



EA Engineering, Science, and Technology, Inc., PBC
320 Gold Avenue SW, Suite 1300
Albuquerque, New Mexico 87102
Phone: (505) 224-9013

December 2, 2021

Mr. Cory Smith
Environmental Bureau
EMNRD - Oil Conservation Division
5200 Oakland Avenue NE, Suite 100
Albuquerque, New Mexico 87113

RE: Surface Soil and Fluid/Aqueous Sample Collection on the Appling Property and Adjacent Properties to the South of Highway US 62/180 Carlsbad, New Mexico

Dear Mr. Smith:

EA Engineering, Science, and Technology, Inc., PBC (EA) is pleased to submit this letter report documenting surface soil and fluid/aqueous sampling conducted on the Appling property and adjacent properties to the south of Highway US 62/180 (the highway). The field activities documented herein were performed on November 10, 2021 and were conducted under EA's price agreement # 10-52100-21-06041 and the work plan submitted to the Energy, Minerals and Natural Resources Department (EMNRD) Oil Conservation Division (OCD) on November 5, 2021. A purchase order to complete the scope of work was issued to EA by OCD on November 8, 2021.

Background Information

On the evening of October 29, 2021, a 10,000+ barrel tank located on the property of Thomas Appling, 2410 East Greene Street (US 62/180), Carlsbad, New Mexico, failed catastrophically. The water from the release reportedly toppled two downgradient waste tanks, overflowed a lined pit, and then flowed across the Appling property to the southeast. The release flowed through a culvert beneath Highway US 62/180 and onto several properties south of the highway. Photos taken after the release by Mr. Chad Hensley of the OCD show an extensive area of impact on the Appling property on the north side of the highway and on several properties south of the highway, including the Sands RV Park and a private residence.

Project Planning Activities

Prior to mobilizing to the site, EA completed the following project planning and premobilization tasks:

- Prepared a site-specific Health and Safety Plan in accordance with the requirements of 40 CFR 1910.120 to cover the proposed project activities;
- Contacted the owner of the Sands RV Park, Mr. Scott Goodale, to coordinate site access and sampling on the south side of the highway;
- Coordinated with Mr. Chad Hensley of the OCD Artesia office to access the Appling

Property on the north side of the highway; and

- Ordered and picked up sample kits for the soil and fluid/aqueous samples from Hall Environmental Analysis Laboratory in Albuquerque, New Mexico.

Field Activities

EA arrived at the site on the morning of November 10, 2021. Mr. Hensley (OCD) and Mr. Michel Garner (onsite representative for Mr. Scott Goodale and owner of the home located on the west side of the RV Park) met EA at the Sands RV Park, located on the south side of the highway. Mr. Hensley coordinated with the Sheriff's Department to remove Mr. Appling and others from the property on the north side of the highway so that EA could complete sampling activities on the property without potential interference.

Extent of Release Mapping

The release on the north side of the highway on the Appling property was not mapped by EA at the request of Mr. Hensley due to the situation with removing Mr. Appling from the property. Mr. Hensley requested that EA complete sampling on the property as quickly as possible. Sample locations are shown on Figure 1 and were collected within areas of visual staining (indicating the path of the release). The exception to this is sample BG-1 which was collected as a background sample (Figure 1). High resolution drone footage of the release on the north side of the highway was obtained by the City of Carlsbad Fire Department and provided to Mr. Hensley.

EA mapped the extent of the release on the south side of the highway based on visual petroleum hydrocarbon and chloride surface staining. EA was accompanied by Mr. Garner, who was present in his home on the night the release occurred and observed the release firsthand. The approximate extent of the release on the south side of highway US 62/180 is shown on Figure 1. Photographic documentation of the impacts of the release on the north and south sides of the highway is provided in Attachment 1.

Surface Soil and Fluid/Aqueous Sampling

EA collected a total of 15 grab surface soil and 2 grab fluid/aqueous samples from select locations within the extent of the release area on the Appling property, and from impacted properties on the south side of the highway. The fluid/aqueous samples were collected from locations where ponded oil (sample location SS-5a) and water (sample location SS-7a) were present on the ground surface (Figure 1). The fluid sample of ponded oil was collected downgradient of the lined pond and waste tanks. The aqueous sample of ponded water was collected east-southeast of the ruptured water tank. In addition to the above samples, 2 background soil samples were collected from locations outside of the release area. Sampling locations are shown on Figure 1.

The samples were collected with a decontaminated spade from approximately 3 to 6 inches below ground surface (bgs) and placed into laboratory-provided sample containers, labeled, and placed on ice in a cooler pending delivery to the analytical laboratory. Disposable gloves were worn and replaced between samples. Sampling equipment were decontaminated prior to use and between samples using a laboratory-grade detergent and fresh tap water rinse.

The samples were submitted to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico for the following analyses:

- U.S. Environmental Protection Agency (EPA) Method 8021 for benzene, toluene, ethylbenzene, and total xylenes (BTEX);
- EPA Method 8015 for TPH gasoline range organics (GRO), diesel range organics (DRO), and motor oil range organics (MRO);
- EPA Method 6010/7471 for select metals including arsenic, barium, cadmium, lead, and mercury; and
- EPA Method 300.0 for chloride.

Analytical Results

Chloride and select metals analytical results are summarized in Table 1. Analytical results of BTEX and TPH GRO/DRO/MRO are summarized in Table 2. Sampling locations are shown on Figure 1. The complete laboratory analytical report is included in Attachment 2. A brief summary of the results is presented below.

Chloride

- Chloride was detected in all of the 15 surface soil samples collected. The chloride concentrations in these samples ranged from 110 milligrams per Kilogram (mg/Kg) at sample location SS-4 to 27,000 mg/Kg at sample location SS-14.
- The two fluid/aqueous samples showed chloride concentrations of 78 mg/Kg (SS-5a; ponded oil sample) and 1,600 milligrams per liter (mg/L) (SS-7a; ponded water sample).
- The two background soil samples collected from locations outside of the release area showed vastly different chloride concentrations; the sample collected north of the Appling property was <60 mg/Kg (BG-1) and the sample collected approximately 600 feet east of SS-13 was 12,000 mg/Kg (BG-2).

Select Metals

The following metals were detected in surface soil samples:

- Barium was detected in all of the samples at concentrations ranging from 59 mg/Kg at sample location SS-8 to 1,500 mg/Kg at sample location SS-3.
- Cadmium was detected only at sample location SS-16 at a concentration of 1.4 mg/Kg.
- Lead was detected in 9 of the 15 samples at concentrations ranging from 1.0 mg/Kg at sample location SS-10 to 33 mg/Kg at sample location SS-2.
- Arsenic and mercury were not detected in any of the samples at concentrations above the laboratory reporting limits.

The following metals were detected in the fluid/aqueous samples:

- SS-5a (ponded oil sample) – arsenic (4 mg/Kg), barium (21 mg/Kg), and lead (2 mg/Kg).

Cadmium and mercury were not detected at concentrations above the laboratory reporting limits.

- SS-7a (ponded water sample) – barium (0.47 mg/L) and lead (0.026 mg/L). Arsenic, cadmium, and mercury were not detected at concentrations above the laboratory reporting limits.

The following metals were detected in the background samples:

- BG-1 – barium (75 mg/Kg) and lead (1.5 mg/Kg). Arsenic, cadmium, and mercury were not detected at concentrations above the laboratory reporting limits.
- BG-2 – barium (91 mg/Kg) and lead (2.5 mg/Kg). Arsenic, cadmium, and mercury were not detected at concentrations above the laboratory reporting limits.

BTEX

BTEX constituents were detected in the following surface soil samples:

- Toluene was detected only at sample location SS-2 at a concentration of 0.13 mg/Kg.
- Ethylbenzene was detected in 2 of 15 samples at concentrations of 0.40 mg/Kg at sample location SS-2 and 0.064 mg/Kg at sample location SS-6.
- Total xylenes were detected in 2 of 15 samples at concentrations of 1.8 mg/Kg at sample location SS-2 and 0.35 mg/Kg at sample location SS-6.
- Benzene was not detected in any of the samples at concentrations above the laboratory reporting limit.

