	10

Client Sample ID: PNKRBG-37-12-18 — Lab Sample ID: 350-1017-17
Date Collected: 09/25/24 09:55 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 90.9

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	120		1.3	0.34	mg/Kg	☼	10/17/24 20:08	10/23/24 01:10	10

Client Sample ID: PNKRBG-37-24-30 — Lab Sample ID: 350-1017-18
Date Collected: 09/25/24 10:00 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 85.9

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	260		1.6	0.40	mg/Kg	☼	10/17/24 20:08	10/23/24 01:12	10

Client Sample ID: PNKRBG-38-0-6
Lab Sample ID: 350-1017-19
Date Collected: 09/25/24 09:30
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 93.3

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	730		1.5	0.38	mg/Kg	☼	10/17/24 20:08	10/23/24 01:15	10

Client Sample ID: PNKRBG-38-12-18
Lab Sample ID: 350-1017-20
Date Collected: 09/25/24 09:35
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 90.5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	90	F1	1.3	0.32	mg/Kg	☼	10/17/24 20:08	10/23/24 18:41	10

Client Sample ID: PNKRBG-38-22-28
Lab Sample ID: 350-1017-21
Date Collected: 09/25/24 09:40
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 84.8

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	69		1.5	0.39	mg/Kg	☼	10/17/24 20:08	10/23/24 01:18	10

Client Sample ID: PNKRBG-39-0-6
Lab Sample ID: 350-1017-22
Date Collected: 09/25/24 08:30
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 96.7

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	150		0.34	0.068	mg/Kg	☼	10/17/24 20:08	10/23/24 01:21	10
Lead	410		0.34	0.072	mg/Kg	☼	10/17/24 20:08	10/23/24 01:21	10
Cadmium	3.4		0.54	0.052	mg/Kg	☼	10/17/24 20:08	10/23/24 01:21	10
Copper	9800		27	6.9	mg/Kg	☼	10/17/24 20:08	10/23/24 19:07	200
Zinc	1000		69	22	mg/Kg	☼	10/17/24 20:08	10/24/24 19:05	200

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0071	J H	0.020	0.0046	mg/Kg	☼	10/25/24 09:07	10/25/24 13:43	1

Client Sample ID: PNKRBG-39-12-15
Lab Sample ID: 350-1017-23
Date Collected: 09/25/24 08:40
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 92.1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	49		0.37	0.073	mg/Kg	☼	10/17/24 20:08	10/23/24 01:24	10
Lead	160		0.37	0.078	mg/Kg	☼	10/17/24 20:08	10/23/24 01:24	10
Cadmium	1.4		0.59	0.056	mg/Kg	☼	10/17/24 20:08	10/23/24 01:24	10
Copper	3700		15	3.7	mg/Kg	☼	10/17/24 20:08	10/23/24 19:10	100
Zinc	390		3.7	1.2	mg/Kg	☼	10/17/24 20:08	10/23/24 01:24	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0077	J H	0.021	0.0048	mg/Kg	☼	10/25/24 09:07	10/25/24 13:48	1

Client Sample ID: PNKRBG-40-0-6 — Lab Sample ID: 350-1017-24

Date Collected: 09/25/24 08:50 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 87.6

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	94		1.6	0.40	mg/Kg	☼	10/17/24 20:08	10/23/24 01:27	10

Client Sample ID: PNKRBG-40-12-18 — Lab Sample ID: 350-1017-25

Date Collected: 09/25/24 09:00 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 76.9

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	11		1.9	0.48	mg/Kg	☼	10/17/24 20:08	10/23/24 01:36	10

Client Sample ID: PNKRBG-41-0-6 — Lab Sample ID: 350-1017-26

Date Collected: 09/24/24 13:35 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 95.3

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	6.2		0.34	0.067	mg/Kg	☼	10/17/24 20:08	10/23/24 01:39	10
Lead	51		0.34	0.071	mg/Kg	☼	10/17/24 20:08	10/23/24 01:39	10
Cadmium	0.55		0.54	0.052	mg/Kg	☼	10/17/24 20:08	10/23/24 01:39	10
Copper	920		13	3.4	mg/Kg	☼	10/17/24 20:08	10/23/24 19:13	100
Zinc	120		3.4	1.1	mg/Kg	☼	10/17/24 20:08	10/23/24 01:39	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0056	J H	0.021	0.0049	mg/Kg	☼	10/25/24 09:07	10/25/24 13:49	1

Client Sample ID: PNKRBG-41-12-17 — Lab Sample ID: 350-1017-27

Date Collected: 09/24/24 13:55 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 92.2

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	23		0.38	0.077	mg/Kg	☼	10/17/24 20:08	10/23/24 01:42	10
Lead	41		0.38	0.082	mg/Kg	☼	10/17/24 20:08	10/23/24 01:42	10
Cadmium	0.38	J	0.62	0.059	mg/Kg	☼	10/17/24 20:08	10/23/24 01:42	10
Copper	170		1.5	0.39	mg/Kg	☼	10/17/24 20:08	10/23/24 01:42	10
Zinc	170		3.9	1.2	mg/Kg	☼	10/17/24 20:08	10/23/24 01:42	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.016	J H	0.023	0.0052	mg/Kg	☼	10/25/24 09:07	10/25/24 13:51	1

Client Sample ID: PNKRBG-42-0-6 — Lab Sample ID: 350-1017-28

Date Collected: 09/24/24 14:10 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 98.0

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	16		0.30	0.059	mg/Kg	☼	10/17/24 21:01	10/23/24 20:16	10
Copper	2000		12	3.0	mg/Kg	☼	10/17/24 21:01	10/24/24 15:19	100
Lead	62		0.30	0.063	mg/Kg	☼	10/17/24 21:01	10/23/24 20:16	10
Cadmium	0.97		0.47	0.045	mg/Kg	☼	10/17/24 21:01	10/23/24 20:16	10

Client Sample ID: PNKRBG-42-0-6
Lab Sample ID: 350-1017-28
Date Collected: 09/24/24 14:10
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 98.0

Method: SW846 6020B - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	270		3.0	0.95	mg/Kg	☼	10/17/24 21:01	10/23/24 20:16	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.064	H	0.021	0.0048	mg/Kg	☼	11/15/24 09:51	11/15/24 12:56	1

Client Sample ID: PNKRBG-43-0-6
Lab Sample ID: 350-1017-29
Date Collected: 09/24/24 12:05
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 95.8

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	12		0.32	0.065	mg/Kg	☼	10/17/24 21:01	10/23/24 20:23	10
Lead	120		0.32	0.069	mg/Kg	☼	10/17/24 21:01	10/23/24 20:23	10
Cadmium	0.71		0.52	0.050	mg/Kg	☼	10/17/24 21:01	10/23/24 20:23	10
Copper	1100		13	3.3	mg/Kg	☼	10/17/24 21:01	10/24/24 15:21	100
Zinc	180		3.3	1.0	mg/Kg	☼	10/17/24 21:01	10/23/24 20:23	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.027	H	0.021	0.0048	mg/Kg	☼	10/25/24 09:07	10/25/24 13:52	1

Method: ASTM D422 - Grain Size

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	23.2				%			10/16/24 10:54	1
Coarse Sand	12.8				%			10/16/24 10:54	1
Medium Sand	25.8				%			10/16/24 10:54	1
Fine Sand	22.5				%			10/16/24 10:54	1
Silt	12.8				%			10/16/24 10:54	1
Clay	2.9				%			10/16/24 10:54	1

Client Sample ID: PNKRBG-43-18-22
Lab Sample ID: 350-1017-30
Date Collected: 09/24/24 12:15
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 88.4

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.7		0.39	0.077	mg/Kg	☼	10/17/24 21:01	10/23/24 20:26	10
Lead	24		0.39	0.082	mg/Kg	☼	10/17/24 21:01	10/23/24 20:26	10
Cadmium	0.25	J	0.62	0.060	mg/Kg	☼	10/17/24 21:01	10/23/24 20:26	10
Copper	35		1.5	0.39	mg/Kg	☼	10/17/24 21:01	10/23/24 20:26	10
Zinc	260		3.9	1.2	mg/Kg	☼	10/17/24 21:01	10/23/24 20:26	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.074	H	0.023	0.0053	mg/Kg	☼	10/25/24 09:07	10/25/24 13:56	1

Client Sample ID: PNKRBG-45-0-6
Lab Sample ID: 350-1017-31
Date Collected: 09/24/24 11:40
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 97.3

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.4		0.31	0.061	mg/Kg	☼	10/17/24 21:01	10/23/24 20:28	10
Lead	22		0.31	0.065	mg/Kg	☼	10/17/24 21:01	10/23/24 20:28	10
Cadmium	0.32	J	0.49	0.047	mg/Kg	☼	10/17/24 21:01	10/23/24 20:28	10
Copper	450		1.2	0.31	mg/Kg	☼	10/17/24 21:01	10/23/24 20:28	10
Zinc	110		3.1	0.99	mg/Kg	☼	10/17/24 21:01	10/23/24 20:28	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.14	H	0.021	0.0049	mg/Kg	☼	10/25/24 09:07	10/25/24 13:57	1

Client Sample ID: PNKRBG-45-12-16
Lab Sample ID: 350-1017-32
Date Collected: 09/24/24 11:45
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 96.5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.3		0.34	0.068	mg/Kg	☼	10/17/24 21:01	10/23/24 20:30	10
Lead	30		0.34	0.072	mg/Kg	☼	10/17/24 21:01	10/23/24 20:30	10
Cadmium	0.25	J	0.54	0.052	mg/Kg	☼	10/17/24 21:01	10/23/24 20:30	10
Copper	190		1.4	0.34	mg/Kg	☼	10/17/24 21:01	10/23/24 20:30	10
Zinc	93		3.5	1.1	mg/Kg	☼	10/17/24 21:01	10/23/24 20:30	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0065	J H	0.020	0.0046	mg/Kg	☼	10/25/24 09:07	10/25/24 13:58	1

Client Sample ID: PNKRBG-47-0-6
Lab Sample ID: 350-1017-33
Date Collected: 09/24/24 16:40
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 97.5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.7		0.36	0.072	mg/Kg	☼	10/17/24 21:01	10/23/24 20:33	10
Lead	56		0.36	0.077	mg/Kg	☼	10/17/24 21:01	10/23/24 20:33	10
Cadmium	0.36	J	0.58	0.056	mg/Kg	☼	10/17/24 21:01	10/23/24 20:33	10
Copper	200		1.4	0.37	mg/Kg	☼	10/17/24 21:01	10/23/24 20:33	10
Zinc	110		3.7	1.2	mg/Kg	☼	10/17/24 21:01	10/23/24 20:33	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0070	J H	0.020	0.0047	mg/Kg	☼	10/25/24 09:07	10/25/24 14:00	1

Method: ASTM D422 - Grain Size

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	25.6				%			10/16/24 10:54	1
Coarse Sand	13.7				%			10/16/24 10:54	1
Medium Sand	27.0				%			10/16/24 10:54	1
Fine Sand	25.6				%			10/16/24 10:54	1
Silt	4.5				%			10/16/24 10:54	1
Clay	3.7				%			10/16/24 10:54	1

Client Sample ID: PNKRBG-48-0-6
Lab Sample ID: 350-1017-34
Date Collected: 09/24/24 16:15
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 54.5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	1300		2.8	0.70	mg/Kg	☼	10/17/24 21:01	10/23/24 20:35	10

Client Sample ID: PNKRBG-48-12-16
Lab Sample ID: 350-1017-35
Date Collected: 09/24/24 16:27
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 63.1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	1200		11	2.7	mg/Kg	☼	10/17/24 21:01	10/24/24 15:23	50

Client Sample ID: PNKRBG-49-0-6
Lab Sample ID: 350-1017-36
Date Collected: 09/24/24 15:25
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 88.8

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	65		1.6	0.40	mg/Kg	☼	10/17/24 21:01	10/23/24 20:40	10

Client Sample ID: PNKRBG-49-12-18
Lab Sample ID: 350-1017-37
Date Collected: 09/24/24 15:35
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 94.3

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	23		1.5	0.37	mg/Kg	☼	10/17/24 21:01	10/23/24 20:42	10

Client Sample ID: PNKRBG-50-0-6
Lab Sample ID: 350-1017-38
Date Collected: 09/24/24 15:00
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 93.3

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	36		1.3	0.34	mg/Kg	☼	10/17/24 21:01	10/23/24 20:45	10

Client Sample ID: PNKRBG-50-14-17
Lab Sample ID: 350-1017-39
Date Collected: 09/24/24 15:12
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 93.6

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	23		1.3	0.34	mg/Kg	☼	10/17/24 21:01	10/23/24 20:52	10

Client Sample ID: PNKRBG-51-0-6
Lab Sample ID: 350-1017-40
Date Collected: 09/24/24 14:30
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 98.0

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.8		0.34	0.067	mg/Kg	☼	10/17/24 21:01	10/23/24 20:54	10
Lead	8.9		0.34	0.071	mg/Kg	☼	10/17/24 21:01	10/23/24 20:54	10
Cadmium	0.13	J	0.54	0.052	mg/Kg	☼	10/17/24 21:01	10/23/24 20:54	10
Copper	110		1.3	0.34	mg/Kg	☼	10/17/24 21:01	10/23/24 20:54	10

Client Sample ID: PNKRBG-51-0-6 — Lab Sample ID: 350-1017-40

Date Collected: 09/24/24 14:30 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 98.0

Method: SW846 6020B - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	66		3.4	1.1	mg/Kg	☼	10/17/24 21:01	10/23/24 20:54	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.018	J H	0.021	0.0049	mg/Kg	☼	10/25/24 09:07	10/25/24 14:01	1

Client Sample ID: PNKRBG-52-0-6 — Lab Sample ID: 350-1017-41

Date Collected: 09/24/24 14:35 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 86.9

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	400		1.6	0.40	mg/Kg	☼	10/17/24 21:01	10/23/24 20:56	10

Client Sample ID: PNKRBG-52-12-18 — Lab Sample ID: 350-1017-42

Date Collected: 09/24/24 14:45 — Matrix: Solid
Date Received: 09/26/24 12:20

Method: ASTM D422 - Grain Size

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	40.2				%			10/16/24 10:54	1
Coarse Sand	17.3				%			10/16/24 10:54	1
Medium Sand	26.2				%			10/16/24 10:54	1
Fine Sand	13.3				%			10/16/24 10:54	1
Silt	0.0				%			10/16/24 10:54	1
Clay	3.1				%			10/16/24 10:54	1

Client Sample ID: PNKRBG-52-12-18 — Lab Sample ID: 350-1017-42

Date Collected: 09/24/24 14:45 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 86.5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	130	F1	1.5	0.38	mg/Kg	☼	10/17/24 21:01	10/23/24 20:02	10

Client Sample ID: PNKRBG-53-0-6 — Lab Sample ID: 350-1017-43

Date Collected: 09/24/24 10:45 — Matrix: Solid
Date Received: 09/26/24 12:20 — Percent Solids: 97.5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	8.3		0.26	0.052	mg/Kg	☼	10/17/24 21:01	10/23/24 20:59	10
Lead	40		0.26	0.055	mg/Kg	☼	10/17/24 21:01	10/23/24 20:59	10
Cadmium	1.1		0.42	0.040	mg/Kg	☼	10/17/24 21:01	10/23/24 20:59	10
Copper	470		1.0	0.26	mg/Kg	☼	10/17/24 21:01	10/23/24 20:59	10
Zinc	240		2.7	0.84	mg/Kg	☼	10/17/24 21:01	10/23/24 20:59	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.027	H	0.020	0.0047	mg/Kg	☼	10/25/24 09:07	10/25/24 14:02	1

Client Sample ID: PNKRBG-53-12-16
Lab Sample ID: 350-1017-44
Date Collected: 09/24/24 10:50
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 95.3

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	7.6		0.36	0.072	mg/Kg	☼	10/17/24 21:01	10/23/24 21:01	10
Lead	42		0.36	0.077	mg/Kg	☼	10/17/24 21:01	10/23/24 21:01	10
Cadmium	0.73		0.58	0.056	mg/Kg	☼	10/17/24 21:01	10/23/24 21:01	10
Copper	180		1.4	0.37	mg/Kg	☼	10/17/24 21:01	10/23/24 21:01	10
Zinc	180		3.7	1.2	mg/Kg	☼	10/17/24 21:01	10/23/24 21:01	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.23	H	0.021	0.0048	mg/Kg	☼	10/25/24 09:07	10/25/24 14:04	1

Client Sample ID: PNKRBG-54-0-6
Lab Sample ID: 350-1017-45
Date Collected: 09/24/24 10:25
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 96.5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	82		1.6	0.40	mg/Kg	☼	10/17/24 21:01	10/23/24 21:03	10

Client Sample ID: PNKRBG-54-12-17
Lab Sample ID: 350-1017-46
Date Collected: 09/24/24 10:35
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 94.0

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	34		1.4	0.36	mg/Kg	☼	10/17/24 21:34	10/23/24 19:00	10

Client Sample ID: PNKRBG-55-0-6
Lab Sample ID: 350-1017-47
Date Collected: 09/24/24 16:15
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 98.8

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	15		0.33	0.067	mg/Kg	☼	10/17/24 21:34	10/23/24 19:07	10
Lead	61		0.33	0.071	mg/Kg	☼	10/17/24 21:34	10/23/24 19:07	10
Cadmium	0.88		0.54	0.052	mg/Kg	☼	10/17/24 21:34	10/23/24 19:07	10
Copper	1500		13	3.4	mg/Kg	☼	10/17/24 21:34	10/24/24 15:16	100
Zinc	250		3.4	1.1	mg/Kg	☼	10/17/24 21:34	10/23/24 19:07	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0093	J H	0.021	0.0049	mg/Kg	☼	10/25/24 09:07	10/25/24 14:05	1

Method: ASTM D422 - Grain Size

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	16.4				%			10/16/24 10:54	1
Coarse Sand	13.9				%			10/16/24 10:54	1
Medium Sand	23.7				%			10/16/24 10:54	1
Fine Sand	34.0				%			10/16/24 10:54	1
Silt	9.1				%			10/16/24 10:54	1
Clay	2.9				%			10/16/24 10:54	1

Client Sample ID: PNKRBG-55-12-18

Lab Sample ID: 350-1017-48
Date Collected: 09/24/24 16:25
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 98.1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	3.4		0.33	0.066	mg/Kg	☼	10/17/24 21:34	10/23/24 19:09	10
Lead	20		0.33	0.070	mg/Kg	☼	10/17/24 21:34	10/23/24 19:09	10
Cadmium	0.23	J	0.53	0.051	mg/Kg	☼	10/17/24 21:34	10/23/24 19:09	10
Copper	170		1.3	0.34	mg/Kg	☼	10/17/24 21:34	10/23/24 19:09	10
Zinc	86		3.4	1.1	mg/Kg	☼	10/17/24 21:34	10/23/24 19:09	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.011	J H	0.021	0.0048	mg/Kg	☼	10/25/24 09:07	10/25/24 14:06	1

Client Sample ID: PNKRBG-55-24-27

Lab Sample ID: 350-1017-49
Date Collected: 09/24/24 16:40
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 97.5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	3.2		0.36	0.072	mg/Kg	☼	10/17/24 21:34	10/23/24 19:11	10
Lead	21		0.36	0.077	mg/Kg	☼	10/17/24 21:34	10/23/24 19:11	10
Cadmium	0.22	J	0.58	0.056	mg/Kg	☼	10/17/24 21:34	10/23/24 19:11	10
Copper	140		1.4	0.37	mg/Kg	☼	10/17/24 21:34	10/23/24 19:11	10
Zinc	71		3.7	1.2	mg/Kg	☼	10/17/24 21:34	10/23/24 19:11	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0077	J H	0.020	0.0046	mg/Kg	☼	10/25/24 09:07	10/25/24 14:08	1

Client Sample ID: PNKRBG-56-0-6

Lab Sample ID: 350-1017-50
Date Collected: 09/24/24 09:25
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 87.6

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	520		1.8	0.44	mg/Kg	☼	10/17/24 21:34	10/23/24 19:14	10

Client Sample ID: PNKRBG-56-12-14

Lab Sample ID: 350-1017-51
Date Collected: 09/24/24 09:35
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 86.8

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	330		1.6	0.41	mg/Kg	☼	10/17/24 21:34	10/23/24 19:16	10

Client Sample ID: PNKRBG-57-0-6

Lab Sample ID: 350-1017-52
Date Collected: 09/23/24 15:20
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 99.2

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.7		0.33	0.066	mg/Kg	☼	10/17/24 21:34	10/23/24 19:19	10
Lead	3.4		0.33	0.070	mg/Kg	☼	10/17/24 21:34	10/23/24 19:19	10
Cadmium	0.13	J	0.53	0.051	mg/Kg	☼	10/17/24 21:34	10/23/24 19:19	10
Copper	33		1.3	0.33	mg/Kg	☼	10/17/24 21:34	10/23/24 19:19	10

Client Sample ID: PNKRBG-57-0-6

Lab Sample ID: 350-1017-52
Date Collected: 09/23/24 15:20
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 99.2

Method: SW846 6020B - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	49		3.4	1.1	mg/Kg	☼	10/17/24 21:34	10/23/24 19:19	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.041	H	0.020	0.0046	mg/Kg	☼	10/25/24 09:07	10/25/24 14:11	1

Client Sample ID: PNKRBG-57-12-17

Lab Sample ID: 350-1017-53
Date Collected: 09/23/24 15:30
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 99.2

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.8		0.28	0.056	mg/Kg	☼	10/17/24 21:34	10/23/24 19:21	10
Lead	3.5		0.28	0.059	mg/Kg	☼	10/17/24 21:34	10/23/24 19:21	10
Cadmium	0.10	J	0.44	0.043	mg/Kg	☼	10/17/24 21:34	10/23/24 19:21	10
Copper	32		1.1	0.28	mg/Kg	☼	10/17/24 21:34	10/23/24 19:21	10
Zinc	51		2.8	0.89	mg/Kg	☼	10/17/24 21:34	10/23/24 19:21	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.068	H	0.021	0.0048	mg/Kg	☼	10/25/24 09:07	10/25/24 14:13	1

Client Sample ID: PNKRBG-58-0-6

Lab Sample ID: 350-1017-54
Date Collected: 09/23/24 12:13
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 82.2

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	ND		1.4	0.35	mg/Kg	☼	10/17/24 21:34	10/23/24 19:23	10

Client Sample ID: PNKRBG-58-12-17

Lab Sample ID: 350-1017-55
Date Collected: 09/23/24 12:18
Matrix: Solid
Date Received: 09/26/24 12:20

Method: ASTM D422 - Grain Size

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	2.3				%			10/16/24 10:54	1
Coarse Sand	8.6				%			10/16/24 10:54	1
Medium Sand	54.3				%			10/16/24 10:54	1
Fine Sand	31.3				%			10/16/24 10:54	1
Silt	0.0				%			10/16/24 10:54	1
Clay	3.5				%			10/16/24 10:54	1

Client Sample ID: PNKRBG-58-12-17

Lab Sample ID: 350-1017-55
Date Collected: 09/23/24 12:18
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 76.3

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	ND		1.7	0.42	mg/Kg	☼	10/17/24 21:34	10/23/24 19:26	10

Client Sample ID: PNKRBG-59-0-6
Lab Sample ID: 350-1017-56
Date Collected: 09/23/24 14:40
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 98.2

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.38	0.076	mg/Kg	☼	10/17/24 21:34	10/23/24 19:28	10
Lead	ND		0.38	0.081	mg/Kg	☼	10/17/24 21:34	10/23/24 19:28	10
Cadmium	ND		0.61	0.059	mg/Kg	☼	10/17/24 21:34	10/23/24 19:28	10
Copper	ND		1.5	0.39	mg/Kg	☼	10/17/24 21:34	10/23/24 19:28	10
Zinc	ND		3.9	1.2	mg/Kg	☼	10/17/24 21:34	10/23/24 19:28	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.021	0.0049	mg/Kg	☼	10/25/24 09:07	10/25/24 14:14	1

