BLM Anchorage Field Office
Minerals Program

Sample Report for Mespelt and Almasy Trust's Tailings
Prepared by Frederick (Fred) Transburg and Francis (Frank) Marley
01/11/2023

Background: Lode gold was first discovered on Ruby Creek in 1918. The historic stamp mill at Nixon Fork Mine was built in 1921 by the Treadwell Yukon Company within the Ruby Creek drainage. The Mespelt brothers took over stamp mill operations in 1924 (U.S. BoM, 1967). The tailings are the by-product of a no longer used (in the United States) mining practice called amalgamation[1]. This mining practice used a stamp mill to grind the ore then gravity and mercury to extract gold from ore. The by-product (tailings) was placed down-slope of the mill in the Ruby Creek drainage at the NFM. Water flows intermittently over and through the tailings depending on annual temperatures, snowmelt, and precipitation. The author was unable to locate a reference to the date of the most recent use of the 10-stamp mill and tailings placement. The historic mill was burned to the ground during a wildfire in June 2022. This represents a major change in site conditions from the previous 101 years.

Sampling: On September 21st, 2022, BLM staff inspected the Mespelt and Almasy Trust's (M&A) occupancy (AA079872) at the Nixon Fork Mine. In addition to the inspection, staff collected soil and surface water samples. BLM inspection staff were Fred Transburg (Geologist, minerals) and Frank Marley (Physical Scientist, Hazmat/AML). Staff collected a total of eight samples; two soil samples from the historic 1921, 10-stamp mill building site (Figure 2), two soil and two water samples from the first catchment silt fence downslope of the historic mill (Figure 3) and one surface water, one soil sample from Ruby Creek downslope of the road crossing (see Figure 1, a sampling location map). Frank Marley was the certified sampler and responsible for sample collection and chain of custody following the sampling. *Sampling methods:* Soil samples were obtained from unconsolidated material after removing the first 6 inches of overburden/soil. Laboratory provided glass sample jars were filled with soil using single use sterile polystyrene scoops. Laboratory jars were sealed, packed in bubble wrap, and placed in a cooler with frozen gel packs along with a temperature blank for transport off site. The cooler remained in the custody of the BLM physical scientist who collected the samples until relinquished to SGS laboratory. Surface water samples were collected into laboratory provided containers using single use sterile polystyrene scoops. Laboratory containers were sealed, packed in bubble wrap, and placed in a cooler with frozen gel packs along with a temperature blank for transport off site. The cooler was stored at 4 degrees Celsius and remained in the custody of the BLM physical scientist who collected the samples until relinquished to SGS laboratory in Anchorage for processing. See Table 1 for sample numbers and descriptions. The SGS lab results are attached.

Figure 1. Overview Map

Figure 1. This figure shows the approximate sample site locations and the sample numbers of the samples taken at each location.

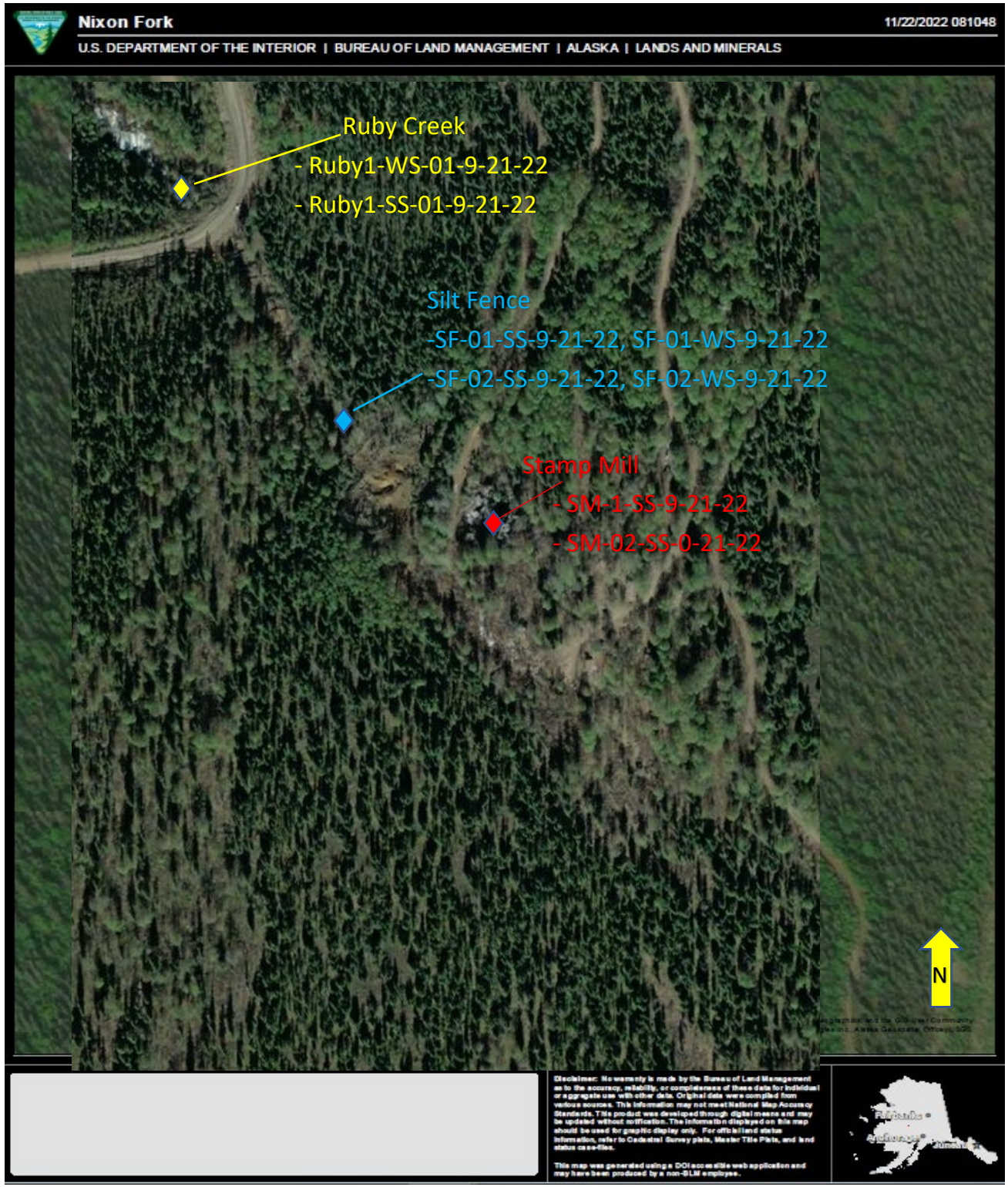

Figure 2 Stamp Mill Site Sampling

Figure 2. (A) shows a soil sample being taken within the burned structure of stamp mill.3 (B) shows the sample number flag and an additional sample being taken. (C) shows the stamp mill burned structures and solid waste.

Figure 3 Silt Fence Sample Site Photos

Figure 3. (A) Frank Marley (certified sample collector) identifying collection site for silt fence sample. (B) BLM staff inspecting the silt fence. (C) Looking upslope in the Ruby Creek drainage at a degraded historical dam structure.

Table 1. Sample Numbers and Types

Sample number	Lab Sample ID	Matrix	Location
SM-01-SS-9-21-22	1225773001	Soil/solid	Stamp Mill
SM-02-SS-0-21-22	1225773002	Soil/Solid	Stamp Mill
SF-01-SS-9-21-22	1225773003	Soil/Solid	Silt Fence
SF-02-SS-9-21-22	1225773004	Soil/Solid	Silt Fence
SF-01-WS-9-21-22	1225773005	Water	Silt Fence
SF-02-WS-9-21-22	1225773006	Water	Silt Fence
Ruby1-WS-01-9-21-22	1225773007	Water	Ruby Creek
Ruby1-SS-01-9-21-22	1225773008	Soil/Solid	Ruby Creek

Citation:
U.S. Bureau of Mines, 1967, Nixon Fork, Kuskokwim River Basin, Alaska: U.S. Bureau of Mines Field Report, 7 p.

Definition:

1. Amalgamation is a physical process. The gold grains are wetted by the mercury and sink beneath the surface of the mercury film on the plates; this is facilitated by feeding mercury to the stamp, so that the grains may be thoroughly wetted before coming in contact with the plates. The surface-tension of the mercury draws the gold beneath the surface and holds it against the plate. By diffusion into the metal of the plates the amalgam often becomes strongly adherent. This assists the "catching" of the gold.

Laboratory Report of Analysis

To: US BLM-Anchorage
Anchorage Field Office 4700 BLM Road
Anchorage, AK 99507
907-267-1226

Report Number: **1225773**

Client Project: **Nixon Fork M.**

Dear Frank Marley,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Justin at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America Inc.

_____

Justin Nelson Date
Project Manager
Justin.Nelson@sgs.com

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Case Narrative

SGS Client: **US BLM-Anchorage**
SGS Project: **1225773**
Project Name/Site: **Nixon Fork M.**
Project Contact: **Frank Marley**

Refer to sample receipt form for information on sample condition.

1225554008(1688527BND) (1688536) BND

6020B - Metals BND recovery for Aluminum does not meet QC criteria. Post digestion spike was unsuccessful. Sample is non - homogeneous for Aluminum.

1225554008(1688527MS) (1688537) MS

6020B - Metals MS recoveries for Calcium, Iron, Magnesium, and Manganese do not meet QC criteria. The post digestion spike was successful.
6020B - Metals MS recovery for Aluminum does not meet QC criteria. Post digestion spike was unsuccessful. Sample is non - homogeneous for Aluminum.

1225554008(1688527MSD) (1688538) MSD

6020B - Metals MSD recoveries for Calcium, Iron, Magnesium, Manganese, and Vanadium do not meet QC criteria. The post digestion spike was successful.
6020B - Metals MSD recovery for Aluminum does not meet QC criteria. Post digestion spike was unsuccessful. Sample is non - homogeneous for Aluminum.
6020B - Metals MSD RPD for Aluminum does not meet QC criteria. Metals DUP RPD for Aluminum does not meet QC criteria. Sample is non - homogeneous for Aluminum.

1225554008(1688527DUP) (1688539) DUP

6020B - Metals MSD RPD for Aluminum does not meet QC criteria. Metals DUP RPD for Aluminum does not meet QC criteria. Sample is non - homogeneous for Aluminum.

1225773010MS (1689098) MS

4500CN-I - Weak Acid Dissociable Cyanide - MS recovery is outside of QC criteria (biased low). Refer to LCS for accuracy requirements.

1225773010MSD (1689099) MSD

4500CN-I - Weak Acid Dissociable Cyanide - MSD recovery is outside of QC criteria (biased low). Refer to LCSD for accuracy requirements.
4500CN-I - Weak Acid Dissociable Cyanide - MS/MSD RPD was outside of QC criteria. Refer to LCS/LCSD RPD for precision requirement.

LCS for HBN 1844890 [XXX/47096 (1689355) LCS

AK102/103- LCS surrogate recoveries for 5-alpha androstane and n-triacontane do not meet QC criteria due to broken vial during extraction.

LCSD for HBN 1844890 [XXX/4709 (1689356) LCSD

AK102/103- LCS surrogate recoveries for 5-alpha androstane and n-triacontane do not meet QC criteria due to broken vial during extraction.

1225773010MS (1689442) MS

4500CN-C,E - Total Cyanide - MS recovery is outside of QC criteria. Refer to LCS for accuracy requirements.

1225773010MSD (1689443) MSD

4500CN-C,E - Total Cyanide - MSD recovery is outside of QC criteria. Refer to LCSD for accuracy requirements.

*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

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Report of Manual Integrations

Laboratory ID	Client Sample ID	Analytical Batch	Analyte	Reason
8270D SIM (PAH)				
1225773001	SM-01-SS-9-21-22	XMS13386	Indeno[1,2,3-c,d] pyrene	RP
1225773002	SM-02-SS-9-21-22	XMS13387	Benzo(a)Anthracene	RP
1225773002	SM-02-SS-9-21-22	XMS13387	Benzo[k]fluoranthene	RP
1688707	1225773001MS	XMS13386	Benzo[k]fluoranthene	RP
1688708	1225773001MSD	XMS13386	Benzo[k]fluoranthene	RP

Manual Integration Reason Code Descriptions

Code	Description
O	Original Chromatogram
M	Modified Chromatogram
SS	Skimmed surrogate
BLG	Closed baseline gap
RP	Reassign peak name
PIR	Pattern integration required
IT	Included tail
SP	Split peak
RSP	Removed split peak
FPS	Forced peak start/stop
BLC	Baseline correction
PNF	Peak not found by software

All DRO/RRO analysis are integrated per SOP.

Print Date: 10/11/2022 8:45:53AM

Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. The results apply to the samples as received. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indenmification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & 17-021 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020B, 7470A, 7471B, 8015C, 8021B, 8082A, 8260D, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). SGS is only certified for the analytes listed on our Drinking Water Certification (DW methods: 200.8, 2130B, 2320B, 2510B, 300.0, 4500-CN-C,E, 4500-H-B, 4500-NO3-F, 4500-P-E and 524.2) and only those analytes will be reported to the State of Alaska for compliance. Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
DF	Analytical Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LLQC/LLIQC	Low Level Quantitation Check
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
RPD	Relative Percent Difference
TNTC	Too Numerous To Count
U	Indicates the analyte was analyzed for but not detected.

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content. All DRO/RRO analyses are integrated per SOP.

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Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
SM-01-SS-9-21-22	1225773001	09/21/2022	09/22/2022	Soil/Solid (dry weight)
SM-02-SS-9-21-22	1225773002	09/21/2022	09/22/2022	Soil/Solid (dry weight)
SF-01-SS-9-21-22	1225773003	09/21/2022	09/22/2022	Soil/Solid (dry weight)
SF-02-SS-9-21-22	1225773004	09/21/2022	09/22/2022	Soil/Solid (dry weight)
SF-01-WS-9-21-22	1225773005	09/21/2022	09/22/2022	Water (Surface, Eff., Ground)
SF-02-WS-9-21-22	1225773006	09/21/2022	09/22/2022	Water (Surface, Eff., Ground)
Ruby1-WS-01-9-21-22	1225773007	09/21/2022	09/22/2022	Water (Surface, Eff., Ground)
Ruby1-SS-01-9-21-23	1225773008	09/21/2022	09/22/2022	Soil/Solid (dry weight)
~~FTDS-WS-01-9-21-22~~	~~1225773009~~	~~09/21/2022~~	~~09/22/2022~~	~~Water (Surface, Eff., Ground)~~
~~FTDS-SS-01-9-21-22~~	~~1225773010~~	~~09/21/2022~~	~~09/22/2022~~	~~Soil/Solid (dry weight)~~
~~FTDS-SS-02-9-21-22~~	~~1225773011~~	~~09/21/2022~~	~~09/22/2022~~	~~Soil/Solid (dry weight)~~

Method	Method Description
8270D SIM (PAH)	8270 PAH SIM Semi-Volatiles GC/MS
AK102	Diesel/Residual Range Organics
AK103	Diesel/Residual Range Organics
SW6020B	Metals by ICP-MS
SW6020B	Metals by ICP-MS (S)
SM21 2540G	Percent Solids SM2540G
SM21 4500-CN C,E	Total Cyanide SM4500CN (S)
SM21 4500-CN I	Weak Acid Disassociable CN (S)

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Detectable Results Summary

Client Sample ID: **SM-01-SS-9-21-22**
Lab Sample ID: 1225773001

	Parameter	Result	Units
Metals by ICP/MS	Aluminum	5170	mg/kg
	Antimony	68.4	mg/kg
	Arsenic	720	mg/kg
	Barium	214	mg/kg
	Beryllium	0.781	mg/kg
	Cadmium	3.13	mg/kg
	Calcium	42500	mg/kg
	Chromium	18.8	mg/kg
	Cobalt	30.8	mg/kg
	Copper	22400	mg/kg
	Iron	87800	mg/kg
	Lead	1240	mg/kg
	Magnesium	3090	mg/kg
	Manganese	1130	mg/kg
	Mercury	513	mg/kg
	Molybdenum	6.23	mg/kg
	Nickel	21.3	mg/kg
	Potassium	985	mg/kg
	Selenium	2.20J	mg/kg
	Silver	80.4	mg/kg
	Sodium	67.9J	mg/kg
	Thallium	0.565	mg/kg
	Vanadium	45.7	mg/kg
	Zinc	1420	mg/kg
Polynuclear Aromatics GC/MS	Acenaphthylene	12.5J	ug/kg
	Benzo(a)Anthracene	13.2J	ug/kg
	Benzo[a]pyrene	12.4J	ug/kg
	Benzo[b]Fluoranthene	26.7J	ug/kg
	Benzo[g,h,i]perylene	12.2J	ug/kg
	Chrysene	36.8	ug/kg
	Fluoranthene	27.8J	ug/kg
	Indeno[1,2,3-c,d] pyrene	8.81J	ug/kg
	Naphthalene	21.5J	ug/kg
	Phenanthrene	20.8J	ug/kg
	Pyrene	32.6	ug/kg
Semivolatile Organic Fuels	Diesel Range Organics	137	mg/kg
	Residual Range Organics	673	mg/kg