BTEX constituents were detected in the following fluid/aqueous samples:

- SS-5a (ponded oil sample) – benzene (3.6 mg/Kg), toluene (26 mg/Kg), ethylbenzene (54 mg/Kg), and total xylenes (290 mg/Kg).
- SS-7a (ponded water sample) – no BTEX constituents were detected above laboratory reporting limits.

BTEX constituents were not detected in either of the background soil samples at concentrations above laboratory reporting limits.

TPH GRO/DRO/MRO

GRO/DRO/MRO were detected in the following surface soil samples:

- GRO was detected in 4 of 15 samples at concentrations ranging from 11 mg/Kg at sample location SS-9 to 58 mg/Kg at sample location SS-2.
- DRO was detected in 13 of 15 samples at concentrations ranging from 43 mg/Kg at sample location SS-4 to 15,000 mg/Kg at sample location SS-5.
- MRO was detected in 12 of 15 samples at concentrations ranging from 65 mg/Kg at sample location SS-3 to 8,100 mg/Kg at sample location SS-5.

GRO/DRO/MRO were detected in the following fluid/aqueous samples:

- SS-5a (ponded oil sample) – GRO (<4.8 mg/Kg), DRO (440,000 mg/Kg), MRO (280,000 mg/Kg).
- SS-7a (ponded water sample) – BTEX and GRO/DRO/MRO were not detected above laboratory reporting limits.

BTEX and GRO/DRO/MRO were not detected in either of the background soil samples at concentrations above laboratory reporting limits.

Conclusions

Based on field mapping and sampling activities, EA offers the following conclusions:

- Laboratory analytical results from grab surface soil samples indicate TPH impacts extend approximately 1,700 feet to the southeast (sample location SS-13) from the culvert on the south side of the highway where DRO and MRO analytical results were 1,400 mg/Kg and 1,000 mg/Kg, and approximately 1,400 feet to the south-southeast of the Garner residence (sample location SS-11) where DRO and MRO analytical results were 2,100 mg/Kg and 2,100 mg/Kg.
- Laboratory analytical results from grab surface soil samples indicate chloride impacts extend approximately 1,700 feet to the southeast (sample location SS-13) from the culvert on the south side of the highway where chloride was detected at a concentration of 4,200 mg/Kg, and approximately 1,400 feet to the south-southeast of the Garner residence (sample location SS-11) where chloride was detected at a concentration of 20,000 mg/Kg.
- Visual chloride impacts (salt crusted surface) are observable over a larger area as shown on Figure 1, particularly in the eastern portion of the Sands RV Park and to the south-southeast of the Garner residence.
- Depth to potable water in the vicinity of the site is between 50 and 100 feet bgs. Depth to water in USGS well 322712104074501 21S.28E.30.14123 MNY, located approximately 1.5 miles east-northeast of the site, was 87.41 ft bgs in November 2021. The well is completed to a depth of 906 feet in the Capitan Limestone.
- Shallower groundwater is present beneath the site according to Mr. Garner, but it is not potable. Local residences and businesses in the area of the release are hooked up to Carlsbad city water.

Recommendations

Based on 19.15.29.12. C.(2), the impacted surface area of a release shall be restored to meet the standards of Table 1 of 19.15.29.12 NMAC. Analytical results from surface soil samples collected at a number of locations on the north and south sides of the highway exceeded the OCD standards for groundwater (<10,000 mg/L TDS) between 51 feet 100 feet bgs (Tables 1 and 2). These included the following:

- Chloride (10,000 mg/Kg):
 - SS-11 (20,000 mg/Kg), SS-14 (27,000 mg/Kg), SS-16 (10,000 mg/Kg), and BG-2 (12,000 mg/Kg)
- TPH (GRO+DRO+MRO) (2,500 mg/Kg):
 - SS-2 (3,158 mg/Kg), SS-5 (23,127 mg/Kg), SS-6 (17,732 mg/Kg), SS-10 (6,300 mg/Kg), SS-11 (4,200 mg/Kg), SS-14 (6,500 mg/Kg), SS-15 (5,100 mg/Kg), and SS-16 (13,900 mg/Kg)

EA recommends that these areas be restored to meet the OCD standards. Because the chloride concentrations in the two background samples varied so dramatically, with BG-2 exceeding the standard at 12,000 mg/Kg, it is recommended that additional background samples be collected to determine a representative background concentration for chloride before restoration of these areas is completed.

In areas where standards were not exceeded, EA recommends that visual impacts resulting from the release on the south side of the highway be removed, particularly the petroleum hydrocarbon residue and staining, on the Sands RV Park properties and the private residence of Mr. Garner.

EA intends to invoice a reduced amount of \$17,592.40 (including New Mexico Gross Receipts Tax). EA did not require use of the contingency. If you have any questions or need additional information, please feel free to contact me at (505) 235-9037.

Sincerely,

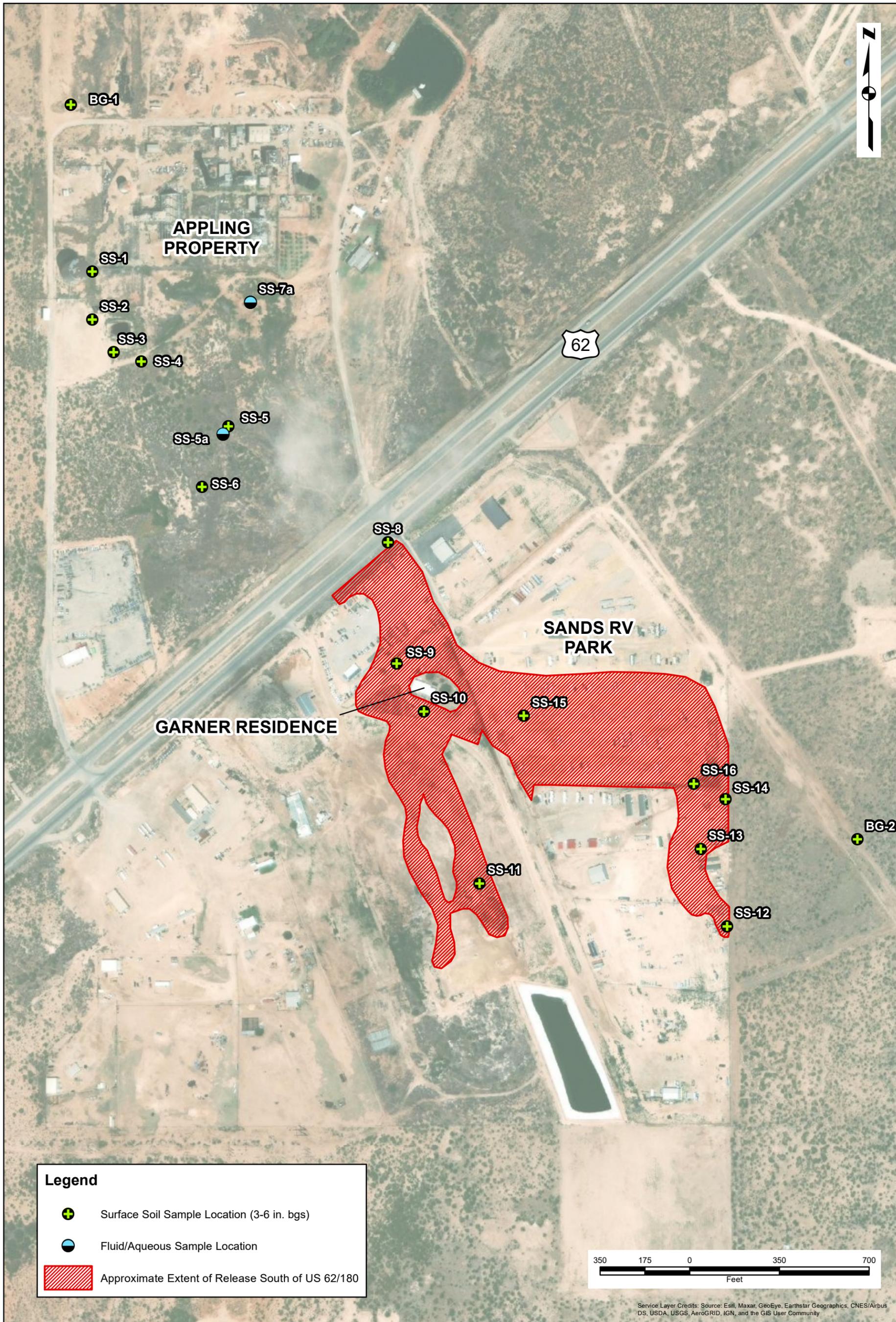
EA Engineering, Science, and Technology, Inc., PBC