Client Sample ID: PNKRBG-59-12-18
Lab Sample ID: 350-1017-57
Date Collected: 09/23/24 14:50
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 96.1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**4.8**		0.34	0.069	mg/Kg	☼	10/17/24 21:34	10/23/24 18:46	10
Lead	**25**		0.34	0.073	mg/Kg	☼	10/17/24 21:34	10/23/24 18:46	10
Cadmium	**0.24**	**J**	0.55	0.053	mg/Kg	☼	10/17/24 21:34	10/23/24 18:46	10
Copper	**94**	**F1**	1.4	0.35	mg/Kg	☼	10/17/24 21:34	10/23/24 18:46	10
Zinc	**100**	**F1**	3.5	1.1	mg/Kg	☼	10/17/24 21:34	10/23/24 18:46	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.0093**	**J H**	0.021	0.0048	mg/Kg	☼	10/25/24 09:07	10/25/24 14:15	1

Client Sample ID: PNKRBG-59-24-28
Lab Sample ID: 350-1017-58
Date Collected: 09/23/24 15:00
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 81.3

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.38	0.076	mg/Kg	☼	10/17/24 21:34	10/23/24 19:35	10
Lead	ND		0.38	0.080	mg/Kg	☼	10/17/24 21:34	10/23/24 19:35	10
Cadmium	ND		0.60	0.058	mg/Kg	☼	10/17/24 21:34	10/23/24 19:35	10
Copper	ND		1.5	0.38	mg/Kg	☼	10/17/24 21:34	10/23/24 19:35	10
Zinc	ND		3.9	1.2	mg/Kg	☼	10/17/24 21:34	10/23/24 19:35	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.015**	**J H**	0.024	0.0055	mg/Kg	☼	10/25/24 09:07	10/25/24 14:17	1

Client Sample ID: PNKRBG-60-0-6
Lab Sample ID: 350-1017-59
Date Collected: 09/23/24 11:40
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 93.8

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	ND		1.4	0.35	mg/Kg	☼	10/17/24 21:34	10/23/24 19:38	10

Client Sample ID: PNKRBG-61-0-6
Lab Sample ID: 350-1017-60
Date Collected: 09/23/24 13:50
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 88.5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.34	0.067	mg/Kg	☼	10/17/24 21:34	10/23/24 19:40	10
Lead	ND		0.34	0.071	mg/Kg	☼	10/17/24 21:34	10/23/24 19:40	10
Cadmium	ND		0.54	0.052	mg/Kg	☼	10/17/24 21:34	10/23/24 19:40	10
Copper	ND		1.3	0.34	mg/Kg	☼	10/17/24 21:34	10/23/24 19:40	10
Zinc	ND		3.4	1.1	mg/Kg	☼	10/17/24 21:34	10/23/24 19:40	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.028	H	0.022	0.0050	mg/Kg	☼	10/25/24 09:49	10/25/24 14:21	1

Client Sample ID: PNKRBG-61-12-18
Lab Sample ID: 350-1017-61
Date Collected: 09/23/24 14:00
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 97.9

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.30	0.060	mg/Kg	☼	10/17/24 21:34	10/23/24 19:43	10
Lead	ND		0.30	0.063	mg/Kg	☼	10/17/24 21:34	10/23/24 19:43	10
Cadmium	ND		0.48	0.046	mg/Kg	☼	10/17/24 21:34	10/23/24 19:43	10
Copper	ND		1.2	0.30	mg/Kg	☼	10/17/24 21:34	10/23/24 19:43	10
Zinc	ND		3.1	0.96	mg/Kg	☼	10/17/24 21:34	10/23/24 19:43	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.017	J H	0.021	0.0048	mg/Kg	☼	10/25/24 09:49	10/25/24 14:30	1

Client Sample ID: PNKRBG-61-24-28
Lab Sample ID: 350-1017-62
Date Collected: 09/23/24 14:13
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 97.8

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.33	0.066	mg/Kg	☼	10/17/24 21:34	10/23/24 19:45	10
Lead	ND		0.33	0.070	mg/Kg	☼	10/17/24 21:34	10/23/24 19:45	10
Cadmium	ND		0.53	0.051	mg/Kg	☼	10/17/24 21:34	10/23/24 19:45	10
Copper	ND		1.3	0.34	mg/Kg	☼	10/17/24 21:34	10/23/24 19:45	10
Zinc	ND		3.4	1.1	mg/Kg	☼	10/17/24 21:34	10/23/24 19:45	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0061	J H	0.021	0.0048	mg/Kg	☼	10/25/24 09:49	10/25/24 14:31	1

Client Sample ID: PNKRBG-62-0-6
Lab Sample ID: 350-1017-63
Date Collected: 09/23/24 11:20
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 95.3

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	ND		1.3	0.32	mg/Kg	☼	10/17/24 21:34	10/23/24 19:48	10

Client Sample ID: PNKRBG-62-12-18

Lab Sample ID: 350-1017-64
Date Collected: 09/23/24 11:25
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 94.0

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	38		1.6	0.42	mg/Kg	☼	10/21/24 16:52	10/23/24 21:59	10

Client Sample ID: PNKRBG-63-0-6

Lab Sample ID: 350-1017-65
Date Collected: 09/23/24 10:10
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 99.2

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.6		0.45	0.090	mg/Kg	☼	10/21/24 16:52	10/23/24 22:01	10
Lead	4.0		0.45	0.096	mg/Kg	☼	10/21/24 16:52	10/23/24 22:01	10
Cadmium	0.15	J	0.72	0.069	mg/Kg	☼	10/21/24 16:52	10/23/24 22:01	10
Copper	23		1.8	0.46	mg/Kg	☼	10/21/24 16:52	10/23/24 22:01	10
Zinc	49		4.6	1.5	mg/Kg	☼	10/21/24 16:52	10/23/24 22:01	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0054	J H	0.021	0.0049	mg/Kg	☼	10/25/24 09:49	10/25/24 14:32	1

Method: ASTM D422 - Grain Size

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	11.0				%			10/16/24 10:54	1
Coarse Sand	10.6				%			10/16/24 10:54	1
Medium Sand	38.0				%			10/16/24 10:54	1
Fine Sand	37.5				%			10/16/24 10:54	1
Silt	0.0				%			10/16/24 10:54	1
Clay	3.0				%			10/16/24 10:54	1

Client Sample ID: PNKRBG-63-12-18

Lab Sample ID: 350-1017-66
Date Collected: 09/23/24 10:25
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 97.1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.9		0.33	0.066	mg/Kg	☼	10/21/24 16:52	10/23/24 22:08	10
Lead	5.4		0.33	0.070	mg/Kg	☼	10/21/24 16:52	10/23/24 22:08	10
Cadmium	0.16	J	0.53	0.051	mg/Kg	☼	10/21/24 16:52	10/23/24 22:08	10
Copper	26		1.3	0.34	mg/Kg	☼	10/21/24 16:52	10/23/24 22:08	10
Zinc	62		3.4	1.1	mg/Kg	☼	10/21/24 16:52	10/23/24 22:08	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0068	J H	0.021	0.0048	mg/Kg	☼	10/25/24 09:49	10/25/24 14:34	1

Method: ASTM D422 - Grain Size

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	18.9				%			10/16/24 10:54	1
Coarse Sand	6.6				%			10/16/24 10:54	1
Medium Sand	25.1				%			10/16/24 10:54	1
Fine Sand	45.8				%			10/16/24 10:54	1
Silt	1.3				%			10/16/24 10:54	1
Clay	2.2				%			10/16/24 10:54	1

Client Sample ID: PNKRBG-63-24-30
Lab Sample ID: 350-1017-67
Date Collected: 09/23/24 10:35
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 98.1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.0		0.37	0.075	mg/Kg	☼	10/21/24 16:52	10/23/24 22:11	10
Lead	4.2		0.37	0.079	mg/Kg	☼	10/21/24 16:52	10/23/24 22:11	10
Cadmium	0.11	J	0.60	0.057	mg/Kg	☼	10/21/24 16:52	10/23/24 22:11	10
Copper	13		1.5	0.38	mg/Kg	☼	10/21/24 16:52	10/23/24 22:11	10
Zinc	49		3.8	1.2	mg/Kg	☼	10/21/24 16:52	10/23/24 22:11	10

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0054	J H	0.020	0.0045	mg/Kg	☼	10/25/24 09:49	10/25/24 14:35	1

Method: ASTM D422 - Grain Size

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	5.7				%			10/16/24 10:54	1
Coarse Sand	6.7				%			10/16/24 10:54	1
Medium Sand	14.9				%			10/16/24 10:54	1
Fine Sand	56.3				%			10/16/24 10:54	1
Silt	14.2				%			10/16/24 10:54	1
Clay	2.3				%			10/16/24 10:54	1

Client Sample ID: PNKRBG-64-0-6
Lab Sample ID: 350-1017-68
Date Collected: 09/23/24 09:45
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 78.1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	27		1.6	0.39	mg/Kg	☼	10/21/24 16:52	10/23/24 22:13	10

Client Sample ID: PNKRBG-64-12-18
Lab Sample ID: 350-1017-69
Date Collected: 09/23/24 09:52
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 97.1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	11		2.0	0.52	mg/Kg	☼	10/21/24 16:52	10/23/24 22:15	10

Client Sample ID: PNKRBG-64-24-30
Lab Sample ID: 350-1017-70
Date Collected: 09/23/24 10:00
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 82.5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	10		1.3	0.32	mg/Kg	☼	10/21/24 16:52	10/23/24 22:18	10

Client Sample ID: PNKRBG-65-0-6
Lab Sample ID: 350-1017-71
Date Collected: 09/25/24 13:30
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 86.6

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	8.7		1.4	0.35	mg/Kg	☼	10/21/24 16:52	10/23/24 22:20	10

Client: Antea USA Inc.
Job ID: 350-1017-1
Project/Site: NuStar Split GWM / KM Van RIFS

Client Sample ID: PNKRBG-65-12-16
Lab Sample ID: 350-1017-72
Date Collected: 09/25/24 13:40
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 84.8

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	9.5		1.3	0.33	mg/Kg	☼	10/25/24 15:04	10/28/24 23:56	10

Client Sample ID: PNKRBG-66-0-6
Lab Sample ID: 350-1017-73
Date Collected: 09/25/24 13:10
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 96.7

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	14		1.3	0.32	mg/Kg	☼	10/25/24 15:04	10/28/24 23:59	10

Client Sample ID: PNKRBG-66-12-18
Lab Sample ID: 350-1017-74
Date Collected: 09/25/24 13:15
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 92.7

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	17		1.5	0.38	mg/Kg	☼	10/25/24 15:04	10/29/24 00:01	10

Client Sample ID: PNKRBG-66-22-28
Lab Sample ID: 350-1017-75
Date Collected: 09/25/24 13:20
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 90.2

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	15		1.4	0.36	mg/Kg	☼	10/25/24 15:04	10/29/24 00:08	10

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 580-474870/22-A
Matrix: Solid
Analysis Batch: 475289

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 474870

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.50	0.10	mg/Kg		10/16/24 08:16	10/18/24 00:05	10
Lead	ND		0.50	0.11	mg/Kg		10/16/24 08:16	10/18/24 00:05	10
Cadmium	ND		0.80	0.077	mg/Kg		10/16/24 08:16	10/18/24 00:05	10
Copper	ND		2.0	0.51	mg/Kg		10/16/24 08:16	10/18/24 00:05	10
Zinc	ND		5.1	1.6	mg/Kg		10/16/24 08:16	10/18/24 00:05	10

Lab Sample ID: LCS 580-474870/23-A
Matrix: Solid
Analysis Batch: 475289

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 474870

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Arsenic			50.0	49.2		mg/Kg		98	80 - 120		
Lead			50.0	48.1		mg/Kg		96	80 - 120		
Cadmium			50.0	51.4		mg/Kg		103	80 - 120		
Copper			50.0	49.1		mg/Kg		98	80 - 120		
Zinc			50.0	51.7		mg/Kg		103	80 - 120		

Lab Sample ID: LCSD 580-474870/24-A
Matrix: Solid
Analysis Batch: 475289

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 474870

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic			50.0	46.3		mg/Kg		93	80 - 120	6	20
Lead			50.0	45.9		mg/Kg		92	80 - 120	5	20
Cadmium			50.0	48.3		mg/Kg		97	80 - 120	6	20
Copper			50.0	45.8		mg/Kg		92	80 - 120	7	20
Zinc			50.0	48.6		mg/Kg		97	80 - 120	6	20

Lab Sample ID: 350-1017-8 MS
Matrix: Solid
Analysis Batch: 475289

Client Sample ID: PNKRBG-34-0-6
Prep Type: Total/NA
Prep Batch: 474870

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Arsenic	2.3		34.1	34.4		mg/Kg	☼	94	80 - 120		
Lead	5.2	F1 F2	34.1	36.8		mg/Kg	☼	93	80 - 120		
Cadmium	0.17	J	34.1	33.3		mg/Kg	☼	97	80 - 120		
Copper	32		34.1	63.3		mg/Kg	☼	91	80 - 120		
Zinc	55	F1 F2	34.1	85.4		mg/Kg	☼	90	80 - 120		

Lab Sample ID: 350-1017-8 MSD
Matrix: Solid
Analysis Batch: 475289

Client Sample ID: PNKRBG-34-0-6
Prep Type: Total/NA
Prep Batch: 474870

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	2.3		34.3	35.5		mg/Kg	☼	97	80 - 120	3	20
Lead	5.2	F1 F2	34.3	47.5	F1 F2	mg/Kg	☼	123	80 - 120	26	20
Cadmium	0.17	J	34.3	34.5		mg/Kg	☼	100	80 - 120	3	20
Copper	32		34.3	65.6		mg/Kg	☼	97	80 - 120	4	20
Zinc	55	F1 F2	34.3	108	F1 F2	mg/Kg	☼	155	80 - 120	23	20

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 350-1017-8 DU
Matrix: Solid
Analysis Batch: 475289

Client Sample ID: PNKRBG-34-0-6
Prep Type: Total/NA
Prep Batch: 474870

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	2.3		2.25		mg/Kg	☼	2	20
Lead	5.2	F1 F2	5.08		mg/Kg	☼	2	20
Cadmium	0.17	J	0.175	J	mg/Kg	☼	4	20
Copper	32		29.6		mg/Kg	☼	9	20
Zinc	55	F1 F2	57.1		mg/Kg	☼	4	20

Lab Sample ID: MB 580-475156/22-A
Matrix: Solid
Analysis Batch: 475647

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 475156

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.50	0.10	mg/Kg		10/17/24 20:08	10/23/24 00:25	10
Lead	ND		0.50	0.11	mg/Kg		10/17/24 20:08	10/23/24 00:25	10
Cadmium	ND		0.80	0.077	mg/Kg		10/17/24 20:08	10/23/24 00:25	10
Zinc	ND		5.1	1.6	mg/Kg		10/17/24 20:08	10/23/24 00:25	10

Lab Sample ID: MB 580-475156/22-A
Matrix: Solid
Analysis Batch: 476517

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 475156

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	ND		2.0	0.51	mg/Kg		10/17/24 20:08	10/31/24 15:18	10

Lab Sample ID: LCS 580-475156/23-A
Matrix: Solid
Analysis Batch: 475647

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 475156

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	50.0	46.8		mg/Kg		94	80 - 120
Lead	50.0	46.2		mg/Kg		92	80 - 120
Cadmium	50.0	48.9		mg/Kg		98	80 - 120
Zinc	50.0	52.3		mg/Kg		105	80 - 120

Lab Sample ID: LCS 580-475156/23-A
Matrix: Solid
Analysis Batch: 476517

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 475156

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Copper	50.0	48.0		mg/Kg		96	80 - 120

Lab Sample ID: LCSD 580-475156/24-A
Matrix: Solid
Analysis Batch: 475647

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 475156

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	50.0	47.2		mg/Kg		94	80 - 120	1	20
Lead	50.0	46.6		mg/Kg		93	80 - 120	1	20
Cadmium	50.0	47.1		mg/Kg		94	80 - 120	4	20
Zinc	50.0	46.3		mg/Kg		93	80 - 120	12	20

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 580-475156/24-A
Matrix: Solid
Analysis Batch: 476517

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 475156

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Copper			50.0	47.3		mg/Kg		95	80 - 120	2	20

Lab Sample ID: 350-1017-20 MS
Matrix: Solid
Analysis Batch: 475647

Client Sample ID: PNKRBG-38-12-18
Prep Type: Total/NA
Prep Batch: 475156

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	2.7		32.2	33.5		mg/Kg	☼	96	80 - 120
Lead	8.3		32.2	38.9		mg/Kg	☼	95	80 - 120
Cadmium	0.23	J	32.2	31.6		mg/Kg	☼	97	80 - 120
Zinc	100	F1	32.2	104	F1	mg/Kg	☼	11	80 - 120

Lab Sample ID: 350-1017-20 MS
Matrix: Solid
Analysis Batch: 475787

Client Sample ID: PNKRBG-38-12-18
Prep Type: Total/NA
Prep Batch: 475156

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	2.6		32.2	35.1		mg/Kg	☼	101	80 - 120
Lead	7.8		32.2	41.2		mg/Kg	☼	104	80 - 120
Cadmium	0.24	J	32.2	33.5		mg/Kg	☼	103	80 - 120
Copper	90	F1	32.2	106	F1	mg/Kg	☼	51	80 - 120
Zinc	100	F1 *+	32.2	120	F1	mg/Kg	☼	53	80 - 120

Lab Sample ID: 350-1017-20 MSD
Matrix: Solid
Analysis Batch: 475647

Client Sample ID: PNKRBG-38-12-18
Prep Type: Total/NA
Prep Batch: 475156

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	2.7		32.1	33.5		mg/Kg	☼	96	80 - 120	0	20
Lead	8.3		32.1	40.1		mg/Kg	☼	99	80 - 120	3	20
Cadmium	0.23	J	32.1	32.3		mg/Kg	☼	100	80 - 120	2	20
Zinc	100	F1	32.1	116	F1	mg/Kg	☼	49	80 - 120	11	20

Lab Sample ID: 350-1017-20 MSD
Matrix: Solid
Analysis Batch: 475787

Client Sample ID: PNKRBG-38-12-18
Prep Type: Total/NA
Prep Batch: 475156

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	2.6		32.1	34.6		mg/Kg	☼	100	80 - 120	1	20
Lead	7.8		32.1	41.4		mg/Kg	☼	105	80 - 120	1	20
Cadmium	0.24	J	32.1	32.8		mg/Kg	☼	102	80 - 120	2	20
Copper	90	F1	32.1	117		mg/Kg	☼	85	80 - 120	10	20
Zinc	100	F1 *+	32.1	130		mg/Kg	☼	85	80 - 120	8	20

Lab Sample ID: 350-1017-20 DU
Matrix: Solid
Analysis Batch: 475647

Client Sample ID: PNKRBG-38-12-18
Prep Type: Total/NA
Prep Batch: 475156

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	2.7		2.47		mg/Kg	☼	9	20

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 350-1017-20 DU
Matrix: Solid
Analysis Batch: 475647

Client Sample ID: PNKRBG-38-12-18
Prep Type: Total/NA
Prep Batch: 475156

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Lead	8.3		9.74		mg/Kg	☼	16	20
Cadmium	0.23	J	0.225	J	mg/Kg	☼	0.2	20
Zinc	100	F1	75.8	F3	mg/Kg	☼	28	20

Lab Sample ID: 350-1017-20 DU
Matrix: Solid
Analysis Batch: 475787

Client Sample ID: PNKRBG-38-12-18
Prep Type: Total/NA
Prep Batch: 475156

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	2.6		2.52		mg/Kg	☼	3	20
Lead	7.8		9.72	F3	mg/Kg	☼	21	20
Cadmium	0.24	J	0.234	J	mg/Kg	☼	2	20
Copper	90	F1	72.3	F3	mg/Kg	☼	22	20

Lab Sample ID: MB 580-475166/22-A
Matrix: Solid
Analysis Batch: 475776

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 475166

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.50	0.10	mg/Kg		10/17/24 21:01	10/23/24 19:55	10
Lead	ND		0.50	0.11	mg/Kg		10/17/24 21:01	10/23/24 19:55	10
Cadmium	ND		0.80	0.077	mg/Kg		10/17/24 21:01	10/23/24 19:55	10
Copper	ND		2.0	0.51	mg/Kg		10/17/24 21:01	10/23/24 19:55	10
Zinc	ND		5.1	1.6	mg/Kg		10/17/24 21:01	10/23/24 19:55	10

Lab Sample ID: LCS 580-475166/23-A
Matrix: Solid
Analysis Batch: 475776

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 475166

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	50.0	50.7		mg/Kg		101	80 - 120
Lead	50.0	51.4		mg/Kg		103	80 - 120
Cadmium	50.0	53.2		mg/Kg		106	80 - 120
Copper	50.0	51.0		mg/Kg		102	80 - 120
Zinc	50.0	50.2		mg/Kg		100	80 - 120

Lab Sample ID: LCSD 580-475166/24-A
Matrix: Solid
Analysis Batch: 475776

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 475166

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	50.0	50.6		mg/Kg		101	80 - 120	0	20
Lead	50.0	50.8		mg/Kg		102	80 - 120	1	20
Cadmium	50.0	52.6		mg/Kg		105	80 - 120	1	20
Copper	50.0	49.9		mg/Kg		100	80 - 120	2	20
Zinc	50.0	48.9		mg/Kg		98	80 - 120	3	20

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 350-1017-42 MS
Matrix: Solid
Analysis Batch: 475776

Client Sample ID: PNKRBG-52-12-18
Prep Type: Total/NA
Prep Batch: 475166

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	3.8		38.3	41.8		mg/Kg	☼	99	80 - 120
Lead	18		38.3	52.8		mg/Kg	☼	92	80 - 120
Cadmium	0.27	J	38.3	39.9		mg/Kg	☼	104	80 - 120
Copper	130	F1	38.3	208	F1	mg/Kg	☼	202	80 - 120
Zinc	92	F1	38.3	137		mg/Kg	☼	116	80 - 120

Lab Sample ID: 350-1017-42 MSD
Matrix: Solid
Analysis Batch: 475776

Client Sample ID: PNKRBG-52-12-18
Prep Type: Total/NA
Prep Batch: 475166

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	3.8		38.4	41.7		mg/Kg	☼	99	80 - 120	0	20
Lead	18		38.4	53.5		mg/Kg	☼	93	80 - 120	1	20
Cadmium	0.27	J	38.4	40.2		mg/Kg	☼	104	80 - 120	1	20
Copper	130	F1	38.4	178	F1	mg/Kg	☼	123	80 - 120	16	20
Zinc	92	F1	38.4	146	F1	mg/Kg	☼	139	80 - 120	6	20

Lab Sample ID: 350-1017-42 DU
Matrix: Solid
Analysis Batch: 475776

Client Sample ID: PNKRBG-52-12-18
Prep Type: Total/NA
Prep Batch: 475166

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	3.8		3.45		mg/Kg	☼	10	20
Lead	18		11.7	F3	mg/Kg	☼	41	20
Cadmium	0.27	J	0.208	J F5	mg/Kg	☼	25	20
Copper	130	F1	116		mg/Kg	☼	12	20
Zinc	92	F1	84.9		mg/Kg	☼	8	20

Lab Sample ID: MB 580-475167/22-A
Matrix: Solid
Analysis Batch: 475776

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 475167

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.50	0.10	mg/Kg		10/17/24 21:34	10/23/24 18:38	10
Lead	ND		0.50	0.11	mg/Kg		10/17/24 21:34	10/23/24 18:38	10
Cadmium	ND		0.80	0.077	mg/Kg		10/17/24 21:34	10/23/24 18:38	10
Copper	ND		2.0	0.51	mg/Kg		10/17/24 21:34	10/23/24 18:38	10
Zinc	ND		5.1	1.6	mg/Kg		10/17/24 21:34	10/23/24 18:38	10

Lab Sample ID: LCS 580-475167/23-A
Matrix: Solid
Analysis Batch: 475776

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 475167

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	50.0	50.3		mg/Kg		101	80 - 120
Lead	50.0	51.3		mg/Kg		103	80 - 120
Cadmium	50.0	52.3		mg/Kg		105	80 - 120
Copper	50.0	50.3		mg/Kg		101	80 - 120
Zinc	50.0	49.6		mg/Kg		99	80 - 120

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 580-475167/24-A
Matrix: Solid
Analysis Batch: 475776