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Detectable Results Summary

Client Sample ID: **SM-02-SS-9-21-22**
Lab Sample ID: 1225773002

	Parameter	Result	Units
Metals by ICP/MS	Aluminum	12800	mg/kg
	Antimony	32.0	mg/kg
	Arsenic	293	mg/kg
	Barium	401	mg/kg
	Beryllium	0.674	mg/kg
	Cadmium	1.51	mg/kg
	Calcium	10200	mg/kg
	Chromium	17.5	mg/kg
	Cobalt	15.0	mg/kg
	Copper	11800	mg/kg
	Iron	41400	mg/kg
	Lead	234	mg/kg
	Magnesium	5680	mg/kg
	Manganese	1140	mg/kg
	Mercury	65.8	mg/kg
	Molybdenum	2.11	mg/kg
	Nickel	13.7	mg/kg
	Potassium	3500	mg/kg
	Selenium	1.58J	mg/kg
	Silver	23.0	mg/kg
	Sodium	78.5J	mg/kg
	Thallium	0.354	mg/kg
	Vanadium	35.1	mg/kg
	Zinc	350	mg/kg
Polynuclear Aromatics GC/MS	2-Methylnaphthalene	11.7J	ug/kg
	Acenaphthylene	33.1	ug/kg
	Anthracene	84.4	ug/kg
	Benzo(a)Anthracene	101	ug/kg
	Benzo[a]pyrene	88.4	ug/kg
	Benzo[b]Fluoranthene	155	ug/kg
	Benzo[g,h,i]perylene	61.7	ug/kg
	Benzo[k]fluoranthene	36.1	ug/kg
	Chrysene	163	ug/kg
	Dibenzo[a,h]anthracene	13.5J	ug/kg
	Fluoranthene	334	ug/kg
	Fluorene	27.8J	ug/kg
	Indeno[1,2,3-c,d] pyrene	52.5	ug/kg
	Naphthalene	37.0	ug/kg
	Phenanthrene	296	ug/kg
	Pyrene	339	ug/kg
Semivolatile Organic Fuels	Diesel Range Organics	242	mg/kg
	Residual Range Organics	897	mg/kg

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Detectable Results Summary

Client Sample ID: **SF-01-SS-9-21-22**
Lab Sample ID: 1225773003

Metals by ICP/MS

Parameter	Result	Units
Aluminum	2890	mg/kg
Antimony	95.7	mg/kg
Arsenic	685	mg/kg
Barium	82.1	mg/kg
Beryllium	0.712	mg/kg
Cadmium	2.51	mg/kg
Calcium	43900	mg/kg
Chromium	9.66	mg/kg
Cobalt	29.4	mg/kg
Copper	29700	mg/kg
Iron	77300	mg/kg
Lead	92.4	mg/kg
Magnesium	1610	mg/kg
Manganese	1330	mg/kg
Mercury	9.31	mg/kg
Molybdenum	8.42	mg/kg
Nickel	12.4	mg/kg
Potassium	258	mg/kg
Selenium	2.77J	mg/kg
Silver	55.8	mg/kg
Thallium	0.895	mg/kg
Vanadium	38.0	mg/kg
Zinc	492	mg/kg

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Detectable Results Summary

Client Sample ID: **SF-02-SS-9-21-22**
Lab Sample ID: 1225773004

Metals by ICP/MS

Parameter	Result	Units
Aluminum	3460	mg/kg
Antimony	96.3	mg/kg
Arsenic	803	mg/kg
Barium	87.5	mg/kg
Beryllium	0.729	mg/kg
Cadmium	2.54	mg/kg
Calcium	53700	mg/kg
Chromium	10.1	mg/kg
Cobalt	31.6	mg/kg
Copper	38800	mg/kg
Iron	88800	mg/kg
Lead	93.5	mg/kg
Magnesium	1700	mg/kg
Manganese	1650	mg/kg
Mercury	9.18	mg/kg
Molybdenum	8.71	mg/kg
Nickel	12.8	mg/kg
Potassium	264	mg/kg
Selenium	2.37J	mg/kg
Silver	48.6	mg/kg
Thallium	0.943	mg/kg
Vanadium	39.6	mg/kg
Zinc	548	mg/kg

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Detectable Results Summary

Client Sample ID: **SF-01-WS-9-21-22**
Lab Sample ID: 1225773005

Metals by ICP/MS

Parameter	Result	Units
Aluminum	673	ug/L
Antimony	52.6	ug/L
Arsenic	99.2	ug/L
Barium	42.5	ug/L
Cadmium	0.661J	ug/L
Calcium	28400	ug/L
Chromium	4.72J	ug/L
Cobalt	5.63	ug/L
Copper	6840	ug/L
Iron	9410	ug/L
Lead	16.3	ug/L
Magnesium	2630	ug/L
Manganese	221	ug/L
Mercury	2.23	ug/L
Molybdenum	2.41J	ug/L
Nickel	2.68	ug/L
Potassium	1200	ug/L
Silver	8.84	ug/L
Sodium	2650	ug/L
Zinc	81.9	ug/L

Client Sample ID: **SF-02-WS-9-21-22**
Lab Sample ID: 1225773006

Metals by ICP/MS

Parameter	Result	Units
Aluminum	819	ug/L
Antimony	48.7	ug/L
Arsenic	94.5	ug/L
Barium	45.4	ug/L
Cadmium	0.712J	ug/L
Calcium	31100	ug/L
Chromium	5.03J	ug/L
Cobalt	6.09	ug/L
Copper	9840	ug/L
Iron	9040	ug/L
Lead	18.4	ug/L
Magnesium	2640	ug/L
Manganese	253	ug/L
Mercury	2.74	ug/L
Molybdenum	2.09J	ug/L
Nickel	2.90	ug/L
Potassium	1150	ug/L
Silver	12.5	ug/L
Sodium	2510	ug/L
Zinc	92.0	ug/L

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Detectable Results Summary

Client Sample ID: **Ruby1-WS-01-9-21-22**
Lab Sample ID: 1225773007

Metals by ICP/MS

Parameter	Result	Units
Antimony	1.66J	ug/L
Arsenic	4.23J	ug/L
Barium	25.4	ug/L
Calcium	20100	ug/L
Cobalt	0.340J	ug/L
Copper	49.5	ug/L
Magnesium	3390	ug/L
Manganese	1.11J	ug/L
Potassium	1250	ug/L
Sodium	3260	ug/L
Zinc	11.0J	ug/L

Client Sample ID: **Ruby1-SS-01-9-21-23**
Lab Sample ID: 1225773008

Metals by ICP/MS

Parameter	Result	Units
Aluminum	9820	mg/kg
Antimony	6.41	mg/kg
Arsenic	41.6	mg/kg
Barium	117	mg/kg
Beryllium	0.376	mg/kg
Cadmium	0.195J	mg/kg
Calcium	2160	mg/kg
Chromium	10.2	mg/kg
Cobalt	7.63	mg/kg
Copper	1270	mg/kg
Iron	19700	mg/kg
Lead	10.8	mg/kg
Magnesium	4130	mg/kg
Manganese	290	mg/kg
Mercury	0.562	mg/kg
Molybdenum	0.754J	mg/kg
Nickel	8.81	mg/kg
Potassium	4520	mg/kg
Silver	1.78	mg/kg
Sodium	56.5J	mg/kg
Thallium	0.361	mg/kg
Vanadium	31.8	mg/kg
Zinc	50.7	mg/kg

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Detectable Results Summary

Client Sample ID: **FTDS-WS-01-9-21-22**
Lab Sample ID: 1225773009

Metals by ICP/MS

Parameter	Result	Units
Aluminum	375	ug/L
Arsenic	190	ug/L
Barium	46.7	ug/L
Boron	1010	ug/L
Calcium	277000	ug/L
Cobalt	568	ug/L
Copper	2910	ug/L
Iron	2270	ug/L
Lead	16.4	ug/L
Magnesium	435000	ug/L
Manganese	1490	ug/L
Mercury	35.4	ug/L
Molybdenum	73.2	ug/L
Nickel	27.8	ug/L
Potassium	58300	ug/L
Selenium	13.5J	ug/L
Silver	53.9	ug/L
Sodium	2930000	ug/L
Thallium	5.01	ug/L
Zinc	127	ug/L

Detectable Results Summary

Client Sample ID: **FTDS-SS-01-9-21-22**
Lab Sample ID: 1225773010

	Parameter	Result	Units
Metals by ICP/MS	Aluminum	5090	mg/kg
	Antimony	30.0	mg/kg
	Arsenic	1210	mg/kg
	Barium	61.4	mg/kg
	Beryllium	0.640	mg/kg
	Boron	10.6J	mg/kg
	Cadmium	2.36	mg/kg
	Calcium	134000	mg/kg
	Chromium	11.4	mg/kg
	Cobalt	12.9	mg/kg
	Copper	5400	mg/kg
	Iron	41500	mg/kg
	Lead	182	mg/kg
	Magnesium	9270	mg/kg
	Manganese	846	mg/kg
	Mercury	0.863	mg/kg
	Molybdenum	4.58	mg/kg
	Nickel	12.0	mg/kg
	Potassium	1270	mg/kg
	Selenium	1.14J	mg/kg
	Silver	3.82	mg/kg
	Sodium	424	mg/kg
	Thallium	0.458	mg/kg
	Vanadium	25.3	mg/kg
	Zinc	303	mg/kg
Waters Department	Cyanide	20	mg/kg
	Weak Acid Dissociable CN	0.58	mg/kg

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Detectable Results Summary

Client Sample ID: **FTDS-SS-02-9-21-22**
Lab Sample ID: 1225773011

	Parameter	Result	Units
Metals by ICP/MS	Aluminum	18800	mg/kg
	Arsenic	20.9	mg/kg
	Barium	55.2	mg/kg
	Beryllium	0.254	mg/kg
	Calcium	732	mg/kg
	Chromium	24.7	mg/kg
	Cobalt	5.72	mg/kg
	Copper	20.1	mg/kg
	Iron	25300	mg/kg
	Lead	11.2	mg/kg
	Magnesium	2930	mg/kg
	Manganese	253	mg/kg
	Molybdenum	1.05J	mg/kg
	Nickel	14.4	mg/kg
	Potassium	625	mg/kg
	Sodium	46.7J	mg/kg
	Thallium	0.144J	mg/kg
	Vanadium	49.0	mg/kg
	Zinc	34.9	mg/kg
Waters Department	Cyanide	0.50	mg/kg
	Weak Acid Dissociable CN	0.22	mg/kg

Print Date: 10/11/2022 8:45:57AM

Results of **SM-01-SS-9-21-22**

Client Sample ID: **SM-01-SS-9-21-22**
Client Project ID: **Nixon Fork M.**
Lab Sample ID: 1225773001
Lab Project ID: 1225773

Collection Date: 09/21/22 11:30
Received Date: 09/22/22 10:34
Matrix: Soil/Solid (dry weight)
Solids (%):83.4
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Aluminum	5170		2370	829	mg/kg	1000		10/03/22 21:14
Antimony	68.4		1.18	0.367	mg/kg	10		10/03/22 16:53
Arsenic	720		118	36.7	mg/kg	1000		10/03/22 21:14
Barium	214		0.355	0.111	mg/kg	10		10/03/22 16:53
Beryllium	0.781		0.118	0.0367	mg/kg	10		10/03/22 16:53
Boron	11.9	U	23.7	7.34	mg/kg	10		10/03/22 16:53
Cadmium	3.13		0.237	0.0734	mg/kg	10		10/03/22 16:53
Calcium	42500		5920	1780	mg/kg	1000		10/03/22 21:14
Chromium	18.8		1.18	0.367	mg/kg	10		10/03/22 16:53
Cobalt	30.8		0.592	0.178	mg/kg	10		10/03/22 16:53
Copper	22400		71.0	21.3	mg/kg	1000		10/03/22 21:14
Iron	87800		5920	1780	mg/kg	1000		10/03/22 21:14
Lead	1240		23.7	7.34	mg/kg	1000		10/03/22 21:14
Magnesium	3090		59.2	17.8	mg/kg	10		10/03/22 16:53
Manganese	1130		23.7	7.34	mg/kg	1000		10/03/22 21:14
Mercury	513		35.5	11.8	mg/kg	1000		10/03/22 21:14
Molybdenum	6.23		1.18	0.367	mg/kg	10		10/03/22 16:53
Nickel	21.3		0.237	0.0734	mg/kg	10		10/03/22 16:53
Potassium	985		118	36.7	mg/kg	10		10/03/22 16:53
Selenium	2.20	J	2.37	0.734	mg/kg	10		10/03/22 16:53
Silver	80.4		59.2	17.8	mg/kg	1000		10/03/22 21:14
Sodium	67.9	J	118	36.7	mg/kg	10		10/03/22 16:53
Thallium	0.565		0.237	0.0734	mg/kg	10		10/03/22 16:53
Vanadium	45.7		5.92	1.78	mg/kg	10		10/03/22 16:53
Zinc	1420		296	92.3	mg/kg	1000		10/03/22 21:14

Batch Information

Analytical Batch: MMS11706
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/03/22 16:53
Container ID: 1225773001-A

Prep Batch: MXX35521
Prep Method: SW3050B
Prep Date/Time: 09/29/22 10:41
Prep Initial Wt./Vol.: 1.013 g
Prep Extract Vol: 50 mL

Analytical Batch: MMS11706
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/03/22 21:14
Container ID: 1225773001-A

Prep Batch: MXX35521
Prep Method: SW3050B
Prep Date/Time: 09/29/22 10:41
Prep Initial Wt./Vol.: 1.013 g
Prep Extract Vol: 50 mL

Print Date: 10/11/2022 8:45:58AM

J flagging is activated

Results of **SM-01-SS-9-21-22**

Client Sample ID: **SM-01-SS-9-21-22**
Client Project ID: **Nixon Fork M.**
Lab Sample ID: 1225773001
Lab Project ID: 1225773

Collection Date: 09/21/22 11:30
Received Date: 09/22/22 10:34
Matrix: Soil/Solid (dry weight)
Solids (%):83.4
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	14.9	U	29.9	7.49	ug/kg	1		10/04/22 11:41
2-Methylnaphthalene	14.9	U	29.9	7.49	ug/kg	1		10/04/22 11:41
Acenaphthene	14.9	U	29.9	7.49	ug/kg	1		10/04/22 11:41
Acenaphthylene	12.5	J	29.9	7.49	ug/kg	1		10/04/22 11:41
Anthracene	14.9	U	29.9	7.49	ug/kg	1		10/04/22 11:41
Benzo(a)Anthracene	13.2	J	29.9	7.49	ug/kg	1		10/04/22 11:41
Benzo[a]pyrene	12.4	J	29.9	7.49	ug/kg	1		10/04/22 11:41
Benzo[b]Fluoranthene	26.7	J	29.9	7.49	ug/kg	1		10/04/22 11:41
Benzo[g,h,i]perylene	12.2	J	29.9	7.49	ug/kg	1		10/04/22 11:41
Benzo[k]fluoranthene	14.9	U	29.9	7.49	ug/kg	1		10/04/22 11:41
Chrysene	36.8		29.9	7.49	ug/kg	1		10/04/22 11:41
Dibenzo[a,h]anthracene	14.9	U	29.9	7.49	ug/kg	1		10/04/22 11:41
Fluoranthene	27.8	J	29.9	7.49	ug/kg	1		10/04/22 11:41
Fluorene	14.9	U	29.9	7.49	ug/kg	1		10/04/22 11:41
Indeno[1,2,3-c,d] pyrene	8.81	J	29.9	7.49	ug/kg	1		10/04/22 11:41
Naphthalene	21.5	J	24.0	5.99	ug/kg	1		10/04/22 11:41
Phenanthrene	20.8	J	29.9	7.49	ug/kg	1		10/04/22 11:41
Pyrene	32.6		29.9	7.49	ug/kg	1		10/04/22 11:41
Surrogates								
2-Methylnaphthalene-d10 (surr)	91.9		58-103		%	1		10/04/22 11:41
Fluoranthene-d10 (surr)	88.8		54-113		%	1		10/04/22 11:41