Michael D. McVey, P.G., C.P.G.
Senior Hydrogeologist

- Attachments:
- Figure 1 – Site Map
 - Table 1 – Surface Soil Sample Analytical Results, Chloride and Select Metals
 - Table 2 – Surface Soil Sample Analytical Results, BTEX and TPH
 - Attachment 1 – Photographic Documentation
 - Attachment 2 – Analytical Laboratory Report

FIGURE



TABLES

**TABLE 1. SURFACE SOIL SAMPLE ANALYTICAL RESULTS
CHLORIDE AND SELECT METALS
APPLING PROPERTY, CARLSBAD, NEW MEXICO**

Sample ID	Date Sampled	Chloride (mg/Kg)	Arsenic (mg/Kg)	Baruim (mg/Kg)	Cadmium (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)
BG-1	10-Nov-21	<60	<4.8	75	<0.097	1.5	<0.033
BG-2	10-Nov-21	12,000	<4.8	91	<0.097	2.5	<0.033
SS-1	10-Nov-21	170	<4.9	390	<0.098	<0.98	<0.034
SS-2	10-Nov-21	660	<4.9	260	<0.098	33	<0.033
SS-3	10-Nov-21	900	<4.9	1,500	<0.099	5.1	<0.033
SS-4	10-Nov-21	110	<5.0	230	<0.099	2.4	<0.033
SS-5	10-Nov-21	200	<4.9	110	<0.099	2.9	<0.033
SS-5a (Oil)	10-Nov-21	78	4	21	<1.0	2	<0.1
SS-6	10-Nov-21	120	<4.8	73	<0.097	<0.97	<0.033
SS-7a (Water) ¹	10-Nov-21	1,600	<0.030	0.47	<0.0020	0.026	<0.00020
SS-8	10-Nov-21	200	<4.9	59	<0.099	1.3	<0.033
SS-9	10-Nov-21	280	<5.0	120	<0.10	4.3	<0.033
SS-10	10-Nov-21	2,200	<4.8	75	<0.095	1.0	<0.033
SS-11	10-Nov-21	20,000	<4.9	62	<0.098	<0.98	<0.033
SS-12	10-Nov-21	390	<4.8	280	<0.097	<0.97	<0.033
SS-13	10-Nov-21	4,200	<4.9	100	<0.098	<0.98	<0.033
SS-14	10-Nov-21	27,000	<5.0	160	<0.10	<1.0	<0.033
SS-15	10-Nov-21	4,300	<4.9	78	<0.097	1.8	<0.034
SS-16	10-Nov-21	10,000	<4.9	110	1.4	3.5	<0.033
OCD Sstandard ²		10,000	--	--	--	--	--

Notes:

Highlighted indicates concentration above the applicable OCD standard.

Chloride analyzed in accordance with EPA Method 300.0.

Metals analyzed in accordance with EPA Method 6010/7471.

"a" after sample number indicates fluid/aqueous sample.

¹ Analytical results reported in milligrams per liter (mg/L).

² OCD standard, 19.15.29.12 NMAC, Table 1 - depth to groundwater 51-100 feet bgs.

mg/Kg = Milligrams per Kilogram

BG = Background soil sample (3-6" bgs)

SS = Surface soil sample (3-6" bgs)

**TABLE 2. SURFACE SOIL SAMPLE ANALYTICAL RESULTS
BTEX AND TOTAL PETROLEUM HYDROCARBONS
APPLING PROPERTY, CARLSBAD, NEW MEXICO**

Sample ID	Date Sampled	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethyl-benzene (mg/Kg)	Total Xylenes (mg/Kg)	GRO (mg/Kg)	DRO (mg/Kg)	MRO (mg/Kg)
BG-1	10-Nov-21	<0.023	<0.046	<0.046	<0.093	<4.6	<9.9	<49
BG-2	10-Nov-21	<0.025	<0.050	<0.050	<0.099	<5.0	<9.6	<48
SS-1	10-Nov-21	<0.023	<0.046	<0.046	<0.093	<4.6	<9.6	<48
SS-2	10-Nov-21	<0.025	0.13	0.40	1.8	58	1,100	2,000
SS-3	10-Nov-21	<0.025	<0.050	<0.050	<0.10	<5.0	74	65
SS-4	10-Nov-21	<0.025	<0.050	<0.050	<0.099	<5.0	43	<47
SS-5	10-Nov-21	<0.023	<0.047	<0.047	<0.093	27	15,000	8,100
SS-5a (Oil)	10-Nov-21	3.6	26	54	290	<4.8	440,000	280,000
SS-6	10-Nov-21	<0.024	<0.047	0.064	0.35	32	11,000	6,700
SS-7a (Water) ¹	10-Nov-21	<1.0	<1.0	<1.0	<1.0	<0.05	<1.0	<5.0
SS-8	10-Nov-21	<0.024	<0.049	<0.049	<0.097	<4.9	400	530
SS-9	10-Nov-21	<0.024	<0.048	<0.048	<0.097	11	450	300
SS-10	10-Nov-21	<0.024	<0.048	<0.048	<0.096	<4.8	3,800	2,500
SS-11	10-Nov-21	<0.024	<0.048	<0.048	<0.096	<4.8	2,100	2,100
SS-12	10-Nov-21	<0.023	<0.046	<0.046	<0.093	<4.6	<8.9	<44
SS-13	10-Nov-21	<0.025	<0.049	<0.049	<0.099	<4.9	1,400	1,000
SS-14	10-Nov-21	<0.025	<0.050	<0.050	<0.10	<5.0	3,700	2,800
SS-15	10-Nov-21	<0.025	<0.050	<0.050	<0.10	<5.0	2,800	2,300
SS-16	10-Nov-21	<0.025	<0.050	<0.050	<0.099	<5.0	8,000	5,900
OCD Sstandard ²		10 ³, 50 ⁴				2,500 ⁵		

Notes:

Highlighted indicates concentration above the applicable OCD standard.

BTEX analyzed in accordance with EPA Method 8021.

Total Petroleum Hydrocarbons (TPH) analyzed in accordance with EPA Method 8015.

"a" after sample number indicates fluid/aqueous sample.

¹ Analytical results for BTEX are reported in micrograms per liter (µg/L).

² OCD standard, 19.15.29.12 NMAC, Table 1 - depth to groundwater 51-100 feet bgs.

³ OCD standard for benzene

⁴ OCD standard for BTEX

⁵ OCD standard for TPH (GRO+DRO+MRO)

GRO = Gasoline range organics

DRO = Diesel range organics

MRO = Motor oil range organics

mg/Kg = Milligrams per Kilogram

BG = Background soil sample (3-6" bgs)

SS = Surface soil sample (3-6" bgs)

ATTACHMENT 1
PHOTOGRAPHIC DOCUMENTATION

**Photographic Documentation – November 2021
Appling Property Release, Carlsbad, New Mexico**



Photograph 1. Lined pond on Appling property (view to the west).



Photograph 2. Release on Appling property, west flow channel (view to the southwest).

**Photographic Documentation – November 2021
Appling Property Release, Carlsbad, New Mexico**



Photograph 3. Release on Appling property, west flow channel (view to the west).



Photograph 4. Release on Appling property, east flow channel (view to the west).

Photographic Documentation – November 2021
Appling Property Release, Carlsbad, New Mexico



Photograph 5. Release on Appling property, east flow channel (view to the east).



Photograph 6. Appling soil removal in east flow channel (view to the south).

**Photographic Documentation – November 2021
Appling Property Release, Carlsbad, New Mexico**



Photograph 7. Culvert on south side of US 62/180 (view to the south).



Photograph 8. Collecting surface soil sample SS-8 at southern culvert.

**Photographic Documentation – November 2021
Appling Property Release, Carlsbad, New Mexico**



Photograph 9. Pondered area along southern fence line of property north of Garner residence (view to the southeast).