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 475167

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic			50.0	51.7		mg/Kg		103	80 - 120	3	20
Lead			50.0	52.6		mg/Kg		105	80 - 120	2	20
Cadmium			50.0	53.7		mg/Kg		107	80 - 120	3	20
Copper			50.0	52.2		mg/Kg		104	80 - 120	4	20
Zinc			50.0	51.9		mg/Kg		104	80 - 120	4	20

Lab Sample ID: 350-1017-57 MS
Matrix: Solid
Analysis Batch: 475776

Client Sample ID: PNKRBG-59-12-18
Prep Type: Total/NA
Prep Batch: 475167

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Arsenic	4.8		34.6	39.6		mg/Kg	☼	101	80 - 120		
Lead	25		34.6	60.9		mg/Kg	☼	104	80 - 120		
Cadmium	0.24	J	34.6	37.2		mg/Kg	☼	107	80 - 120		
Copper	94	F1	34.6	139	F1	mg/Kg	☼	131	80 - 120		
Zinc	100	F1	34.6	155	F1	mg/Kg	☼	148	80 - 120		

Lab Sample ID: 350-1017-57 MSD
Matrix: Solid
Analysis Batch: 475776

Client Sample ID: PNKRBG-59-12-18
Prep Type: Total/NA
Prep Batch: 475167

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	4.8		34.1	38.7		mg/Kg	☼	99	80 - 120	2	20
Lead	25		34.1	57.6		mg/Kg	☼	96	80 - 120	6	20
Cadmium	0.24	J	34.1	35.7		mg/Kg	☼	104	80 - 120	4	20
Copper	94	F1	34.1	140	F1	mg/Kg	☼	136	80 - 120	1	20
Zinc	100	F1	34.1	144		mg/Kg	☼	116	80 - 120	8	20

Lab Sample ID: 350-1017-57 DU
Matrix: Solid
Analysis Batch: 475776

Client Sample ID: PNKRBG-59-12-18
Prep Type: Total/NA
Prep Batch: 475167

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Arsenic	4.8			4.39		mg/Kg	☼			9	20
Lead	25			23.5		mg/Kg	☼			5	20
Cadmium	0.24	J		0.251	J	mg/Kg	☼			3	20
Copper	94	F1		89.9		mg/Kg	☼			4	20
Zinc	100	F1		105		mg/Kg	☼			1	20

Lab Sample ID: MB 580-475451/22-A
Matrix: Solid
Analysis Batch: 475776

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 475451

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.50	0.10	mg/Kg		10/21/24 16:52	10/23/24 21:11	10
Lead	ND		0.50	0.11	mg/Kg		10/21/24 16:52	10/23/24 21:11	10
Cadmium	ND		0.80	0.077	mg/Kg		10/21/24 16:52	10/23/24 21:11	10
Copper	ND		2.0	0.51	mg/Kg		10/21/24 16:52	10/23/24 21:11	10
Zinc	ND		5.1	1.6	mg/Kg		10/21/24 16:52	10/23/24 21:11	10

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 580-475451/23-A
Matrix: Solid
Analysis Batch: 475776

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 475451

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	50.0	50.7		mg/Kg		101	80 - 120
Lead	50.0	51.4		mg/Kg		103	80 - 120
Cadmium	50.0	52.3		mg/Kg		105	80 - 120
Copper	50.0	51.7		mg/Kg		103	80 - 120
Zinc	50.0	50.7		mg/Kg		101	80 - 120

Lab Sample ID: LCSD 580-475451/24-A
Matrix: Solid
Analysis Batch: 475776

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 475451

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	50.0	53.1		mg/Kg		106	80 - 120	5	20
Lead	50.0	53.1		mg/Kg		106	80 - 120	3	20
Cadmium	50.0	54.2		mg/Kg		108	80 - 120	4	20
Copper	50.0	53.7		mg/Kg		107	80 - 120	4	20
Zinc	50.0	52.2		mg/Kg		104	80 - 120	3	20

Lab Sample ID: MB 580-475959/23-A
Matrix: Solid
Analysis Batch: 476210

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 475959

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	ND		1.0	0.25	mg/Kg		10/25/24 15:04	10/28/24 22:54	5

Lab Sample ID: LCS 580-475959/24-A
Matrix: Solid
Analysis Batch: 476210

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 475959

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Copper	50.0	47.9		mg/Kg		96	80 - 120

Method: 7471B - Mercury (CVAA)

Lab Sample ID: MB 480-729636/1-A
Matrix: Solid
Analysis Batch: 729877

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 729636

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.020	0.0045	mg/Kg		10/25/24 09:07	10/25/24 12:16	1

Lab Sample ID: LCSSRM 480-729636/2-A ^10
Matrix: Solid
Analysis Batch: 729877

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 729636

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	11.9	11.2		mg/Kg		93.9	59.8 - 139.5

Method: 7471B - Mercury (CVAA) (Continued)

Lab Sample ID: MB 480-729637/1-A
Matrix: Solid
Analysis Batch: 729877

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 729637

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.021	0.0047	mg/Kg		10/25/24 09:07	10/25/24 13:40	1

Lab Sample ID: LCSSRM 480-729637/2-A ^10
Matrix: Solid
Analysis Batch: 729877

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 729637

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	11.9	10.5		mg/Kg		88.4	59.8 - 139.5

Lab Sample ID: 350-1017-22 MS
Matrix: Solid
Analysis Batch: 729877

Client Sample ID: PNKRBG-39-0-6
Prep Type: Total/NA
Prep Batch: 729637

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.0071	J H	0.335	0.332		mg/Kg	☼	97	80 - 120

Lab Sample ID: 350-1017-22 MSD
Matrix: Solid
Analysis Batch: 729877

Client Sample ID: PNKRBG-39-0-6
Prep Type: Total/NA
Prep Batch: 729637

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.0071	J H	0.351	0.348		mg/Kg	☼	97	80 - 120	5	20

Lab Sample ID: MB 480-729638/1-A
Matrix: Solid
Analysis Batch: 729877

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 729638

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.021	0.0048	mg/Kg		10/25/24 09:49	10/25/24 14:18	1

Lab Sample ID: LCSSRM 480-729638/2-A ^10
Matrix: Solid
Analysis Batch: 729877

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 729638

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	11.9	10.3		mg/Kg		86.6	59.8 - 139.5

Lab Sample ID: 350-1017-60 MS
Matrix: Solid
Analysis Batch: 729877

Client Sample ID: PNKRBG-61-0-6
Prep Type: Total/NA
Prep Batch: 729638

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.028	H	0.370	0.371		mg/Kg	☼	93	80 - 120

Method: 7471B - Mercury (CVAA) (Continued)

Lab Sample ID: 350-1017-60 MSD
Matrix: Solid
Analysis Batch: 729877

Client Sample ID: PNKRBG-61-0-6
Prep Type: Total/NA
Prep Batch: 729638

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.028	H	0.385	0.382		mg/Kg	☼	92	80 - 120	3	20

Lab Sample ID: MB 480-732529/1-A
Matrix: Solid
Analysis Batch: 732596

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 732529

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.020	0.0047	mg/Kg		11/15/24 09:51	11/15/24 12:38	1

Lab Sample ID: LCSSRM 480-732529/2-A ^10
Matrix: Solid
Analysis Batch: 732596

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 732529

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			24.9	20.6		mg/Kg		82.5	55.0 - 128.1		

Method: D422 - Grain Size

Lab Sample ID: 350-1017-2 DU
Matrix: Solid
Analysis Batch: 474898

Client Sample ID: PNKRBG-31-12-18
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Gravel	8.6			8.6		%				0	20
Coarse Sand	6.4			6.5		%				2	20
Medium Sand	26.1			27.6		%				6	20
Fine Sand	38.7			39.0		%				0.8	20
Silt	16.7			14.7		%				13	20
Clay	3.5			3.6		%				3	20

Metals

Prep Batch: 474870

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1017-1	PNKRBG-31-0-6	Total/NA	Solid	3050B	
350-1017-2	PNKRBG-31-12-18	Total/NA	Solid	3050B	
350-1017-3	PNKRBG-31-24-30	Total/NA	Solid	3050B	
350-1017-4	PNKRBG-32-0-6	Total/NA	Solid	3050B	
350-1017-5	PNKRBG-32-12-18	Total/NA	Solid	3050B	
350-1017-6	PNKRBG-32-24-30	Total/NA	Solid	3050B	
350-1017-7	PNKRBG-33-0-6	Total/NA	Solid	3050B	
350-1017-8	PNKRBG-34-0-6	Total/NA	Solid	3050B	
350-1017-9	PNKRBG-34-12-18	Total/NA	Solid	3050B	
350-1017-10	PNKRBG-34-24-30	Total/NA	Solid	3050B	
350-1017-11	PNKRBG-35-0-6	Total/NA	Solid	3050B	
350-1017-13	PNKRBG-36-0-6	Total/NA	Solid	3050B	
MB 580-474870/22-A	Method Blank	Total/NA	Solid	3050B	
LCS 580-474870/23-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 580-474870/24-A	Lab Control Sample Dup	Total/NA	Solid	3050B	
350-1017-8 MS	PNKRBG-34-0-6	Total/NA	Solid	3050B	
350-1017-8 MSD	PNKRBG-34-0-6	Total/NA	Solid	3050B	
350-1017-8 DU	PNKRBG-34-0-6	Total/NA	Solid	3050B	

Prep Batch: 475156

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1017-12	PNKRBG-35-12-18	Total/NA	Solid	3050B	
350-1017-14	PNKRBG-36-12-18	Total/NA	Solid	3050B	
350-1017-15	PNKRBG-36-24-30	Total/NA	Solid	3050B	
350-1017-16	PNKRBG-37-0-6	Total/NA	Solid	3050B	
350-1017-17	PNKRBG-37-12-18	Total/NA	Solid	3050B	
350-1017-18	PNKRBG-37-24-30	Total/NA	Solid	3050B	
350-1017-19	PNKRBG-38-0-6	Total/NA	Solid	3050B	
350-1017-20	PNKRBG-38-12-18	Total/NA	Solid	3050B	
350-1017-21	PNKRBG-38-22-28	Total/NA	Solid	3050B	
350-1017-22	PNKRBG-39-0-6	Total/NA	Solid	3050B	
350-1017-23	PNKRBG-39-12-15	Total/NA	Solid	3050B	
350-1017-24	PNKRBG-40-0-6	Total/NA	Solid	3050B	
350-1017-25	PNKRBG-40-12-18	Total/NA	Solid	3050B	
350-1017-26	PNKRBG-41-0-6	Total/NA	Solid	3050B	
350-1017-27	PNKRBG-41-12-17	Total/NA	Solid	3050B	
MB 580-475156/22-A	Method Blank	Total/NA	Solid	3050B	
LCS 580-475156/23-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 580-475156/24-A	Lab Control Sample Dup	Total/NA	Solid	3050B	
350-1017-20 MS	PNKRBG-38-12-18	Total/NA	Solid	3050B	
350-1017-20 MSD	PNKRBG-38-12-18	Total/NA	Solid	3050B	
350-1017-20 DU	PNKRBG-38-12-18	Total/NA	Solid	3050B	

Prep Batch: 475166

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1017-28	PNKRBG-42-0-6	Total/NA	Solid	3050B	
350-1017-29	PNKRBG-43-0-6	Total/NA	Solid	3050B	
350-1017-30	PNKRBG-43-18-22	Total/NA	Solid	3050B	
350-1017-31	PNKRBG-45-0-6	Total/NA	Solid	3050B	
350-1017-32	PNKRBG-45-12-16	Total/NA	Solid	3050B	
350-1017-33	PNKRBG-47-0-6	Total/NA	Solid	3050B	

Metals (Continued)

Prep Batch: 475166 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1017-34	PNKRBG-48-0-6	Total/NA	Solid	3050B	
350-1017-35	PNKRBG-48-12-16	Total/NA	Solid	3050B	
350-1017-36	PNKRBG-49-0-6	Total/NA	Solid	3050B	
350-1017-37	PNKRBG-49-12-18	Total/NA	Solid	3050B	
350-1017-38	PNKRBG-50-0-6	Total/NA	Solid	3050B	
350-1017-39	PNKRBG-50-14-17	Total/NA	Solid	3050B	
350-1017-40	PNKRBG-51-0-6	Total/NA	Solid	3050B	
350-1017-41	PNKRBG-52-0-6	Total/NA	Solid	3050B	
350-1017-42	PNKRBG-52-12-18	Total/NA	Solid	3050B	
350-1017-43	PNKRBG-53-0-6	Total/NA	Solid	3050B	
350-1017-44	PNKRBG-53-12-16	Total/NA	Solid	3050B	
350-1017-45	PNKRBG-54-0-6	Total/NA	Solid	3050B	
MB 580-475166/22-A	Method Blank	Total/NA	Solid	3050B	
LCS 580-475166/23-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 580-475166/24-A	Lab Control Sample Dup	Total/NA	Solid	3050B	
350-1017-42 MS	PNKRBG-52-12-18	Total/NA	Solid	3050B	
350-1017-42 MSD	PNKRBG-52-12-18	Total/NA	Solid	3050B	
350-1017-42 DU	PNKRBG-52-12-18	Total/NA	Solid	3050B	

Prep Batch: 475167

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1017-46	PNKRBG-54-12-17	Total/NA	Solid	3050B	
350-1017-47	PNKRBG-55-0-6	Total/NA	Solid	3050B	
350-1017-48	PNKRBG-55-12-18	Total/NA	Solid	3050B	
350-1017-49	PNKRBG-55-24-27	Total/NA	Solid	3050B	
350-1017-50	PNKRBG-56-0-6	Total/NA	Solid	3050B	
350-1017-51	PNKRBG-56-12-14	Total/NA	Solid	3050B	
350-1017-52	PNKRBG-57-0-6	Total/NA	Solid	3050B	
350-1017-53	PNKRBG-57-12-17	Total/NA	Solid	3050B	
350-1017-54	PNKRBG-58-0-6	Total/NA	Solid	3050B	
350-1017-55	PNKRBG-58-12-17	Total/NA	Solid	3050B	
350-1017-56	PNKRBG-59-0-6	Total/NA	Solid	3050B	
350-1017-57	PNKRBG-59-12-18	Total/NA	Solid	3050B	
350-1017-58	PNKRBG-59-24-28	Total/NA	Solid	3050B	
350-1017-59	PNKRBG-60-0-6	Total/NA	Solid	3050B	
350-1017-60	PNKRBG-61-0-6	Total/NA	Solid	3050B	
350-1017-61	PNKRBG-61-12-18	Total/NA	Solid	3050B	
350-1017-62	PNKRBG-61-24-28	Total/NA	Solid	3050B	
350-1017-63	PNKRBG-62-0-6	Total/NA	Solid	3050B	
MB 580-475167/22-A	Method Blank	Total/NA	Solid	3050B	
LCS 580-475167/23-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 580-475167/24-A	Lab Control Sample Dup	Total/NA	Solid	3050B	
350-1017-57 MS	PNKRBG-59-12-18	Total/NA	Solid	3050B	
350-1017-57 MSD	PNKRBG-59-12-18	Total/NA	Solid	3050B	
350-1017-57 DU	PNKRBG-59-12-18	Total/NA	Solid	3050B	

Analysis Batch: 475289

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1017-1	PNKRBG-31-0-6	Total/NA	Solid	6020B	474870
350-1017-2	PNKRBG-31-12-18	Total/NA	Solid	6020B	474870
350-1017-3	PNKRBG-31-24-30	Total/NA	Solid	6020B	474870

Metals (Continued)

Analysis Batch: 475289 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1017-4	PNKRBG-32-0-6	Total/NA	Solid	6020B	474870
350-1017-5	PNKRBG-32-12-18	Total/NA	Solid	6020B	474870
350-1017-6	PNKRBG-32-24-30	Total/NA	Solid	6020B	474870
350-1017-7	PNKRBG-33-0-6	Total/NA	Solid	6020B	474870
350-1017-8	PNKRBG-34-0-6	Total/NA	Solid	6020B	474870
350-1017-9	PNKRBG-34-12-18	Total/NA	Solid	6020B	474870
350-1017-10	PNKRBG-34-24-30	Total/NA	Solid	6020B	474870
350-1017-11	PNKRBG-35-0-6	Total/NA	Solid	6020B	474870
350-1017-13	PNKRBG-36-0-6	Total/NA	Solid	6020B	474870
MB 580-474870/22-A	Method Blank	Total/NA	Solid	6020B	474870
LCS 580-474870/23-A	Lab Control Sample	Total/NA	Solid	6020B	474870
LCSD 580-474870/24-A	Lab Control Sample Dup	Total/NA	Solid	6020B	474870
350-1017-8 MS	PNKRBG-34-0-6	Total/NA	Solid	6020B	474870
350-1017-8 MSD	PNKRBG-34-0-6	Total/NA	Solid	6020B	474870
350-1017-8 DU	PNKRBG-34-0-6	Total/NA	Solid	6020B	474870

Analysis Batch: 475388

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1017-11	PNKRBG-35-0-6	Total/NA	Solid	6020B	474870

Prep Batch: 475451

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1017-64	PNKRBG-62-12-18	Total/NA	Solid	3050B	
350-1017-65	PNKRBG-63-0-6	Total/NA	Solid	3050B	
350-1017-66	PNKRBG-63-12-18	Total/NA	Solid	3050B	
350-1017-67	PNKRBG-63-24-30	Total/NA	Solid	3050B	
350-1017-68	PNKRBG-64-0-6	Total/NA	Solid	3050B	
350-1017-69	PNKRBG-64-12-18	Total/NA	Solid	3050B	
350-1017-70	PNKRBG-64-24-30	Total/NA	Solid	3050B	
350-1017-71	PNKRBG-65-0-6	Total/NA	Solid	3050B	
MB 580-475451/22-A	Method Blank	Total/NA	Solid	3050B	
LCS 580-475451/23-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 580-475451/24-A	Lab Control Sample Dup	Total/NA	Solid	3050B	

Analysis Batch: 475647

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1017-12	PNKRBG-35-12-18	Total/NA	Solid	6020B	475156
350-1017-14	PNKRBG-36-12-18	Total/NA	Solid	6020B	475156
350-1017-15	PNKRBG-36-24-30	Total/NA	Solid	6020B	475156
350-1017-16	PNKRBG-37-0-6	Total/NA	Solid	6020B	475156
350-1017-17	PNKRBG-37-12-18	Total/NA	Solid	6020B	475156
350-1017-18	PNKRBG-37-24-30	Total/NA	Solid	6020B	475156
350-1017-19	PNKRBG-38-0-6	Total/NA	Solid	6020B	475156
350-1017-21	PNKRBG-38-22-28	Total/NA	Solid	6020B	475156
350-1017-22	PNKRBG-39-0-6	Total/NA	Solid	6020B	475156
350-1017-23	PNKRBG-39-12-15	Total/NA	Solid	6020B	475156
350-1017-24	PNKRBG-40-0-6	Total/NA	Solid	6020B	475156
350-1017-25	PNKRBG-40-12-18	Total/NA	Solid	6020B	475156
350-1017-26	PNKRBG-41-0-6	Total/NA	Solid	6020B	475156
350-1017-27	PNKRBG-41-12-17	Total/NA	Solid	6020B	475156
MB 580-475156/22-A	Method Blank	Total/NA	Solid	6020B	475156

Metals (Continued)

Analysis Batch: 475647 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 580-475156/23-A	Lab Control Sample	Total/NA	Solid	6020B	475156
LCSD 580-475156/24-A	Lab Control Sample Dup	Total/NA	Solid	6020B	475156
350-1017-20 MS	PNKRBG-38-12-18	Total/NA	Solid	6020B	475156
350-1017-20 MSD	PNKRBG-38-12-18	Total/NA	Solid	6020B	475156
350-1017-20 DU	PNKRBG-38-12-18	Total/NA	Solid	6020B	475156

Analysis Batch: 475776

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1017-28	PNKRBG-42-0-6	Total/NA	Solid	6020B	475166
350-1017-29	PNKRBG-43-0-6	Total/NA	Solid	6020B	475166
350-1017-30	PNKRBG-43-18-22	Total/NA	Solid	6020B	475166
350-1017-31	PNKRBG-45-0-6	Total/NA	Solid	6020B	475166
350-1017-32	PNKRBG-45-12-16	Total/NA	Solid	6020B	475166
350-1017-33	PNKRBG-47-0-6	Total/NA	Solid	6020B	475166
350-1017-34	PNKRBG-48-0-6	Total/NA	Solid	6020B	475166
350-1017-36	PNKRBG-49-0-6	Total/NA	Solid	6020B	475166
350-1017-37	PNKRBG-49-12-18	Total/NA	Solid	6020B	475166
350-1017-38	PNKRBG-50-0-6	Total/NA	Solid	6020B	475166
350-1017-39	PNKRBG-50-14-17	Total/NA	Solid	6020B	475166
350-1017-40	PNKRBG-51-0-6	Total/NA	Solid	6020B	475166
350-1017-41	PNKRBG-52-0-6	Total/NA	Solid	6020B	475166
350-1017-42	PNKRBG-52-12-18	Total/NA	Solid	6020B	475166
350-1017-43	PNKRBG-53-0-6	Total/NA	Solid	6020B	475166
350-1017-44	PNKRBG-53-12-16	Total/NA	Solid	6020B	475166
350-1017-45	PNKRBG-54-0-6	Total/NA	Solid	6020B	475166
350-1017-46	PNKRBG-54-12-17	Total/NA	Solid	6020B	475167
350-1017-47	PNKRBG-55-0-6	Total/NA	Solid	6020B	475167
350-1017-48	PNKRBG-55-12-18	Total/NA	Solid	6020B	475167
350-1017-49	PNKRBG-55-24-27	Total/NA	Solid	6020B	475167
350-1017-50	PNKRBG-56-0-6	Total/NA	Solid	6020B	475167
350-1017-51	PNKRBG-56-12-14	Total/NA	Solid	6020B	475167
350-1017-52	PNKRBG-57-0-6	Total/NA	Solid	6020B	475167
350-1017-53	PNKRBG-57-12-17	Total/NA	Solid	6020B	475167
350-1017-54	PNKRBG-58-0-6	Total/NA	Solid	6020B	475167
350-1017-55	PNKRBG-58-12-17	Total/NA	Solid	6020B	475167
350-1017-56	PNKRBG-59-0-6	Total/NA	Solid	6020B	475167
350-1017-57	PNKRBG-59-12-18	Total/NA	Solid	6020B	475167
350-1017-58	PNKRBG-59-24-28	Total/NA	Solid	6020B	475167
350-1017-59	PNKRBG-60-0-6	Total/NA	Solid	6020B	475167
350-1017-60	PNKRBG-61-0-6	Total/NA	Solid	6020B	475167
350-1017-61	PNKRBG-61-12-18	Total/NA	Solid	6020B	475167
350-1017-62	PNKRBG-61-24-28	Total/NA	Solid	6020B	475167
350-1017-63	PNKRBG-62-0-6	Total/NA	Solid	6020B	475167
350-1017-64	PNKRBG-62-12-18	Total/NA	Solid	6020B	475451
350-1017-65	PNKRBG-63-0-6	Total/NA	Solid	6020B	475451
350-1017-66	PNKRBG-63-12-18	Total/NA	Solid	6020B	475451
350-1017-67	PNKRBG-63-24-30	Total/NA	Solid	6020B	475451
350-1017-68	PNKRBG-64-0-6	Total/NA	Solid	6020B	475451
350-1017-69	PNKRBG-64-12-18	Total/NA	Solid	6020B	475451
350-1017-70	PNKRBG-64-24-30	Total/NA	Solid	6020B	475451
350-1017-71	PNKRBG-65-0-6	Total/NA	Solid	6020B	475451

Metals (Continued)