Batch Information

Analytical Batch: XMS13386
Analytical Method: 8270D SIM (PAH)
Analyst: NGG
Analytical Date/Time: 10/04/22 11:41
Container ID: 1225773001-A

Prep Batch: XXX47074
Prep Method: SW3550C
Prep Date/Time: 09/29/22 15:03
Prep Initial Wt./Vol.: 22.524 g
Prep Extract Vol: 5 mL

Print Date: 10/11/2022 8:45:58AM

J flagging is activated

Results of **SM-01-SS-9-21-22**

Client Sample ID: **SM-01-SS-9-21-22**
Client Project ID: **Nixon Fork M.**
Lab Sample ID: 1225773001
Lab Project ID: 1225773

Collection Date: 09/21/22 11:30
Received Date: 09/22/22 10:34
Matrix: Soil/Solid (dry weight)
Solids (%):83.4
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	137		23.9	10.8	mg/kg	1		10/08/22 03:20
Surrogates								
5a Androstane (surr)	101		50-150		%	1		10/08/22 03:20

Batch Information

Analytical Batch: XFC16363
Analytical Method: AK102
Analyst: MAP
Analytical Date/Time: 10/08/22 03:20
Container ID: 1225773001-A

Prep Batch: XXX47096
Prep Method: SW3550C
Prep Date/Time: 10/04/22 09:00
Prep Initial Wt./Vol.: 30.095 g
Prep Extract Vol: 5 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	673		120	51.4	mg/kg	1		10/08/22 03:20
Surrogates								
n-Triacontane-d62 (surr)	100		50-150		%	1		10/08/22 03:20

Batch Information

Analytical Batch: XFC16363
Analytical Method: AK103
Analyst: MAP
Analytical Date/Time: 10/08/22 03:20
Container ID: 1225773001-A

Prep Batch: XXX47096
Prep Method: SW3550C
Prep Date/Time: 10/04/22 09:00
Prep Initial Wt./Vol.: 30.095 g
Prep Extract Vol: 5 mL

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Results of **SM-02-SS-9-21-22**

Client Sample ID: **SM-02-SS-9-21-22**
Client Project ID: **Nixon Fork M.**
Lab Sample ID: 1225773002
Lab Project ID: 1225773

Collection Date: 09/21/22 11:45
Received Date: 09/22/22 10:34
Matrix: Soil/Solid (dry weight)
Solids (%):78.1
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Aluminum	12800		1220	425	mg/kg	500		10/03/22 21:20
Antimony	32.0		1.22	0.377	mg/kg	10		10/03/22 16:56
Arsenic	293		60.8	18.8	mg/kg	500		10/03/22 21:20
Barium	401		0.365	0.114	mg/kg	10		10/03/22 16:56
Beryllium	0.674		0.122	0.0377	mg/kg	10		10/03/22 16:56
Boron	12.2	U	24.3	7.53	mg/kg	10		10/03/22 16:56
Cadmium	1.51		0.243	0.0753	mg/kg	10		10/03/22 16:56
Calcium	10200		60.8	18.2	mg/kg	10		10/03/22 16:56
Chromium	17.5		1.22	0.377	mg/kg	10		10/03/22 16:56
Cobalt	15.0		0.608	0.182	mg/kg	10		10/03/22 16:56
Copper	11800		36.5	10.9	mg/kg	500		10/03/22 21:20
Iron	41400		3040	911	mg/kg	500		10/03/22 21:20
Lead	234		0.243	0.0753	mg/kg	10		10/03/22 16:56
Magnesium	5680		60.8	18.2	mg/kg	10		10/03/22 16:56
Manganese	1140		12.2	3.77	mg/kg	500		10/03/22 21:20
Mercury	65.8		18.2	6.08	mg/kg	500		10/03/22 21:20
Molybdenum	2.11		1.22	0.377	mg/kg	10		10/03/22 16:56
Nickel	13.7		0.243	0.0753	mg/kg	10		10/03/22 16:56
Potassium	3500		122	37.7	mg/kg	10		10/03/22 16:56
Selenium	1.58	J	2.43	0.753	mg/kg	10		10/03/22 16:56
Silver	23.0		12.2	3.65	mg/kg	200		10/03/22 21:17
Sodium	78.5	J	122	37.7	mg/kg	10		10/03/22 16:56
Thallium	0.354		0.243	0.0753	mg/kg	10		10/03/22 16:56
Vanadium	35.1		6.08	1.82	mg/kg	10		10/03/22 16:56
Zinc	350		152	47.4	mg/kg	500		10/03/22 21:20

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Results of **SM-02-SS-9-21-22**

Client Sample ID: **SM-02-SS-9-21-22**
Client Project ID: **Nixon Fork M.**
Lab Sample ID: 1225773002
Lab Project ID: 1225773

Collection Date: 09/21/22 11:45
Received Date: 09/22/22 10:34
Matrix: Soil/Solid (dry weight)
Solids (%):78.1
Location:

Results by **Metals by ICP/MS**

Batch Information

Analytical Batch: MMS11706
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/03/22 16:56
Container ID: 1225773002-A

Prep Batch: MXX35521
Prep Method: SW3050B
Prep Date/Time: 09/29/22 10:41
Prep Initial Wt./Vol.: 1.053 g
Prep Extract Vol: 50 mL

Analytical Batch: MMS11706
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/03/22 21:17
Container ID: 1225773002-A

Prep Batch: MXX35521
Prep Method: SW3050B
Prep Date/Time: 09/29/22 10:41
Prep Initial Wt./Vol.: 1.053 g
Prep Extract Vol: 50 mL

Analytical Batch: MMS11706
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/03/22 21:20
Container ID: 1225773002-A

Prep Batch: MXX35521
Prep Method: SW3050B
Prep Date/Time: 09/29/22 10:41
Prep Initial Wt./Vol.: 1.053 g
Prep Extract Vol: 50 mL

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Results of **SM-02-SS-9-21-22**

Client Sample ID: **SM-02-SS-9-21-22**
Client Project ID: **Nixon Fork M.**
Lab Sample ID: 1225773002
Lab Project ID: 1225773

Collection Date: 09/21/22 11:45
Received Date: 09/22/22 10:34
Matrix: Soil/Solid (dry weight)
Solids (%):78.1
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	15.8	U	31.6	7.91	ug/kg	1		10/03/22 16:47
2-Methylnaphthalene	11.7	J	31.6	7.91	ug/kg	1		10/03/22 16:47
Acenaphthene	15.8	U	31.6	7.91	ug/kg	1		10/03/22 16:47
Acenaphthylene	33.1		31.6	7.91	ug/kg	1		10/03/22 16:47
Anthracene	84.4		31.6	7.91	ug/kg	1		10/03/22 16:47
Benzo(a)Anthracene	101		31.6	7.91	ug/kg	1		10/03/22 16:47
Benzo[a]pyrene	88.4		31.6	7.91	ug/kg	1		10/03/22 16:47
Benzo[b]Fluoranthene	155		31.6	7.91	ug/kg	1		10/03/22 16:47
Benzo[g,h,i]perylene	61.7		31.6	7.91	ug/kg	1		10/03/22 16:47
Benzo[k]fluoranthene	36.1		31.6	7.91	ug/kg	1		10/03/22 16:47
Chrysene	163		31.6	7.91	ug/kg	1		10/03/22 16:47
Dibenzo[a,h]anthracene	13.5	J	31.6	7.91	ug/kg	1		10/03/22 16:47
Fluoranthene	334		31.6	7.91	ug/kg	1		10/03/22 16:47
Fluorene	27.8	J	31.6	7.91	ug/kg	1		10/03/22 16:47
Indeno[1,2,3-c,d] pyrene	52.5		31.6	7.91	ug/kg	1		10/03/22 16:47
Naphthalene	37.0		25.3	6.33	ug/kg	1		10/03/22 16:47
Phenanthrene	296		31.6	7.91	ug/kg	1		10/03/22 16:47
Pyrene	339		31.6	7.91	ug/kg	1		10/03/22 16:47
Surrogates								
2-Methylnaphthalene-d10 (surr)	80.7		58-103		%	1		10/03/22 16:47
Fluoranthene-d10 (surr)	80.2		54-113		%	1		10/03/22 16:47

Batch Information

Analytical Batch: XMS13387
Analytical Method: 8270D SIM (PAH)
Analyst: NGG
Analytical Date/Time: 10/03/22 16:47
Container ID: 1225773002-A

Prep Batch: XXX47074
Prep Method: SW3550C
Prep Date/Time: 09/29/22 15:03
Prep Initial Wt./Vol.: 22.752 g
Prep Extract Vol: 5 mL

Print Date: 10/11/2022 8:45:58AM

J flagging is activated

Results of **SM-02-SS-9-21-22**

Client Sample ID: **SM-02-SS-9-21-22**
Client Project ID: **Nixon Fork M.**
Lab Sample ID: 1225773002
Lab Project ID: 1225773

Collection Date: 09/21/22 11:45
Received Date: 09/22/22 10:34
Matrix: Soil/Solid (dry weight)
Solids (%):78.1
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	242		25.5	11.5	mg/kg	1		10/08/22 03:30
Surrogates								
5a Androstane (surr)	93.3		50-150		%	1		10/08/22 03:30

Batch Information

Analytical Batch: XFC16363
Analytical Method: AK102
Analyst: MAP
Analytical Date/Time: 10/08/22 03:30
Container ID: 1225773002-A

Prep Batch: XXX47096
Prep Method: SW3550C
Prep Date/Time: 10/04/22 09:00
Prep Initial Wt./Vol.: 30.159 g
Prep Extract Vol: 5 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	897		127	54.7	mg/kg	1		10/08/22 03:30
Surrogates								
n-Triacontane-d62 (surr)	95.6		50-150		%	1		10/08/22 03:30

Batch Information

Analytical Batch: XFC16363
Analytical Method: AK103
Analyst: MAP
Analytical Date/Time: 10/08/22 03:30
Container ID: 1225773002-A

Prep Batch: XXX47096
Prep Method: SW3550C
Prep Date/Time: 10/04/22 09:00
Prep Initial Wt./Vol.: 30.159 g
Prep Extract Vol: 5 mL

Print Date: 10/11/2022 8:45:58AM

J flagging is activated

Results of **SF-01-SS-9-21-22**

Client Sample ID: **SF-01-SS-9-21-22**
Client Project ID: **Nixon Fork M.**
Lab Sample ID: 1225773003
Lab Project ID: 1225773

Collection Date: 09/21/22 12:00
Received Date: 09/22/22 10:34
Matrix: Soil/Solid (dry weight)
Solids (%):66.7
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Aluminum	2890		570	200	mg/kg	200		10/03/22 21:31
Antimony	95.7		1.43	0.442	mg/kg	10		10/03/22 16:58
Arsenic	685		28.5	8.84	mg/kg	200		10/03/22 21:31
Barium	82.1		0.428	0.134	mg/kg	10		10/03/22 16:58
Beryllium	0.712		0.143	0.0442	mg/kg	10		10/03/22 16:58
Boron	14.3	U	28.5	8.84	mg/kg	10		10/03/22 16:58
Cadmium	2.51		0.285	0.0884	mg/kg	10		10/03/22 16:58
Calcium	43900		1430	428	mg/kg	200		10/03/22 21:31
Chromium	9.66		1.43	0.442	mg/kg	10		10/03/22 16:58
Cobalt	29.4		0.713	0.214	mg/kg	10		10/03/22 16:58
Copper	29700		8.55	2.57	mg/kg	100		10/03/22 21:28
Iron	77300		1430	428	mg/kg	200		10/03/22 21:31
Lead	92.4		0.285	0.0884	mg/kg	10		10/03/22 16:58
Magnesium	1610		71.3	21.4	mg/kg	10		10/03/22 16:58
Manganese	1330		5.70	1.77	mg/kg	200		10/03/22 21:31
Mercury	9.31		4.28	1.43	mg/kg	100		10/03/22 21:28
Molybdenum	8.42		1.43	0.442	mg/kg	10		10/03/22 16:58
Nickel	12.4		0.285	0.0884	mg/kg	10		10/03/22 16:58
Potassium	258		143	44.2	mg/kg	10		10/03/22 16:58
Selenium	2.77	J	2.85	0.884	mg/kg	10		10/03/22 16:58
Silver	55.8		14.3	4.28	mg/kg	200		10/03/22 21:31
Sodium	71.5	U	143	44.2	mg/kg	10		10/03/22 16:58
Thallium	0.895		0.285	0.0884	mg/kg	10		10/03/22 16:58
Vanadium	38.0		7.13	2.14	mg/kg	10		10/03/22 16:58
Zinc	492		71.3	22.2	mg/kg	200		10/03/22 21:31

J flagging is activated

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Results of **SF-01-SS-9-21-22**

Client Sample ID: **SF-01-SS-9-21-22**
Client Project ID: **Nixon Fork M.**
Lab Sample ID: 1225773003
Lab Project ID: 1225773

Collection Date: 09/21/22 12:00
Received Date: 09/22/22 10:34
Matrix: Soil/Solid (dry weight)
Solids (%):66.7
Location:

Results by **Metals by ICP/MS**

Batch Information

Analytical Batch: MMS11706
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/03/22 16:58
Container ID: 1225773003-A

Prep Batch: MXX35521
Prep Method: SW3050B
Prep Date/Time: 09/29/22 10:41
Prep Initial Wt./Vol.: 1.051 g
Prep Extract Vol: 50 mL

Analytical Batch: MMS11706
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/03/22 21:28
Container ID: 1225773003-A

Prep Batch: MXX35521
Prep Method: SW3050B
Prep Date/Time: 09/29/22 10:41
Prep Initial Wt./Vol.: 1.051 g
Prep Extract Vol: 50 mL

Analytical Batch: MMS11706
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/03/22 21:31
Container ID: 1225773003-A

Prep Batch: MXX35521
Prep Method: SW3050B
Prep Date/Time: 09/29/22 10:41
Prep Initial Wt./Vol.: 1.051 g
Prep Extract Vol: 50 mL

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Results of **SF-01-SS-9-21-22**

Client Sample ID: **SF-01-SS-9-21-22**
Client Project ID: **Nixon Fork M.**
Lab Sample ID: 1225773003
Lab Project ID: 1225773

Collection Date: 09/21/22 12:00
Received Date: 09/22/22 10:34
Matrix: Soil/Solid (dry weight)
Solids (%):66.7
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	18.6	U	37.3	9.32	ug/kg	1		10/03/22 17:03
2-Methylnaphthalene	18.6	U	37.3	9.32	ug/kg	1		10/03/22 17:03
Acenaphthene	18.6	U	37.3	9.32	ug/kg	1		10/03/22 17:03
Acenaphthylene	18.6	U	37.3	9.32	ug/kg	1		10/03/22 17:03
Anthracene	18.6	U	37.3	9.32	ug/kg	1		10/03/22 17:03
Benzo(a)Anthracene	18.6	U	37.3	9.32	ug/kg	1		10/03/22 17:03
Benzo[a]pyrene	18.6	U	37.3	9.32	ug/kg	1		10/03/22 17:03
Benzo[b]Fluoranthene	18.6	U	37.3	9.32	ug/kg	1		10/03/22 17:03
Benzo[g,h,i]perylene	18.6	U	37.3	9.32	ug/kg	1		10/03/22 17:03
Benzo[k]fluoranthene	18.6	U	37.3	9.32	ug/kg	1		10/03/22 17:03
Chrysene	18.6	U	37.3	9.32	ug/kg	1		10/03/22 17:03
Dibenzo[a,h]anthracene	18.6	U	37.3	9.32	ug/kg	1		10/03/22 17:03
Fluoranthene	18.6	U	37.3	9.32	ug/kg	1		10/03/22 17:03
Fluorene	18.6	U	37.3	9.32	ug/kg	1		10/03/22 17:03
Indeno[1,2,3-c,d] pyrene	18.6	U	37.3	9.32	ug/kg	1		10/03/22 17:03
Naphthalene	14.9	U	29.8	7.46	ug/kg	1		10/03/22 17:03
Phenanthrene	18.6	U	37.3	9.32	ug/kg	1		10/03/22 17:03
Pyrene	18.6	U	37.3	9.32	ug/kg	1		10/03/22 17:03
Surrogates								
2-Methylnaphthalene-d10 (surr)	82.7		58-103		%	1		10/03/22 17:03
Fluoranthene-d10 (surr)	88.1		54-113		%	1		10/03/22 17:03