Photograph 10. Staining on south fence approximately 18 inches high (view to the south).

Photographic Documentation – November 2021
Appling Property Release, Carlsbad, New Mexico



Photograph 11. Soil staining in the Sands RV Park (view to the east).



Photograph 12. Soil staining and chloride surface crust in the Sands RV Park (view to the east).

Photographic Documentation – November 2021
Appling Property Release, Carlsbad, New Mexico



Photograph 13. Soil staining in Sands RV Park (view to the southeast).

ATTACHMENT 2
ANALYTICAL LABORATORY REPORT



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

November 29, 2021

Mike McVey
EA Engineering
320 Gold Ave SW Suite 1210
Albuquerque, NM 87102
TEL: (505) 224-9013
FAX:

RE: NMOCD

OrderNo.: 2111603

Dear Mike McVey:

Hall Environmental Analysis Laboratory received 20 sample(s) on 11/11/2021 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a light blue horizontal line.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 2111603

Date Reported: 11/29/2021

CLIENT: EA Engineering

Client Sample ID: BG-1

Project: NMOCD

Collection Date: 11/10/2021 10:54:00 AM

Lab ID: 2111603-001

Matrix: SOIL

Received Date: 11/11/2021 11:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LRN
Chloride	ND	60		mg/Kg	20	11/15/2021 3:28:37 PM	63931
EPA METHOD 7471B: MERCURY							Analyst: VP
Mercury	ND	0.033		mg/Kg	1	11/17/2021 3:57:22 PM	63999
EPA METHOD 6010B: SOIL METALS							Analyst: JLF
Arsenic	ND	4.8		mg/Kg	1	11/17/2021 7:04:32 PM	63898
Barium	75	0.097		mg/Kg	1	11/17/2021 7:04:32 PM	63898
Cadmium	ND	0.097		mg/Kg	1	11/17/2021 7:04:32 PM	63898
Lead	1.5	0.97		mg/Kg	1	11/17/2021 7:04:32 PM	63898
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	11/16/2021 12:01:23 PM	63901
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/16/2021 12:01:23 PM	63901
Surr: DNOP	94.6	70-130		%Rec	1	11/16/2021 12:01:23 PM	63901
EPA METHOD 8015D: GASOLINE RANGE							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/12/2021 11:11:00 AM	63886
Surr: BFB	98.1	70-130		%Rec	1	11/12/2021 11:11:00 AM	63886
EPA METHOD 8021B: VOLATILES							Analyst: CCM
Benzene	ND	0.023		mg/Kg	1	11/12/2021 11:11:00 AM	63886
Toluene	ND	0.046		mg/Kg	1	11/12/2021 11:11:00 AM	63886
Ethylbenzene	ND	0.046		mg/Kg	1	11/12/2021 11:11:00 AM	63886
Xylenes, Total	ND	0.093		mg/Kg	1	11/12/2021 11:11:00 AM	63886
Surr: 4-Bromofluorobenzene	105	70-130		%Rec	1	11/12/2021 11:11:00 AM	63886

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 2111603

Date Reported: 11/29/2021

CLIENT: EA Engineering

Client Sample ID: SS-1

Project: NMOCD

Collection Date: 11/10/2021 11:07:00 AM

Lab ID: 2111603-002

Matrix: SOIL

Received Date: 11/11/2021 11:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LRN
Chloride	170	60		mg/Kg	20	11/15/2021	63947
EPA METHOD 7471B: MERCURY							Analyst: VP
Mercury	ND	0.034		mg/Kg	1	11/17/2021 4:03:52 PM	63999
EPA METHOD 6010B: SOIL METALS							Analyst: JLF
Arsenic	ND	4.9		mg/Kg	1	11/17/2021 7:06:45 PM	63898
Barium	390	0.20		mg/Kg	2	11/18/2021 7:03:12 PM	63898
Cadmium	ND	0.098		mg/Kg	1	11/17/2021 7:06:45 PM	63898
Lead	ND	0.98		mg/Kg	1	11/17/2021 7:06:45 PM	63898
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	11/16/2021 1:13:33 PM	63901
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/16/2021 1:13:33 PM	63901
Surr: DNOP	102	70-130		%Rec	1	11/16/2021 1:13:33 PM	63901
EPA METHOD 8015D: GASOLINE RANGE							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/12/2021 12:10:00 PM	63886
Surr: BFB	94.0	70-130		%Rec	1	11/12/2021 12:10:00 PM	63886
EPA METHOD 8021B: VOLATILES							Analyst: CCM
Benzene	ND	0.023		mg/Kg	1	11/12/2021 12:10:00 PM	63886
Toluene	ND	0.046		mg/Kg	1	11/12/2021 12:10:00 PM	63886
Ethylbenzene	ND	0.046		mg/Kg	1	11/12/2021 12:10:00 PM	63886
Xylenes, Total	ND	0.093		mg/Kg	1	11/12/2021 12:10:00 PM	63886
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	11/12/2021 12:10:00 PM	63886

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 2111603

Date Reported: 11/29/2021

CLIENT: EA Engineering

Client Sample ID: SS-2

Project: NMOCD

Collection Date: 11/10/2021 11:20:00 AM

Lab ID: 2111603-003

Matrix: SOIL

Received Date: 11/11/2021 11:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LRN
Chloride	660	60		mg/Kg	20	11/15/2021	63947
EPA METHOD 7471B: MERCURY							Analyst: VP
Mercury	ND	0.033		mg/Kg	1	11/17/2021 4:06:02 PM	63999
EPA METHOD 6010B: SOIL METALS							Analyst: JLF
Arsenic	ND	4.9		mg/Kg	1	11/17/2021 7:09:02 PM	63898
Barium	260	0.20		mg/Kg	2	11/18/2021 7:05:18 PM	63898
Cadmium	ND	0.098		mg/Kg	1	11/17/2021 7:09:02 PM	63898
Lead	33	0.98		mg/Kg	1	11/17/2021 7:09:02 PM	63898
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	1100	360		mg/Kg	40	11/17/2021 7:54:25 PM	63901
Motor Oil Range Organics (MRO)	2000	1800		mg/Kg	40	11/17/2021 7:54:25 PM	63901
Surr: DNOP	0	70-130	S	%Rec	40	11/17/2021 7:54:25 PM	63901
EPA METHOD 8015D: GASOLINE RANGE							Analyst: mb
Gasoline Range Organics (GRO)	58	5.0		mg/Kg	1	11/15/2021 6:31:00 PM	63886
Surr: BFB	251	70-130	S	%Rec	1	11/15/2021 6:31:00 PM	63886
EPA METHOD 8021B: VOLATILES							Analyst: mb
Benzene	ND	0.025		mg/Kg	1	11/15/2021 6:31:00 PM	63886
Toluene	0.13	0.050		mg/Kg	1	11/15/2021 6:31:00 PM	63886
Ethylbenzene	0.40	0.050		mg/Kg	1	11/15/2021 6:31:00 PM	63886
Xylenes, Total	1.8	0.099		mg/Kg	1	11/15/2021 6:31:00 PM	63886
Surr: 4-Bromofluorobenzene	179	70-130	S	%Rec	1	11/15/2021 6:31:00 PM	63886

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 2111603

Date Reported: 11/29/2021

CLIENT: EA Engineering

Client Sample ID: SS-4

Project: NMOCD

Collection Date: 11/10/2021 11:32:00 AM

Lab ID: 2111603-004

Matrix: SOIL

Received Date: 11/11/2021 11:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LRN
Chloride	110	60		mg/Kg	20	11/15/2021	63947
EPA METHOD 7471B: MERCURY							Analyst: VP
Mercury	ND	0.033		mg/Kg	1	11/17/2021 4:08:11 PM	63999
EPA METHOD 6010B: SOIL METALS							Analyst: JLF
Arsenic	ND	5.0		mg/Kg	1	11/17/2021 7:11:15 PM	63898
Barium	230	0.099		mg/Kg	1	11/17/2021 7:11:15 PM	63898
Cadmium	ND	0.099		mg/Kg	1	11/17/2021 7:11:15 PM	63898
Lead	2.4	0.99		mg/Kg	1	11/17/2021 7:11:15 PM	63898
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	43	9.4		mg/Kg	1	11/17/2021 4:51:43 PM	63901
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/17/2021 4:51:43 PM	63901
Surr: DNOP	88.2	70-130		%Rec	1	11/17/2021 4:51:43 PM	63901
EPA METHOD 8015D: GASOLINE RANGE							Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/12/2021 7:40:00 PM	63886
Surr: BFB	102	70-130		%Rec	1	11/12/2021 7:40:00 PM	63886
EPA METHOD 8021B: VOLATILES							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	11/12/2021 7:40:00 PM	63886
Toluene	ND	0.050		mg/Kg	1	11/12/2021 7:40:00 PM	63886
Ethylbenzene	ND	0.050		mg/Kg	1	11/12/2021 7:40:00 PM	63886
Xylenes, Total	ND	0.099		mg/Kg	1	11/12/2021 7:40:00 PM	63886
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	11/12/2021 7:40:00 PM	63886