Analysis Batch: 475776 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 580-475166/22-A	Method Blank	Total/NA	Solid	6020B	475166
MB 580-475167/22-A	Method Blank	Total/NA	Solid	6020B	475167
MB 580-475451/22-A	Method Blank	Total/NA	Solid	6020B	475451
LCS 580-475166/23-A	Lab Control Sample	Total/NA	Solid	6020B	475166
LCS 580-475167/23-A	Lab Control Sample	Total/NA	Solid	6020B	475167
LCS 580-475451/23-A	Lab Control Sample	Total/NA	Solid	6020B	475451
LCSD 580-475166/24-A	Lab Control Sample Dup	Total/NA	Solid	6020B	475166
LCSD 580-475167/24-A	Lab Control Sample Dup	Total/NA	Solid	6020B	475167
LCSD 580-475451/24-A	Lab Control Sample Dup	Total/NA	Solid	6020B	475451
350-1017-42 MS	PNKRBG-52-12-18	Total/NA	Solid	6020B	475166
350-1017-42 MSD	PNKRBG-52-12-18	Total/NA	Solid	6020B	475166
350-1017-57 MS	PNKRBG-59-12-18	Total/NA	Solid	6020B	475167
350-1017-57 MSD	PNKRBG-59-12-18	Total/NA	Solid	6020B	475167
350-1017-42 DU	PNKRBG-52-12-18	Total/NA	Solid	6020B	475166
350-1017-57 DU	PNKRBG-59-12-18	Total/NA	Solid	6020B	475167

Analysis Batch: 475787

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1017-12	PNKRBG-35-12-18	Total/NA	Solid	6020B	475156
350-1017-20	PNKRBG-38-12-18	Total/NA	Solid	6020B	475156
350-1017-22	PNKRBG-39-0-6	Total/NA	Solid	6020B	475156
350-1017-23	PNKRBG-39-12-15	Total/NA	Solid	6020B	475156
350-1017-26	PNKRBG-41-0-6	Total/NA	Solid	6020B	475156
350-1017-20 MS	PNKRBG-38-12-18	Total/NA	Solid	6020B	475156
350-1017-20 MSD	PNKRBG-38-12-18	Total/NA	Solid	6020B	475156
350-1017-20 DU	PNKRBG-38-12-18	Total/NA	Solid	6020B	475156

Analysis Batch: 475861

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1017-28	PNKRBG-42-0-6	Total/NA	Solid	6020B	475166
350-1017-29	PNKRBG-43-0-6	Total/NA	Solid	6020B	475166
350-1017-35	PNKRBG-48-12-16	Total/NA	Solid	6020B	475166
350-1017-47	PNKRBG-55-0-6	Total/NA	Solid	6020B	475167

Analysis Batch: 475885

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1017-22	PNKRBG-39-0-6	Total/NA	Solid	6020B	475156

Prep Batch: 475959

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1017-72	PNKRBG-65-12-16	Total/NA	Solid	3050B	
350-1017-73	PNKRBG-66-0-6	Total/NA	Solid	3050B	
350-1017-74	PNKRBG-66-12-18	Total/NA	Solid	3050B	
350-1017-75	PNKRBG-66-22-28	Total/NA	Solid	3050B	
MB 580-475959/23-A	Method Blank	Total/NA	Solid	3050B	
LCS 580-475959/24-A	Lab Control Sample	Total/NA	Solid	3050B	

Analysis Batch: 476210

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1017-72	PNKRBG-65-12-16	Total/NA	Solid	6020B	475959
350-1017-73	PNKRBG-66-0-6	Total/NA	Solid	6020B	475959

Metals (Continued)

Analysis Batch: 476210 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1017-74	PNKRBG-66-12-18	Total/NA	Solid	6020B	475959
350-1017-75	PNKRBG-66-22-28	Total/NA	Solid	6020B	475959
MB 580-475959/23-A	Method Blank	Total/NA	Solid	6020B	475959
LCS 580-475959/24-A	Lab Control Sample	Total/NA	Solid	6020B	475959

Analysis Batch: 476517

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 580-475156/22-A	Method Blank	Total/NA	Solid	6020B	475156
LCS 580-475156/23-A	Lab Control Sample	Total/NA	Solid	6020B	475156
LCSD 580-475156/24-A	Lab Control Sample Dup	Total/NA	Solid	6020B	475156

Prep Batch: 729636

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1017-1	PNKRBG-31-0-6	Total/NA	Solid	7471B	
350-1017-2	PNKRBG-31-12-18	Total/NA	Solid	7471B	
350-1017-3	PNKRBG-31-24-30	Total/NA	Solid	7471B	
350-1017-7	PNKRBG-33-0-6	Total/NA	Solid	7471B	
350-1017-11	PNKRBG-35-0-6	Total/NA	Solid	7471B	
350-1017-12	PNKRBG-35-12-18	Total/NA	Solid	7471B	
MB 480-729636/1-A	Method Blank	Total/NA	Solid	7471B	
LCSSRM 480-729636/2-A ^1	Lab Control Sample	Total/NA	Solid	7471B	

Prep Batch: 729637

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1017-22	PNKRBG-39-0-6	Total/NA	Solid	7471B	
350-1017-23	PNKRBG-39-12-15	Total/NA	Solid	7471B	
350-1017-26	PNKRBG-41-0-6	Total/NA	Solid	7471B	
350-1017-27	PNKRBG-41-12-17	Total/NA	Solid	7471B	
350-1017-29	PNKRBG-43-0-6	Total/NA	Solid	7471B	
350-1017-30	PNKRBG-43-18-22	Total/NA	Solid	7471B	
350-1017-31	PNKRBG-45-0-6	Total/NA	Solid	7471B	
350-1017-32	PNKRBG-45-12-16	Total/NA	Solid	7471B	
350-1017-33	PNKRBG-47-0-6	Total/NA	Solid	7471B	
350-1017-40	PNKRBG-51-0-6	Total/NA	Solid	7471B	
350-1017-43	PNKRBG-53-0-6	Total/NA	Solid	7471B	
350-1017-44	PNKRBG-53-12-16	Total/NA	Solid	7471B	
350-1017-47	PNKRBG-55-0-6	Total/NA	Solid	7471B	
350-1017-48	PNKRBG-55-12-18	Total/NA	Solid	7471B	
350-1017-49	PNKRBG-55-24-27	Total/NA	Solid	7471B	
350-1017-52	PNKRBG-57-0-6	Total/NA	Solid	7471B	
350-1017-53	PNKRBG-57-12-17	Total/NA	Solid	7471B	
350-1017-56	PNKRBG-59-0-6	Total/NA	Solid	7471B	
350-1017-57	PNKRBG-59-12-18	Total/NA	Solid	7471B	
350-1017-58	PNKRBG-59-24-28	Total/NA	Solid	7471B	
MB 480-729637/1-A	Method Blank	Total/NA	Solid	7471B	
LCSSRM 480-729637/2-A ^1	Lab Control Sample	Total/NA	Solid	7471B	
350-1017-22 MS	PNKRBG-39-0-6	Total/NA	Solid	7471B	
350-1017-22 MSD	PNKRBG-39-0-6	Total/NA	Solid	7471B	

Metals

Prep Batch: 729638

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1017-60	PNKRBG-61-0-6	Total/NA	Solid	7471B	
350-1017-61	PNKRBG-61-12-18	Total/NA	Solid	7471B	
350-1017-62	PNKRBG-61-24-28	Total/NA	Solid	7471B	
350-1017-65	PNKRBG-63-0-6	Total/NA	Solid	7471B	
350-1017-66	PNKRBG-63-12-18	Total/NA	Solid	7471B	
350-1017-67	PNKRBG-63-24-30	Total/NA	Solid	7471B	
MB 480-729638/1-A	Method Blank	Total/NA	Solid	7471B	
LCSSRM 480-729638/2-A ^1	Lab Control Sample	Total/NA	Solid	7471B	
350-1017-60 MS	PNKRBG-61-0-6	Total/NA	Solid	7471B	
350-1017-60 MSD	PNKRBG-61-0-6	Total/NA	Solid	7471B	

Analysis Batch: 729877

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1017-1	PNKRBG-31-0-6	Total/NA	Solid	7471B	729636
350-1017-2	PNKRBG-31-12-18	Total/NA	Solid	7471B	729636
350-1017-3	PNKRBG-31-24-30	Total/NA	Solid	7471B	729636
350-1017-7	PNKRBG-33-0-6	Total/NA	Solid	7471B	729636
350-1017-11	PNKRBG-35-0-6	Total/NA	Solid	7471B	729636
350-1017-12	PNKRBG-35-12-18	Total/NA	Solid	7471B	729636
350-1017-22	PNKRBG-39-0-6	Total/NA	Solid	7471B	729637
350-1017-23	PNKRBG-39-12-15	Total/NA	Solid	7471B	729637
350-1017-26	PNKRBG-41-0-6	Total/NA	Solid	7471B	729637
350-1017-27	PNKRBG-41-12-17	Total/NA	Solid	7471B	729637
350-1017-29	PNKRBG-43-0-6	Total/NA	Solid	7471B	729637
350-1017-30	PNKRBG-43-18-22	Total/NA	Solid	7471B	729637
350-1017-31	PNKRBG-45-0-6	Total/NA	Solid	7471B	729637
350-1017-32	PNKRBG-45-12-16	Total/NA	Solid	7471B	729637
350-1017-33	PNKRBG-47-0-6	Total/NA	Solid	7471B	729637
350-1017-40	PNKRBG-51-0-6	Total/NA	Solid	7471B	729637
350-1017-43	PNKRBG-53-0-6	Total/NA	Solid	7471B	729637
350-1017-44	PNKRBG-53-12-16	Total/NA	Solid	7471B	729637
350-1017-47	PNKRBG-55-0-6	Total/NA	Solid	7471B	729637
350-1017-48	PNKRBG-55-12-18	Total/NA	Solid	7471B	729637
350-1017-49	PNKRBG-55-24-27	Total/NA	Solid	7471B	729637
350-1017-52	PNKRBG-57-0-6	Total/NA	Solid	7471B	729637
350-1017-53	PNKRBG-57-12-17	Total/NA	Solid	7471B	729637
350-1017-56	PNKRBG-59-0-6	Total/NA	Solid	7471B	729637
350-1017-57	PNKRBG-59-12-18	Total/NA	Solid	7471B	729637
350-1017-58	PNKRBG-59-24-28	Total/NA	Solid	7471B	729637
350-1017-60	PNKRBG-61-0-6	Total/NA	Solid	7471B	729638
350-1017-61	PNKRBG-61-12-18	Total/NA	Solid	7471B	729638
350-1017-62	PNKRBG-61-24-28	Total/NA	Solid	7471B	729638
350-1017-65	PNKRBG-63-0-6	Total/NA	Solid	7471B	729638
350-1017-66	PNKRBG-63-12-18	Total/NA	Solid	7471B	729638
350-1017-67	PNKRBG-63-24-30	Total/NA	Solid	7471B	729638
MB 480-729636/1-A	Method Blank	Total/NA	Solid	7471B	729636
MB 480-729637/1-A	Method Blank	Total/NA	Solid	7471B	729637
MB 480-729638/1-A	Method Blank	Total/NA	Solid	7471B	729638
LCSSRM 480-729636/2-A ^1	Lab Control Sample	Total/NA	Solid	7471B	729636
LCSSRM 480-729637/2-A ^1	Lab Control Sample	Total/NA	Solid	7471B	729637
LCSSRM 480-729638/2-A ^1	Lab Control Sample	Total/NA	Solid	7471B	729638

Metals (Continued)

Analysis Batch: 729877 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1017-22 MS	PNKRBG-39-0-6	Total/NA	Solid	7471B	729637
350-1017-22 MSD	PNKRBG-39-0-6	Total/NA	Solid	7471B	729637
350-1017-60 MS	PNKRBG-61-0-6	Total/NA	Solid	7471B	729638
350-1017-60 MSD	PNKRBG-61-0-6	Total/NA	Solid	7471B	729638

Prep Batch: 732529

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1017-28	PNKRBG-42-0-6	Total/NA	Solid	7471B	
MB 480-732529/1-A	Method Blank	Total/NA	Solid	7471B	
LCSSRM 480-732529/2-A ^1	Lab Control Sample	Total/NA	Solid	7471B	

Analysis Batch: 732596

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1017-28	PNKRBG-42-0-6	Total/NA	Solid	7471B	732529
MB 480-732529/1-A	Method Blank	Total/NA	Solid	7471B	732529
LCSSRM 480-732529/2-A ^1	Lab Control Sample	Total/NA	Solid	7471B	732529

General Chemistry

Analysis Batch: 473722

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1017-1	PNKRBG-31-0-6	Total/NA	Solid	2540G	
350-1017-2	PNKRBG-31-12-18	Total/NA	Solid	2540G	
350-1017-3	PNKRBG-31-24-30	Total/NA	Solid	2540G	
350-1017-4	PNKRBG-32-0-6	Total/NA	Solid	2540G	
350-1017-5	PNKRBG-32-12-18	Total/NA	Solid	2540G	
350-1017-6	PNKRBG-32-24-30	Total/NA	Solid	2540G	
350-1017-7	PNKRBG-33-0-6	Total/NA	Solid	2540G	
350-1017-8	PNKRBG-34-0-6	Total/NA	Solid	2540G	
350-1017-9	PNKRBG-34-12-18	Total/NA	Solid	2540G	
350-1017-10	PNKRBG-34-24-30	Total/NA	Solid	2540G	
350-1017-11	PNKRBG-35-0-6	Total/NA	Solid	2540G	
350-1017-12	PNKRBG-35-12-18	Total/NA	Solid	2540G	
350-1017-13	PNKRBG-36-0-6	Total/NA	Solid	2540G	
350-1017-14	PNKRBG-36-12-18	Total/NA	Solid	2540G	
350-1017-15	PNKRBG-36-24-30	Total/NA	Solid	2540G	
350-1017-16	PNKRBG-37-0-6	Total/NA	Solid	2540G	
350-1017-17	PNKRBG-37-12-18	Total/NA	Solid	2540G	
350-1017-18	PNKRBG-37-24-30	Total/NA	Solid	2540G	
350-1017-19	PNKRBG-38-0-6	Total/NA	Solid	2540G	
350-1017-20	PNKRBG-38-12-18	Total/NA	Solid	2540G	
350-1017-21	PNKRBG-38-22-28	Total/NA	Solid	2540G	
350-1017-22	PNKRBG-39-0-6	Total/NA	Solid	2540G	
350-1017-23	PNKRBG-39-12-15	Total/NA	Solid	2540G	
350-1017-24	PNKRBG-40-0-6	Total/NA	Solid	2540G	
350-1017-25	PNKRBG-40-12-18	Total/NA	Solid	2540G	
350-1017-26	PNKRBG-41-0-6	Total/NA	Solid	2540G	
350-1017-27	PNKRBG-41-12-17	Total/NA	Solid	2540G	
350-1017-28	PNKRBG-42-0-6	Total/NA	Solid	2540G	
350-1017-29	PNKRBG-43-0-6	Total/NA	Solid	2540G	
350-1017-30	PNKRBG-43-18-22	Total/NA	Solid	2540G	

General Chemistry (Continued)

Analysis Batch: 473722 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1017-31	PNKRBG-45-0-6	Total/NA	Solid	2540G	
350-1017-32	PNKRBG-45-12-16	Total/NA	Solid	2540G	
350-1017-33	PNKRBG-47-0-6	Total/NA	Solid	2540G	
350-1017-34	PNKRBG-48-0-6	Total/NA	Solid	2540G	
350-1017-35	PNKRBG-48-12-16	Total/NA	Solid	2540G	
350-1017-36	PNKRBG-49-0-6	Total/NA	Solid	2540G	
350-1017-37	PNKRBG-49-12-18	Total/NA	Solid	2540G	
350-1017-38	PNKRBG-50-0-6	Total/NA	Solid	2540G	
350-1017-39	PNKRBG-50-14-17	Total/NA	Solid	2540G	
350-1017-40	PNKRBG-51-0-6	Total/NA	Solid	2540G	
350-1017-41	PNKRBG-52-0-6	Total/NA	Solid	2540G	
350-1017-42	PNKRBG-52-12-18	Total/NA	Solid	2540G	
350-1017-43	PNKRBG-53-0-6	Total/NA	Solid	2540G	
350-1017-44	PNKRBG-53-12-16	Total/NA	Solid	2540G	
350-1017-45	PNKRBG-54-0-6	Total/NA	Solid	2540G	
350-1017-46	PNKRBG-54-12-17	Total/NA	Solid	2540G	
350-1017-47	PNKRBG-55-0-6	Total/NA	Solid	2540G	
350-1017-48	PNKRBG-55-12-18	Total/NA	Solid	2540G	
350-1017-49	PNKRBG-55-24-27	Total/NA	Solid	2540G	
350-1017-50	PNKRBG-56-0-6	Total/NA	Solid	2540G	
350-1017-51	PNKRBG-56-12-14	Total/NA	Solid	2540G	
350-1017-52	PNKRBG-57-0-6	Total/NA	Solid	2540G	
350-1017-53	PNKRBG-57-12-17	Total/NA	Solid	2540G	
350-1017-54	PNKRBG-58-0-6	Total/NA	Solid	2540G	
350-1017-55	PNKRBG-58-12-17	Total/NA	Solid	2540G	
350-1017-56	PNKRBG-59-0-6	Total/NA	Solid	2540G	
350-1017-57	PNKRBG-59-12-18	Total/NA	Solid	2540G	
350-1017-58	PNKRBG-59-24-28	Total/NA	Solid	2540G	
350-1017-59	PNKRBG-60-0-6	Total/NA	Solid	2540G	
350-1017-60	PNKRBG-61-0-6	Total/NA	Solid	2540G	
350-1017-61	PNKRBG-61-12-18	Total/NA	Solid	2540G	
350-1017-62	PNKRBG-61-24-28	Total/NA	Solid	2540G	
350-1017-63	PNKRBG-62-0-6	Total/NA	Solid	2540G	
350-1017-64	PNKRBG-62-12-18	Total/NA	Solid	2540G	
350-1017-65	PNKRBG-63-0-6	Total/NA	Solid	2540G	
350-1017-66	PNKRBG-63-12-18	Total/NA	Solid	2540G	
350-1017-67	PNKRBG-63-24-30	Total/NA	Solid	2540G	
350-1017-68	PNKRBG-64-0-6	Total/NA	Solid	2540G	
350-1017-69	PNKRBG-64-12-18	Total/NA	Solid	2540G	
350-1017-70	PNKRBG-64-24-30	Total/NA	Solid	2540G	
350-1017-71	PNKRBG-65-0-6	Total/NA	Solid	2540G	
350-1017-72	PNKRBG-65-12-16	Total/NA	Solid	2540G	
350-1017-73	PNKRBG-66-0-6	Total/NA	Solid	2540G	
350-1017-74	PNKRBG-66-12-18	Total/NA	Solid	2540G	
350-1017-75	PNKRBG-66-22-28	Total/NA	Solid	2540G	
350-1017-1 DU	PNKRBG-31-0-6	Total/NA	Solid	2540G	
350-1017-19 DU	PNKRBG-38-0-6	Total/NA	Solid	2540G	
350-1017-38 DU	PNKRBG-50-0-6	Total/NA	Solid	2540G	
350-1017-57 DU	PNKRBG-59-12-18	Total/NA	Solid	2540G	

Client: Antea USA Inc.
Job ID: 350-1017-1
Project/Site: NuStar Split GWM / KM Van RIFS

Geotechnical

Analysis Batch: 474898

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
350-1017-2	PNKRBG-31-12-18	Total/NA	Solid	D422	
350-1017-12	PNKRBG-35-12-18	Total/NA	Solid	D422	
350-1017-13	PNKRBG-36-0-6	Total/NA	Solid	D422	
350-1017-29	PNKRBG-43-0-6	Total/NA	Solid	D422	
350-1017-33	PNKRBG-47-0-6	Total/NA	Solid	D422	
350-1017-42	PNKRBG-52-12-18	Total/NA	Solid	D422	
350-1017-47	PNKRBG-55-0-6	Total/NA	Solid	D422	
350-1017-55	PNKRBG-58-12-17	Total/NA	Solid	D422	
350-1017-65	PNKRBG-63-0-6	Total/NA	Solid	D422	
350-1017-66	PNKRBG-63-12-18	Total/NA	Solid	D422	
350-1017-67	PNKRBG-63-24-30	Total/NA	Solid	D422	
350-1017-2 DU	PNKRBG-31-12-18	Total/NA	Solid	D422	

Client Sample ID: PNKRBG-31-0-6
Lab Sample ID: 350-1017-1
Date Collected: 09/25/24 11:10
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-31-0-6
Lab Sample ID: 350-1017-1
Date Collected: 09/25/24 11:10
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 98.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			474870		EET SEA	10/16/24 08:16
Total/NA	Analysis	6020B		10	475289	CA	EET SEA	10/18/24 00:55
Total/NA	Prep	7471B			729636	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 12:47

Client Sample ID: PNKRBG-31-12-18
Lab Sample ID: 350-1017-2
Date Collected: 09/25/24 11:20
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57
Total/NA	Analysis	D422		1	474898	AUA	EET SEA	10/16/24 10:54

Client Sample ID: PNKRBG-31-12-18
Lab Sample ID: 350-1017-2
Date Collected: 09/25/24 11:20
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 97.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			474870		EET SEA	10/16/24 08:16
Total/NA	Analysis	6020B		10	475289	CA	EET SEA	10/18/24 00:58
Total/NA	Prep	7471B			729636	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 12:51

Client Sample ID: PNKRBG-31-24-30
Lab Sample ID: 350-1017-3
Date Collected: 09/25/24 11:30
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-31-24-30
Lab Sample ID: 350-1017-3
Date Collected: 09/25/24 11:30
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 96.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			474870		EET SEA	10/16/24 08:16
Total/NA	Analysis	6020B		10	475289	CA	EET SEA	10/18/24 01:01
Total/NA	Prep	7471B			729636	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 12:52

Client Sample ID: PNKRBG-32-0-6 — **Lab Sample ID: 350-1017-4**
Date Collected: 09/25/24 11:50 — **Matrix: Solid**
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-32-0-6 — **Lab Sample ID: 350-1017-4**
Date Collected: 09/25/24 11:50 — **Matrix: Solid**
Date Received: 09/26/24 12:20 — **Percent Solids: 96.2**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			474870		EET SEA	10/16/24 08:16
Total/NA	Analysis	6020B		10	475289	CA	EET SEA	10/18/24 01:04

Client Sample ID: PNKRBG-32-12-18 — **Lab Sample ID: 350-1017-5**
Date Collected: 09/25/24 11:55 — **Matrix: Solid**
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-32-12-18 — **Lab Sample ID: 350-1017-5**
Date Collected: 09/25/24 11:55 — **Matrix: Solid**
Date Received: 09/26/24 12:20 — **Percent Solids: 93.0**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			474870		EET SEA	10/16/24 08:16
Total/NA	Analysis	6020B		10	475289	CA	EET SEA	10/18/24 01:07

Client Sample ID: PNKRBG-32-24-30 — **Lab Sample ID: 350-1017-6**
Date Collected: 09/25/24 12:00 — **Matrix: Solid**
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-32-24-30 — **Lab Sample ID: 350-1017-6**
Date Collected: 09/25/24 12:00 — **Matrix: Solid**
Date Received: 09/26/24 12:20 — **Percent Solids: 93.3**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			474870		EET SEA	10/16/24 08:16
Total/NA	Analysis	6020B		10	475289	CA	EET SEA	10/18/24 01:16

Client Sample ID: PNKRBG-33-0-6 — **Lab Sample ID: 350-1017-7**
Date Collected: 09/25/24 13:45 — **Matrix: Solid**
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-33-0-6
Lab Sample ID: 350-1017-7
Date Collected: 09/25/24 13:45
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 94.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			474870		EET SEA	10/16/24 08:16
Total/NA	Analysis	6020B		10	475289	CA	EET SEA	10/18/24 01:19
Total/NA	Prep	7471B			729636	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 12:53

Client Sample ID: PNKRBG-34-0-6
Lab Sample ID: 350-1017-8
Date Collected: 09/25/24 10:10
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-34-0-6
Lab Sample ID: 350-1017-8
Date Collected: 09/25/24 10:10
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 92.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			474870		EET SEA	10/16/24 08:16
Total/NA	Analysis	6020B		10	475289	CA	EET SEA	10/18/24 00:14

Client Sample ID: PNKRBG-34-12-18
Lab Sample ID: 350-1017-9
Date Collected: 09/25/24 10:15
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-34-12-18
Lab Sample ID: 350-1017-9
Date Collected: 09/25/24 10:15
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 93.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			474870		EET SEA	10/16/24 08:16
Total/NA	Analysis	6020B		10	475289	CA	EET SEA	10/18/24 01:21