Batch Information

Analytical Batch: XMS13387
Analytical Method: 8270D SIM (PAH)
Analyst: NGG
Analytical Date/Time: 10/03/22 17:03
Container ID: 1225773003-A

Prep Batch: XXX47074
Prep Method: SW3550C
Prep Date/Time: 09/29/22 15:03
Prep Initial Wt./Vol.: 22.594 g
Prep Extract Vol: 5 mL

Print Date: 10/11/2022 8:45:58AM

J flagging is activated

Results of **SF-01-SS-9-21-22**

Client Sample ID: **SF-01-SS-9-21-22**
Client Project ID: **Nixon Fork M.**
Lab Sample ID: 1225773003
Lab Project ID: 1225773

Collection Date: 09/21/22 12:00
Received Date: 09/22/22 10:34
Matrix: Soil/Solid (dry weight)
Solids (%):66.7
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	14.9	U	29.8	13.4	mg/kg	1		10/08/22 03:40
Surrogates								
5a Androstane (surr)	80.2		50-150		%	1		10/08/22 03:40

Batch Information

Analytical Batch: XFC16363
Analytical Method: AK102
Analyst: MAP
Analytical Date/Time: 10/08/22 03:40
Container ID: 1225773003-A

Prep Batch: XXX47096
Prep Method: SW3550C
Prep Date/Time: 10/04/22 09:00
Prep Initial Wt./Vol.: 30.21 g
Prep Extract Vol: 5 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	74.5	U	149	64.0	mg/kg	1		10/08/22 03:40
Surrogates								
n-Triacontane-d62 (surr)	76.5		50-150		%	1		10/08/22 03:40

Batch Information

Analytical Batch: XFC16363
Analytical Method: AK103
Analyst: MAP
Analytical Date/Time: 10/08/22 03:40
Container ID: 1225773003-A

Prep Batch: XXX47096
Prep Method: SW3550C
Prep Date/Time: 10/04/22 09:00
Prep Initial Wt./Vol.: 30.21 g
Prep Extract Vol: 5 mL

Print Date: 10/11/2022 8:45:58AM

J flagging is activated

Results of **SF-02-SS-9-21-22**

Client Sample ID: **SF-02-SS-9-21-22**
Client Project ID: **Nixon Fork M.**
Lab Sample ID: 1225773004
Lab Project ID: 1225773

Collection Date: 09/21/22 12:10
Received Date: 09/22/22 10:34
Matrix: Soil/Solid (dry weight)
Solids (%):66.9
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Aluminum	3460		2780	974	mg/kg	1000		10/03/22 21:37
Antimony	96.3		1.39	0.431	mg/kg	10		10/03/22 17:07
Arsenic	803		139	43.1	mg/kg	1000		10/03/22 21:37
Barium	87.5		0.417	0.131	mg/kg	10		10/03/22 17:07
Beryllium	0.729		0.139	0.0431	mg/kg	10		10/03/22 17:07
Boron	13.9	U	27.8	8.62	mg/kg	10		10/03/22 17:07
Cadmium	2.54		0.278	0.0862	mg/kg	10		10/03/22 17:07
Calcium	53700		6960	2090	mg/kg	1000		10/03/22 21:37
Chromium	10.1		1.39	0.431	mg/kg	10		10/03/22 17:07
Cobalt	31.6		0.696	0.209	mg/kg	10		10/03/22 17:07
Copper	38800		104	31.3	mg/kg	1250		10/05/22 17:33
Iron	88800		6960	2090	mg/kg	1000		10/03/22 21:37
Lead	93.5		0.278	0.0862	mg/kg	10		10/03/22 17:07
Magnesium	1700		69.6	20.9	mg/kg	10		10/03/22 17:07
Manganese	1650		27.8	8.62	mg/kg	1000		10/03/22 21:37
Mercury	9.18		0.417	0.139	mg/kg	10		10/03/22 21:54
Molybdenum	8.71		1.39	0.431	mg/kg	10		10/03/22 17:07
Nickel	12.8		0.278	0.0862	mg/kg	10		10/03/22 17:07
Potassium	264		139	43.1	mg/kg	10		10/03/22 17:07
Selenium	2.37	J	2.78	0.862	mg/kg	10		10/03/22 17:07
Silver	48.6		6.96	2.09	mg/kg	100		10/05/22 17:31
Sodium	69.5	U	139	43.1	mg/kg	10		10/03/22 17:07
Thallium	0.943		0.278	0.0862	mg/kg	10		10/03/22 17:07
Vanadium	39.6		6.96	2.09	mg/kg	10		10/03/22 17:07
Zinc	548		348	108	mg/kg	1000		10/03/22 21:37

Print Date: 10/11/2022 8:45:58AM

J flagging is activated

Results of **SF-02-SS-9-21-22**

Client Sample ID: **SF-02-SS-9-21-22**
Client Project ID: **Nixon Fork M.**
Lab Sample ID: 1225773004
Lab Project ID: 1225773

Collection Date: 09/21/22 12:10
Received Date: 09/22/22 10:34
Matrix: Soil/Solid (dry weight)
Solids (%):66.9
Location:

Results by **Metals by ICP/MS**

Batch Information

Analytical Batch: MMS11706
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/03/22 17:07
Container ID: 1225773004-A

Prep Batch: MXX35521
Prep Method: SW3050B
Prep Date/Time: 09/29/22 10:41
Prep Initial Wt./Vol.: 1.075 g
Prep Extract Vol: 50 mL

Analytical Batch: MMS11708
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/05/22 17:31
Container ID: 1225773004-A

Prep Batch: MXX35521
Prep Method: SW3050B
Prep Date/Time: 09/29/22 10:41
Prep Initial Wt./Vol.: 1.075 g
Prep Extract Vol: 50 mL

Analytical Batch: MMS11708
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/05/22 17:33
Container ID: 1225773004-A

Prep Batch: MXX35521
Prep Method: SW3050B
Prep Date/Time: 09/29/22 10:41
Prep Initial Wt./Vol.: 1.075 g
Prep Extract Vol: 50 mL

Analytical Batch: MMS11706
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/03/22 21:37
Container ID: 1225773004-A

Prep Batch: MXX35521
Prep Method: SW3050B
Prep Date/Time: 09/29/22 10:41
Prep Initial Wt./Vol.: 1.075 g
Prep Extract Vol: 50 mL

Analytical Batch: MMS11706
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/03/22 21:54
Container ID: 1225773004-A

Prep Batch: MXX35521
Prep Method: SW3050B
Prep Date/Time: 09/29/22 10:41
Prep Initial Wt./Vol.: 1.075 g
Prep Extract Vol: 50 mL

J flagging is activated

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Results of **SF-02-SS-9-21-22**

Client Sample ID: **SF-02-SS-9-21-22**
Client Project ID: **Nixon Fork M.**
Lab Sample ID: 1225773004
Lab Project ID: 1225773

Collection Date: 09/21/22 12:10
Received Date: 09/22/22 10:34
Matrix: Soil/Solid (dry weight)
Solids (%):66.9
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	18.6	U	37.2	9.29	ug/kg	1		10/03/22 17:19
2-Methylnaphthalene	18.6	U	37.2	9.29	ug/kg	1		10/03/22 17:19
Acenaphthene	18.6	U	37.2	9.29	ug/kg	1		10/03/22 17:19
Acenaphthylene	18.6	U	37.2	9.29	ug/kg	1		10/03/22 17:19
Anthracene	18.6	U	37.2	9.29	ug/kg	1		10/03/22 17:19
Benzo(a)Anthracene	18.6	U	37.2	9.29	ug/kg	1		10/03/22 17:19
Benzo[a]pyrene	18.6	U	37.2	9.29	ug/kg	1		10/03/22 17:19
Benzo[b]Fluoranthene	18.6	U	37.2	9.29	ug/kg	1		10/03/22 17:19
Benzo[g,h,i]perylene	18.6	U	37.2	9.29	ug/kg	1		10/03/22 17:19
Benzo[k]fluoranthene	18.6	U	37.2	9.29	ug/kg	1		10/03/22 17:19
Chrysene	18.6	U	37.2	9.29	ug/kg	1		10/03/22 17:19
Dibenzo[a,h]anthracene	18.6	U	37.2	9.29	ug/kg	1		10/03/22 17:19
Fluoranthene	18.6	U	37.2	9.29	ug/kg	1		10/03/22 17:19
Fluorene	18.6	U	37.2	9.29	ug/kg	1		10/03/22 17:19
Indeno[1,2,3-c,d] pyrene	18.6	U	37.2	9.29	ug/kg	1		10/03/22 17:19
Naphthalene	14.9	U	29.7	7.43	ug/kg	1		10/03/22 17:19
Phenanthrene	18.6	U	37.2	9.29	ug/kg	1		10/03/22 17:19
Pyrene	18.6	U	37.2	9.29	ug/kg	1		10/03/22 17:19
Surrogates								
2-Methylnaphthalene-d10 (surr)	81.1		58-103		%	1		10/03/22 17:19
Fluoranthene-d10 (surr)	85.2		54-113		%	1		10/03/22 17:19

Batch Information

Analytical Batch: XMS13387
Analytical Method: 8270D SIM (PAH)
Analyst: NGG
Analytical Date/Time: 10/03/22 17:19
Container ID: 1225773004-A

Prep Batch: XXX47074
Prep Method: SW3550C
Prep Date/Time: 09/29/22 15:03
Prep Initial Wt./Vol.: 22.641 g
Prep Extract Vol: 5 mL

Print Date: 10/11/2022 8:45:58AM

J flagging is activated

Results of **SF-02-SS-9-21-22**

Client Sample ID: **SF-02-SS-9-21-22**
Client Project ID: **Nixon Fork M.**
Lab Sample ID: 1225773004
Lab Project ID: 1225773

Collection Date: 09/21/22 12:10
Received Date: 09/22/22 10:34
Matrix: Soil/Solid (dry weight)
Solids (%):66.9
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	14.8	U	29.6	13.3	mg/kg	1		10/08/22 03:50
Surrogates								
5a Androstane (surr)	81.5		50-150		%	1		10/08/22 03:50

Batch Information

Analytical Batch: XFC16363
Analytical Method: AK102
Analyst: MAP
Analytical Date/Time: 10/08/22 03:50
Container ID: 1225773004-A

Prep Batch: XXX47096
Prep Method: SW3550C
Prep Date/Time: 10/04/22 09:00
Prep Initial Wt./Vol.: 30.286 g
Prep Extract Vol: 5 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	74.0	U	148	63.7	mg/kg	1		10/08/22 03:50
Surrogates								
n-Triacontane-d62 (surr)	77.3		50-150		%	1		10/08/22 03:50

Batch Information

Analytical Batch: XFC16363
Analytical Method: AK103
Analyst: MAP
Analytical Date/Time: 10/08/22 03:50
Container ID: 1225773004-A

Prep Batch: XXX47096
Prep Method: SW3550C
Prep Date/Time: 10/04/22 09:00
Prep Initial Wt./Vol.: 30.286 g
Prep Extract Vol: 5 mL

Print Date: 10/11/2022 8:45:58AM

J flagging is activated

Results of **SF-01-WS-9-21-22**

Client Sample ID: **SF-01-WS-9-21-22**
Client Project ID: **Nixon Fork M.**
Lab Sample ID: 1225773005
Lab Project ID: 1225773

Collection Date: 09/21/22 12:15
Received Date: 09/22/22 10:34
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Aluminum	673		200	62.0	ug/L	5		10/03/22 14:44
Antimony	52.6		3.00	0.940	ug/L	5		10/03/22 14:44
Arsenic	99.2		10.0	3.10	ug/L	5		10/03/22 14:44
Barium	42.5		3.00	0.940	ug/L	5		10/03/22 14:44
Beryllium	0.500	U	1.00	0.310	ug/L	5		10/03/22 14:44
Boron	100	U	200	62.0	ug/L	5		10/03/22 14:44
Cadmium	0.661	J	2.00	0.620	ug/L	5		10/03/22 14:44
Calcium	28400		1000	300	ug/L	5		10/03/22 14:44
Chromium	4.72	J	10.0	3.10	ug/L	5		10/03/22 14:44
Cobalt	5.63		1.00	0.310	ug/L	5		10/03/22 14:44
Copper	6840		24.0	7.20	ug/L	20		10/03/22 19:01
Iron	9410		500	150	ug/L	5		10/03/22 14:44
Lead	16.3		1.00	0.310	ug/L	5		10/03/22 14:44
Magnesium	2630		500	150	ug/L	5		10/03/22 14:44
Manganese	221		2.00	0.620	ug/L	5		10/03/22 14:44
Mercury	2.23		0.500	0.180	ug/L	5		10/03/22 14:44
Molybdenum	2.41	J	5.00	1.50	ug/L	5		10/03/22 14:44
Nickel	2.68		2.00	0.620	ug/L	5		10/03/22 14:44
Potassium	1200		1000	310	ug/L	5		10/03/22 14:44
Selenium	10.0	U	20.0	6.20	ug/L	5		10/03/22 14:44
Silver	8.84		2.00	0.620	ug/L	5		10/03/22 14:44
Sodium	2650		1000	310	ug/L	5		10/03/22 14:44
Thallium	1.00	U	2.00	0.620	ug/L	5		10/03/22 14:44
Vanadium	25.0	U	50.0	15.0	ug/L	5		10/03/22 14:44
Zinc	81.9		25.0	7.80	ug/L	5		10/03/22 14:44

Batch Information

Analytical Batch: MMS11706
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/03/22 14:44
Container ID: 1225773005-A

Prep Batch: MXX35516
Prep Method: SW3010A
Prep Date/Time: 09/28/22 10:39
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL

Analytical Batch: MMS11706
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/03/22 19:01
Container ID: 1225773005-A

Prep Batch: MXX35516
Prep Method: SW3010A
Prep Date/Time: 09/28/22 10:39
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL

Print Date: 10/11/2022 8:45:58AM

J flagging is activated

Results of **SF-02-WS-9-21-22**

Client Sample ID: **SF-02-WS-9-21-22**
Client Project ID: **Nixon Fork M.**
Lab Sample ID: 1225773006
Lab Project ID: 1225773

Collection Date: 09/21/22 12:20
Received Date: 09/22/22 10:34
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Aluminum	819		200	62.0	ug/L	5		10/03/22 14:50
Antimony	48.7		3.00	0.940	ug/L	5		10/03/22 14:50
Arsenic	94.5		10.0	3.10	ug/L	5		10/03/22 14:50
Barium	45.4		3.00	0.940	ug/L	5		10/03/22 14:50
Beryllium	0.500	U	1.00	0.310	ug/L	5		10/03/22 14:50
Boron	100	U	200	62.0	ug/L	5		10/03/22 14:50
Cadmium	0.712	J	2.00	0.620	ug/L	5		10/03/22 14:50
Calcium	31100		1000	300	ug/L	5		10/03/22 14:50
Chromium	5.03	J	10.0	3.10	ug/L	5		10/03/22 14:50
Cobalt	6.09		1.00	0.310	ug/L	5		10/03/22 14:50
Copper	9840		30.0	9.00	ug/L	25		10/03/22 19:04
Iron	9040		500	150	ug/L	5		10/03/22 14:50
Lead	18.4		1.00	0.310	ug/L	5		10/03/22 14:50
Magnesium	2640		500	150	ug/L	5		10/03/22 14:50
Manganese	253		2.00	0.620	ug/L	5		10/03/22 14:50
Mercury	2.74		0.500	0.180	ug/L	5		10/03/22 14:50
Molybdenum	2.09	J	5.00	1.50	ug/L	5		10/03/22 14:50
Nickel	2.90		2.00	0.620	ug/L	5		10/03/22 14:50
Potassium	1150		1000	310	ug/L	5		10/03/22 14:50
Selenium	10.0	U	20.0	6.20	ug/L	5		10/03/22 14:50
Silver	12.5		2.00	0.620	ug/L	5		10/03/22 14:50
Sodium	2510		1000	310	ug/L	5		10/03/22 14:50
Thallium	1.00	U	2.00	0.620	ug/L	5		10/03/22 14:50
Vanadium	25.0	U	50.0	15.0	ug/L	5		10/03/22 14:50
Zinc	92.0		25.0	7.80	ug/L	5		10/03/22 14:50