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 2111603

Date Reported: 11/29/2021

CLIENT: EA Engineering

Client Sample ID: SS-3

Project: NMOCD

Collection Date: 11/10/2021 11:45:00 AM

Lab ID: 2111603-005

Matrix: SOIL

Received Date: 11/11/2021 11:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LRN
Chloride	900	60		mg/Kg	20	11/15/2021	63947
EPA METHOD 7471B: MERCURY							Analyst: VP
Mercury	ND	0.033		mg/Kg	1	11/17/2021 4:10:20 PM	63999
EPA METHOD 6010B: SOIL METALS							Analyst: JLF
Arsenic	ND	4.9		mg/Kg	1	11/17/2021 7:27:53 PM	63898
Barium	1500	0.99		mg/Kg	10	11/18/2021 7:31:34 PM	63898
Cadmium	ND	0.099		mg/Kg	1	11/17/2021 7:27:53 PM	63898
Lead	5.1	0.99		mg/Kg	1	11/17/2021 7:27:53 PM	63898
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	74	9.7		mg/Kg	1	11/17/2021 5:04:27 PM	63901
Motor Oil Range Organics (MRO)	65	49		mg/Kg	1	11/17/2021 5:04:27 PM	63901
Surr: DNOP	89.4	70-130		%Rec	1	11/17/2021 5:04:27 PM	63901
EPA METHOD 8015D: GASOLINE RANGE							Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/12/2021 8:00:00 PM	63886
Surr: BFB	106	70-130		%Rec	1	11/12/2021 8:00:00 PM	63886
EPA METHOD 8021B: VOLATILES							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	11/12/2021 8:00:00 PM	63886
Toluene	ND	0.050		mg/Kg	1	11/12/2021 8:00:00 PM	63886
Ethylbenzene	ND	0.050		mg/Kg	1	11/12/2021 8:00:00 PM	63886
Xylenes, Total	ND	0.10		mg/Kg	1	11/12/2021 8:00:00 PM	63886
Surr: 4-Bromofluorobenzene	99.7	70-130		%Rec	1	11/12/2021 8:00:00 PM	63886

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 2111603

Date Reported: 11/29/2021

CLIENT: EA Engineering

Client Sample ID: SS-5A

Project: NMOCD

Collection Date: 11/10/2021 12:03:00 PM

Lab ID: 2111603-006

Matrix: OIL

Received Date: 11/11/2021 11:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
DRO BY 8015D							Analyst: SB
Diesel Range Organics (DRO)	44	1.1		wt%	20	11/16/2021 8:14:22 PM	63939
Motor Oil Range Organics (MRO)	28	5.7		wt%	20	11/16/2021 8:14:22 PM	63939
Surr: DNOP	0	64.9-131	S	%Rec	20	11/16/2021 8:14:22 PM	63939
GRO BY 8015D							Analyst: mb
Gasoline Range Organics (GRO)	ND	4.8		wt%	1	11/17/2021 9:21:00 AM	63972
Surr: BFB	106	58.9-156		%Rec	1	11/17/2021 9:21:00 AM	63972
EPA METHOD 8021B: VOLATILES							Analyst: mb
Benzene	3.6	2.4		mg/Kg	1	11/17/2021 11:39:00 AM	63972
Toluene	26	2.4		mg/Kg	1	11/17/2021 11:39:00 AM	63972
Ethylbenzene	54	2.4		mg/Kg	1	11/17/2021 11:39:00 AM	63972
Xylenes, Total	290	4.8		mg/Kg	1	11/17/2021 11:39:00 AM	63972
Surr: 4-Bromofluorobenzene	303	70-130	S	%Rec	1	11/17/2021 11:39:00 AM	63972

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 2111603

Date Reported: 11/29/2021

CLIENT: EA Engineering

Client Sample ID: SS-5

Project: NMOCD

Collection Date: 11/10/2021 12:10:00 PM

Lab ID: 2111603-007

Matrix: SOIL

Received Date: 11/11/2021 11:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LRN
Chloride	200	60		mg/Kg	20	11/15/2021	63947
EPA METHOD 7471B: MERCURY							Analyst: VP
Mercury	ND	0.033		mg/Kg	1	11/17/2021 4:16:52 PM	63999
EPA METHOD 6010B: SOIL METALS							Analyst: JLF
Arsenic	ND	4.9		mg/Kg	1	11/17/2021 7:32:28 PM	63898
Barium	110	0.099		mg/Kg	1	11/17/2021 7:32:28 PM	63898
Cadmium	ND	0.099		mg/Kg	1	11/17/2021 7:32:28 PM	63898
Lead	2.9	0.99		mg/Kg	1	11/17/2021 7:32:28 PM	63898
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	15000	500		mg/Kg	50	11/16/2021 2:50:39 PM	63901
Motor Oil Range Organics (MRO)	8100	2500		mg/Kg	50	11/16/2021 2:50:39 PM	63901
Surr: DNOP	0	70-130	S	%Rec	50	11/16/2021 2:50:39 PM	63901
EPA METHOD 8015D: GASOLINE RANGE							Analyst: CCM
Gasoline Range Organics (GRO)	27	4.7		mg/Kg	1	11/12/2021 8:20:00 PM	63886
Surr: BFB	151	70-130	S	%Rec	1	11/12/2021 8:20:00 PM	63886
EPA METHOD 8021B: VOLATILES							Analyst: CCM
Benzene	ND	0.023		mg/Kg	1	11/12/2021 8:20:00 PM	63886
Toluene	ND	0.047		mg/Kg	1	11/12/2021 8:20:00 PM	63886
Ethylbenzene	ND	0.047		mg/Kg	1	11/12/2021 8:20:00 PM	63886
Xylenes, Total	0.16	0.093		mg/Kg	1	11/12/2021 8:20:00 PM	63886
Surr: 4-Bromofluorobenzene	140	70-130	S	%Rec	1	11/12/2021 8:20:00 PM	63886

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 2111603

Date Reported: 11/29/2021

CLIENT: EA Engineering

Client Sample ID: SS-6

Project: NMOCD

Collection Date: 11/10/2021 12:20:00 PM

Lab ID: 2111603-008

Matrix: SOIL

Received Date: 11/11/2021 11:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LRN
Chloride	120	60		mg/Kg	20	11/15/2021	63947
EPA METHOD 7471B: MERCURY							Analyst: VP
Mercury	ND	0.033		mg/Kg	1	11/17/2021 4:19:03 PM	63999
EPA METHOD 6010B: SOIL METALS							Analyst: JLF
Arsenic	ND	4.8		mg/Kg	1	11/17/2021 7:34:38 PM	63898
Barium	73	0.097		mg/Kg	1	11/17/2021 7:34:38 PM	63898
Cadmium	ND	0.097		mg/Kg	1	11/17/2021 7:34:38 PM	63898
Lead	ND	0.97		mg/Kg	1	11/17/2021 7:34:38 PM	63898
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	11000	490		mg/Kg	50	11/16/2021 3:15:03 PM	63901
Motor Oil Range Organics (MRO)	6700	2500		mg/Kg	50	11/16/2021 3:15:03 PM	63901
Surr: DNOP	0	70-130	S	%Rec	50	11/16/2021 3:15:03 PM	63901
EPA METHOD 8015D: GASOLINE RANGE							Analyst: CCM
Gasoline Range Organics (GRO)	32	4.7		mg/Kg	1	11/12/2021 8:39:00 PM	63886
Surr: BFB	172	70-130	S	%Rec	1	11/12/2021 8:39:00 PM	63886
EPA METHOD 8021B: VOLATILES							Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	11/12/2021 8:39:00 PM	63886
Toluene	ND	0.047		mg/Kg	1	11/12/2021 8:39:00 PM	63886
Ethylbenzene	0.064	0.047		mg/Kg	1	11/12/2021 8:39:00 PM	63886
Xylenes, Total	0.35	0.094		mg/Kg	1	11/12/2021 8:39:00 PM	63886
Surr: 4-Bromofluorobenzene	150	70-130	S	%Rec	1	11/12/2021 8:39:00 PM	63886