Client Sample ID: PNKRBG-34-24-30
Lab Sample ID: 350-1017-10
Date Collected: 09/25/24 10:20
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Lab Chronicle

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1017-1

Client Sample ID: PNKRBG-34-24-30
Date Collected: 09/25/24 10:20
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-10
Matrix: Solid
Percent Solids: 85.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			474870		EET SEA	10/16/24 08:16
Total/NA	Analysis	6020B		10	475289	CA	EET SEA	10/18/24 01:24

Client Sample ID: PNKRBG-35-0-6
Date Collected: 09/25/24 10:45
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-11
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-35-0-6
Date Collected: 09/25/24 10:45
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-11
Matrix: Solid
Percent Solids: 96.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			474870		EET SEA	10/16/24 08:16
Total/NA	Analysis	6020B		10	475289	CA	EET SEA	10/18/24 01:27
Total/NA	Prep	3050B			474870		EET SEA	10/16/24 08:16
Total/NA	Analysis	6020B		20	475388	CA	EET SEA	10/18/24 18:40
Total/NA	Prep	7471B			729636	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 12:55

Client Sample ID: PNKRBG-35-12-18
Date Collected: 09/25/24 10:55
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-12
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57
Total/NA	Analysis	D422		1	474898	AUA	EET SEA	10/16/24 10:54

Client Sample ID: PNKRBG-35-12-18
Date Collected: 09/25/24 10:55
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-12
Matrix: Solid
Percent Solids: 93.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475156		EET SEA	10/17/24 20:08
Total/NA	Analysis	6020B		10	475647	CA	EET SEA	10/23/24 00:52
Total/NA	Prep	3050B			475156		EET SEA	10/17/24 20:08
Total/NA	Analysis	6020B		10	475787	CA	EET SEA	10/23/24 18:58
Total/NA	Prep	7471B			729636	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 12:56

Lab Chronicle

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1017-1

Client Sample ID: PNKRBG-36-0-6
Lab Sample ID: 350-1017-13
Date Collected: 09/25/24 09:00
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57
Total/NA	Analysis	D422		1	474898	AUA	EET SEA	10/16/24 10:54

Client Sample ID: PNKRBG-36-0-6
Lab Sample ID: 350-1017-13
Date Collected: 09/25/24 09:00
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 96.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			474870		EET SEA	10/16/24 08:16
Total/NA	Analysis	6020B		10	475289	CA	EET SEA	10/18/24 01:30

Client Sample ID: PNKRBG-36-12-18
Lab Sample ID: 350-1017-14
Date Collected: 09/25/24 09:15
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-36-12-18
Lab Sample ID: 350-1017-14
Date Collected: 09/25/24 09:15
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 92.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475156		EET SEA	10/17/24 20:08
Total/NA	Analysis	6020B		10	475647	CA	EET SEA	10/23/24 01:01

Client Sample ID: PNKRBG-36-24-30
Lab Sample ID: 350-1017-15
Date Collected: 09/25/24 09:20
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-36-24-30
Lab Sample ID: 350-1017-15
Date Collected: 09/25/24 09:20
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 71.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475156		EET SEA	10/17/24 20:08
Total/NA	Analysis	6020B		10	475647	CA	EET SEA	10/23/24 01:04

Client Sample ID: PNKRBG-37-0-6 — **Lab Sample ID: 350-1017-16**
Date Collected: 09/25/24 09:45 — **Matrix: Solid**
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-37-0-6 — **Lab Sample ID: 350-1017-16**
Date Collected: 09/25/24 09:45 — **Matrix: Solid**
Date Received: 09/26/24 12:20 — **Percent Solids: 97.9**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475156		EET SEA	10/17/24 20:08
Total/NA	Analysis	6020B		10	475647	CA	EET SEA	10/23/24 01:07

Client Sample ID: PNKRBG-37-12-18 — **Lab Sample ID: 350-1017-17**
Date Collected: 09/25/24 09:55 — **Matrix: Solid**
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-37-12-18 — **Lab Sample ID: 350-1017-17**
Date Collected: 09/25/24 09:55 — **Matrix: Solid**
Date Received: 09/26/24 12:20 — **Percent Solids: 90.9**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475156		EET SEA	10/17/24 20:08
Total/NA	Analysis	6020B		10	475647	CA	EET SEA	10/23/24 01:10

Client Sample ID: PNKRBG-37-24-30 — **Lab Sample ID: 350-1017-18**
Date Collected: 09/25/24 10:00 — **Matrix: Solid**
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-37-24-30 — **Lab Sample ID: 350-1017-18**
Date Collected: 09/25/24 10:00 — **Matrix: Solid**
Date Received: 09/26/24 12:20 — **Percent Solids: 85.9**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475156		EET SEA	10/17/24 20:08
Total/NA	Analysis	6020B		10	475647	CA	EET SEA	10/23/24 01:12

Client Sample ID: PNKRBG-38-0-6 — **Lab Sample ID: 350-1017-19**
Date Collected: 09/25/24 09:30 — **Matrix: Solid**
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Lab Chronicle

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1017-1

Client Sample ID: PNKRBG-38-0-6
Lab Sample ID: 350-1017-19
Date Collected: 09/25/24 09:30
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 93.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475156		EET SEA	10/17/24 20:08
Total/NA	Analysis	6020B		10	475647	CA	EET SEA	10/23/24 01:15

Client Sample ID: PNKRBG-38-12-18
Lab Sample ID: 350-1017-20
Date Collected: 09/25/24 09:35
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-38-12-18
Lab Sample ID: 350-1017-20
Date Collected: 09/25/24 09:35
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 90.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475156		EET SEA	10/17/24 20:08
Total/NA	Analysis	6020B		10	475787	CA	EET SEA	10/23/24 18:41

Client Sample ID: PNKRBG-38-22-28
Lab Sample ID: 350-1017-21
Date Collected: 09/25/24 09:40
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-38-22-28
Lab Sample ID: 350-1017-21
Date Collected: 09/25/24 09:40
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 84.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475156		EET SEA	10/17/24 20:08
Total/NA	Analysis	6020B		10	475647	CA	EET SEA	10/23/24 01:18

Client Sample ID: PNKRBG-39-0-6
Lab Sample ID: 350-1017-22
Date Collected: 09/25/24 08:30
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Lab Chronicle

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1017-1

Client Sample ID: PNKRBG-39-0-6
Date Collected: 09/25/24 08:30
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-22
Matrix: Solid
Percent Solids: 96.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475156		EET SEA	10/17/24 20:08
Total/NA	Analysis	6020B		10	475647	CA	EET SEA	10/23/24 01:21
Total/NA	Prep	3050B			475156		EET SEA	10/17/24 20:08
Total/NA	Analysis	6020B		200	475787	CA	EET SEA	10/23/24 19:07
Total/NA	Prep	3050B			475156		EET SEA	10/17/24 20:08
Total/NA	Analysis	6020B		200	475885	CA	EET SEA	10/24/24 19:05
Total/NA	Prep	7471B			729637	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 13:43

Client Sample ID: PNKRBG-39-12-15
Date Collected: 09/25/24 08:40
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-23
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-39-12-15
Date Collected: 09/25/24 08:40
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-23
Matrix: Solid
Percent Solids: 92.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475156		EET SEA	10/17/24 20:08
Total/NA	Analysis	6020B		10	475647	CA	EET SEA	10/23/24 01:24
Total/NA	Prep	3050B			475156		EET SEA	10/17/24 20:08
Total/NA	Analysis	6020B		100	475787	CA	EET SEA	10/23/24 19:10
Total/NA	Prep	7471B			729637	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 13:48

Client Sample ID: PNKRBG-40-0-6
Date Collected: 09/25/24 08:50
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-24
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-40-0-6
Date Collected: 09/25/24 08:50
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-24
Matrix: Solid
Percent Solids: 87.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475156		EET SEA	10/17/24 20:08
Total/NA	Analysis	6020B		10	475647	CA	EET SEA	10/23/24 01:27

Client Sample ID: PNKRBG-40-12-18 — Lab Sample ID: 350-1017-25
Date Collected: 09/25/24 09:00 — **Matrix: Solid**
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-40-12-18 — Lab Sample ID: 350-1017-25
Date Collected: 09/25/24 09:00 — **Matrix: Solid**
Date Received: 09/26/24 12:20 — **Percent Solids: 76.9**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475156		EET SEA	10/17/24 20:08
Total/NA	Analysis	6020B		10	475647	CA	EET SEA	10/23/24 01:36

Client Sample ID: PNKRBG-41-0-6 — Lab Sample ID: 350-1017-26
Date Collected: 09/24/24 13:35 — **Matrix: Solid**
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-41-0-6 — Lab Sample ID: 350-1017-26
Date Collected: 09/24/24 13:35 — **Matrix: Solid**
Date Received: 09/26/24 12:20 — **Percent Solids: 95.3**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475156		EET SEA	10/17/24 20:08
Total/NA	Analysis	6020B		10	475647	CA	EET SEA	10/23/24 01:39
Total/NA	Prep	3050B			475156		EET SEA	10/17/24 20:08
Total/NA	Analysis	6020B		100	475787	CA	EET SEA	10/23/24 19:13
Total/NA	Prep	7471B			729637	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 13:49

Client Sample ID: PNKRBG-41-12-17 — Lab Sample ID: 350-1017-27
Date Collected: 09/24/24 13:55 — **Matrix: Solid**
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-41-12-17 — Lab Sample ID: 350-1017-27
Date Collected: 09/24/24 13:55 — **Matrix: Solid**
Date Received: 09/26/24 12:20 — **Percent Solids: 92.2**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475156		EET SEA	10/17/24 20:08
Total/NA	Analysis	6020B		10	475647	CA	EET SEA	10/23/24 01:42
Total/NA	Prep	7471B			729637	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 13:51

Lab Chronicle

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1017-1

Client Sample ID: PNKRBG-42-0-6
Date Collected: 09/24/24 14:10
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-28
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-42-0-6
Date Collected: 09/24/24 14:10
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-28
Matrix: Solid
Percent Solids: 98.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475166		EET SEA	10/17/24 21:01
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 20:16
Total/NA	Prep	3050B			475166		EET SEA	10/17/24 21:01
Total/NA	Analysis	6020B		100	475861	CA	EET SEA	10/24/24 15:19
Total/NA	Prep	7471B			732529	ESB	EET BUF	11/15/24 09:51
Total/NA	Analysis	7471B		1	732596	ESB	EET BUF	11/15/24 12:56

Client Sample ID: PNKRBG-43-0-6
Date Collected: 09/24/24 12:05
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-29
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57
Total/NA	Analysis	D422		1	474898	AUA	EET SEA	10/16/24 10:54

Client Sample ID: PNKRBG-43-0-6
Date Collected: 09/24/24 12:05
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-29
Matrix: Solid
Percent Solids: 95.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475166		EET SEA	10/17/24 21:01
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 20:23
Total/NA	Prep	3050B			475166		EET SEA	10/17/24 21:01
Total/NA	Analysis	6020B		100	475861	CA	EET SEA	10/24/24 15:21
Total/NA	Prep	7471B			729637	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 13:52

Client Sample ID: PNKRBG-43-18-22
Date Collected: 09/24/24 12:15
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-30
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Lab Chronicle

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1017-1

Client Sample ID: PNKRBG-43-18-22
Date Collected: 09/24/24 12:15
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-30
Matrix: Solid
Percent Solids: 88.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475166		EET SEA	10/17/24 21:01
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 20:26
Total/NA	Prep	7471B			729637	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 13:56

Client Sample ID: PNKRBG-45-0-6
Date Collected: 09/24/24 11:40
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-31
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-45-0-6
Date Collected: 09/24/24 11:40
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-31
Matrix: Solid
Percent Solids: 97.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475166		EET SEA	10/17/24 21:01
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 20:28
Total/NA	Prep	7471B			729637	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 13:57

Client Sample ID: PNKRBG-45-12-16
Date Collected: 09/24/24 11:45
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-32
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-45-12-16
Date Collected: 09/24/24 11:45
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-32
Matrix: Solid
Percent Solids: 96.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475166		EET SEA	10/17/24 21:01
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 20:30
Total/NA	Prep	7471B			729637	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 13:58

Client Sample ID: PNKRBG-47-0-6
Date Collected: 09/24/24 16:40
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-33
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57
Total/NA	Analysis	D422		1	474898	AUA	EET SEA	10/16/24 10:54

Lab Chronicle

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1017-1

Client Sample ID: PNKRBG-47-0-6
Lab Sample ID: 350-1017-33
Date Collected: 09/24/24 16:40
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 97.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475166		EET SEA	10/17/24 21:01
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 20:33
Total/NA	Prep	7471B			729637	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 14:00

Client Sample ID: PNKRBG-48-0-6
Lab Sample ID: 350-1017-34
Date Collected: 09/24/24 16:15
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-48-0-6
Lab Sample ID: 350-1017-34
Date Collected: 09/24/24 16:15
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 54.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475166		EET SEA	10/17/24 21:01
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 20:35

Client Sample ID: PNKRBG-48-12-16
Lab Sample ID: 350-1017-35
Date Collected: 09/24/24 16:27
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-48-12-16
Lab Sample ID: 350-1017-35
Date Collected: 09/24/24 16:27
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 63.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475166		EET SEA	10/17/24 21:01
Total/NA	Analysis	6020B		50	475861	CA	EET SEA	10/24/24 15:23

Client Sample ID: PNKRBG-49-0-6
Lab Sample ID: 350-1017-36
Date Collected: 09/24/24 15:25
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Lab Chronicle

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1017-1

Client Sample ID: PNKRBG-49-0-6
Lab Sample ID: 350-1017-36
Date Collected: 09/24/24 15:25
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 88.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475166		EET SEA	10/17/24 21:01
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 20:40

Client Sample ID: PNKRBG-49-12-18
Lab Sample ID: 350-1017-37
Date Collected: 09/24/24 15:35
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-49-12-18
Lab Sample ID: 350-1017-37
Date Collected: 09/24/24 15:35
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 94.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475166		EET SEA	10/17/24 21:01
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 20:42

Client Sample ID: PNKRBG-50-0-6
Lab Sample ID: 350-1017-38
Date Collected: 09/24/24 15:00
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-50-0-6
Lab Sample ID: 350-1017-38
Date Collected: 09/24/24 15:00
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 93.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475166		EET SEA	10/17/24 21:01
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 20:45

Client Sample ID: PNKRBG-50-14-17
Lab Sample ID: 350-1017-39
Date Collected: 09/24/24 15:12
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-50-14-17
Lab Sample ID: 350-1017-39
Date Collected: 09/24/24 15:12
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 93.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475166		EET SEA	10/17/24 21:01
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 20:52

Client Sample ID: PNKRBG-51-0-6
Lab Sample ID: 350-1017-40
Date Collected: 09/24/24 14:30
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-51-0-6
Lab Sample ID: 350-1017-40
Date Collected: 09/24/24 14:30
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 98.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475166		EET SEA	10/17/24 21:01
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 20:54
Total/NA	Prep	7471B			729637	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 14:01

Client Sample ID: PNKRBG-52-0-6
Lab Sample ID: 350-1017-41
Date Collected: 09/24/24 14:35
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-52-0-6
Lab Sample ID: 350-1017-41
Date Collected: 09/24/24 14:35
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 86.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475166		EET SEA	10/17/24 21:01
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 20:56

Client Sample ID: PNKRBG-52-12-18
Lab Sample ID: 350-1017-42
Date Collected: 09/24/24 14:45
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57
Total/NA	Analysis	D422		1	474898	AUA	EET SEA	10/16/24 10:54

Client Sample ID: PNKRBG-52-12-18
Lab Sample ID: 350-1017-42
Date Collected: 09/24/24 14:45
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 86.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475166		EET SEA	10/17/24 21:01
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 20:02

Client Sample ID: PNKRBG-53-0-6
Lab Sample ID: 350-1017-43
Date Collected: 09/24/24 10:45
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-53-0-6
Lab Sample ID: 350-1017-43
Date Collected: 09/24/24 10:45
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 97.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475166		EET SEA	10/17/24 21:01
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 20:59
Total/NA	Prep	7471B			729637	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 14:02

Client Sample ID: PNKRBG-53-12-16
Lab Sample ID: 350-1017-44
Date Collected: 09/24/24 10:50
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-53-12-16
Lab Sample ID: 350-1017-44
Date Collected: 09/24/24 10:50
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 95.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475166		EET SEA	10/17/24 21:01
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 21:01
Total/NA	Prep	7471B			729637	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 14:04

Client Sample ID: PNKRBG-54-0-6
Lab Sample ID: 350-1017-45
Date Collected: 09/24/24 10:25
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Lab Chronicle

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1017-1

Client Sample ID: PNKRBG-54-0-6
Date Collected: 09/24/24 10:25
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-45
Matrix: Solid
Percent Solids: 96.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475166		EET SEA	10/17/24 21:01
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 21:03

Client Sample ID: PNKRBG-54-12-17
Date Collected: 09/24/24 10:35
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-46
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-54-12-17
Date Collected: 09/24/24 10:35
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-46
Matrix: Solid
Percent Solids: 94.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475167		EET SEA	10/17/24 21:34
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 19:00

Client Sample ID: PNKRBG-55-0-6
Date Collected: 09/24/24 16:15
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-47
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57
Total/NA	Analysis	D422		1	474898	AUA	EET SEA	10/16/24 10:54

Client Sample ID: PNKRBG-55-0-6
Date Collected: 09/24/24 16:15
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-47
Matrix: Solid
Percent Solids: 98.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475167		EET SEA	10/17/24 21:34
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 19:07
Total/NA	Prep	3050B			475167		EET SEA	10/17/24 21:34
Total/NA	Analysis	6020B		100	475861	CA	EET SEA	10/24/24 15:16
Total/NA	Prep	7471B			729637	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 14:05

Client Sample ID: PNKRBG-55-12-18
Date Collected: 09/24/24 16:25
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-48
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Lab Chronicle

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1017-1

Client Sample ID: PNKRBG-55-12-18
Date Collected: 09/24/24 16:25
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-48
Matrix: Solid
Percent Solids: 98.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475167		EET SEA	10/17/24 21:34
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 19:09
Total/NA	Prep	7471B			729637	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 14:06

Client Sample ID: PNKRBG-55-24-27
Date Collected: 09/24/24 16:40
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-49
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-55-24-27
Date Collected: 09/24/24 16:40
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-49
Matrix: Solid
Percent Solids: 97.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475167		EET SEA	10/17/24 21:34
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 19:11
Total/NA	Prep	7471B			729637	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 14:08

Client Sample ID: PNKRBG-56-0-6
Date Collected: 09/24/24 09:25
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-50
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-56-0-6
Date Collected: 09/24/24 09:25
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-50
Matrix: Solid
Percent Solids: 87.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475167		EET SEA	10/17/24 21:34
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 19:14

Client Sample ID: PNKRBG-56-12-14
Date Collected: 09/24/24 09:35
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-51
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-56-12-14
Lab Sample ID: 350-1017-51
Date Collected: 09/24/24 09:35
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 86.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475167		EET SEA	10/17/24 21:34
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 19:16

Client Sample ID: PNKRBG-57-0-6
Lab Sample ID: 350-1017-52
Date Collected: 09/23/24 15:20
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-57-0-6
Lab Sample ID: 350-1017-52
Date Collected: 09/23/24 15:20
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 99.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475167		EET SEA	10/17/24 21:34
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 19:19
Total/NA	Prep	7471B			729637	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 14:11

Client Sample ID: PNKRBG-57-12-17
Lab Sample ID: 350-1017-53
Date Collected: 09/23/24 15:30
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-57-12-17
Lab Sample ID: 350-1017-53
Date Collected: 09/23/24 15:30
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 99.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475167		EET SEA	10/17/24 21:34
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 19:21
Total/NA	Prep	7471B			729637	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 14:13

Client Sample ID: PNKRBG-58-0-6
Lab Sample ID: 350-1017-54
Date Collected: 09/23/24 12:13
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Lab Chronicle

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1017-1

Client Sample ID: PNKRBG-58-0-6
Lab Sample ID: 350-1017-54
Date Collected: 09/23/24 12:13
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 82.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475167		EET SEA	10/17/24 21:34
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 19:23

Client Sample ID: PNKRBG-58-12-17
Lab Sample ID: 350-1017-55
Date Collected: 09/23/24 12:18
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57
Total/NA	Analysis	D422		1	474898	AUA	EET SEA	10/16/24 10:54

Client Sample ID: PNKRBG-58-12-17
Lab Sample ID: 350-1017-55
Date Collected: 09/23/24 12:18
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 76.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475167		EET SEA	10/17/24 21:34
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 19:26

Client Sample ID: PNKRBG-59-0-6
Lab Sample ID: 350-1017-56
Date Collected: 09/23/24 14:40
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-59-0-6
Lab Sample ID: 350-1017-56
Date Collected: 09/23/24 14:40
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 98.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475167		EET SEA	10/17/24 21:34
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 19:28
Total/NA	Prep	7471B			729637	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 14:14

Client Sample ID: PNKRBG-59-12-18
Lab Sample ID: 350-1017-57
Date Collected: 09/23/24 14:50
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Lab Chronicle

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1017-1

Client Sample ID: PNKRBG-59-12-18
Date Collected: 09/23/24 14:50
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-57
Matrix: Solid
Percent Solids: 96.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475167		EET SEA	10/17/24 21:34
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 18:46
Total/NA	Prep	7471B			729637	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 14:15

Client Sample ID: PNKRBG-59-24-28
Date Collected: 09/23/24 15:00
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-58
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-59-24-28
Date Collected: 09/23/24 15:00
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-58
Matrix: Solid
Percent Solids: 81.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475167		EET SEA	10/17/24 21:34
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 19:35
Total/NA	Prep	7471B			729637	ESB	EET BUF	10/25/24 09:07
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 14:17

Client Sample ID: PNKRBG-60-0-6
Date Collected: 09/23/24 11:40
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-59
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-60-0-6
Date Collected: 09/23/24 11:40
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-59
Matrix: Solid
Percent Solids: 93.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475167		EET SEA	10/17/24 21:34
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 19:38

Client Sample ID: PNKRBG-61-0-6
Date Collected: 09/23/24 13:50
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-60
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Lab Chronicle

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1017-1

Client Sample ID: PNKRBG-61-0-6
Lab Sample ID: 350-1017-60
Date Collected: 09/23/24 13:50
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 88.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475167		EET SEA	10/17/24 21:34
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 19:40
Total/NA	Prep	7471B			729638	ESB	EET BUF	10/25/24 09:49
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 14:21

Client Sample ID: PNKRBG-61-12-18
Lab Sample ID: 350-1017-61
Date Collected: 09/23/24 14:00
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-61-12-18
Lab Sample ID: 350-1017-61
Date Collected: 09/23/24 14:00
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 97.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475167		EET SEA	10/17/24 21:34
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 19:43
Total/NA	Prep	7471B			729638	ESB	EET BUF	10/25/24 09:49
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 14:30

Client Sample ID: PNKRBG-61-24-28
Lab Sample ID: 350-1017-62
Date Collected: 09/23/24 14:13
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-61-24-28
Lab Sample ID: 350-1017-62
Date Collected: 09/23/24 14:13
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 97.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475167		EET SEA	10/17/24 21:34
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 19:45
Total/NA	Prep	7471B			729638	ESB	EET BUF	10/25/24 09:49
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 14:31

Client Sample ID: PNKRBG-62-0-6
Lab Sample ID: 350-1017-63
Date Collected: 09/23/24 11:20
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Lab Chronicle

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1017-1

Client Sample ID: PNKRBG-62-0-6
Lab Sample ID: 350-1017-63
Date Collected: 09/23/24 11:20
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 95.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475167		EET SEA	10/17/24 21:34
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 19:48

Client Sample ID: PNKRBG-62-12-18
Lab Sample ID: 350-1017-64
Date Collected: 09/23/24 11:25
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-62-12-18
Lab Sample ID: 350-1017-64
Date Collected: 09/23/24 11:25
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 94.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475451		EET SEA	10/21/24 16:52
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 21:59

Client Sample ID: PNKRBG-63-0-6
Lab Sample ID: 350-1017-65
Date Collected: 09/23/24 10:10
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57
Total/NA	Analysis	D422		1	474898	AUA	EET SEA	10/16/24 10:54