Batch Information

Analytical Batch: MMS11706
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/03/22 14:50
Container ID: 1225773006-A

Prep Batch: MXX35516
Prep Method: SW3010A
Prep Date/Time: 09/28/22 10:39
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL

Analytical Batch: MMS11706
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/03/22 19:04
Container ID: 1225773006-A

Prep Batch: MXX35516
Prep Method: SW3010A
Prep Date/Time: 09/28/22 10:39
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL

Print Date: 10/11/2022 8:45:58AM

J flagging is activated

Results of **Ruby1-WS-01-9-21-22**

Client Sample ID: **Ruby1-WS-01-9-21-22**
Client Project ID: **Nixon Fork M.**
Lab Sample ID: 1225773007
Lab Project ID: 1225773

Collection Date: 09/21/22 12:40
Received Date: 09/22/22 10:34
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Aluminum	100	U	200	62.0	ug/L	5		10/03/22 14:52
Antimony	1.66	J	3.00	0.940	ug/L	5		10/03/22 14:52
Arsenic	4.23	J	10.0	3.10	ug/L	5		10/03/22 14:52
Barium	25.4		3.00	0.940	ug/L	5		10/03/22 14:52
Beryllium	0.500	U	1.00	0.310	ug/L	5		10/03/22 14:52
Boron	100	U	200	62.0	ug/L	5		10/03/22 14:52
Cadmium	1.00	U	2.00	0.620	ug/L	5		10/03/22 14:52
Calcium	20100		1000	300	ug/L	5		10/03/22 14:52
Chromium	5.00	U	10.0	3.10	ug/L	5		10/03/22 14:52
Cobalt	0.340	J	1.00	0.310	ug/L	5		10/03/22 14:52
Copper	49.5		6.00	1.80	ug/L	5		10/03/22 14:52
Iron	250	U	500	150	ug/L	5		10/03/22 14:52
Lead	0.500	U	1.00	0.310	ug/L	5		10/03/22 14:52
Magnesium	3390		500	150	ug/L	5		10/03/22 14:52
Manganese	1.11	J	2.00	0.620	ug/L	5		10/03/22 14:52
Mercury	0.250	U	0.500	0.180	ug/L	5		10/03/22 14:52
Molybdenum	2.50	U	5.00	1.50	ug/L	5		10/03/22 14:52
Nickel	1.00	U	2.00	0.620	ug/L	5		10/03/22 14:52
Potassium	1250		1000	310	ug/L	5		10/03/22 14:52
Selenium	10.0	U	20.0	6.20	ug/L	5		10/03/22 14:52
Silver	1.00	U	2.00	0.620	ug/L	5		10/03/22 14:52
Sodium	3260		1000	310	ug/L	5		10/03/22 14:52
Thallium	1.00	U	2.00	0.620	ug/L	5		10/03/22 14:52
Vanadium	25.0	U	50.0	15.0	ug/L	5		10/03/22 14:52
Zinc	11.0	J	25.0	7.80	ug/L	5		10/03/22 14:52

Batch Information

Analytical Batch: MMS11706
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/03/22 14:52
Container ID: 1225773007-A

Prep Batch: MXX35516
Prep Method: SW3010A
Prep Date/Time: 09/28/22 10:39
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL

Print Date: 10/11/2022 8:45:58AM

J flagging is activated

Results of **Ruby1-SS-01-9-21-23**

Client Sample ID: **Ruby1-SS-01-9-21-23**
Client Project ID: **Nixon Fork M.**
Lab Sample ID: 1225773008
Lab Project ID: 1225773

Collection Date: 09/21/22 12:45
Received Date: 09/22/22 10:34
Matrix: Soil/Solid (dry weight)
Solids (%):76.0
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Aluminum	9820		1250	439	mg/kg	500		10/03/22 21:43
Antimony	6.41		1.25	0.389	mg/kg	10		10/03/22 17:10
Arsenic	41.6		6.27	1.95	mg/kg	50		10/03/22 21:40
Barium	117		0.376	0.118	mg/kg	10		10/03/22 17:10
Beryllium	0.376		0.125	0.0389	mg/kg	10		10/03/22 17:10
Boron	12.6	U	25.1	7.78	mg/kg	10		10/03/22 17:10
Cadmium	0.195	J	0.251	0.0778	mg/kg	10		10/03/22 17:10
Calcium	2160		62.7	18.8	mg/kg	10		10/03/22 17:10
Chromium	10.2		1.25	0.389	mg/kg	10		10/03/22 17:10
Cobalt	7.63		0.627	0.188	mg/kg	10		10/03/22 17:10
Copper	1270		37.6	11.3	mg/kg	500		10/03/22 21:43
Iron	19700		62.7	18.8	mg/kg	10		10/03/22 17:10
Lead	10.8		0.251	0.0778	mg/kg	10		10/03/22 17:10
Magnesium	4130		62.7	18.8	mg/kg	10		10/03/22 17:10
Manganese	290		0.251	0.0778	mg/kg	10		10/03/22 17:10
Mercury	0.562		0.376	0.125	mg/kg	10		10/03/22 22:02
Molybdenum	0.754	J	1.25	0.389	mg/kg	10		10/03/22 17:10
Nickel	8.81		0.251	0.0778	mg/kg	10		10/03/22 17:10
Potassium	4520		125	38.9	mg/kg	10		10/03/22 17:10
Selenium	1.25	U	2.51	0.778	mg/kg	10		10/03/22 17:10
Silver	1.78		0.627	0.188	mg/kg	10		10/03/22 17:10
Sodium	56.5	J	125	38.9	mg/kg	10		10/03/22 17:10
Thallium	0.361		0.251	0.0778	mg/kg	10		10/03/22 17:10
Vanadium	31.8		6.27	1.88	mg/kg	10		10/03/22 17:10
Zinc	50.7		3.14	0.979	mg/kg	10		10/03/22 17:10

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Results of **Ruby1-SS-01-9-21-23**

Client Sample ID: **Ruby1-SS-01-9-21-23**
Client Project ID: **Nixon Fork M.**
Lab Sample ID: 1225773008
Lab Project ID: 1225773

Collection Date: 09/21/22 12:45
Received Date: 09/22/22 10:34
Matrix: Soil/Solid (dry weight)
Solids (%):76.0
Location:

Results by **Metals by ICP/MS**

Batch Information

Analytical Batch: MMS11706
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/03/22 17:10
Container ID: 1225773008-A

Prep Batch: MXX35521
Prep Method: SW3050B
Prep Date/Time: 09/29/22 10:41
Prep Initial Wt./Vol.: 1.049 g
Prep Extract Vol: 50 mL

Analytical Batch: MMS11706
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/03/22 21:40
Container ID: 1225773008-A

Prep Batch: MXX35521
Prep Method: SW3050B
Prep Date/Time: 09/29/22 10:41
Prep Initial Wt./Vol.: 1.049 g
Prep Extract Vol: 50 mL

Analytical Batch: MMS11706
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/03/22 21:43
Container ID: 1225773008-A

Prep Batch: MXX35521
Prep Method: SW3050B
Prep Date/Time: 09/29/22 10:41
Prep Initial Wt./Vol.: 1.049 g
Prep Extract Vol: 50 mL

Analytical Batch: MMS11706
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/03/22 22:02
Container ID: 1225773008-A

Prep Batch: MXX35521
Prep Method: SW3050B
Prep Date/Time: 09/29/22 10:41
Prep Initial Wt./Vol.: 1.049 g
Prep Extract Vol: 50 mL

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Results of **FTDS-WS-01-9-21-22**

Client Sample ID: **FTDS-WS-01-9-21-22**
Client Project ID: **Nixon Fork M.**
Lab Sample ID: 1225773009
Lab Project ID: 1225773

Collection Date: 09/21/22 14:05
Received Date: 09/22/22 10:34
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Aluminum	375		200	62.0	ug/L	5		10/03/22 14:55
Arsenic	190		10.0	3.10	ug/L	5		10/03/22 14:55
Barium	46.7		3.00	0.940	ug/L	5		10/03/22 14:55
Beryllium	0.500	U	1.00	0.310	ug/L	5		10/03/22 14:55
Boron	1010		200	62.0	ug/L	5		10/03/22 14:55
Cadmium	1.00	U	2.00	0.620	ug/L	5		10/03/22 14:55
Calcium	277000		4000	1200	ug/L	20		10/03/22 19:07
Chromium	5.00	U	10.0	3.10	ug/L	5		10/03/22 14:55
Cobalt	568		1.00	0.310	ug/L	5		10/03/22 14:55
Copper	2910		24.0	7.20	ug/L	20		10/03/22 19:07
Iron	2270		500	150	ug/L	5		10/03/22 14:55
Lead	16.4		1.00	0.310	ug/L	5		10/03/22 14:55
Magnesium	435000		2000	600	ug/L	20		10/03/22 19:07
Manganese	1490		2.00	0.620	ug/L	5		10/03/22 14:55
Mercury	35.4		0.500	0.180	ug/L	5		10/03/22 14:55
Molybdenum	73.2		5.00	1.50	ug/L	5		10/03/22 14:55
Nickel	27.8		2.00	0.620	ug/L	5		10/03/22 14:55
Potassium	58300		1000	310	ug/L	5		10/03/22 14:55
Selenium	13.5	J	20.0	6.20	ug/L	5		10/03/22 14:55
Silver	53.9		8.00	2.48	ug/L	20		10/03/22 19:07
Sodium	2930000		20000	6200	ug/L	100		10/03/22 22:11
Thallium	5.01		2.00	0.620	ug/L	5		10/03/22 14:55
Vanadium	25.0	U	50.0	15.0	ug/L	5		10/03/22 14:55
Zinc	127		25.0	7.80	ug/L	5		10/03/22 14:55

Results of **FTDS-WS-01-9-21-22**

Client Sample ID: **FTDS-WS-01-9-21-22**
Client Project ID: **Nixon Fork M.**
Lab Sample ID: 1225773009
Lab Project ID: 1225773

Collection Date: 09/21/22 14:05
Received Date: 09/22/22 10:34
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Metals by ICP/MS**

Batch Information

Analytical Batch: MMS11706
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/03/22 14:55
Container ID: 1225773009-A

Prep Batch: MXX35516
Prep Method: SW3010A
Prep Date/Time: 09/28/22 10:39
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL

Analytical Batch: MMS11706
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/03/22 19:07
Container ID: 1225773009-A

Prep Batch: MXX35516
Prep Method: SW3010A
Prep Date/Time: 09/28/22 10:39
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL

Analytical Batch: MMS11706
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/03/22 22:11
Container ID: 1225773009-A

Prep Batch: MXX35516
Prep Method: SW3010A
Prep Date/Time: 09/28/22 10:39
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL

Results of **FTDS-SS-01-9-21-22**

Client Sample ID: **FTDS-SS-01-9-21-22**
Client Project ID: **Nixon Fork M.**
Lab Sample ID: 1225773010
Lab Project ID: 1225773

Collection Date: 09/21/22 14:10
Received Date: 09/22/22 10:34
Matrix: Soil/Solid (dry weight)
Solids (%):75.6
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Aluminum	5090		1250	437	mg/kg	500		10/03/22 21:48
Antimony	30.0		1.25	0.387	mg/kg	10		10/03/22 17:13
Arsenic	1210		62.5	19.4	mg/kg	500		10/03/22 21:48
Barium	61.4		0.375	0.117	mg/kg	10		10/03/22 17:13
Beryllium	0.640		0.125	0.0387	mg/kg	10		10/03/22 17:13
Boron	10.6	J	25.0	7.75	mg/kg	10		10/03/22 17:13
Cadmium	2.36		0.250	0.0775	mg/kg	10		10/03/22 17:13
Calcium	134000		3120	937	mg/kg	500		10/03/22 21:48
Chromium	11.4		1.25	0.387	mg/kg	10		10/03/22 17:13
Cobalt	12.9		0.625	0.187	mg/kg	10		10/03/22 17:13
Copper	5400		37.5	11.2	mg/kg	500		10/03/22 21:48
Iron	41500		3120	937	mg/kg	500		10/03/22 21:48
Lead	182		0.250	0.0775	mg/kg	10		10/03/22 17:13
Magnesium	9270		62.5	18.7	mg/kg	10		10/03/22 17:13
Manganese	846		12.5	3.87	mg/kg	500		10/03/22 21:48
Mercury	0.863		0.375	0.125	mg/kg	10		10/03/22 22:05
Molybdenum	4.58		1.25	0.387	mg/kg	10		10/03/22 17:13
Nickel	12.0		0.250	0.0775	mg/kg	10		10/03/22 17:13
Potassium	1270		125	38.7	mg/kg	10		10/03/22 17:13
Selenium	1.14	J	2.50	0.775	mg/kg	10		10/03/22 17:13
Silver	3.82		0.625	0.187	mg/kg	10		10/03/22 17:13
Sodium	424		125	38.7	mg/kg	10		10/03/22 17:13
Thallium	0.458		0.250	0.0775	mg/kg	10		10/03/22 17:13
Vanadium	25.3		6.25	1.87	mg/kg	10		10/03/22 17:13
Zinc	303		3.12	0.975	mg/kg	10		10/03/22 17:13

Results of **FTDS-SS-01-9-21-22**

Client Sample ID: **FTDS-SS-01-9-21-22**
Client Project ID: **Nixon Fork M.**
Lab Sample ID: 1225773010
Lab Project ID: 1225773

Collection Date: 09/21/22 14:10
Received Date: 09/22/22 10:34
Matrix: Soil/Solid (dry weight)
Solids (%):75.6
Location:

Results by **Metals by ICP/MS**

Batch Information

Analytical Batch: MMS11706
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/03/22 17:13
Container ID: 1225773010-A

Prep Batch: MXX35521
Prep Method: SW3050B
Prep Date/Time: 09/29/22 10:41
Prep Initial Wt./Vol.: 1.059 g
Prep Extract Vol: 50 mL

Analytical Batch: MMS11706
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/03/22 21:48
Container ID: 1225773010-A

Prep Batch: MXX35521
Prep Method: SW3050B
Prep Date/Time: 09/29/22 10:41
Prep Initial Wt./Vol.: 1.059 g
Prep Extract Vol: 50 mL

Analytical Batch: MMS11706
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/03/22 22:05
Container ID: 1225773010-A

Prep Batch: MXX35521
Prep Method: SW3050B
Prep Date/Time: 09/29/22 10:41
Prep Initial Wt./Vol.: 1.059 g
Prep Extract Vol: 50 mL

Results of **FTDS-SS-01-9-21-22**

Client Sample ID: **FTDS-SS-01-9-21-22**
Client Project ID: **Nixon Fork M.**
Lab Sample ID: 1225773010
Lab Project ID: 1225773

Collection Date: 09/21/22 14:10
Received Date: 09/22/22 10:34
Matrix: Soil/Solid (dry weight)
Solids (%):75.6
Location:

Results by **Waters Department**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Cyanide	20		1.6	0.48	mg/kg	20		10/03/22 17:34

Batch Information

Analytical Batch: WDA5347
Analytical Method: SM21 4500-CN C,E
Analyst: MEB
Analytical Date/Time: 10/03/22 17:34
Container ID: 1225773010-A

Prep Batch: WXX14492
Prep Method: METHOD
Prep Date/Time: 10/03/22 10:23
Prep Initial Wt./Vol.: 1.0031 g
Prep Extract Vol: 6 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Weak Acid Dissociable CN	0.58		0.079	0.024	mg/kg	1		09/30/22 15:58

Batch Information

Analytical Batch: WDA5343
Analytical Method: SM21 4500-CN I
Analyst: MEB
Analytical Date/Time: 09/30/22 15:58
Container ID: 1225773010-A

Prep Batch: WXX14485
Prep Method: METHOD
Prep Date/Time: 09/30/22 10:18
Prep Initial Wt./Vol.: 1 g
Prep Extract Vol: 6 mL

Print Date: 10/11/2022 8:45:58AM

J flagging is activated

Results of **FTDS-SS-02-9-21-22**

Client Sample ID: **FTDS-SS-02-9-21-22**
Client Project ID: **Nixon Fork M.**
Lab Sample ID: 1225773011
Lab Project ID: 1225773