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 2111603

Date Reported: 11/29/2021

CLIENT: EA Engineering

Client Sample ID: SS-7A

Project: NMOCD

Collection Date: 11/10/2021 12:40:00 PM

Lab ID: 2111603-009

Matrix: AQUEOUS

Received Date: 11/11/2021 11:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	1600	50	*	mg/L	100	11/11/2021 8:15:57 PM	R82800
EPA METHOD 7470A: MERCURY							Analyst: VP
Mercury	ND	0.00020		mg/L	1	11/18/2021 12:14:47 PM	64017
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: JLF
Arsenic	ND	0.030		mg/L	1	11/16/2021 4:09:36 PM	63941
Barium	0.47	0.0020		mg/L	1	11/16/2021 4:09:36 PM	63941
Cadmium	ND	0.0020		mg/L	1	11/16/2021 4:09:36 PM	63941
Lead	0.026	0.020		mg/L	1	11/16/2021 4:09:36 PM	63941
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: SB
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	11/15/2021 8:57:36 PM	63878
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	11/15/2021 8:57:36 PM	63878
Surr: DNOP	94.8	64.8-167		%Rec	1	11/15/2021 8:57:36 PM	63878
EPA METHOD 8015D: GASOLINE RANGE							Analyst: CCM
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	11/13/2021 12:54:00 AM	R82818
Surr: BFB	99.3	68.5-136		%Rec	1	11/13/2021 12:54:00 AM	R82818
EPA METHOD 8021B: VOLATILES							Analyst: CCM
Benzene	ND	1.0		µg/L	1	11/13/2021 12:54:00 AM	R82818
Toluene	ND	1.0		µg/L	1	11/13/2021 12:54:00 AM	R82818
Ethylbenzene	ND	1.0		µg/L	1	11/13/2021 12:54:00 AM	R82818
Xylenes, Total	ND	2.0		µg/L	1	11/13/2021 12:54:00 AM	R82818
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/13/2021 12:54:00 AM	R82818
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/13/2021 12:54:00 AM	R82818
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	11/13/2021 12:54:00 AM	R82818

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 2111603

Date Reported: 11/29/2021

CLIENT: EA Engineering

Client Sample ID: SS-8

Project: NMOCD

Collection Date: 11/10/2021 1:05:00 PM

Lab ID: 2111603-010

Matrix: SOIL

Received Date: 11/11/2021 11:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LRN
Chloride	200	60		mg/Kg	20	11/15/2021	63947
EPA METHOD 7471B: MERCURY							Analyst: VP
Mercury	ND	0.033		mg/Kg	1	11/17/2021 4:21:13 PM	63999
EPA METHOD 6010B: SOIL METALS							Analyst: JLF
Arsenic	ND	4.9		mg/Kg	1	11/17/2021 7:39:12 PM	63898
Barium	59	0.099		mg/Kg	1	11/17/2021 7:39:12 PM	63898
Cadmium	ND	0.099		mg/Kg	1	11/17/2021 7:39:12 PM	63898
Lead	1.3	0.99		mg/Kg	1	11/17/2021 7:39:12 PM	63898
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	400	43		mg/Kg	5	11/17/2021 8:29:46 PM	63901
Motor Oil Range Organics (MRO)	530	220		mg/Kg	5	11/17/2021 8:29:46 PM	63901
Surr: DNOP	96.7	70-130		%Rec	5	11/17/2021 8:29:46 PM	63901
EPA METHOD 8015D: GASOLINE RANGE							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/12/2021 8:59:00 PM	63886
Surr: BFB	117	70-130		%Rec	1	11/12/2021 8:59:00 PM	63886
EPA METHOD 8021B: VOLATILES							Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	11/12/2021 8:59:00 PM	63886
Toluene	ND	0.049		mg/Kg	1	11/12/2021 8:59:00 PM	63886
Ethylbenzene	ND	0.049		mg/Kg	1	11/12/2021 8:59:00 PM	63886
Xylenes, Total	ND	0.097		mg/Kg	1	11/12/2021 8:59:00 PM	63886
Surr: 4-Bromofluorobenzene	104	70-130		%Rec	1	11/12/2021 8:59:00 PM	63886

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 2111603

Date Reported: 11/29/2021

CLIENT: EA Engineering

Client Sample ID: SS-9

Project: NMOCD

Collection Date: 11/10/2021 1:55:00 PM

Lab ID: 2111603-011

Matrix: SOIL

Received Date: 11/11/2021 11:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LRN
Chloride	280	60		mg/Kg	20	11/15/2021	63947
EPA METHOD 7471B: MERCURY							Analyst: VP
Mercury	ND	0.033		mg/Kg	1	11/17/2021 4:23:25 PM	63999
EPA METHOD 6010B: SOIL METALS							Analyst: JLF
Arsenic	ND	5.0		mg/Kg	1	11/17/2021 7:41:25 PM	63898
Barium	120	0.10		mg/Kg	1	11/17/2021 7:41:25 PM	63898
Cadmium	ND	0.10		mg/Kg	1	11/17/2021 7:41:25 PM	63898
Lead	4.3	1.0		mg/Kg	1	11/17/2021 7:41:25 PM	63898
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	450	47		mg/Kg	5	11/18/2021 8:56:51 AM	63901
Motor Oil Range Organics (MRO)	300	240		mg/Kg	5	11/18/2021 8:56:51 AM	63901
Surr: DNOP	95.4	70-130		%Rec	5	11/18/2021 8:56:51 AM	63901
EPA METHOD 8015D: GASOLINE RANGE							Analyst: CCM
Gasoline Range Organics (GRO)	11	4.8		mg/Kg	1	11/12/2021 9:18:00 PM	63886
Surr: BFB	167	70-130	S	%Rec	1	11/12/2021 9:18:00 PM	63886
EPA METHOD 8021B: VOLATILES							Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	11/12/2021 9:18:00 PM	63886
Toluene	ND	0.048		mg/Kg	1	11/12/2021 9:18:00 PM	63886
Ethylbenzene	ND	0.048		mg/Kg	1	11/12/2021 9:18:00 PM	63886
Xylenes, Total	ND	0.097		mg/Kg	1	11/12/2021 9:18:00 PM	63886
Surr: 4-Bromofluorobenzene	110	70-130		%Rec	1	11/12/2021 9:18:00 PM	63886

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 2111603

Date Reported: 11/29/2021

CLIENT: EA Engineering

Client Sample ID: SS-10

Project: NMOCD

Collection Date: 11/10/2021 2:35:00 PM

Lab ID: 2111603-012

Matrix: SOIL

Received Date: 11/11/2021 11:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: CAS
Chloride	2200	150		mg/Kg	50	11/16/2021 10:31:59 PM	63947
EPA METHOD 7471B: MERCURY							Analyst: VP
Mercury	ND	0.033		mg/Kg	1	11/17/2021 4:25:36 PM	63999
EPA METHOD 6010B: SOIL METALS							Analyst: JLF
Arsenic	ND	4.8		mg/Kg	1	11/17/2021 7:43:48 PM	63898
Barium	75	0.095		mg/Kg	1	11/17/2021 7:43:48 PM	63898
Cadmium	ND	0.095		mg/Kg	1	11/17/2021 7:43:48 PM	63898
Lead	1.0	0.95		mg/Kg	1	11/17/2021 7:43:48 PM	63898
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	3800	190		mg/Kg	20	11/16/2021 4:28:02 PM	63901
Motor Oil Range Organics (MRO)	2500	930		mg/Kg	20	11/16/2021 4:28:02 PM	63901
Surr: DNOP	0	70-130	S	%Rec	20	11/16/2021 4:28:02 PM	63901
EPA METHOD 8015D: GASOLINE RANGE							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/12/2021 9:38:00 PM	63886
Surr: BFB	97.7	70-130		%Rec	1	11/12/2021 9:38:00 PM	63886
EPA METHOD 8021B: VOLATILES							Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	11/12/2021 9:38:00 PM	63886
Toluene	ND	0.048		mg/Kg	1	11/12/2021 9:38:00 PM	63886
Ethylbenzene	ND	0.048		mg/Kg	1	11/12/2021 9:38:00 PM	63886
Xylenes, Total	ND	0.096		mg/Kg	1	11/12/2021 9:38:00 PM	63886
Surr: 4-Bromofluorobenzene	105	70-130		%Rec	1	11/12/2021 9:38:00 PM	63886