Client Sample ID: PNKRBG-63-0-6
Lab Sample ID: 350-1017-65
Date Collected: 09/23/24 10:10
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 99.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475451		EET SEA	10/21/24 16:52
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 22:01
Total/NA	Prep	7471B			729638	ESB	EET BUF	10/25/24 09:49
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 14:32

Client Sample ID: PNKRBG-63-12-18
Lab Sample ID: 350-1017-66
Date Collected: 09/23/24 10:25
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57
Total/NA	Analysis	D422		1	474898	AUA	EET SEA	10/16/24 10:54

Client Sample ID: PNKRBG-63-12-18
Lab Sample ID: 350-1017-66
Date Collected: 09/23/24 10:25
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 97.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475451		EET SEA	10/21/24 16:52
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 22:08
Total/NA	Prep	7471B			729638	ESB	EET BUF	10/25/24 09:49
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 14:34

Client Sample ID: PNKRBG-63-24-30
Lab Sample ID: 350-1017-67
Date Collected: 09/23/24 10:35
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57
Total/NA	Analysis	D422		1	474898	AUA	EET SEA	10/16/24 10:54

Client Sample ID: PNKRBG-63-24-30
Lab Sample ID: 350-1017-67
Date Collected: 09/23/24 10:35
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 98.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475451		EET SEA	10/21/24 16:52
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 22:11
Total/NA	Prep	7471B			729638	ESB	EET BUF	10/25/24 09:49
Total/NA	Analysis	7471B		1	729877	ESB	EET BUF	10/25/24 14:35

Client Sample ID: PNKRBG-64-0-6
Lab Sample ID: 350-1017-68
Date Collected: 09/23/24 09:45
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-64-0-6
Lab Sample ID: 350-1017-68
Date Collected: 09/23/24 09:45
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 78.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475451		EET SEA	10/21/24 16:52
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 22:13

Client Sample ID: PNKRBG-64-12-18
Lab Sample ID: 350-1017-69
Date Collected: 09/23/24 09:52
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Lab Chronicle

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1017-1

Client Sample ID: PNKRBG-64-12-18
Lab Sample ID: 350-1017-69
Date Collected: 09/23/24 09:52
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 97.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475451		EET SEA	10/21/24 16:52
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 22:15

Client Sample ID: PNKRBG-64-24-30
Lab Sample ID: 350-1017-70
Date Collected: 09/23/24 10:00
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-64-24-30
Lab Sample ID: 350-1017-70
Date Collected: 09/23/24 10:00
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 82.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475451		EET SEA	10/21/24 16:52
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 22:18

Client Sample ID: PNKRBG-65-0-6
Lab Sample ID: 350-1017-71
Date Collected: 09/25/24 13:30
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-65-0-6
Lab Sample ID: 350-1017-71
Date Collected: 09/25/24 13:30
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 86.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475451		EET SEA	10/21/24 16:52
Total/NA	Analysis	6020B		10	475776	CA	EET SEA	10/23/24 22:20

Client Sample ID: PNKRBG-65-12-16
Lab Sample ID: 350-1017-72
Date Collected: 09/25/24 13:40
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-65-12-16
Lab Sample ID: 350-1017-72
Date Collected: 09/25/24 13:40
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 84.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475959		EET SEA	10/25/24 15:04
Total/NA	Analysis	6020B		10	476210	CA	EET SEA	10/28/24 23:56

Client Sample ID: PNKRBG-66-0-6
Lab Sample ID: 350-1017-73
Date Collected: 09/25/24 13:10
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-66-0-6
Lab Sample ID: 350-1017-73
Date Collected: 09/25/24 13:10
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 96.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475959		EET SEA	10/25/24 15:04
Total/NA	Analysis	6020B		10	476210	CA	EET SEA	10/28/24 23:59

Client Sample ID: PNKRBG-66-12-18
Lab Sample ID: 350-1017-74
Date Collected: 09/25/24 13:15
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Client Sample ID: PNKRBG-66-12-18
Lab Sample ID: 350-1017-74
Date Collected: 09/25/24 13:15
Matrix: Solid
Date Received: 09/26/24 12:20
Percent Solids: 92.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475959		EET SEA	10/25/24 15:04
Total/NA	Analysis	6020B		10	476210	CA	EET SEA	10/29/24 00:01

Client Sample ID: PNKRBG-66-22-28
Lab Sample ID: 350-1017-75
Date Collected: 09/25/24 13:20
Matrix: Solid
Date Received: 09/26/24 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	473722	SCS	EET SEA	10/04/24 12:57

Lab Chronicle

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1017-1

Client Sample ID: PNKRBG-66-22-28

Date Collected: 09/25/24 13:20
Date Received: 09/26/24 12:20

Lab Sample ID: 350-1017-75

Matrix: Solid
Percent Solids: 90.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			475959		EET SEA	10/25/24 15:04
Total/NA	Analysis	6020B		10	476210	CA	EET SEA	10/29/24 00:08

Laboratory References:

EET BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Antea USA Inc. Job ID: 350-1017-1
Project/Site: NuStar Split GWM / KM Van RIFS

Laboratory: Eurofins Buffalo

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	88-00686	07-06-25
Connecticut	State	PH-0807	03-31-25
Georgia	State	10026 (NY)	03-31-25
Georgia	State Program	N/A	03-31-09 *
Illinois	NELAP	200003	09-30-25
Iowa	State	374	03-01-25
Iowa	State Program	374	03-01-09 *
Kansas	NELAP	E-10187	02-01-25
Kentucky (UST)	State	108092	04-01-25
Kentucky (WW)	State	KY90029	12-31-24
Maine	State	NY00044	12-04-24
Maryland	State	294	06-30-25
Massachusetts	State	M-NY044	07-01-25
Michigan	State	9937	03-31-25
Michigan	State Program	9937	04-01-09 *
New Hampshire	NELAP	2973	09-11-19 *
New Hampshire	NELAP	2337	11-17-24
New Jersey	NELAP	NY455	07-02-25
New York	NELAP	10026	03-31-25
Pennsylvania	NELAP	68-00281	08-31-25
Rhode Island	State	LAO00378	12-30-24
Virginia	NELAP	460185	09-14-25
Washington	State	C784	02-10-25
Wisconsin	State	998310390	08-31-25

Laboratory: Eurofins Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2540G		Solid	Percent Moisture
2540G		Solid	Percent Solids
D422		Solid	Clay
D422		Solid	Coarse Sand
D422		Solid	Fine Sand
D422		Solid	Gravel
D422		Solid	Medium Sand
D422		Solid	Silt

ANAB	Dept. of Defense ELAP	L2236	01-19-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2540G		Solid	Percent Moisture
2540G		Solid	Percent Solids

ANAB	Dept. of Energy	L2236	01-19-25

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Antea USA Inc. Job ID: 350-1017-1
Project/Site: NuStar Split GWM / KM Van RIFS

Laboratory: Eurofins Seattle (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2540G		Solid	Percent Moisture
2540G		Solid	Percent Solids
6020B	3050B	Solid	Arsenic
6020B	3050B	Solid	Cadmium
6020B	3050B	Solid	Copper
6020B	3050B	Solid	Lead
6020B	3050B	Solid	Zinc
D422		Solid	Clay
D422		Solid	Coarse Sand
D422		Solid	Fine Sand
D422		Solid	Gravel
D422		Solid	Medium Sand
D422		Solid	Silt

ANAB	ISO/IEC 17025	L2236	01-19-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2540G		Solid	Percent Moisture
2540G		Solid	Percent Solids

California	State	2954	07-07-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2540G		Solid	Percent Moisture
2540G		Solid	Percent Solids
D422		Solid	Clay
D422		Solid	Coarse Sand
D422		Solid	Fine Sand
D422		Solid	Gravel
D422		Solid	Medium Sand
D422		Solid	Silt

Florida	NELAP	E87575	06-30-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2540G		Solid	Percent Moisture
2540G		Solid	Percent Solids
6020B	3050B	Solid	Arsenic
6020B	3050B	Solid	Cadmium
6020B	3050B	Solid	Copper
6020B	3050B	Solid	Lead
6020B	3050B	Solid	Zinc
D422		Solid	Clay
D422		Solid	Coarse Sand

Accreditation/Certification Summary

Client: Antea USA Inc. Job ID: 350-1017-1
Project/Site: NuStar Split GWM / KM Van RIFS

Laboratory: Eurofins Seattle (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
D422		Solid	Fine Sand
D422		Solid	Gravel
D422		Solid	Medium Sand
D422		Solid	Silt

Louisiana (All)	NELAP	03073	06-30-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2540G		Solid	Percent Moisture
2540G		Solid	Percent Solids
6020B	3050B	Solid	Arsenic
6020B	3050B	Solid	Cadmium
6020B	3050B	Solid	Copper
6020B	3050B	Solid	Lead
6020B	3050B	Solid	Zinc
D422		Solid	Clay
D422		Solid	Coarse Sand
D422		Solid	Fine Sand
D422		Solid	Gravel
D422		Solid	Medium Sand
D422		Solid	Silt

Maine	State	WA01273	05-02-26

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2540G		Solid	Percent Moisture
2540G		Solid	Percent Solids
6020B	3050B	Solid	Arsenic
6020B	3050B	Solid	Cadmium
6020B	3050B	Solid	Copper
6020B	3050B	Solid	Lead
6020B	3050B	Solid	Zinc
D422		Solid	Clay
D422		Solid	Coarse Sand
D422		Solid	Fine Sand
D422		Solid	Gravel
D422		Solid	Medium Sand
D422		Solid	Silt

Montana (UST)	State	NA	04-14-27

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2540G		Solid	Percent Moisture
2540G		Solid	Percent Solids

Laboratory: Eurofins Seattle (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020B	3050B	Solid	Arsenic
6020B	3050B	Solid	Cadmium
6020B	3050B	Solid	Copper
6020B	3050B	Solid	Lead
6020B	3050B	Solid	Zinc
D422		Solid	Clay
D422		Solid	Coarse Sand
D422		Solid	Fine Sand
D422		Solid	Gravel
D422		Solid	Medium Sand
D422		Solid	Silt

New Jersey	NELAP	WA014	06-30-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2540G		Solid	Percent Moisture
2540G		Solid	Percent Solids
6020B	3050B	Solid	Arsenic
6020B	3050B	Solid	Cadmium
6020B	3050B	Solid	Copper
6020B	3050B	Solid	Lead
6020B	3050B	Solid	Zinc
D422		Solid	Clay
D422		Solid	Coarse Sand
D422		Solid	Fine Sand
D422		Solid	Gravel
D422		Solid	Medium Sand
D422		Solid	Silt

New York	NELAP	11662	04-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2540G		Solid	Percent Moisture
2540G		Solid	Percent Solids
6020B	3050B	Solid	Arsenic
6020B	3050B	Solid	Cadmium
6020B	3050B	Solid	Copper
6020B	3050B	Solid	Lead
6020B	3050B	Solid	Zinc
D422		Solid	Clay
D422		Solid	Coarse Sand
D422		Solid	Fine Sand
D422		Solid	Gravel
D422		Solid	Medium Sand
D422		Solid	Silt

Accreditation/Certification Summary

Client: Antea USA Inc. Job ID: 350-1017-1
Project/Site: NuStar Split GWM / KM Van RIFS

Laboratory: Eurofins Seattle (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	4167	07-07-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2540G		Solid	Percent Solids

Authority	Program	Identification Number	Expiration Date
US Fish & Wildlife	US Federal Programs	A20571	06-30-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2540G		Solid	Percent Moisture
2540G		Solid	Percent Solids
6020B	3050B	Solid	Arsenic
6020B	3050B	Solid	Cadmium
6020B	3050B	Solid	Copper
6020B	3050B	Solid	Lead
6020B	3050B	Solid	Zinc
D422		Solid	Clay
D422		Solid	Coarse Sand
D422		Solid	Fine Sand
D422		Solid	Gravel
D422		Solid	Medium Sand
D422		Solid	Silt

Authority	Program	Identification Number	Expiration Date
USDA	US Federal Programs	525-23-4-22573	01-04-26

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2540G		Solid	Percent Moisture
2540G		Solid	Percent Solids
6020B	3050B	Solid	Arsenic
6020B	3050B	Solid	Cadmium
6020B	3050B	Solid	Copper
6020B	3050B	Solid	Lead
6020B	3050B	Solid	Zinc
D422		Solid	Clay
D422		Solid	Coarse Sand
D422		Solid	Fine Sand
D422		Solid	Gravel
D422		Solid	Medium Sand
D422		Solid	Silt

Authority	Program	Identification Number	Expiration Date
Washington	State	C788-24	07-13-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2540G		Solid	Percent Solids

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	399133460	09-01-25

Accreditation/Certification Summary

Client: Antea USA Inc. Job ID: 350-1017-1
Project/Site: NuStar Split GWM / KM Van RIFS

Laboratory: Eurofins Seattle (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2540G		Solid	Percent Moisture
2540G		Solid	Percent Solids
6020B	3050B	Solid	Arsenic
6020B	3050B	Solid	Cadmium
6020B	3050B	Solid	Copper
6020B	3050B	Solid	Lead
6020B	3050B	Solid	Zinc
D422		Solid	Clay
D422		Solid	Coarse Sand
D422		Solid	Fine Sand
D422		Solid	Gravel
D422		Solid	Medium Sand
D422		Solid	Silt

Method Summary

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1017-1

Method	Method Description	Protocol	Laboratory
6020B	Metals (ICP/MS)	SW846	EET SEA
7471B	Mercury (CVAA)	SW846	EET BUF
2540G	SM 2540G	SM22	EET SEA
D422	Grain Size	ASTM	EET SEA
3050B	Preparation, Metals	SW846	EET SEA
7471B	Preparation, Mercury	SW846	EET BUF

Protocol References:

ASTM = ASTM International

SM22 = Standard Methods For The Examination Of Water And Wastewater, 22nd Edition

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1017-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
350-1017-1	PNKRBG-31-0-6	Solid	09/25/24 11:10	09/26/24 12:20
350-1017-2	PNKRBG-31-12-18	Solid	09/25/24 11:20	09/26/24 12:20
350-1017-3	PNKRBG-31-24-30	Solid	09/25/24 11:30	09/26/24 12:20
350-1017-4	PNKRBG-32-0-6	Solid	09/25/24 11:50	09/26/24 12:20
350-1017-5	PNKRBG-32-12-18	Solid	09/25/24 11:55	09/26/24 12:20
350-1017-6	PNKRBG-32-24-30	Solid	09/25/24 12:00	09/26/24 12:20
350-1017-7	PNKRBG-33-0-6	Solid	09/25/24 13:45	09/26/24 12:20
350-1017-8	PNKRBG-34-0-6	Solid	09/25/24 10:10	09/26/24 12:20
350-1017-9	PNKRBG-34-12-18	Solid	09/25/24 10:15	09/26/24 12:20
350-1017-10	PNKRBG-34-24-30	Solid	09/25/24 10:20	09/26/24 12:20
350-1017-11	PNKRBG-35-0-6	Solid	09/25/24 10:45	09/26/24 12:20
350-1017-12	PNKRBG-35-12-18	Solid	09/25/24 10:55	09/26/24 12:20
350-1017-13	PNKRBG-36-0-6	Solid	09/25/24 09:00	09/26/24 12:20
350-1017-14	PNKRBG-36-12-18	Solid	09/25/24 09:15	09/26/24 12:20
350-1017-15	PNKRBG-36-24-30	Solid	09/25/24 09:20	09/26/24 12:20
350-1017-16	PNKRBG-37-0-6	Solid	09/25/24 09:45	09/26/24 12:20
350-1017-17	PNKRBG-37-12-18	Solid	09/25/24 09:55	09/26/24 12:20
350-1017-18	PNKRBG-37-24-30	Solid	09/25/24 10:00	09/26/24 12:20
350-1017-19	PNKRBG-38-0-6	Solid	09/25/24 09:30	09/26/24 12:20
350-1017-20	PNKRBG-38-12-18	Solid	09/25/24 09:35	09/26/24 12:20
350-1017-21	PNKRBG-38-22-28	Solid	09/25/24 09:40	09/26/24 12:20
350-1017-22	PNKRBG-39-0-6	Solid	09/25/24 08:30	09/26/24 12:20
350-1017-23	PNKRBG-39-12-15	Solid	09/25/24 08:40	09/26/24 12:20
350-1017-24	PNKRBG-40-0-6	Solid	09/25/24 08:50	09/26/24 12:20
350-1017-25	PNKRBG-40-12-18	Solid	09/25/24 09:00	09/26/24 12:20
350-1017-26	PNKRBG-41-0-6	Solid	09/24/24 13:35	09/26/24 12:20
350-1017-27	PNKRBG-41-12-17	Solid	09/24/24 13:55	09/26/24 12:20
350-1017-28	PNKRBG-42-0-6	Solid	09/24/24 14:10	09/26/24 12:20
350-1017-29	PNKRBG-43-0-6	Solid	09/24/24 12:05	09/26/24 12:20
350-1017-30	PNKRBG-43-18-22	Solid	09/24/24 12:15	09/26/24 12:20
350-1017-31	PNKRBG-45-0-6	Solid	09/24/24 11:40	09/26/24 12:20
350-1017-32	PNKRBG-45-12-16	Solid	09/24/24 11:45	09/26/24 12:20
350-1017-33	PNKRBG-47-0-6	Solid	09/24/24 16:40	09/26/24 12:20
350-1017-34	PNKRBG-48-0-6	Solid	09/24/24 16:15	09/26/24 12:20
350-1017-35	PNKRBG-48-12-16	Solid	09/24/24 16:27	09/26/24 12:20
350-1017-36	PNKRBG-49-0-6	Solid	09/24/24 15:25	09/26/24 12:20
350-1017-37	PNKRBG-49-12-18	Solid	09/24/24 15:35	09/26/24 12:20
350-1017-38	PNKRBG-50-0-6	Solid	09/24/24 15:00	09/26/24 12:20
350-1017-39	PNKRBG-50-14-17	Solid	09/24/24 15:12	09/26/24 12:20
350-1017-40	PNKRBG-51-0-6	Solid	09/24/24 14:30	09/26/24 12:20
350-1017-41	PNKRBG-52-0-6	Solid	09/24/24 14:35	09/26/24 12:20
350-1017-42	PNKRBG-52-12-18	Solid	09/24/24 14:45	09/26/24 12:20
350-1017-43	PNKRBG-53-0-6	Solid	09/24/24 10:45	09/26/24 12:20
350-1017-44	PNKRBG-53-12-16	Solid	09/24/24 10:50	09/26/24 12:20
350-1017-45	PNKRBG-54-0-6	Solid	09/24/24 10:25	09/26/24 12:20
350-1017-46	PNKRBG-54-12-17	Solid	09/24/24 10:35	09/26/24 12:20
350-1017-47	PNKRBG-55-0-6	Solid	09/24/24 16:15	09/26/24 12:20
350-1017-48	PNKRBG-55-12-18	Solid	09/24/24 16:25	09/26/24 12:20
350-1017-49	PNKRBG-55-24-27	Solid	09/24/24 16:40	09/26/24 12:20
350-1017-50	PNKRBG-56-0-6	Solid	09/24/24 09:25	09/26/24 12:20
350-1017-51	PNKRBG-56-12-14	Solid	09/24/24 09:35	09/26/24 12:20
350-1017-52	PNKRBG-57-0-6	Solid	09/23/24 15:20	09/26/24 12:20
350-1017-53	PNKRBG-57-12-17	Solid	09/23/24 15:30	09/26/24 12:20
350-1017-54	PNKRBG-58-0-6	Solid	09/23/24 12:13	09/26/24 12:20

Sample Summary

Client: Antea USA Inc.
Project/Site: NuStar Split GWM / KM Van RIFS

Job ID: 350-1017-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
350-1017-55	PNKRBG-58-12-17	Solid	09/23/24 12:18	09/26/24 12:20
350-1017-56	PNKRBG-59-0-6	Solid	09/23/24 14:40	09/26/24 12:20
350-1017-57	PNKRBG-59-12-18	Solid	09/23/24 14:50	09/26/24 12:20
350-1017-58	PNKRBG-59-24-28	Solid	09/23/24 15:00	09/26/24 12:20
350-1017-59	PNKRBG-60-0-6	Solid	09/23/24 11:40	09/26/24 12:20
350-1017-60	PNKRBG-61-0-6	Solid	09/23/24 13:50	09/26/24 12:20
350-1017-61	PNKRBG-61-12-18	Solid	09/23/24 14:00	09/26/24 12:20
350-1017-62	PNKRBG-61-24-28	Solid	09/23/24 14:13	09/26/24 12:20
350-1017-63	PNKRBG-62-0-6	Solid	09/23/24 11:20	09/26/24 12:20
350-1017-64	PNKRBG-62-12-18	Solid	09/23/24 11:25	09/26/24 12:20
350-1017-65	PNKRBG-63-0-6	Solid	09/23/24 10:10	09/26/24 12:20
350-1017-66	PNKRBG-63-12-18	Solid	09/23/24 10:25	09/26/24 12:20
350-1017-67	PNKRBG-63-24-30	Solid	09/23/24 10:35	09/26/24 12:20
350-1017-68	PNKRBG-64-0-6	Solid	09/23/24 09:45	09/26/24 12:20
350-1017-69	PNKRBG-64-12-18	Solid	09/23/24 09:52	09/26/24 12:20
350-1017-70	PNKRBG-64-24-30	Solid	09/23/24 10:00	09/26/24 12:20
350-1017-71	PNKRBG-65-0-6	Solid	09/25/24 13:30	09/26/24 12:20
350-1017-72	PNKRBG-65-12-16	Solid	09/25/24 13:40	09/26/24 12:20
350-1017-73	PNKRBG-66-0-6	Solid	09/25/24 13:10	09/26/24 12:20
350-1017-74	PNKRBG-66-12-18	Solid	09/25/24 13:15	09/26/24 12:20
350-1017-75	PNKRBG-66-22-28	Solid	09/25/24 13:20	09/26/24 12:20

Eurofins Specialty Metals Testing
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: Nate Hemphill	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s):	COC No: 350-261-138.1
Client Contact: Nolan Lewis	Phone: 503 550 3703	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: WA	Page: Page 1 of 7
Company: Antea USA Inc.	PWSID:			Job #: VBT
Address: 205 SE Spokane Street Suite 300	Due Date Requested:			
City: Portland	TAT Requested (days): Standard			
State, Zip: OR, 97202	Compliance Project: Δ Yes Δ No			
Phone: 503 550 3703	PO #: WD1093775			
Email: nolan.lewis@anteagroup.us	WO #:			
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			
Site: VBT	SSOW#:			

Analysis Requested

Preservation Codes: N - None

350-1017 Chain of Custody

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	D422 - D422 Grain Size	200.8 Total arsenic, cadmium, copper, lead, mercury, zinc	200.8 Total copper	Total Number of co	Special Instructions/Note:
			Preservation Code:				N				
PNKRBG-31-0-6	9/25/24	1110	C	Solid				X			
PNKRBG-31-12-18	9/25/24	1120	C	Solid			X	X			
PNKRBG-31-24-30	9/25/24	1130	C	Solid				X			
PNKRBG-32-0-6	9/25/24	1150	C	Solid					X		
PNKRBG-32-12-18	9/25/24	1155	C	Solid					X		
PNKRBG-32-24-30	9/25/24	1200	C	Solid					X		
PNKRBG-33-0-6	9/25/24	1345	C	Solid				X			
PNKRBG-34-0-6	9/25/24	1010	C	Solid					X		
PNKRBG-34-12-18	9/25/24	1015	C	Solid					X		
PNKRBG-34-24-30	9/25/24	1020	C	Solid				X	X		BNL Copper Only
PNKRBG-35-0-6	9/25/24	1045	C	Solid			X	X			BNL No grain size

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		9/26/24 1220			9/26/24 1220	ET
2	Relinquished by:	Date/Time: 9/26/24 1700	Company: ET	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 0.5/0.4, 0.2/0.1 PDK SCR

Ver: 05/06/2024

11/19/2024 (Rev. 3)