Collection Date: 09/21/22 14:15
Received Date: 09/22/22 10:34
Matrix: Soil/Solid (dry weight)
Solids (%):69.2
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Aluminum	18800		1420	496	mg/kg	500		10/03/22 21:51
Antimony	0.710	U	1.42	0.440	mg/kg	10		10/03/22 17:16
Arsenic	20.9		1.42	0.440	mg/kg	10		10/03/22 17:16
Barium	55.2		0.426	0.133	mg/kg	10		10/03/22 17:16
Beryllium	0.254		0.142	0.0440	mg/kg	10		10/03/22 17:16
Boron	14.2	U	28.4	8.79	mg/kg	10		10/03/22 17:16
Cadmium	0.142	U	0.284	0.0879	mg/kg	10		10/03/22 17:16
Calcium	732		70.9	21.3	mg/kg	10		10/03/22 17:16
Chromium	24.7		1.42	0.440	mg/kg	10		10/03/22 17:16
Cobalt	5.72		0.709	0.213	mg/kg	10		10/03/22 17:16
Copper	20.1		0.851	0.255	mg/kg	10		10/03/22 22:08
Iron	25300		70.9	21.3	mg/kg	10		10/03/22 17:16
Lead	11.2		0.284	0.0879	mg/kg	10		10/03/22 17:16
Magnesium	2930		70.9	21.3	mg/kg	10		10/03/22 17:16
Manganese	253		0.284	0.0879	mg/kg	10		10/03/22 17:16
Mercury	0.213	U	0.426	0.142	mg/kg	10		10/03/22 22:08
Molybdenum	1.05	J	1.42	0.440	mg/kg	10		10/03/22 17:16
Nickel	14.4		0.284	0.0879	mg/kg	10		10/03/22 17:16
Potassium	625		142	44.0	mg/kg	10		10/03/22 17:16
Selenium	1.42	U	2.84	0.879	mg/kg	10		10/03/22 17:16
Silver	0.354	U	0.709	0.213	mg/kg	10		10/03/22 17:16
Sodium	46.7	J	142	44.0	mg/kg	10		10/03/22 17:16
Thallium	0.144	J	0.284	0.0879	mg/kg	10		10/03/22 17:16
Vanadium	49.0		7.09	2.13	mg/kg	10		10/03/22 17:16
Zinc	34.9		3.55	1.11	mg/kg	10		10/03/22 17:16

Print Date: 10/11/2022 8:45:58AM

J flagging is activated

Results of **FTDS-SS-02-9-21-22**

Client Sample ID: **FTDS-SS-02-9-21-22**
Client Project ID: **Nixon Fork M.**
Lab Sample ID: 1225773011
Lab Project ID: 1225773

Collection Date: 09/21/22 14:15
Received Date: 09/22/22 10:34
Matrix: Soil/Solid (dry weight)
Solids (%):69.2
Location:

Results by **Metals by ICP/MS**

Batch Information

Analytical Batch: MMS11706
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/03/22 17:16
Container ID: 1225773011-A

Prep Batch: MXX35521
Prep Method: SW3050B
Prep Date/Time: 09/29/22 10:41
Prep Initial Wt./Vol.: 1.019 g
Prep Extract Vol: 50 mL

Analytical Batch: MMS11706
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/03/22 21:51
Container ID: 1225773011-A

Prep Batch: MXX35521
Prep Method: SW3050B
Prep Date/Time: 09/29/22 10:41
Prep Initial Wt./Vol.: 1.019 g
Prep Extract Vol: 50 mL

Analytical Batch: MMS11706
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/03/22 22:08
Container ID: 1225773011-A

Prep Batch: MXX35521
Prep Method: SW3050B
Prep Date/Time: 09/29/22 10:41
Prep Initial Wt./Vol.: 1.019 g
Prep Extract Vol: 50 mL

Results of FTDS-SS-02-9-21-22

Client Sample ID: **FTDS-SS-02-9-21-22**
Client Project ID: **Nixon Fork M.**
Lab Sample ID: 1225773011
Lab Project ID: 1225773

Collection Date: 09/21/22 14:15
Received Date: 09/22/22 10:34
Matrix: Soil/Solid (dry weight)
Solids (%):69.2
Location:

Results by **Waters Department**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Cyanide	0.50		0.084	0.025	mg/kg	1		10/03/22 15:20

Batch Information

Analytical Batch: WDA5347
Analytical Method: SM21 4500-CN C,E
Analyst: MEB
Analytical Date/Time: 10/03/22 15:20
Container ID: 1225773011-A

Prep Batch: WXX14492
Prep Method: METHOD
Prep Date/Time: 10/03/22 10:23
Prep Initial Wt./Vol.: 1.0352 g
Prep Extract Vol: 6 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Weak Acid Dissociable CN	0.22		0.087	0.026	mg/kg	1		09/30/22 16:05

Batch Information

Analytical Batch: WDA5343
Analytical Method: SM21 4500-CN I
Analyst: MEB
Analytical Date/Time: 09/30/22 16:05
Container ID: 1225773011-A

Prep Batch: WXX14485
Prep Method: METHOD
Prep Date/Time: 09/30/22 10:18
Prep Initial Wt./Vol.: 1 g
Prep Extract Vol: 6 mL

Print Date: 10/11/2022 8:45:58AM

J flagging is activated

Method Blank

Blank ID: MB for HBN 1844441 [MXX/35516]
Blank Lab ID: 1688494

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1225773005, 1225773006, 1225773007, 1225773009

Results by **SW6020B**

Parameter	Results	LOQ/CL	DL	Units
Aluminum	100U	200	62.0	ug/L
Antimony	1.29J	3.00	0.940	ug/L
Arsenic	5.00U	10.0	3.10	ug/L
Barium	1.50U	3.00	0.940	ug/L
Beryllium	0.500U	1.00	0.310	ug/L
Boron	100U	200	62.0	ug/L
Cadmium	1.00U	2.00	0.620	ug/L
Calcium	500U	1000	300	ug/L
Chromium	5.00U	10.0	3.10	ug/L
Cobalt	0.500U	1.00	0.310	ug/L
Copper	3.00U	6.00	1.80	ug/L
Iron	250U	500	150	ug/L
Lead	0.500U	1.00	0.310	ug/L
Magnesium	250U	500	150	ug/L
Manganese	1.00U	2.00	0.620	ug/L
Mercury	0.250U	0.500	0.180	ug/L
Molybdenum	2.50U	5.00	1.50	ug/L
Nickel	1.00U	2.00	0.620	ug/L
Potassium	500U	1000	310	ug/L
Selenium	10.0U	20.0	6.20	ug/L
Silver	1.00U	2.00	0.620	ug/L
Sodium	500U	1000	310	ug/L
Thallium	1.00U	2.00	0.620	ug/L
Vanadium	25.0U	50.0	15.0	ug/L
Zinc	12.5U	25.0	7.80	ug/L

Batch Information

Analytical Batch: MMS11706
Analytical Method: SW6020B
Instrument: P7 Agilent 7800
Analyst: HGS
Analytical Date/Time: 10/3/2022 2:15:48PM

Prep Batch: MXX35516
Prep Method: SW3010A
Prep Date/Time: 9/28/2022 10:39:52AM
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1225773 [MXX35516]
Blank Spike Lab ID: 1688495
Date Analyzed: 10/03/2022 14:18

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1225773005, 1225773006, 1225773007, 1225773009

Results by **SW6020B**

	Blank Spike (ug/L)			
Parameter	Spike	Result	Rec (%)	CL
Aluminum	1000	987	99	(84-117)
Antimony	1000	1020	102	(85-117)
Arsenic	1000	983	98	(84-116)
Barium	1000	1000	100	(86-114)
Beryllium	100	92.2	92	(83-121)
Boron	1000	925	93	(73-130)
Cadmium	100	103	103	(87-115)
Calcium	10000	10200	102	(87-118)
Chromium	400	399	100	(85-116)
Cobalt	500	499	100	(86-115)
Copper	1000	986	99	(85-118)
Iron	5000	5070	101	(87-118)
Lead	1000	995	100	(88-115)
Magnesium	10000	9890	99	(83-118)
Manganese	500	499	100	(87-115)
Mercury	10	9.88	99	(70-124)
Molybdenum	400	390	97	(83-115)
Nickel	1000	988	99	(85-117)
Potassium	10000	10400	104	(87-115)
Selenium	1000	967	97	(80-120)
Silver	100	101	101	(85-116)
Sodium	10000	9850	99	(85-117)
Thallium	10	10.1	101	(82-116)
Vanadium	200	197	99	(86-115)
Zinc	1000	990	99	(83-119)

Batch Information

Analytical Batch: **MMS11706**
Analytical Method: **SW6020B**
Instrument: **P7 Agilent 7800**
Analyst: **HGS**

Prep Batch: **MXX35516**
Prep Method: **SW3010A**
Prep Date/Time: **09/28/2022 10:39**
Spike Init Wt./Vol.: 1000 ug/L Extract Vol: 25 mL
Dupe Init Wt./Vol.: Extract Vol:

Print Date: 10/11/2022 8:46:03AM

Matrix Spike Summary

Original Sample ID: 1688493
MS Sample ID: 1688497 MS
MSD Sample ID: 1688498 MSD

Analysis Date: 10/03/2022 14:21
Analysis Date: 10/03/2022 14:24
Analysis Date: 10/03/2022 14:27
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1225773005, 1225773006, 1225773007, 1225773009

Results by **SW6020B**

		Matrix Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Aluminum	135J	1000	1170	103	1000	1170	103	84-117	0.25	(< 20)
Antimony	1.34J	1000	1010	101	1000	1040	104	85-117	2.81	(< 20)
Arsenic	5.00U	1000	968	97	1000	974	97	84-116	0.55	(< 20)
Barium	1.27J	1000	1000	100	1000	1020	102	86-114	1.96	(< 20)
Beryllium	0.500U	100	91.1	91	100	92.0	92	83-121	0.92	(< 20)
Boron	100U	1000	930	93	1000	944	94	73-130	1.48	(< 20)
Cadmium	1.00U	100	102	102	100	102	102	87-115	0.15	(< 20)
Calcium	2970	10000	13100	101	10000	13200	102	87-118	0.95	(< 20)
Chromium	3.46J	400	394	98	400	402	100	85-116	2.07	(< 20)
Cobalt	0.500U	500	488	98	500	493	99	86-115	0.96	(< 20)
Copper	3.00U	1000	969	97	1000	991	99	85-118	2.23	(< 20)
Iron	250U	5000	5080	102	5000	5170	103	87-118	1.88	(< 20)
Lead	0.325J	1000	978	98	1000	993	99	88-115	1.56	(< 20)
Magnesium	1050	10000	10900	98	10000	11100	100	83-118	1.46	(< 20)
Manganese	1.17J	500	492	98	500	499	100	87-115	1.43	(< 20)
Mercury	0.250U	10.0	9.92	99	10.0	10.1	101	70-124	2.25	(< 20)
Molybdenum	2.52J	400	385	96	400	395	98	83-115	2.68	(< 20)
Nickel	1.00U	1000	980	98	1000	989	99	85-117	0.90	(< 20)
Potassium	980J	10000	11300	103	10000	11300	103	87-115	0.21	(< 20)
Selenium	10.0U	1000	952	95	1000	956	96	80-120	0.40	(< 20)
Silver	1.00U	100	101	101	100	102	102	85-116	0.99	(< 20)
Sodium	6690	10000	16600	99	10000	16600	99	85-117	0.38	(< 20)
Thallium	1.00U	10.0	10	100	10.0	10.1	101	82-116	0.41	(< 20)
Vanadium	25.0U	200	194	97	200	198	99	86-115	2.11	(< 20)
Zinc	16.9J	1000	986	97	1000	1000	99	83-119	1.72	(< 20)

Batch Information

Analytical Batch: MMS11706
Analytical Method: SW6020B
Instrument: P7 Agilent 7800
Analyst: HGS
Analytical Date/Time: 10/3/2022 2:24:00PM

Prep Batch: MXX35516
Prep Method: 3010 H20 Digest for Metals ICP-MS
Prep Date/Time: 9/28/2022 10:39:52AM
Prep Initial Wt./Vol.: 25.00mL
Prep Extract Vol: 25.00mL

Print Date: 10/11/2022 8:46:04AM

Method Blank

Blank ID: MB for HBN 1844448 [MXX/35521]
Blank Lab ID: 1688534

Matrix: Soil/Solid (dry weight)

QC for Samples:
1225773001, 1225773002, 1225773003, 1225773004, 1225773008, 1225773010, 1225773011

Results by **SW6020B**

Parameter	Results	LOQ/CL	DL	Units
Aluminum	10.0U	20.0	7.00	mg/kg
Antimony	0.500U	1.00	0.310	mg/kg
Arsenic	0.500U	1.00	0.310	mg/kg
Barium	0.150U	0.300	0.0940	mg/kg
Beryllium	0.0500U	0.100	0.0310	mg/kg
Boron	10.0U	20.0	6.20	mg/kg
Cadmium	0.100U	0.200	0.0620	mg/kg
Calcium	25.0U	50.0	15.0	mg/kg
Chromium	0.500U	1.00	0.310	mg/kg
Cobalt	0.250U	0.500	0.150	mg/kg
Copper	0.300U	0.600	0.180	mg/kg
Iron	25.0U	50.0	15.0	mg/kg
Lead	0.100U	0.200	0.0620	mg/kg
Magnesium	25.0U	50.0	15.0	mg/kg
Manganese	0.100U	0.200	0.0620	mg/kg
Mercury	0.150U	0.300	0.100	mg/kg
Molybdenum	0.500U	1.00	0.310	mg/kg
Nickel	0.100U	0.200	0.0620	mg/kg
Potassium	50.0U	100	31.0	mg/kg
Selenium	1.00U	2.00	0.620	mg/kg
Silver	0.250U	0.500	0.150	mg/kg
Sodium	50.0U	100	31.0	mg/kg
Thallium	0.100U	0.200	0.0620	mg/kg
Vanadium	2.50U	5.00	1.50	mg/kg
Zinc	1.25U	2.50	0.780	mg/kg

Batch Information

Analytical Batch: MMS11706
Analytical Method: SW6020B
Instrument: P7 Agilent 7800
Analyst: HGS
Analytical Date/Time: 10/3/2022 4:01:55PM

Prep Batch: MXX35521
Prep Method: SW3050B
Prep Date/Time: 9/29/2022 10:41:17AM
Prep Initial Wt./Vol.: 1 g
Prep Extract Vol: 50 mL

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Duplicate Sample Summary

Original Sample ID: 1688527
Duplicate Sample ID: 1688539

Analysis Date: 10/03/2022 21:06
Matrix: Solid/Soil (Wet Weight)

QC for Samples:

1225773001, 1225773002, 1225773003, 1225773004, 1225773008, 1225773010, 1225773011

Results by **SW6020B**

NAME	Original	Duplicate	Units	RPD (%)	RPD CL
Aluminum	8920	15150	mg/kg	51.70*	(< 20)

Batch Information

Analytical Batch: MMS11706
Analytical Method: SW6020B
Instrument: P7 Agilent 7800
Analyst: HGS

Prep Batch: MXX35521
Prep Method: SW3050B
Prep Date/Time: 9/29/2022 10:41:17AM

Print Date: 10/11/2022 8:46:07AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1225773 [MXX35521]
Blank Spike Lab ID: 1688535
Date Analyzed: 10/03/2022 16:04

Matrix: Soil/Solid (dry weight)

QC for Samples: 1225773001, 1225773002, 1225773003, 1225773004, 1225773008, 1225773010, 1225773011

Results by **SW6020B**

	Blank Spike (mg/kg)			
Parameter	Spike	Result	Rec (%)	CL
Aluminum	50	51.8	104	(78-124)
Antimony	50	53.0	106	(72-124)
Arsenic	50	50.4	101	(82-118)
Barium	50	52.0	104	(86-116)
Beryllium	5	4.65	93	(80-120)
Boron	50	46.8	94	(74-128)
Cadmium	5	5.30	106	(84-116)
Calcium	500	525	105	(86-118)
Chromium	20	20.9	104	(83-119)
Cobalt	25	25.4	102	(84-115)
Copper	50	51.5	103	(84-119)
Iron	250	262	105	(81-124)
Lead	50	51.8	104	(84-118)
Magnesium	500	513	103	(80-123)
Manganese	25	26.0	104	(85-116)
Mercury	0.5	0.520	104	(74-126)
Molybdenum	20	20.1	100	(83-114)
Nickel	50	50.7	101	(84-119)
Potassium	500	537	107	(85-119)
Selenium	50	49.0	98	(80-119)
Silver	5	5.25	105	(83-118)
Sodium	500	516	103	(79-125)
Thallium	0.5	0.533	107	(83-118)
Vanadium	10	10.6	106	(82-116)
Zinc	50	51.2	102	(82-119)