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 2111603

Date Reported: 11/29/2021

CLIENT: EA Engineering

Client Sample ID: SS-11

Project: NMOCD

Collection Date: 11/10/2021 3:00:00 PM

Lab ID: 2111603-013

Matrix: SOIL

Received Date: 11/11/2021 11:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: CAS
Chloride	20000	1500		mg/Kg	500	11/16/2021 10:44:23 PM	63947
EPA METHOD 7471B: MERCURY							Analyst: VP
Mercury	ND	0.033		mg/Kg	1	11/17/2021 4:27:48 PM	63999
EPA METHOD 6010B: SOIL METALS							Analyst: JLF
Arsenic	ND	4.9		mg/Kg	1	11/17/2021 7:46:11 PM	63898
Barium	62	0.098		mg/Kg	1	11/17/2021 7:46:11 PM	63898
Cadmium	ND	0.098		mg/Kg	1	11/17/2021 7:46:11 PM	63898
Lead	ND	0.98		mg/Kg	1	11/17/2021 7:46:11 PM	63898
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	2100	190		mg/Kg	20	11/16/2021 4:52:18 PM	63901
Motor Oil Range Organics (MRO)	2100	960		mg/Kg	20	11/16/2021 4:52:18 PM	63901
Surr: DNOP	0	70-130	S	%Rec	20	11/16/2021 4:52:18 PM	63901
EPA METHOD 8015D: GASOLINE RANGE							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/12/2021 9:57:00 PM	63886
Surr: BFB	95.3	70-130		%Rec	1	11/12/2021 9:57:00 PM	63886
EPA METHOD 8021B: VOLATILES							Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	11/12/2021 9:57:00 PM	63886
Toluene	ND	0.048		mg/Kg	1	11/12/2021 9:57:00 PM	63886
Ethylbenzene	ND	0.048		mg/Kg	1	11/12/2021 9:57:00 PM	63886
Xylenes, Total	ND	0.096		mg/Kg	1	11/12/2021 9:57:00 PM	63886
Surr: 4-Bromofluorobenzene	95.5	70-130		%Rec	1	11/12/2021 9:57:00 PM	63886

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 2111603

Date Reported: 11/29/2021

CLIENT: EA Engineering

Client Sample ID: SS-12

Project: NMOCD

Collection Date: 11/10/2021 3:35:00 PM

Lab ID: 2111603-014

Matrix: SOIL

Received Date: 11/11/2021 11:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LRN
Chloride	390	60		mg/Kg	20	11/15/2021	63947
EPA METHOD 7471B: MERCURY							Analyst: VP
Mercury	ND	0.033		mg/Kg	1	11/17/2021 4:30:01 PM	63999
EPA METHOD 6010B: SOIL METALS							Analyst: JLF
Arsenic	ND	4.8		mg/Kg	1	11/17/2021 7:48:24 PM	63898
Barium	280	0.19		mg/Kg	2	11/18/2021 7:09:31 PM	63898
Cadmium	ND	0.097		mg/Kg	1	11/17/2021 7:48:24 PM	63898
Lead	ND	0.97		mg/Kg	1	11/17/2021 7:48:24 PM	63898
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	8.9		mg/Kg	1	11/16/2021 5:16:33 PM	63901
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	11/16/2021 5:16:33 PM	63901
Surr: DNOP	114	70-130		%Rec	1	11/16/2021 5:16:33 PM	63901
EPA METHOD 8015D: GASOLINE RANGE							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/12/2021 10:17:00 PM	63886
Surr: BFB	98.7	70-130		%Rec	1	11/12/2021 10:17:00 PM	63886
EPA METHOD 8021B: VOLATILES							Analyst: CCM
Benzene	ND	0.023		mg/Kg	1	11/12/2021 10:17:00 PM	63886
Toluene	ND	0.046		mg/Kg	1	11/12/2021 10:17:00 PM	63886
Ethylbenzene	ND	0.046		mg/Kg	1	11/12/2021 10:17:00 PM	63886
Xylenes, Total	ND	0.093		mg/Kg	1	11/12/2021 10:17:00 PM	63886
Surr: 4-Bromofluorobenzene	109	70-130		%Rec	1	11/12/2021 10:17:00 PM	63886

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 2111603

Date Reported: 11/29/2021

CLIENT: EA Engineering

Client Sample ID: SS-13

Project: NMOCD

Collection Date: 11/10/2021 4:00:00 PM

Lab ID: 2111603-015

Matrix: SOIL

Received Date: 11/11/2021 11:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: CAS
Chloride	4200	150		mg/Kg	50	11/16/2021 10:56:47 PM	63947
EPA METHOD 7471B: MERCURY							Analyst: VP
Mercury	ND	0.033		mg/Kg	1	11/17/2021 4:32:11 PM	63999
EPA METHOD 6010B: SOIL METALS							Analyst: JLF
Arsenic	ND	4.9		mg/Kg	1	11/17/2021 8:01:19 PM	63898
Barium	100	0.098		mg/Kg	1	11/17/2021 8:01:19 PM	63898
Cadmium	ND	0.098		mg/Kg	1	11/17/2021 8:01:19 PM	63898
Lead	ND	0.98		mg/Kg	1	11/17/2021 8:01:19 PM	63898
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	1400	190		mg/Kg	20	11/16/2021 5:40:45 PM	63901
Motor Oil Range Organics (MRO)	1000	930		mg/Kg	20	11/16/2021 5:40:45 PM	63901
Surr: DNOP	0	70-130	S	%Rec	20	11/16/2021 5:40:45 PM	63901
EPA METHOD 8015D: GASOLINE RANGE							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/12/2021 11:16:00 PM	63886
Surr: BFB	99.8	70-130		%Rec	1	11/12/2021 11:16:00 PM	63886
EPA METHOD 8021B: VOLATILES							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	11/12/2021 11:16:00 PM	63886
Toluene	ND	0.049		mg/Kg	1	11/12/2021 11:16:00 PM	63886
Ethylbenzene	ND	0.049		mg/Kg	1	11/12/2021 11:16:00 PM	63886
Xylenes, Total	ND	0.099		mg/Kg	1	11/12/2021 11:16:00 PM	63886
Surr: 4-Bromofluorobenzene	107	70-130		%Rec	1	11/12/2021 11:16:00 PM	63886