Eurofins Specialty Metals Testing
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: Nate Hemphill	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s):	COC No: 350-261-138.1
Client Contact: Nolan Lewis	Phone: 503 550 3703	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: WA	Page: Page 7 of 7
Company: Antea USA Inc.	PWSID:	Analysis Requested		Job #: VBT
Address: 205 SE Spokane Street Suite 300	Due Date Requested:			Preservation Codes: N - None
City: Portland	TAT Requested (days): Standard			
State, Zip: OR, 97202	Compliance Project: Δ Yes Δ No			
Phone: 503 550 3703	PO #: WD1093775			
Email: nolan.lewis@anteagroup.us	WO #:			Other:
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			
Site: VBT	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	D422 - D422 Grain Size	200.8 Total arsenic, cadmium, copper, lead, mercury, zinc	200.8 Total copper	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	N			X	
PNKRBG-35-12-18	9/25/24	1055	C	Solid			X	X			
PNKRBG-36-0-6	9/25/24	900	C	Solid			X		X		
PNKRBG-36-12-18	9/25/24	915	C	Solid					X		
PNKRBG-36-24-30	9/25/24	920	C	Solid					X		
PNKRBG-37-0-6	9/25/24	945	C	Solid					X		
PNKRBG-37-12-18	9/25/24	955	C	Solid					X		
PNKRBG-37-24-30	9/25/24	1000	C	Solid					X		
PNKRBG-38-0-6	9/25/24	930	C	Solid					X		
PNKRBG-38-12-18	9/25/24	935	C	Solid					X		
PNKRBG-38-22-28	9/25/24	940	C	Solid					X		
PNKRBG-39-0-6	9/25/24	830	C	Solid				X			

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		9/26/24 1220			9/26/24 1220	
2		9/26/24 1720				
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 05/06/2024

Eurofins Specialty Metals Testing
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: Nate Hemphill	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s):	COC No: 350-261-138.1
Client Contact: Nolan Lewis	Phone: 503 550 3703	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: WA	Page: Page 3 of 7
Company: Antea USA Inc.	PWSID:	Analysis Requested		Job #:
Address: 205 SE Spokane Street Suite 300	Due Date Requested: 8			Preservation Codes: N - None
City: Portland	TAT Requested (days): Standard			
State, Zip: OR, 97202	Compliance Project: Δ Yes Δ No			
Phone: 503 5503203	PO #: WD1093775			
Email: nolan.lewis@anteagroup.us	WO #:			Other:
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			
Site: VBT	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	D422 - D422 Grain Size	200.8 Total arsenic, cadmium, copper, lead, mercury, zinc	200.8 Total copper	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	N			X	
PNKRBG-39-12-15	9/25/24	840	C	Solid				X			
PNKRBG-40-0-6	9/25/24	850	C	Solid					X		
PNKRBG-40-12-18	9/25/24	900	C	Solid					X		
PNKRBG-41-0-6	9/24/24	1335	C	Solid				X			
PNKRBG-41-12-17	9/24/24	1355	C	Solid				X			
PNKRBG-42-0-6	9/24/24	1410	C	Solid					X		
PNKRBG-43-0-6	9/24/24	1205	C	Solid			X	X			
PNKRBG-43-18-22	9/24/24	1215	C	Solid				X			
PNKRBG-45-0-6	9/24/24	1140	C	Solid				X			
PNKRBG-45-12-16	9/24/24	1145	C	Solid				X			
PNKRBG-47-0-6	9/24/24	1640	C	Solid			X	X			

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown* ☐ *Radiological*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For _____ Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		9/26/24 1220			9/26/24 1220	ET
2		9/26/24 1720	ET			
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 05/06/2024

11/19/2024 (Rev. 3)

Eurofins Specialty Metals Testing
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: Nate Hemphill	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s):	COC No: 350-261-138.1
Client Contact: Nolan Lewis	Phone: 503 550 3703	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: WA	Page: Page 4 of 7
Company: Antea USA Inc.	PWSID:	Analysis Requested		Job #:
Address: 205 SE Spokane Street Suite 300	Due Date Requested:			Preservation Codes: N - None
City: Portland	TAT Requested (days): Standard			
State, Zip: OR, 97202	Compliance Project: Δ Yes Δ No			
Phone: 503 550 3703	PO #: WD1093775			
Email: nolan.lewis@anteagroup.us	WO #:			Other:
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			
Site: VBT	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	D422 - D422 Grain Size	200.8 Total arsenic, cadmium, copper, lead, mercury, zinc	200.8 Total copper	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N				
PNKRBG-48-0-6	9/24/24	1615	C	Solid					X		
PNKRBG-48-12-16	9/24/24	1627	C	Solid					X		
PNKRBG-49-0-6	9/24/24	1525	C	Solid					X		
PNKRBG-49-12-18	9/24/24	1535	C	Solid					X		
PNKRBG-50-0-6	9/24/24	1500	C	Solid					X		
PNKRBG-50-14-17	9/24/24	1512	C	Solid					X		
PNKRBG-51-0-6	9/24/24	1430	C	Solid				X			
PNKRBG-52-0-6	9/24/24	1435	C	Solid					X		
PNKRBG-52-12-18	9/24/24	1445	C	Solid			X		X		
PNKRBG-53-0-6	9/24/24	1045	C	Solid				X			
PNKRBG-53-12-16	9/24/24	1058	C	Solid				X			

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		9/26/24 1220			9/26/24 1220	ET
2		9/26/24 1720	ET			
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 05/06/2024

Eurofins Specialty Metals Testing
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: Nate Hemphill	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s):	COC No: 350-261-138.1
Client Contact: Nolan Lewis	Phone: 503 550 3703	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: WA	Page: Page 5 of 7
Company: Antea USA Inc.	PWSID:	Analysis Requested		Job #:
Address: 205 SE Spokane Street Suite 300	Due Date Requested:			Preservation Codes: N - None
City: Portland	TAT Requested (days): Standard			
State, Zip: OR, 97202	Compliance Project: Δ Yes Δ No			
Phone: 503 550 3703	PO #: WD1093775			
Email: nolan.lewis@anteagroup.us	WO #:			Other:
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			
Site: VBT	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	D422 - D422 Grain Size	200.8 Total arsenic, cadmium, copper, lead, mercury, zinc	200.8 Total copper	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N				
PNKRBG-54-0-6	9/24/24	1025	C	Solid					X		
PNKRBG-54-12-17	9/24/24	1035	C	Solid					X		
PNKRBG-55-0-6	9/23/24	1615	C	Solid			X	X			
PNKRBG-55-12-18	9/23/24	1625	C	Solid				X			
PNKRBG-55-24-27	9/23/24	1640	C	Solid				X			
PNKRBG-56-0-6	9/24/24	925	C	Solid					X		
PNKRBG-56-12-14	9/24/24	935	C	Solid					X		
PNKRBG-57-0-6	9/23/24	1520	C	Solid				X			
PNKRBG-57-12-17	9/23/24	1530	C	Solid				X			
PNKRBG-58-0-6	9/23/24	1213	C	Solid					X		
PNKRBG-58-12-17	9/23/24	1218	C	Solid			X		X		

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	9/26/24 1220			9/26/24 1220	ECT
Relinquished by:	Date/Time: 9/26/24 1720	Company ECT	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 05/06/2024

Eurofins Specialty Metals Testing
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: Nate Hemphill	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s):	COC No: 350-261-138.1
Client Contact: Nolan Lewis	Phone: 503 550 3703	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: WA	Page: Page 6 of 7
Company: Antea USA Inc.	PWSID:	Analysis Requested		Job #:
Address: 205 SE Spokane Street Suite 300	Due Date Requested:			Preservation Codes: N - None
City: Portland	TAT Requested (days): Standard			
State, Zip: OR, 97202	Compliance Project: Δ Yes Δ No			
Phone: 503 550 3703	PO #: WD1093775			
Email: nolan.lewis@anteagroup.us	WO #:			Other:
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			
Site: VBT	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	D422 - D422 Grain Size	200.8 Total arsenic, cadmium, copper, lead, mercury, zinc	200.8 Total copper	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	N			X	
PNKRBG-59-0-6	9/23/24	1440	C	Solid				X			
PNKRBG-59-12-18	9/23/24	1450	C	Solid				X			
PNKRBG-59-24-28	9/23/24	1500	C	Solid				X			
PNKRBG-60-0-6	9/23/24	1140	C	Solid					X		
PNKRBG-61-0-6	9/23/24	1350	C	Solid				X			
PNKRBG-61-12-18	9/23/24	1400	C	Solid				X			
PNKRBG-61-24-28	9/23/24	1413	C	Solid				X			
PNKRBG-62-0-6	9/23/24	1120	C	Solid					X		
PNKRBG-62-12-18	9/23/24	1125	C	Solid					X		
PNKRBG-63-0-6	9/23/24	1010	C	Solid			X	X			
PNKRBG-63-12-18	9/23/24	1025	C	Solid			X	X			

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		9/26/24 1220			9/26/24 1220	ELT
2		9/26/24 1220	ELT			
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 05/06/2024

11/19/2024 (Rev. 3)

Eurofins Specialty Metals Testing
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: Nate Hemphill	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s):	COC No: 350-261-138.1
Client Contact: Nolan Lewis	Phone: 503 550 3703	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: WA	Page: Page 7 of 7
Company: Antea USA Inc.	PWSID:			Job #:
Address: 205 SE Spokane Street Suite 300	Due Date Requested:			
City: Portland	TAT Requested (days): Standard			
State, Zip: OR, 97202	Compliance Project: Δ Yes Δ No			
Phone: 503 550 3703	PO #: WD1093775			
Email: nolan.lewis@anteagroup.us	WO #:			
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			
Site: VBT	SSOW#:			

Analysis Requested

Preservation Codes: N - None

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	D422 - D422 Grain Size	200.8 Total arsenic, cadmium, copper, lead, mercury, zinc	200.8 Total copper	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N				
PNKRBG-63-24-30	9/23/24	1035	C	Solid			X	X			
PNKRBG-64-0-6	9/23/24	945	C	Solid					X		
PNKRBG-64-12-18	9/23/24	952	C	Solid					X		
PNKRBG-64-24-30	9/23/24	1000	C	Solid					X		
PNKRBG-65-0-6	9/25/24	1330	C	Solid					X		
PNKRBG-65-12-16	9/25/24	1340	C	Solid					X		
PNKRBG-66-0-6	9/25/24	1310	C	Solid					X		
PNKRBG-66-12-18	9/25/24	1315	C	Solid					X		
PNKRBG-66-22-28	9/25/24	1320	C	Solid					X		
~~PNKRBG~~-Blk				Solid							
				Solid							

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown* ☐ *Radiological*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For _____ Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		9/26/24 1220			9/26/24 1220	ET
2		9/26/24 1700	ET			
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 05/06/2024

5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s): N/A	COC No: 350-3018.1
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: Oregon	Page: Page 1 of 4
Company: Eurofins Environment Testing Northeast L		Accreditations Required (See note): Dept. of Defense ELAP - ANAB; Dept. of Energy - ANAB; I ...		Job #: 350-1017-1
Address: 10 Hazelwood Drive, ,	Due Date Requested: 10/16/2024			
City: Amherst	TAT Requested (days): N/A			
State, Zip: NY, 14228-2298				
Phone: 716-691-2600(Tel) 716-691-7991(Fax)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			
Site: N/A	SSOW#: N/A			

Analysis Requested

Preservation Codes: -

Other: N/A

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	7471B/7471B_Prep	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
PNKRBG-31-0-6 (350-1017-1)	9/25/24	11:10 Pacific	G	Solid			X	1	
PNKRBG-31-12-18 (350-1017-2)	9/25/24	11:20 Pacific	G	Solid			X	1	
PNKRBG-31-24-30 (350-1017-3)	9/25/24	11:30 Pacific	G	Solid			X	1	
PNKRBG-33-0-6 (350-1017-7)	9/25/24	13:45 Pacific	G	Solid			X	1	
PNKRBG-35-0-6 (350-1017-11)	9/25/24	10:45 Pacific	G	Solid			X	1	
PNKRBG-35-12-18 (350-1017-12)	9/25/24	10:55 Pacific	G	Solid			X	1	
PNKRBG-39-0-6 (350-1017-22)	9/25/24	08:30 Pacific	G	Solid			X	1	
PNKRBG-39-12-15 (350-1017-23)	9/25/24	08:40 Pacific	G	Solid			X	1	
PNKRBG-41-0-6 (350-1017-26)	9/24/24	13:35 Pacific	G	Solid			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Northwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Northwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Northwest, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 10/22/24 14:45	Company ECTN	Received by: DS	Date/Time: 10-24-24 1000	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.4 IR#5C Ice

Ver: 10/10/2024

5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s): N/A	COC No: 350-3018.2
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: Oregon	Page: Page 2 of 4
Company: Eurofins Environment Testing Northeast L		Accreditations Required (See note): Dept. of Defense ELAP - ANAB; Dept. of Energy - ANAB; I ...		Job #: 350-1017-1
Address: 10 Hazelwood Drive, ,	Due Date Requested: 10/16/2024			
City: Amherst	TAT Requested (days): N/A			
State, Zip: NY, 14228-2298				
Phone: 716-691-2600(Tel) 716-691-7991(Fax)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			
Site: N/A	SSOW#: N/A			

Analysis Requested

Preservation Codes: -

Other: N/A

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	7471B/7471B_Prep	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
PNKRBG-41-12-17 (350-1017-27)	9/24/24	13:55 Pacific	G	Solid			X	1	
PNKRBG-43-0-6 (350-1017-29)	9/24/24	12:05 Pacific	G	Solid			X	1	
PNKRBG-43-18-22 (350-1017-30)	9/24/24	12:15 Pacific	G	Solid			X	1	
PNKRBG-45-0-6 (350-1017-31)	9/24/24	11:40 Pacific	G	Solid			X	1	
PNKRBG-45-12-16 (350-1017-32)	9/24/24	11:45 Pacific	G	Solid			X	1	
PNKRBG-47-0-6 (350-1017-33)	9/24/24	16:40 Pacific	G	Solid			X	1	
PNKRBG-51-0-6 (350-1017-40)	9/24/24	14:30 Pacific	G	Solid			X	1	
PNKRBG-53-0-6 (350-1017-43)	9/24/24	10:45 Pacific	G	Solid			X	1	
PNKRBG-53-12-16 (350-1017-44)	9/24/24	10:50 Pacific	G	Solid			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Northwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Northwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Northwest, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by:	Date/Time: 9/27/24 14:45	Company ETN	Received by: See pg1
Relinquished by:	Date/Time:	Company	Received by:
Relinquished by:	Date/Time:	Company	Received by:

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 10/10/2024

Eurofins Specialty Metals Testing
5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s): N/A	COC No: 350-3018.3
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: Oregon	Page: Page 3 of 4
Company: Eurofins Environment Testing Northeast L		Accreditations Required (See note): Dept. of Defense ELAP - ANAB; Dept. of Energy - ANAB; I ...		Job #: 350-1017-1
Address: 10 Hazelwood Drive, ,	Due Date Requested: 10/16/2024			
City: Amherst	TAT Requested (days): N/A			
State, Zip: NY, 14228-2298				
Phone: 716-691-2600(Tel) 716-691-7991(Fax)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			
Site: N/A	SSOW#: N/A			

Analysis Requested

Preservation Codes: -

Other: N/A

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	7471B/7471B_Prep	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
PNKRBG-55-0-6 (350-1017-47)	9/24/24	16:15 Pacific	G	Solid			X	1	
PNKRBG-55-12-18 (350-1017-48)	9/24/24	16:25 Pacific	G	Solid			X	1	
PNKRBG-55-24-27 (350-1017-49)	9/24/24	16:40 Pacific	G	Solid			X	1	
PNKRBG-57-0-6 (350-1017-52)	9/23/24	15:20 Pacific	G	Solid			X	1	
PNKRBG-57-12-17 (350-1017-53)	9/23/24	15:30 Pacific	G	Solid			X	1	
PNKRBG-59-0-6 (350-1017-56)	9/23/24	14:40 Pacific	G	Solid			X	1	
PNKRBG-59-12-18 (350-1017-57)	9/23/24	14:50 Pacific	G	Solid			X	1	
PNKRBG-59-24-28 (350-1017-58)	9/23/24	15:00 Pacific	G	Solid			X	1	
PNKRBG-61-0-6 (350-1017-60)	9/23/24	13:50 Pacific	G	Solid			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Northwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Northwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Northwest, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by:	Date/Time: 10/21/24 14:45	Company ETTN	Received by: See pg1
Relinquished by:	Date/Time:	Company	Received by:
Relinquished by:	Date/Time:	Company	Received by:

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 10/10/2024

Eurofins Specialty Metals Testing
5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s): N/A	COC No: 350-3018.4
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: Oregon	Page: Page 4 of 4
Company: Eurofins Environment Testing Northeast L		Accreditations Required (See note): Dept. of Defense ELAP - ANAB; Dept. of Energy - ANAB; I ...		Job #: 350-1017-1
Address: 10 Hazelwood Drive, ,	Due Date Requested: 10/16/2024			
City: Amherst	TAT Requested (days): N/A			
State, Zip: NY, 14228-2298				
Phone: 716-691-2600(Tel) 716-691-7991(Fax)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			
Site: N/A	SSOW#: N/A			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	7471B/7471B_Prep	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
PNKRBG-61-12-18 (350-1017-61)	9/23/24	14:00 Pacific	G	Solid			X	1	
PNKRBG-61-24-28 (350-1017-62)	9/23/24	14:13 Pacific	G	Solid			X	1	
PNKRBG-63-0-6 (350-1017-65)	9/23/24	10:10 Pacific	G	Solid			X	1	
PNKRBG-63-12-18 (350-1017-66)	9/23/24	10:25 Pacific	G	Solid			X	1	
PNKRBG-63-24-30 (350-1017-67)	9/23/24	10:35 Pacific	G	Solid			X	1	

Analysis Requested

Preservation Codes: -

Other: N/A

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Northwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Northwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Northwest, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by:	Date/Time: 9/22/24 14:45	Company EET N	Received by: See pg1
Relinquished by:	Date/Time:	Company	Received by:
Relinquished by:	Date/Time:	Company	Received by:

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 10/10/2024

5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s): N/A	COC No: 350-3317.1
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: Oregon	Page: Page 1 of 1
Company: Eurofins Environment Testing Northeast L		Accreditations Required (See note): Dept. of Defense ELAP - ANAB; Dept. of Energy - ANAB; I ...		Job #: 350-1017-1
Address: 10 Hazelwood Drive, ,	Due Date Requested: 10/16/2024			
City: Amherst	TAT Requested (days): N/A			
State, Zip: NY, 14228-2298				
Phone: 716-691-2600(Tel) 716-691-7991(Fax)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			
Site: N/A	SSOW#: N/A			

Analysis Requested

Preservation Codes: -

Other: N/A

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	7471B/7471B_Prep	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
PNKRBG-42-0-6 (350-1017-28)	9/24/24	14:10 Pacific	G	Solid			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Northwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Northwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Northwest, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 11/13/24 14:18	Company EEIN	Received by:	Date/Time: 11-14-24 1000	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.0 IR#SC Ice

Ver: 10/10/2024

Eurofins Specialty Metals Testing
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: Nate Hemphill	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s):	COC No: 350-261-138.1
Client Contact: Nolan Lewis	Phone: 503 330 3703	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: WA	Page: Page 1 of 7
Company: Antea USA Inc.	PWSID:	Analysis Requested		Job #: VBT
Address: 205 SE Spokane Street Suite 300	Due Date Requested:			Preservation Codes: N - None
City: Portland	TAT Requested (days): Standard			
State, Zip: OR, 97202	Compliance Project: Δ Yes Δ No			
Phone: 503 330 3703	PO #: WD1093775			
Email: nolan.lewis@anteagroup.us	WO #:			
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			
Site: VBT	SSOW#:			Other:

350-1017 Chain of Custody

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	D422 - D422 Grain Size	200.8 Total arsenic, cadmium, copper, lead, mercury, zinc	200.8 Total copper	Total Number of co	Special Instructions/Note:
			Preservation Code:			N					
PNKRBG-31-0-6	9/25/24	1110	C	Solid				X			
PNKRBG-31-12-18	9/25/24	1120	C	Solid			X	X			
PNKRBG-31-24-30	9/25/24	1130	C	Solid				X			
PNKRBG-32-0-6	9/25/24	1150	C	Solid					X		
PNKRBG-32-12-18	9/25/24	1155	C	Solid					X		
PNKRBG-32-24-30	9/25/24	1200	C	Solid					X		
PNKRBG-33-0-6	9/25/24	1345	C	Solid				X			
PNKRBG-34-0-6	9/25/24	1010	C	Solid					X		
PNKRBG-34-12-18	9/25/24	1015	C	Solid					X		
PNKRBG-34-24-30	9/25/24	1020	C	Solid				[redacted]	X		BNL Copper Only
PNKRBG-35-0-6	9/25/24	1045	C	Solid			[redacted]	X			BNL No grain size

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		9/26/24 1220			9/26/24 1220	ET
2		9/26/24 1700	ET			
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 0.5/0.4, 0.2/0.1 PDK SCH

Ver: 05/06/2024

11/19/2024 (Rev. 3)

Eurofins Specialty Metals Testing
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: Nate Hemphill	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s):	COC No: 350-261-138.1
Client Contact: Nolan Lewis	Phone: 503 550 3703	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: UNA	Page: Page 2 of 7
Company: Antea USA Inc.	PWSID:	Analysis Requested		Job #: VBT
Address: 205 SE Spokane Street Suite 300	Due Date Requested:			Preservation Codes: N - None
City: Portland	TAT Requested (days): Standard			
State, Zip: OR, 97202	Compliance Project: Δ Yes Δ No			
Phone: 503 550 3703	PO #: WD1093775			
Email: nolan.lewis@anteagroup.us	WO #:			Other:
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			
Site: VBT	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	D422 - D422 Grain Size	200.8 Total arsenic, cadmium, copper, lead, mercury, zinc	200.8 Total copper	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N				
PNKRBG-35-12-18	9/25/24	1055	C	Solid			X	X			
PNKRBG-36-0-6	9/25/24	900	C	Solid			X		X		
PNKRBG-36-12-18	9/25/24	915	C	Solid					X		
PNKRBG-36-24-30	9/25/24	920	C	Solid					X		
PNKRBG-37-0-6	9/25/24	945	C	Solid					X		
PNKRBG-37-12-18	9/25/24	955	C	Solid					X		
PNKRBG-37-24-30	9/25/24	1000	C	Solid					X		
PNKRBG-38-0-6	9/25/24	930	C	Solid					X		
PNKRBG-38-12-18	9/25/24	935	C	Solid					X		
PNKRBG-38-22-28	9/25/24	940	C	Solid					X		
PNKRBG-39-0-6	9/25/24	830	C	Solid				X			

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		9/26/24 1220			9/26/24 1220	
2		9/26/24 1720				
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 05/06/2024

11/19/2024 (Rev. 3)

Eurofins Specialty Metals Testing
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: Nate Hemphill	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s):	COC No: 350-261-138.1
Client Contact: Nolan Lewis	Phone: 503 550 3703	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: WA	Page: Page 3 of 7
Company: Antea USA Inc.	PWSID:	Analysis Requested		Job #:
Address: 205 SE Spokane Street Suite 300	Due Date Requested: 8			Preservation Codes: N - None
City: Portland	TAT Requested (days): Standard			
State, Zip: OR, 97202	Compliance Project: Δ Yes Δ No			
Phone: 503 5503203	PO #: WD1093775			
Email: nolan.lewis@anteagroup.us	WO #:			Other:
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			
Site: VBT	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	D422 - D422 Grain Size	200.8 Total arsenic, cadmium, copper, lead, mercury, zinc	200.8 Total copper	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N				
PNKRBG-39-12-15	9/25/24	840	C	Solid				X			
PNKRBG-40-0-6	9/25/24	850	C	Solid					X		
PNKRBG-40-12-18	9/25/24	900	C	Solid					X		
PNKRBG-41-0-6	9/24/24	1335	C	Solid				X			
PNKRBG-41-12-17	9/24/24	1355	C	Solid				X			
PNKRBG-42-0-6	9/24/24	1410	C	Solid					X		
PNKRBG-43-0-6	9/24/24	1205	C	Solid			X	X			
PNKRBG-43-18-22	9/24/24	1215	C	Solid				X			
PNKRBG-45-0-6	9/24/24	1140	C	Solid				X			
PNKRBG-45-12-16	9/24/24	1145	C	Solid				X			
PNKRBG-47-0-6	9/24/24	1640	C	Solid			X	X			