Batch Information

Analytical Batch: **MMS11706**
Analytical Method: **SW6020B**
Instrument: **P7 Agilent 7800**
Analyst: **HGS**

Prep Batch: **MXX35521**
Prep Method: **SW3050B**
Prep Date/Time: **09/29/2022 10:41**
Spike Init Wt./Vol.: 50 mg/kg Extract Vol: 50 mL
Dupe Init Wt./Vol.: Extract Vol:

Print Date: 10/11/2022 8:46:08AM

Matrix Spike Summary

Original Sample ID: 1688527
MS Sample ID: 1688537 MS
MSD Sample ID: 1688538 MSD

Analysis Date: 10/03/2022 20:54
Analysis Date: 10/03/2022 20:57
Analysis Date: 10/03/2022 21:00
Matrix: Solid/Soil (Wet Weight)

QC for Samples: 1225773001, 1225773002, 1225773003, 1225773004, 1225773008, 1225773010, 1225773011

Results by **SW6020B**

		Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Aluminum	8920	47.5	5780	-6610 *	48.2	10100	2480 *	78-124	54.50 *	(< 20)
Antimony	0.470U	47.5	42.4	89	48.2	42.4	88	72-124	0.08	(< 20)
Arsenic	0.549J	47.5	47.1	98	48.2	47.6	98	82-118	0.99	(< 20)
Barium	17.5	47.5	62.7	95	48.2	66.9	103	86-116	6.52	(< 20)
Beryllium	0.0880J	4.75	4.39	91	4.82	4.31	88	80-120	1.76	(< 20)
Boron	9.40U	47.5	43.4	91	48.2	43.1	90	74-128	0.59	(< 20)
Cadmium	0.0940U	4.75	4.96	104	4.82	4.95	103	84-116	0.19	(< 20)
Calcium	1600	475	2250	136 *	482	2540	194 *	86-118	12.00	(< 20)
Chromium	0.937J	19.0	19.9	100	19.3	20.1	99	83-119	0.76	(< 20)
Cobalt	0.733	23.8	24.2	99	24.1	24.1	97	84-115	0.34	(< 20)
Copper	3.39	47.5	50	98	48.2	50.2	97	84-119	0.49	(< 20)
Iron	1620	238	2040	178 *	241	2300	284 *	81-124	12.00	(< 20)
Lead	0.904	47.5	48.3	100	48.2	48.7	99	84-118	0.73	(< 20)
Magnesium	349	475	954	127 *	482	1020	138 *	80-123	6.27	(< 20)
Manganese	20.3	23.8	53.7	141 *	24.1	57.1	153 *	85-116	6.25	(< 20)
Mercury	0.141U	0.475	.491	103	0.482	0.502	104	74-126	2.20	(< 20)
Molybdenum	0.322J	19.0	18.8	97	19.3	19.0	97	83-114	0.88	(< 20)
Nickel	0.352	47.5	47.8	100	48.2	47.0	97	84-119	1.72	(< 20)
Potassium	58.9J	475	558	105	482	563	105	85-119	0.89	(< 20)
Selenium	0.929J	47.5	47.5	98	48.2	49.2	100	80-119	3.45	(< 20)
Silver	0.235U	4.75	4.87	102	4.82	4.92	102	83-118	1.15	(< 20)
Sodium	279	475	828	116	482	857	120	79-125	3.46	(< 20)
Thallium	0.0940U	0.475	.512	108	0.482	0.525	109	83-118	2.62	(< 20)
Vanadium	24.0	9.51	34	105	9.63	35.7	121 *	82-116	4.67	(< 20)
Zinc	2.98	47.5	50.3	100	48.2	50.7	99	82-119	0.75	(< 20)

Batch Information

Analytical Batch: MMS11706
Analytical Method: SW6020B
Instrument: P7 Agilent 7800
Analyst: HGS
Analytical Date/Time: 10/3/2022 4:10:00PM

Prep Batch: MXX35521
Prep Method: Soils/Solids Digest for Metals by ICP-MS
Prep Date/Time: 9/29/2022 10:41:17AM
Prep Initial Wt./Vol.: 1.05g
Prep Extract Vol: 50.00mL

Print Date: 10/11/2022 8:46:09AM

Bench Spike Summary

Original Sample ID: 1688527
MS Sample ID: 1688536 BND
MSD Sample ID:

Analysis Date: 10/03/2022 20:54
Analysis Date: 10/03/2022 21:03
Analysis Date:
Matrix: Solid/Soil (Wet Weight)

QC for Samples: 1225773001, 1225773002, 1225773003, 1225773004, 1225773008, 1225773010, 1225773011

Results by **SW6020B**

		Matrix Spike (mg/kg)				Spike Duplicate (mg/kg)					
Parameter	Sample	Spike	Result	Rec (%)		Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Aluminum	8920	5880	9300	6	*				75-125		
Calcium	1600	2350	3880	97					75-125		
Iron	1620	2350	3980	101					75-125		
Magnesium	349	2350	2800	104					75-125		
Manganese	20.3	118	140	102					75-125		
Vanadium	24.0	118	144	102					75-125		

Batch Information

Analytical Batch: MMS11706
Analytical Method: SW6020B
Instrument: P7 Agilent 7800
Analyst: HGS
Analytical Date/Time: 10/3/2022 4:16:00PM

Prep Batch: MXX35521
Prep Method: Soils/Solids Digest for Metals by ICP-MS
Prep Date/Time: 9/29/2022 10:41:17AM
Prep Initial Wt./Vol.: 1.06g
Prep Extract Vol: 50.00mL

Print Date: 10/11/2022 8:46:09AM

Method Blank

Blank ID: MB for HBN 1844490 [SPT/11641]
Blank Lab ID: 1688709

Matrix: Soil/Solid (dry weight)

QC for Samples:
1225773001, 1225773002, 1225773003, 1225773004, 1225773008, 1225773010, 1225773011

Results by **SM21 2540G**

Parameter	Results	LOQ/CL	DL	Units
Total Solids	100			%

Batch Information

Analytical Batch: SPT11641
Analytical Method: SM21 2540G
Instrument:
Analyst: APS
Analytical Date/Time: 9/28/2022 4:15:00PM

Print Date: 10/11/2022 8:46:11AM

Duplicate Sample Summary

Original Sample ID: 1225709006
Duplicate Sample ID: 1688710

Analysis Date: 09/28/2022 16:15
Matrix: Soil/Solid (dry weight)

QC for Samples:

1225773001, 1225773002, 1225773003, 1225773004, 1225773008, 1225773010, 1225773011

Results by **SM21 2540G**

NAME	Original	Duplicate	Units	RPD (%)	RPD CL
Total Solids	92.6	91.9	%	0.77	(< 15)

Batch Information

Analytical Batch: SPT11641
Analytical Method: SM21 2540G
Instrument:
Analyst: APS

Print Date: 10/11/2022 8:46:11AM

Duplicate Sample Summary

Original Sample ID: 1225723002
Duplicate Sample ID: 1688711

Analysis Date: 09/28/2022 16:15
Matrix: Soil/Solid (dry weight)

QC for Samples:

1225773001, 1225773002, 1225773003, 1225773004, 1225773008, 1225773010, 1225773011

Results by **SM21 2540G**

NAME	Original	Duplicate	Units	RPD (%)	RPD CL
Total Solids	96.0	96.2	%	0.21	(< 15)

Batch Information

Analytical Batch: SPT11641
Analytical Method: SM21 2540G
Instrument:
Analyst: APS

Print Date: 10/11/2022 8:46:11AM

Duplicate Sample Summary

Original Sample ID: 1225749007
Duplicate Sample ID: 1688712
QC for Samples:

Analysis Date: 09/28/2022 16:15
Matrix: Soil/Solid (dry weight)

Results by **SM21 2540G**

NAME	Original	Duplicate	Units	RPD (%)	RPD CL
Total Solids	84.9	84.0	%	1.10	(< 15)

Batch Information

Analytical Batch: SPT11641
Analytical Method: SM21 2540G
Instrument:
Analyst: APS

Print Date: 10/11/2022 8:46:11AM

Method Blank

Blank ID: MB for HBN 1844649 [WXX/14485]
Blank Lab ID: 1689095

Matrix: Soil/Solid (dry weight)

QC for Samples:
1225773010, 1225773011

Results by **SM21 4500-CN I**

Parameter	Results	LOQ/CL	DL	Units
Weak Acid Dissociable CN	0.030U	0.060	0.018	mg/kg

Batch Information

Analytical Batch: WDA5343
Analytical Method: SM21 4500-CN I
Instrument: Discrete Analyzer 3
Analyst: MEB
Analytical Date/Time: 9/30/2022 3:51:00PM

Prep Batch: WXX14485
Prep Method: METHOD
Prep Date/Time: 9/30/2022 10:18:00AM
Prep Initial Wt./Vol.: 1 g
Prep Extract Vol: 6 mL

Print Date: 10/11/2022 8:46:14AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1225773 [WXX14485]
Blank Spike Lab ID: 1689096
Date Analyzed: 09/30/2022 15:53

Spike Duplicate ID: LCSD for HBN 1225773 [WXX14485]
Spike Duplicate Lab ID: 1689097
Matrix: Soil/Solid (dry weight)

QC for Samples: 1225773010, 1225773011

Results by **SM21 4500-CN I**

	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Weak Acid Dissociable CN	0.3	0.24	81	0.3	0.23	78	(75-125)	4.30	(< 25)

Batch Information

Analytical Batch: **WDA5343**
Analytical Method: **SM21 4500-CN I**
Instrument: **Discrete Analyzer 3**
Analyst: **MEB**

Prep Batch: **WXX14485**
Prep Method: **METHOD**
Prep Date/Time: **09/30/2022 10:18**
Spike Init Wt./Vol.: 0.3 mg/kg Extract Vol: 6 mL
Dupe Init Wt./Vol.: 0.3 mg/kg Extract Vol: 6 mL

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Matrix Spike Summary

Original Sample ID: 1225773010
MS Sample ID: 1689098 MS
MSD Sample ID: 1689099 MSD

QC for Samples: 1225773010, 1225773011

Analysis Date: 09/30/2022 15:58
Analysis Date: 09/30/2022 16:00
Analysis Date: 09/30/2022 16:02
Matrix: Soil/Solid (dry weight)

Results by **SM21 4500-CN I**

		Matrix Spike (mg/kg)				Spike Duplicate (mg/kg)						
Parameter	Sample	Spike	Result	Rec (%)		Spike	Result	Rec (%)		CL	RPD (%)		RPD CL
Weak Acid Dissociable CN	0.58	0.40	0.44	-36	*	0.40	0.75	44	*	75-125	53.80	*	(< 25)

Batch Information

Analytical Batch: WDA5343
Analytical Method: SM21 4500-CN I
Instrument: Discrete Analyzer 3
Analyst: MEB
Analytical Date/Time: 9/30/2022 4:00:00PM

Prep Batch: WXX14485
Prep Method: Weak Acid Disassociable CN Distill.
Prep Date/Time: 9/30/2022 10:18:00AM
Prep Initial Wt./Vol.: 1.00g
Prep Extract Vol: 6.00mL

Print Date: 10/11/2022 8:46:17AM

Method Blank

Blank ID: MB for HBN 1844897 [WXX/14492]
Blank Lab ID: 1689439

Matrix: Soil/Solid (dry weight)

QC for Samples:
1225773010, 1225773011

Results by **SM21 4500-CN C,E**

Parameter	Results	LOQ/CL	DL	Units
Cyanide	0.030U	0.060	0.018	mg/kg

Batch Information

Analytical Batch: WDA5347
Analytical Method: SM21 4500-CN C,E
Instrument: Discrete Analyzer 3
Analyst: MEB
Analytical Date/Time: 10/3/2022 3:06:00PM

Prep Batch: WXX14492
Prep Method: METHOD
Prep Date/Time: 10/3/2022 10:23:00AM
Prep Initial Wt./Vol.: 1 g
Prep Extract Vol: 6 mL

Print Date: 10/11/2022 8:46:18AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1225773 [WXX14492]
Blank Spike Lab ID: 1689440
Date Analyzed: 10/03/2022 15:09

Spike Duplicate ID: LCSD for HBN 1225773 [WXX14492]
Spike Duplicate Lab ID: 1689441
Matrix: Soil/Solid (dry weight)

QC for Samples: 1225773010, 1225773011

Results by **SM21 4500-CN C,E**

	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Cyanide	0.3	0.26	85	0.3	0.25	85	(75-125)	0.24	(< 25)

Batch Information

Analytical Batch: **WDA5347**
Analytical Method: **SM21 4500-CN C,E**
Instrument: **Discrete Analyzer 3**
Analyst: **MEB**

Prep Batch: **WXX14492**
Prep Method: **METHOD**
Prep Date/Time: **10/03/2022 10:23**
Spike Init Wt./Vol.: 0.3 mg/kg Extract Vol: 6 mL
Dupe Init Wt./Vol.: 0.3 mg/kg Extract Vol: 6 mL

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200 West Potter Drive Anchorage, AK 95518
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Matrix Spike Summary

Original Sample ID: 1225773010
MS Sample ID: 1689442 MS
MSD Sample ID: 1689443 MSD

QC for Samples: 1225773010, 1225773011

Analysis Date: 10/03/2022 17:34
Analysis Date: 10/03/2022 17:35
Analysis Date: 10/03/2022 17:37
Matrix: Soil/Solid (dry weight)

Results by **SM21 4500-CN C,E**

		Matrix Spike (mg/kg)				Spike Duplicate (mg/kg)					
Parameter	Sample	Spike	Result	Rec (%)		Spike	Result	Rec (%)		CL	RPD (%)	RPD CL
Cyanide	20	0.37	19	-587	*	0.37	17	-840	*	75-125	5.00	(< 25)

Batch Information

Analytical Batch: WDA5347
Analytical Method: SM21 4500-CN C,E
Instrument: Discrete Analyzer 3
Analyst: MEB
Analytical Date/Time: 10/3/2022 5:35:00PM

Prep Batch: WXX14492
Prep Method: Cyanide Distillation (S)
Prep Date/Time: 10/3/2022 10:23:00AM
Prep Initial Wt./Vol.: 1.06g
Prep Extract Vol: 6.00mL

Print Date: 10/11/2022 8:46:22AM

Method Blank

Blank ID: MB for HBN 1844489 [XXX/47074]
Blank Lab ID: 1688705

Matrix: Soil/Solid (dry weight)

QC for Samples:
1225773001, 1225773002, 1225773003, 1225773004

Results by **8270D SIM (PAH)**

Parameter	Results	LOQ/CL	DL	Units
1-Methylnaphthalene	12.5U	25.0	6.25	ug/kg
2-Methylnaphthalene	12.5U	25.0	6.25	ug/kg
Acenaphthene	12.5U	25.0	6.25	ug/kg
Acenaphthylene	12.5U	25.0	6.25	ug/kg
Anthracene	12.5U	25.0	6.25	ug/kg
Benzo(a)Anthracene	12.5U	25.0	6.25	ug/kg
Benzo[a]pyrene	12.5U	25.0	6.25	ug/kg
Benzo[b]Fluoranthene	12.5U	25.0	6.25	ug/kg
Benzo[g,h,i]perylene	12.5U	25.0	6.25	ug/kg
Benzo[k]fluoranthene	12.5U	25.0	6.25	ug/kg
Chrysene	12.5U	25.0	6.25	ug/kg
Dibenzo[a,h]anthracene	12.5U	25.0	6.25	ug/kg
Fluoranthene	12.5U	25.0	6.25	ug/kg
Fluorene	12.5U	25.0	6.25	ug/kg
Indeno[1,2,3-c,d] pyrene	12.5U	25.0	6.25	ug/kg
Naphthalene	10.0U	20.0	5.00	ug/kg
Phenanthrene	12.5U	25.0	6.25	ug/kg
Pyrene	12.5U	25.0	6.25	ug/kg
Surrogates				
2-Methylnaphthalene-d10 (surr)	85.3	58-103		%
Fluoranthene-d10 (surr)	92.7	54-113		%

Batch Information

Analytical Batch: XMS13386
Analytical Method: 8270D SIM (PAH)
Instrument: Agilent 8890 GC/MS US2210A024
Analyst: NGG
Analytical Date/Time: 10/4/2022 11:09:00AM

Prep Batch: XXX47074
Prep Method: SW3550C
Prep Date/Time: 9/29/2022 3:03:31PM
Prep Initial Wt./Vol.: 22.5 g
Prep Extract Vol: 5 mL

Print Date: 10/11/2022 8:46:23AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1225773 [XXX47074]
Blank Spike Lab ID: 1688706
Date Analyzed: 10/04/2022 11:25

Matrix: Soil/Solid (dry weight)

QC for Samples: 1225773001, 1225773002, 1225773003, 1225773004

Results by **8270D SIM (PAH)**

	Blank Spike (ug/kg)			
Parameter	Spike	Result	Rec (%)	CL
1-Methylnaphthalene	111	91.5	82	(43-111)
2-Methylnaphthalene	111	91.6	82	(39-114)
Acenaphthene	111	96.2	87	(44-111)
Acenaphthylene	111	94.1	85	(39-116)
Anthracene	111	98.5	89	(50-114)
Benzo(a)Anthracene	111	95.0	86	(54-122)
Benzo[a]pyrene	111	94.1	85	(50-125)
Benzo[b]Fluoranthene	111	101	91	(53-128)
Benzo[g,h,i]perylene	111	91.1	82	(49-127)
Benzo[k]fluoranthene	111	101	91	(56-123)
Chrysene	111	100	90	(57-118)
Dibenzo[a,h]anthracene	111	97.1	87	(50-129)
Fluoranthene	111	95.2	86	(55-119)
Fluorene	111	96.5	87	(47-114)
Indeno[1,2,3-c,d] pyrene	111	96.6	87	(49-130)
Naphthalene	111	90.1	81	(38-111)
Phenanthrene	111	96.5	87	(49-113)
Pyrene	111	94.4	85	(55-117)
Surrogates				
2-Methylnaphthalene-d10 (surr)	111		84	(58-103)
Fluoranthene-d10 (surr)	111		87	(54-113)

Batch Information

Analytical Batch: **XMS13386**
Analytical Method: **8270D SIM (PAH)**
Instrument: **Agilent 8890 GC/MS US2210A024**
Analyst: **NGG**

Prep Batch: **XXX47074**
Prep Method: **SW3550C**
Prep Date/Time: **09/29/2022 15:03**
Spike Init Wt./Vol.: 111 ug/kg Extract Vol: 5 mL
Dupe Init Wt./Vol.: Extract Vol:

Print Date: 10/11/2022 8:46:25AM

Matrix Spike Summary

Original Sample ID: 1225773001
MS Sample ID: 1688707 MS
MSD Sample ID: 1688708 MSD

Analysis Date: 10/04/2022 11:41
Analysis Date: 10/04/2022 11:57
Analysis Date: 10/04/2022 12:14
Matrix: Soil/Solid (dry weight)

QC for Samples: 1225773001, 1225773002, 1225773003, 1225773004

Results by **8270D SIM (PAH)**

		Matrix Spike (ug/kg)			Spike Duplicate (ug/kg)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1-Methylnaphthalene	14.9U	132	115	87	132	117	88	43-111	1.50	(< 20)
2-Methylnaphthalene	14.9U	132	118	89	132	117	89	39-114	0.27	(< 20)
Acenaphthene	14.9U	132	118	89	132	120	91	44-111	1.90	(< 20)
Acenaphthylene	12.5J	132	124	84	132	120	82	39-116	2.30	(< 20)
Anthracene	14.9U	132	118	89	132	120	91	50-114	1.80	(< 20)
Benzo(a)Anthracene	13.2J	132	124	83	132	125	84	54-122	1.00	(< 20)
Benzo[a]pyrene	12.4J	132	122	83	132	122	83	50-125	0.43	(< 20)
Benzo[b]Fluoranthene	26.7J	132	133	80	132	133	81	53-128	0.32	(< 20)
Benzo[g,h,i]perylene	12.2J	132	114	77	132	113	77	49-127	0.73	(< 20)
Benzo[k]fluoranthene	14.9U	132	120	91	132	121	92	56-123	0.75	(< 20)
Chrysene	36.8	132	146	82	132	143	80	57-118	2.20	(< 20)
Dibenzo[a,h]anthracene	14.9U	132	117	88	132	115	87	50-129	1.40	(< 20)
Fluoranthene	27.8J	132	140	85	132	139	84	55-119	0.30	(< 20)
Fluorene	14.9U	132	121	91	132	120	91	47-114	0.82	(< 20)
Indeno[1,2,3-c,d] pyrene	8.81J	132	118	83	132	118	83	49-130	0.01	(< 20)
Naphthalene	21.5J	132	134	85	132	129	81	38-111	3.60	(< 20)
Phenanthrene	20.8J	132	135	87	132	135	86	49-113	0.31	(< 20)
Pyrene	32.6	132	146	86	132	144	84	55-117	2.00	(< 20)
Surrogates										
2-Methylnaphthalene-d10 (surr)		132	109	82	132	111	84	58-103	2.10	
Fluoranthene-d10 (surr)		132	110	83	132	112	85	54-113	2.40	

Batch Information

Analytical Batch: XMS13386
Analytical Method: 8270D SIM (PAH)
Instrument: Agilent 8890 GC/MS US2210A024
Analyst: NGG
Analytical Date/Time: 10/4/2022 11:57:00AM

Prep Batch: XXX47074
Prep Method: Sonication Extr Soil 8270 PAH SIM 5ml
Prep Date/Time: 9/29/2022 3:03:31PM
Prep Initial Wt./Vol.: 22.66g
Prep Extract Vol: 5.00mL

Print Date: 10/11/2022 8:46:27AM

Method Blank

Blank ID: MB for HBN 1844890 [XXX/47096]
Blank Lab ID: 1689354

Matrix: Soil/Solid (dry weight)

QC for Samples:
1225773001, 1225773002, 1225773003, 1225773004

Results by **AK102**

Parameter	Results	LOQ/CL	DL	Units
Diesel Range Organics	10.0U	20.0	9.00	mg/kg
Surrogates				
5a Androstane (surr)	87.8	60-120		%

Batch Information

Analytical Batch: XFC16363
Analytical Method: AK102
Instrument: Agilent 7890B R
Analyst: MAP
Analytical Date/Time: 10/8/2022 12:41:00AM

Prep Batch: XXX47096
Prep Method: SW3550C
Prep Date/Time: 10/4/2022 9:00:15AM
Prep Initial Wt./Vol.: 30 g
Prep Extract Vol: 5 mL

Print Date: 10/11/2022 8:46:28AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1225773 [XXX47096]
Blank Spike Lab ID: 1689355
Date Analyzed: 10/08/2022 00:51

Spike Duplicate ID: LCSD for HBN 1225773 [XXX47096]
Spike Duplicate Lab ID: 1689356
Matrix: Soil/Solid (dry weight)

QC for Samples: 1225773001, 1225773002, 1225773003, 1225773004

Results by **AK102**

	Blank Spike (mg/kg)				Spike Duplicate (mg/kg)						
Parameter	Spike	Result	Rec (%)		Spike	Result	Rec (%)	CL	RPD (%)		RPD CL
Diesel Range Organics	667	291	44	*	667	678	102	(75-125)	79.90	*	(< 20)
Surrogates											
5a Androstane (surr)	16.7		40	*	16.7		92	(60-120)	78.10		

Batch Information

Analytical Batch: **XFC16363**
Analytical Method: **AK102**
Instrument: **Agilent 7890B R**
Analyst: **MAP**

Prep Batch: **XXX47096**
Prep Method: **SW3550C**
Prep Date/Time: **10/04/2022 09:00**
Spike Init Wt./Vol.: 16.7 mg/kg Extract Vol: 5 mL
Dupe Init Wt./Vol.: 16.7 mg/kg Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1844890 [XXX/47096]
Blank Lab ID: 1689354

Matrix: Soil/Solid (dry weight)

QC for Samples:
1225773001, 1225773002, 1225773003, 1225773004

Results by **AK103**

Parameter	Results	LOQ/CL	DL	Units
Residual Range Organics	50.0U	100	43.0	mg/kg
Surrogates				
n-Triacontane-d62 (surr)	83.7	60-120		%

Batch Information

Analytical Batch: XFC16363
Analytical Method: AK103
Instrument: Agilent 7890B R
Analyst: MAP
Analytical Date/Time: 10/8/2022 12:41:00AM

Prep Batch: XXX47096
Prep Method: SW3550C
Prep Date/Time: 10/4/2022 9:00:15AM
Prep Initial Wt./Vol.: 30 g
Prep Extract Vol: 5 mL

Print Date: 10/11/2022 8:46:33AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1225773 [XXX47096]
Blank Spike Lab ID: 1689355
Date Analyzed: 10/08/2022 00:51

Spike Duplicate ID: LCSD for HBN 1225773 [XXX47096]
Spike Duplicate Lab ID: 1689356
Matrix: Soil/Solid (dry weight)

QC for Samples: 1225773001, 1225773002, 1225773003, 1225773004

Results by **AK103**

	Blank Spike (mg/kg)				Spike Duplicate (mg/kg)						
Parameter	Spike	Result	Rec (%)		Spike	Result	Rec (%)	CL	RPD (%)		RPD CL
Residual Range Organics	667	258	39	*	667	596	89	(60-120)	79.10	*	(< 20)
Surrogates											
n-Triacontane-d62 (surr)	16.7		36	*	16.7		81	(60-120)	77.40		

Batch Information

Analytical Batch: **XFC16363**
Analytical Method: **AK103**
Instrument: **Agilent 7890B R**
Analyst: **MAP**

Prep Batch: **XXX47096**
Prep Method: **SW3550C**
Prep Date/Time: **10/04/2022 09:00**
Spike Init Wt./Vol.: 16.7 mg/kg Extract Vol: 5 mL
Dupe Init Wt./Vol.: 16.7 mg/kg Extract Vol: 5 mL

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CHAIN OF CUSTODY RECORD

1225773

Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.

Page ____ of ____

Section 1

CLIENT: BLM 907 267 1226

CONTACT: Francis Marley

PHONE #:

PROJECT NAME: Nixon Fork Mine

PROJECT/ PWSID/ PERMIT#:

REPORTS TO: Francis Marley

E-MAIL: fmarley@blm.gov

Profile #: 37007 1 M

INVOICE TO:

QUOTE #:

P.O. #: LLAKA01200L19900000

Section 2

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/ MATRIX CODE	# CONTAINERS	Comp Grab MI (Multi-incre-mental)	PAH	AK102	AK103	~~RCRA Metals~~	WOD Cyanide	Total Cyanide	6020 Total w/Hg Metals	200.8	SW6028		REMARKS/LOC ID
1A	SM-01-SS-9-21-22	9/21/22	1130	Soil			X	X	X				X				
2A	SM-02-SS-9-21-22		1145	Soil			X	X	X				X				
3A	SF-01-SS-9-21-22		1200	Soil			X	X	X				X				
4A	SF-02-SS-9-21-22		1210	Soil			X	X	X				X				
5A	SF-01-WS-9-21-22		1215	water			~~X~~	~~X~~	~~X~~				X				
6A	SF-02-WS-9-21-22		1220	water			~~X~~	~~X~~	~~X~~				X				
7A	Ruby 1-WS-01 9-21-22		1240	water									X	X	X		
8A	Ruby 1-SS-01-9-21-22		1245	Soil									X	X	X		
9A	FTDS-WS-01-9-21-22		1405	water							~~X~~	~~X~~	X				
10A	FTDS-SS-01-9-21-22		1410	Soil							X	X	X				
11A	FTDS-SS-02-9-21-22		1415	Soil							X	X	X				

NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS

Section 5

Relinquished By:	Date	Time	Received By:
(1) Francis Marley	9/22/22	10:34	
(2)			
(3)			
(4)	9/22/22	10:34	Received For Laboratory By:

Section 4

DOD Project? Yes No

Cooler ID:

Data Deliverable Requirements:

Requested Turnaround Time and/or Special Instructions:

Temp Blank °C: 2.7 D2.3 or Ambient [ ]

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Delivery Method: Hand Delivery [ ] Commerical Delivery [ ]

http://www.sgs.com/terms-and-conditions

F083-Blank_COC_20181228

US BLM-ANCHORAGE METALS 20200619

SGS North America Inc.
200 W. Potter Dr., Anchorage, AK 99518 (ph) 907-562-2343, (fax) 907-561-5301
3180 Peger Rd. Ste. 190, Fairbanks, AK 99709 (ph) 907-474-8656

Sample Kit Request

Client pickup Date: 6/22/2020 **Time:** 1200

Be sure to ask if client will ship by ground (DOT) or air carrier (IATA)

Does a Profile exist in LIMS? **If not, please send a request for new profile build.**

Client Name: US BLM-Anchorage
Ordered By: Ben Stratton
Email: btstratton@blm.gov
Project Name: Metals
Quote #:
Delivery Address:

Deliver to client:
Ship by/Air Carrier:
Airbill Number:
Date to ship by:
Notes:
Kit request taken by: NJW **Date:** June 19, 2020
Kit prepared by: **Date:**
Kit *(including lid tightness for pres'd bottles)* checked by: **Date:**
Kit packed & shipped by: **Date:**

Filename: SKIT_US BLM-Anchorage_Metals_2020-06-19 *Required Items

No. Samples	Matrix	Analysis	Container Size & Type		Pres.	Bottle Lot #	Preservative Lot #	Hold Time	# QC Bottles	Total Bottles
3	water	200.8+Hg	1 x 250-mL	HDPE	HNO3			28 days		3
3	soil	6020+Hg	1 x 4-oz	amber glass				28 days		3

Note: The first 10 Analysis and Preservative columns will auto-fill up to the capacity of the associated COC.

Additional Information		Notes for Kit Prep
Pack for Shipment via:	N/A	
Temperature Blank:	Yes - Small (125 mL)	
Trip Blank:	No	
Coolers:	Yes	
Gel Ice:	Yes	
Labels:	Yes	
Custody Seals:	Yes	
Paper Chain of Custody:	Yes - Standard COC	
Lot Number Tracking (Required for DOD):	No	

Attention Client/Sampler:

1. Do not rinse container, be aware of any acid preservative.
2. Fill container, but do not overfill (except volatiles).
3. Label the container with your sample ID and date/time of collection
4. Fill out the Chain of Custody.
5. Add frozen gel packs to your cooler and pack to prevent breakage.

If you have any questions please contact your Project Manager.

e-Sample Receipt Form

SGS Workorder #:	1225773	1225773

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
Chain of Custody / Temperature Requirements		*Note:* Temperature and COC seal information is found on the chain of custody form
DOD only: Did all sample coolers have a corresponding COC?	N/A	
If <0°C, were sample containers ice free?	N/A	
Note containers received with ice:		
Identify any containers received at non-compliant temperature: *(Use form FS-0029 if more space is needed)*		
Holding Time / Documentation / Sample Condition Requirements		*Note:* Refer to form F-083 "Sample Guide" for specific holding times and sample containers.
Were samples received within analytical holding time?	Yes	
Do sample labels match COC? Record discrepancies. *Note: If information on containers differs from COC, default to COC information for login. If times differ <1hr, record details & login per COC.*	Yes	
Were analytical requests clear? *(i.e. method is specified for analyses with multiple option for method (Eg, BTEX 8021 vs 8260, Metals 6020 vs 200.8)*	Yes	
Were proper containers (type/mass/volume/preservative)used? Note: Exemption for metals analysis by 200.8/6020 in water.	Yes	
Volatile Analysis Requirements (VOC, GRO, LL-Hg, etc.)		
Were all soil VOAs received with a corresponding % solids container?	N/A	
Were Trip Blanks (e.g., VOAs, LL-Hg) in cooler with samples?	N/A	
Were all water VOA vials free of headspace (e.g., bubbles ≤ 6mm)?	N/A	
Were all soil VOAs field extracted with Methanol+BFB?	N/A	

Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.

Additional notes (if applicable):

Sample Containers and Preservatives

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition
1225773001-A	No Preservative Required	OK			
1225773002-A	No Preservative Required	OK			
1225773003-A	No Preservative Required	OK			
1225773004-A	No Preservative Required	OK			
1225773005-A	HNO3 to pH < 2	OK			
1225773006-A	HNO3 to pH < 2	OK			
1225773007-A	HNO3 to pH < 2	OK			
1225773008-A	No Preservative Required	OK			
1225773009-A	HNO3 to pH < 2	OK			
1225773010-A	No Preservative Required	OK			
1225773011-A	No Preservative Required	OK			

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.
BU - The container was received with headspace greater than 6mm.
DM - The container was received damaged.
FR - The container was received frozen and not usable for Bacteria or BOD analyses.
IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.
NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.
PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.
PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.
QN - Insufficient sample quantity provided.