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		9/26/24 1220			9/26/24 1220	ET
2		9/26/24 1720	ET			
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 05/06/2024

11/19/2024 (Rev. 3)

Eurofins Specialty Metals Testing
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: Nate Hemphill	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s):	COC No: 350-261-138.1
Client Contact: Nolan Lewis	Phone: 503 550 3703	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: WA	Page: Page 4 of 7
Company: Antea USA Inc.	PWSID:	Analysis Requested		Job #:
Address: 205 SE Spokane Street Suite 300	Due Date Requested:			Preservation Codes: N - None
City: Portland	TAT Requested (days): Standard			
State, Zip: OR, 97202	Compliance Project: Δ Yes Δ No			
Phone: 503 550 3703	PO #: WD1093775			
Email: nolan.lewis@anteagroup.us	WO #:			Other:
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			
Site: VBT	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	D422 - D422 Grain Size	200.8 Total arsenic, cadmium, copper, lead, mercury, zinc	200.8 Total copper	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N				
PNLCRBG-48-0-6	9/24/24	1615	C	Solid					X		
PNLCRBG-48-12-16	9/24/24	1627	C	Solid					X		
PNLCRBG-49-0-6	9/24/24	1525	C	Solid					X		
PNLCRBG-49-12-18	9/24/24	1535	C	Solid					X		
PNLCRBG-50-0-6	9/24/24	1500	C	Solid					X		
PNLCRBG-50-14-17	9/24/24	1512	C	Solid					X		
PNLCRBG-51-0-6	9/24/24	1430	C	Solid				X			
PNLCRBG-52-0-6	9/24/24	1435	C	Solid					X		
PNLCRBG-52-12-18	9/24/24	1445	C	Solid			X		X		
PNLCRBG-53-0-6	9/24/24	1045	C	Solid				X			
PNLCRBG-53-12-16	9/24/24	1058	C	Solid				X			

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		9/26/24 1220			9/26/24 1220	ECT
2		9/26/24 1720	ECT			
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 05/06/2024

11/19/2024 (Rev. 3)

Page 105 of 121

Eurofins Specialty Metals Testing
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: Nate Hemphill	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s):	COC No: 350-261-138.1
Client Contact: Nolan Lewis	Phone: 503 550 3703	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: WA	Page: Page 5 of 7
Company: Antea USA Inc.	PWSID:			Job #:
Address: 205 SE Spokane Street Suite 300	Due Date Requested:			
City: Portland	TAT Requested (days): Standard			
State, Zip: OR, 97202	Compliance Project: Δ Yes Δ No			
Phone: 503 550 3703	PO #: WD1093775			
Email: nolan.lewis@anteagroup.us	WO #:			
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			
Site: VBT	SSOW#:			

Analysis Requested

Preservation Codes: N - None

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	D422 - D422 Grain Size	200.8 Total arsenic, cadmium, copper, lead, mercury, zinc	200.8 Total copper	Total Number of containers	Special Instructions/Note:
			Preservation Code:			N					
PNKRBG-54-0-6	9/24/24	1025	C	Solid					X		
PNKRBG-54-12-17	9/24/24	1035	C	Solid					X		
PNKRBG-55-0-6	9/23/24	1615	C	Solid			X	X			
PNKRBG-55-12-18	9/23/24	1625	C	Solid				X			
PNKRBG-55-24-27	9/23/24	1640	C	Solid				X			
PNKRBG-56-0-6	9/24/24	925	C	Solid					X		
PNKRBG-56-12-14	9/24/24	935	C	Solid					X		
PNKRBG-57-0-6	9/23/24	1520	C	Solid				X			
PNKRBG-57-12-17	9/23/24	1530	C	Solid				X			
PNKRBG-58-0-6	9/23/24	1213	C	Solid					X		
PNKRBG-58-12-17	9/23/24	1218	C	Solid			X		X		

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by: | Date: | Time: | Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		9/26/24 1220			9/26/24 1220	ET
2		9/26/24 1720	ET			
3						

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Ver: 05/06/2024

11/19/2024 (Rev. 3)

Eurofins Specialty Metals Testing
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: Nate Hemphill	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s):	COC No: 350-261-138.1
Client Contact: Nolan Lewis	Phone: 503 550 3703	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: WA	Page: Page 6 of 7
Company: Antea USA Inc.	PWSID:	Analysis Requested		Job #:
Address: 205 SE Spokane Street Suite 300	Due Date Requested:			Preservation Codes: N - None
City: Portland	TAT Requested (days): Standard			
State, Zip: OR, 97202	Compliance Project: Δ Yes Δ No			
Phone: 503 550 3703	PO #: WD1093775			
Email: nolan.lewis@anteagroup.us	WO #:			
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			
Site: VBT	SSOW#:			Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	D422 - D422 Grain Size	200.8 Total arsenic, cadmium, copper, lead, mercury, zinc	200.8 Total copper	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N				
PNKRBG-59-0-6	9/23/24	1440	C	Solid				X			
PNKRBG-59-12-18	9/23/24	1450	C	Solid				X			
PNKRBG-59-24-28	9/23/24	1500	C	Solid				X			
PNKRBG-60-0-6	9/23/24	1140	C	Solid					X		
PNKRBG-61-0-6	9/23/24	1350	C	Solid				X			
PNKRBG-61-12-18	9/23/24	1400	C	Solid				X			
PNKRBG-61-24-28	9/23/24	1413	C	Solid				X			
PNKRBG-62-0-6	9/23/24	1120	C	Solid					X		
PNKRBG-62-12-18	9/23/24	1125	C	Solid					X		
PNKRBG-63-0-6	9/23/24	1010	C	Solid			X	X			
PNKRBG-63-12-18	9/23/24	1025	C	Solid			X	X			

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		9/26/24 1220			9/26/24 1220	ET
2		9/26/24 1720	ET			
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 05/06/2024

11/19/2024 (Rev. 3)

Eurofins Specialty Metals Testing
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: Nate Hemphill	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s):	COC No: 350-261-138.1
Client Contact: Nolan Lewis	Phone: 503 550 3703	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: WA	Page: Page 7 of 7
Company: Antea USA Inc.	PWSID:	Analysis Requested		Job #:
Address: 205 SE Spokane Street Suite 300	Due Date Requested:			Preservation Codes: N - None
City: Portland	TAT Requested (days): Standard			
State, Zip: OR, 97202	Compliance Project: Δ Yes Δ No			
Phone: 503 550 3703	PO #: WD1093775			
Email: nolan.lewis@anteagroup.us	WO #:			Other:
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			
Site: VBT	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	D422 - D422 Grain Size	200.8 Total arsenic, cadmium, copper, lead, mercury, zinc	200.8 Total copper	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N				
PNKRBG-63-24-30	9/23/24	1035	C	Solid			X	X			
PNKRBG-64-0-6	9/23/24	945	C	Solid					X		
PNKRBG-64-12-18	9/23/24	952	C	Solid					X		
PNKRBG-64-24-30	9/23/24	1000	C	Solid					X		
PNKRBG-65-0-6	9/25/24	1330	C	Solid					X		
PNKRBG-65-12-16	9/25/24	1340	C	Solid					X		
PNKRBG-66-0-6	9/25/24	1310	C	Solid					X		
PNKRBG-66-12-18	9/25/24	1315	C	Solid					X		
PNKRBG-66-22-28	9/25/24	1320	C	Solid					X		
~~FAILED~~-Bile				Solid							
				Solid							

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		9/26/24 1220			9/26/24 1220	ET
2		9/26/24 1740	ET			
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 05/06/2024

Eurofins Specialty Metals Testing
5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s):	COC No: 350-2623.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: Oregon	Page: Page 1 of 9
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): Dept. of Defense ELAP - ANAB; Dept. of Energy - ANAB; I ...		Job #: 350-1017-1
Address: 5755 8th Street East, ,	Due Date Requested: 10/16/2024			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
-

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020B/3050B (MOD) As, Cd, Cu, Pb, Zn	7471B/7471B_Prep	Moisture	D422/ D422 Grain Size	6020B/3050B Copper	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
PNKRBG-31-0-6 (350-1017-1)	9/25/24	11:10 Pacific	G	Solid			X	X	X			1	
PNKRBG-31-12-18 (350-1017-2)	9/25/24	11:20 Pacific	G	Solid			X	X	X	X		2	
PNKRBG-31-24-30 (350-1017-3)	9/25/24	11:30 Pacific	G	Solid			X	X	X			1	
PNKRBG-32-0-6 (350-1017-4)	9/25/24	11:50 Pacific	G	Solid							X	1	
PNKRBG-32-12-18 (350-1017-5)	9/25/24	11:55 Pacific	G	Solid							X	1	
PNKRBG-32-24-30 (350-1017-6)	9/25/24	12:00 Pacific	G	Solid							X	1	
PNKRBG-33-0-6 (350-1017-7)	9/25/24	13:45 Pacific	G	Solid			X	X	X			1	
PNKRBG-34-0-6 (350-1017-8)	9/25/24	10:10 Pacific	G	Solid							X	1	
PNKRBG-34-12-18 (350-1017-9)	9/25/24	10:15 Pacific	G	Solid							X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Northwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Northwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Northwest, LLC.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	9/26/24 16:37	EET			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 05/06/2024

Eurofins Specialty Metals Testing
5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s):	COC No: 350-2623.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: Oregon	Page: Page 2 of 9
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): Dept. of Defense ELAP - ANAB; Dept. of Energy - ANAB; I ...		Job #: 350-1017-1
Address: 5755 8th Street East, ,	Due Date Requested: 10/16/2024			Preservation Codes: -
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			
Site:	SSOW#:			Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020B/3050B (MOD) As, Cd, Cu, Pb, Zn	7471B/7471B_Prep	Moisture	D422/ D422 Grain Size	6020B/3050B Copper	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
PNKRBG-34-24-30 (350-1017-10)	9/25/24	10:20 Pacific	G	Solid							X	1	
PNKRBG-35-0-6 (350-1017-11)	9/25/24	10:45 Pacific	G	Solid			X	X	X			1	
PNKRBG-35-12-18 (350-1017-12)	9/25/24	10:55 Pacific	G	Solid			X	X	X	X		2	
PNKRBG-36-0-6 (350-1017-13)	9/25/24	09:00 Pacific	G	Solid						X	X	2	
PNKRBG-36-12-18 (350-1017-14)	9/25/24	09:15 Pacific	G	Solid							X	1	
PNKRBG-36-24-30 (350-1017-15)	9/25/24	09:20 Pacific	G	Solid							X	1	
PNKRBG-37-0-6 (350-1017-16)	9/25/24	09:45 Pacific	G	Solid							X	1	
PNKRBG-37-12-18 (350-1017-17)	9/25/24	09:55 Pacific	G	Solid							X	1	
PNKRBG-37-24-30 (350-1017-18)	9/25/24	10:00 Pacific	G	Solid							X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Northwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Northwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Northwest, LLC.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For _____ Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	9/26/24 16:37	EET			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 05/06/2024

Eurofins Specialty Metals Testing
5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s):	COC No: 350-2623.3
Client Contact: Shipping/Receiving	Phone:	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: Oregon	Page: Page 3 of 9
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): Dept. of Defense ELAP - ANAB; Dept. of Energy - ANAB; I ...		Job #: 350-1017-1
Address: 5755 8th Street East, ,	Due Date Requested: 10/16/2024	Analysis Requested		Preservation Codes: -
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			Other:
Site:	SSOW#:			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020B/3050B (MOD) As, Cd, Cu, Pb, Zn	7471B/7471B_Prep	Moisture	D422/ D422 Grain Size	6020B/3050B Copper	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
PNKRBG-38-0-6 (350-1017-19)	9/25/24	09:30 Pacific	G	Solid							X	1	
PNKRBG-38-12-18 (350-1017-20)	9/25/24	09:35 Pacific	G	Solid							X	1	
PNKRBG-38-22-28 (350-1017-21)	9/25/24	09:40 Pacific	G	Solid							X	1	
PNKRBG-39-0-6 (350-1017-22)	9/25/24	08:30 Pacific	G	Solid			X	X	X			1	
PNKRBG-39-12-15 (350-1017-23)	9/25/24	08:40 Pacific	G	Solid			X	X	X			1	
PNKRBG-40-0-6 (350-1017-24)	9/25/24	08:50 Pacific	G	Solid							X	1	
PNKRBG-40-12-18 (350-1017-25)	9/25/24	09:00 Pacific	G	Solid							X	1	
PNKRBG-41-0-6 (350-1017-26)	9/24/24	13:35 Pacific	G	Solid			X	X	X			1	
PNKRBG-41-12-17 (350-1017-27)	9/24/24	13:55 Pacific	G	Solid			X	X	X			1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Northwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Northwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Northwest, LLC.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	9/26/24 16:31	EET			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 05/06/2024

Eurofins Specialty Metals Testing
5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s):	COC No: 350-2623.4
Client Contact: Shipping/Receiving	Phone:	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: Oregon	Page: Page 4 of 9
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): Dept. of Defense ELAP - ANAB; Dept. of Energy - ANAB; I ...		Job #: 350-1017-1
Address: 5755 8th Street East, ,	Due Date Requested: 10/16/2024	Analysis Requested		Preservation Codes: -
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			
Site:	SSOW#:			Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020B/3050B (MOD) As, Cd, Cu, Pb, Zn	7471B/7471B_Prep	Moisture	D422/ D422 Grain Size	6020B/3050B Copper	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
PNKRBG-42-0-6 (350-1017-28)	9/24/24	14:10 Pacific	G	Solid							X	1	
PNKRBG-43-0-6 (350-1017-29)	9/24/24	12:05 Pacific	G	Solid			X	X	X	X		2	
PNKRBG-43-18-22 (350-1017-30)	9/24/24	12:15 Pacific	G	Solid			X	X	X			1	
PNKRBG-45-0-6 (350-1017-31)	9/24/24	11:40 Pacific	G	Solid			X	X	X			1	
PNKRBG-45-12-16 (350-1017-32)	9/24/24	11:45 Pacific	G	Solid			X	X	X			1	
PNKRBG-47-0-6 (350-1017-33)	9/24/24	16:40 Pacific	G	Solid			X	X	X	X		2	
PNKRBG-48-0-6 (350-1017-34)	9/24/24	16:15 Pacific	G	Solid							X	1	
PNKRBG-48-12-16 (350-1017-35)	9/24/24	16:27 Pacific	G	Solid							X	1	
PNKRBG-49-0-6 (350-1017-36)	9/24/24	15:25 Pacific	G	Solid							X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Northwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Northwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Northwest, LLC.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For _____ Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	9/26/24 16:37	EET			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 05/06/2024

Eurofins Specialty Metals Testing
5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s):	COC No: 350-2623.5
Client Contact: Shipping/Receiving	Phone:	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: Oregon	Page: Page 5 of 9
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): Dept. of Defense ELAP - ANAB; Dept. of Energy - ANAB; I ...		Job #: 350-1017-1
Address: 5755 8th Street East, ,	Due Date Requested: 10/16/2024			Preservation Codes: -
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			
Site:	SSOW#:			Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020B/3050B (MOD) As, Cd, Cu, Pb, Zn	7471B/7471B_Prep	Moisture	D422/ D422 Grain Size	6020B/3050B Copper	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
PNKRBG-49-12-18 (350-1017-37)	9/24/24	15:35 Pacific	G	Solid							X	1	
PNKRBG-50-0-6 (350-1017-38)	9/24/24	15:00 Pacific	G	Solid							X	1	
PNKRBG-50-14-17 (350-1017-39)	9/24/24	15:12 Pacific	G	Solid							X	1	
PNKRBG-51-0-6 (350-1017-40)	9/24/24	14:30 Pacific	G	Solid			X	X	X			1	
PNKRBG-52-0-6 (350-1017-41)	9/24/24	14:35 Pacific	G	Solid							X	1	
PNKRBG-52-12-18 (350-1017-42)	9/24/24	14:45 Pacific	G	Solid						X	X	2	
PNKRBG-53-0-6 (350-1017-43)	9/24/24	10:45 Pacific	G	Solid			X	X	X			1	
PNKRBG-53-12-16 (350-1017-44)	9/24/24	10:50 Pacific	G	Solid			X	X	X			1	
PNKRBG-54-0-6 (350-1017-45)	9/24/24	10:25 Pacific	G	Solid							X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Northwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Northwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Northwest, LLC.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	9/26/24 16:37	[illegible]			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 05/06/2024

Eurofins Specialty Metals Testing
5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s):	COC No: 350-2623.6
Client Contact: Shipping/Receiving	Phone:	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: Oregon	Page: Page 6 of 9
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): Dept. of Defense ELAP - ANAB; Dept. of Energy - ANAB; I ...		Job #: 350-1017-1
Address: 5755 8th Street East, ,	Due Date Requested: 10/16/2024			Preservation Codes: -
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			
Site:	SSOW#:			Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020B/3050B (MOD) As, Cd, Cu, Pb, Zn	7471B/7471B_Prep	Moisture	D422/ D422 Grain Size	6020B/3050B Copper	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
PNKRBG-54-12-17 (350-1017-46)	9/24/24	10:35 Pacific	G	Solid							X	1	
PNKRBG-55-0-6 (350-1017-47)	9/24/24	16:15 Pacific	G	Solid			X	X	X	X		2	
PNKRBG-55-12-18 (350-1017-48)	9/24/24	16:25 Pacific	G	Solid			X	X	X			1	
PNKRBG-55-24-27 (350-1017-49)	9/24/24	16:40 Pacific	G	Solid			X	X	X			1	
PNKRBG-56-0-6 (350-1017-50)	9/24/24	09:25 Pacific	G	Solid							X	1	
PNKRBG-56-12-14 (350-1017-51)	9/24/24	09:35 Pacific	G	Solid							X	1	
PNKRBG-57-0-6 (350-1017-52)	9/23/24	15:20 Pacific	G	Solid			X	X	X			1	
PNKRBG-57-12-17 (350-1017-53)	9/23/24	15:30 Pacific	G	Solid			X	X	X			1	
PNKRBG-58-0-6 (350-1017-54)	9/23/24	12:13 Pacific	G	Solid							X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Northwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Northwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Northwest, LLC.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For _____ Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	9/26/24 16:37	EET			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 05/06/2024

Eurofins Specialty Metals Testing
5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s):	COC No: 350-2623.7
Client Contact: Shipping/Receiving	Phone:	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: Oregon	Page: Page 7 of 9
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): Dept. of Defense ELAP - ANAB; Dept. of Energy - ANAB; I ...		Job #: 350-1017-1
Address: 5755 8th Street East, ,	Due Date Requested: 10/16/2024			Preservation Codes: -
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			
Site:	SSOW#:			Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020B/3050B (MOD) As, Cd, Cu, Pb, Zn	7471B/7471B_Prep	Moisture	D422/ D422 Grain Size	6020B/3050B Copper								Total Number of containers	Special Instructions/Note:
			Preservation Code:																	
PNKRBG-58-12-17 (350-1017-55)	9/23/24	12:18 Pacific	G	Solid						X	X								2	
PNKRBG-59-0-6 (350-1017-56)	9/23/24	14:40 Pacific	G	Solid			X	X	X										1	
PNKRBG-59-12-18 (350-1017-57)	9/23/24	14:50 Pacific	G	Solid			X	X	X										1	
PNKRBG-59-24-28 (350-1017-58)	9/23/24	15:00 Pacific	G	Solid			X	X	X										1	
PNKRBG-60-0-6 (350-1017-59)	9/23/24	11:40 Pacific	G	Solid							X								1	
PNKRBG-61-0-6 (350-1017-60)	9/23/24	13:50 Pacific	G	Solid			X	X	X										1	
PNKRBG-61-12-18 (350-1017-61)	9/23/24	14:00 Pacific	G	Solid			X	X	X										1	
PNKRBG-61-24-28 (350-1017-62)	9/23/24	14:13 Pacific	G	Solid			X	X	X										1	
PNKRBG-62-0-6 (350-1017-63)	9/23/24	11:20 Pacific	G	Solid							X								1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Northwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Northwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Northwest, LLC.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	9/26/24 16:37	EET			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 05/06/2024

Eurofins Specialty Metals Testing
5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s):	COC No: 350-2623.8
Client Contact: Shipping/Receiving	Phone:	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: Oregon	Page: Page 8 of 9
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): Dept. of Defense ELAP - ANAB; Dept. of Energy - ANAB; I ...		Job #: 350-1017-1
Address: 5755 8th Street East, ,	Due Date Requested: 10/16/2024			Preservation Codes: -
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			
Site:	SSOW#:			Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020B/3050B (MOD) As, Cd, Cu, Pb, Zn	7471B/7471B_Prep	Moisture	D422/ D422 Grain Size	6020B/3050B Copper	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
PNKRBG-62-12-18 (350-1017-64)	9/23/24	11:25 Pacific	G	Solid							X	1	
PNKRBG-63-0-6 (350-1017-65)	9/23/24	10:10 Pacific	G	Solid			X	X	X	X		2	
PNKRBG-63-12-18 (350-1017-66)	9/23/24	10:25 Pacific	G	Solid			X	X	X	X		2	
PNKRBG-63-24-30 (350-1017-67)	9/23/24	10:35 Pacific	G	Solid			X	X	X	X		2	
PNKRBG-64-0-6 (350-1017-68)	9/23/24	09:45 Pacific	G	Solid							X	1	
PNKRBG-64-12-18 (350-1017-69)	9/23/24	09:52 Pacific	G	Solid							X	1	
PNKRBG-64-24-30 (350-1017-70)	9/23/24	10:00 Pacific	G	Solid							X	1	
PNKRBG-65-0-6 (350-1017-71)	9/25/24	13:30 Pacific	G	Solid							X	1	
PNKRBG-65-12-16 (350-1017-72)	9/25/24	13:40 Pacific	G	Solid							X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Northwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Northwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Northwest, LLC.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	9/26/24 16:37	EET			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 05/06/2024

Eurofins Specialty Metals Testing
5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: LaCount, Lilly-Anna E	Carrier Tracking No(s):	COC No: 350-2623.9
Client Contact: Shipping/Receiving	Phone:	E-Mail: Lilly-Anna.Lacount@et.eurofinsus.com	State of Origin: Oregon	Page: Page 9 of 9
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): Dept. of Defense ELAP - ANAB; Dept. of Energy - ANAB; I ...		Job #: 350-1017-1
Address: 5755 8th Street East, ,	Due Date Requested: 10/16/2024			Preservation Codes: -
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			Other:
Project Name: NuStar Split GWM / KM Van RIFS	Project #: 35000008			
Site:	SSOW#:			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020B/3050B (MOD) As, Cd, Cu, Pb, Zn	7471B/7471B_Prep	Moisture	D422/ D422 Grain Size	6020B/3050B Copper	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
PNKRBG-66-0-6 (350-1017-73)	9/25/24	13:10 Pacific	G	Solid							X	1	
PNKRBG-66-12-18 (350-1017-74)	9/25/24	13:15 Pacific	G	Solid							X	1	
PNKRBG-66-22-28 (350-1017-75)	9/25/24	13:20 Pacific	G	Solid							X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Northwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Northwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Northwest, LLC.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 9/26/24 16:37	Company EET	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 05/06/2024

Login Sample Receipt Checklist

Client: Antea USA Inc. Job Number: 350-1017-1

Login Number: 1017 **List Source: Eurofins Seattle Specialty Metals**
List Number: 1
Creator: O'Connell, Jason I

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Antea USA Inc.

Job Number: 350-1017-1

Login Number: 1017
List Number: 3
Creator: Stapleton, Kaitlyn

List Source: Eurofins Buffalo
List Creation: 10/24/24 10:53 AM

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.4 IR#SC ice
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

Login Sample Receipt Checklist

Client: Antea USA Inc.

Job Number: 350-1017-1

Login Number: 1017
List Number: 4
Creator: Stapleton, Kaitlyn

List Source: Eurofins Buffalo
List Creation: 11/14/24 02:45 PM

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.0 IR#SC ice
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

Login Sample Receipt Checklist

Client: Antea USA Inc.

Job Number: 350-1017-1

Login Number: 1017
List Number: 2
Creator: Russell, Meagann

List Source: Eurofins Seattle
List Creation: 09/27/24 04:14 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	