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 2111603

Date Reported: 11/29/2021

CLIENT: EA Engineering

Client Sample ID: SS-14

Project: NMOCD

Collection Date: 11/10/2021 4:45:00 PM

Lab ID: 2111603-016

Matrix: SOIL

Received Date: 11/11/2021 11:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: CAS
Chloride	27000	1500		mg/Kg	500	11/16/2021 11:09:12 PM	63947
EPA METHOD 7471B: MERCURY							Analyst: VP
Mercury	ND	0.033		mg/Kg	1	11/17/2021 4:34:21 PM	63999
EPA METHOD 6010B: SOIL METALS							Analyst: JLF
Arsenic	ND	5.0		mg/Kg	1	11/17/2021 8:03:38 PM	63898
Barium	160	0.10		mg/Kg	1	11/17/2021 8:03:38 PM	63898
Cadmium	ND	0.10		mg/Kg	1	11/17/2021 8:03:38 PM	63898
Lead	ND	1.0		mg/Kg	1	11/17/2021 8:03:38 PM	63898
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	3700	430		mg/Kg	50	11/16/2021 6:04:52 PM	63901
Motor Oil Range Organics (MRO)	2800	2200		mg/Kg	50	11/16/2021 6:04:52 PM	63901
Surr: DNOP	0	70-130	S	%Rec	50	11/16/2021 6:04:52 PM	63901
EPA METHOD 8015D: GASOLINE RANGE							Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/12/2021 11:36:00 PM	63886
Surr: BFB	97.5	70-130		%Rec	1	11/12/2021 11:36:00 PM	63886
EPA METHOD 8021B: VOLATILES							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	11/12/2021 11:36:00 PM	63886
Toluene	ND	0.050		mg/Kg	1	11/12/2021 11:36:00 PM	63886
Ethylbenzene	ND	0.050		mg/Kg	1	11/12/2021 11:36:00 PM	63886
Xylenes, Total	ND	0.10		mg/Kg	1	11/12/2021 11:36:00 PM	63886
Surr: 4-Bromofluorobenzene	108	70-130		%Rec	1	11/12/2021 11:36:00 PM	63886

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 2111603

Date Reported: 11/29/2021

CLIENT: EA Engineering

Client Sample ID: SS-15

Project: NMOCD

Collection Date: 11/10/2021 5:20:00 PM

Lab ID: 2111603-017

Matrix: SOIL

Received Date: 11/11/2021 11:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: CAS
Chloride	4300	150		mg/Kg	50	11/16/2021 11:21:37 PM	63947
EPA METHOD 7471B: MERCURY							Analyst: VP
Mercury	ND	0.034		mg/Kg	1	11/17/2021 4:36:30 PM	63999
EPA METHOD 6010B: SOIL METALS							Analyst: JLF
Arsenic	ND	4.9		mg/Kg	1	11/17/2021 8:05:59 PM	63898
Barium	78	0.097		mg/Kg	1	11/17/2021 8:05:59 PM	63898
Cadmium	ND	0.097		mg/Kg	1	11/17/2021 8:05:59 PM	63898
Lead	1.8	0.97		mg/Kg	1	11/17/2021 8:05:59 PM	63898
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	2800	200		mg/Kg	20	11/16/2021 6:29:00 PM	63901
Motor Oil Range Organics (MRO)	2300	1000		mg/Kg	20	11/16/2021 6:29:00 PM	63901
Surr: DNOP	0	70-130	S	%Rec	20	11/16/2021 6:29:00 PM	63901
EPA METHOD 8015D: GASOLINE RANGE							Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/12/2021 11:55:00 PM	63886
Surr: BFB	93.9	70-130		%Rec	1	11/12/2021 11:55:00 PM	63886
EPA METHOD 8021B: VOLATILES							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	11/12/2021 11:55:00 PM	63886
Toluene	ND	0.050		mg/Kg	1	11/12/2021 11:55:00 PM	63886
Ethylbenzene	ND	0.050		mg/Kg	1	11/12/2021 11:55:00 PM	63886
Xylenes, Total	ND	0.10		mg/Kg	1	11/12/2021 11:55:00 PM	63886
Surr: 4-Bromofluorobenzene	105	70-130		%Rec	1	11/12/2021 11:55:00 PM	63886

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 2111603

Date Reported: 11/29/2021

CLIENT: EA Engineering

Client Sample ID: SS-16

Project: NMOCD

Collection Date: 11/10/2021 5:32:00 PM

Lab ID: 2111603-018

Matrix: SOIL

Received Date: 11/11/2021 11:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: CAS
Chloride	10000	600		mg/Kg	200	11/17/2021 12:11:15 AM	63947
EPA METHOD 7471B: MERCURY							Analyst: VP
Mercury	ND	0.033		mg/Kg	1	11/17/2021 4:43:00 PM	63999
EPA METHOD 6010B: SOIL METALS							Analyst: JLF
Arsenic	ND	4.9		mg/Kg	1	11/17/2021 8:08:12 PM	63898
Barium	110	0.098		mg/Kg	1	11/17/2021 8:08:12 PM	63898
Cadmium	1.4	0.098		mg/Kg	1	11/17/2021 8:08:12 PM	63898
Lead	3.5	0.98		mg/Kg	1	11/17/2021 8:08:12 PM	63898
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	8000	470		mg/Kg	50	11/17/2021 4:12:33 PM	63901
Motor Oil Range Organics (MRO)	5900	2400		mg/Kg	50	11/17/2021 4:12:33 PM	63901
Surr: DNOP	0	70-130	S	%Rec	50	11/17/2021 4:12:33 PM	63901
EPA METHOD 8015D: GASOLINE RANGE							Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/13/2021 12:15:00 AM	63886
Surr: BFB	95.6	70-130		%Rec	1	11/13/2021 12:15:00 AM	63886
EPA METHOD 8021B: VOLATILES							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	11/13/2021 12:15:00 AM	63886
Toluene	ND	0.050		mg/Kg	1	11/13/2021 12:15:00 AM	63886
Ethylbenzene	ND	0.050		mg/Kg	1	11/13/2021 12:15:00 AM	63886
Xylenes, Total	ND	0.099		mg/Kg	1	11/13/2021 12:15:00 AM	63886
Surr: 4-Bromofluorobenzene	108	70-130		%Rec	1	11/13/2021 12:15:00 AM	63886

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 2111603

Date Reported: 11/29/2021

CLIENT: EA Engineering

Client Sample ID: BG-2

Project: NMOCD

Collection Date: 11/10/2021 5:50:00 PM

Lab ID: 2111603-019

Matrix: SOIL

Received Date: 11/11/2021 11:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: CAS
Chloride	12000	600		mg/Kg	200	11/17/2021 12:23:39 AM	63947
EPA METHOD 7471B: MERCURY							Analyst: VP
Mercury	ND	0.033		mg/Kg	1	11/17/2021 4:45:10 PM	63999
EPA METHOD 6010B: SOIL METALS							Analyst: JLF
Arsenic	ND	4.8		mg/Kg	1	11/17/2021 8:10:20 PM	63898
Barium	91	0.097		mg/Kg	1	11/18/2021 7:11:43 PM	63898
Cadmium	ND	0.097		mg/Kg	1	11/17/2021 8:10:20 PM	63898
Lead	2.5	0.97		mg/Kg	1	11/17/2021 8:10:20 PM	63898
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	11/17/2021 4:38:38 PM	63901
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/17/2021 4:38:38 PM	63901
Surr: DNOP	84.4	70-130		%Rec	1	11/17/2021 4:38:38 PM	63901
EPA METHOD 8015D: GASOLINE RANGE							Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/13/2021 12:34:00 AM	63886
Surr: BFB	92.8	70-130		%Rec	1	11/13/2021 12:34:00 AM	63886
EPA METHOD 8021B: VOLATILES							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	11/13/2021 12:34:00 AM	63886
Toluene	ND	0.050		mg/Kg	1	11/13/2021 12:34:00 AM	63886
Ethylbenzene	ND	0.050		mg/Kg	1	11/13/2021 12:34:00 AM	63886
Xylenes, Total	ND	0.099		mg/Kg	1	11/13/2021 12:34:00 AM	63886
Surr: 4-Bromofluorobenzene	105	70-130		%Rec	1	11/13/2021 12:34:00 AM	63886

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 2111603

Date Reported: 11/29/2021

CLIENT: EA Engineering

Client Sample ID: TB-1

Project: NMOCD

Collection Date: 11/10/2021 6:00:00 PM

Lab ID: 2111603-020

Matrix: TRIP BLANK

Received Date: 11/11/2021 11:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES							Analyst: CCM
Benzene	ND	1.0		µg/L	1	11/13/2021 1:33:00 AM	R82818
Toluene	ND	1.0		µg/L	1	11/13/2021 1:33:00 AM	R82818
Ethylbenzene	ND	1.0		µg/L	1	11/13/2021 1:33:00 AM	R82818
Xylenes, Total	ND	2.0		µg/L	1	11/13/2021 1:33:00 AM	R82818
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/13/2021 1:33:00 AM	R82818
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/13/2021 1:33:00 AM	R82818
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	11/13/2021 1:33:00 AM	R82818

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		



ANALYTICAL SUMMARY REPORT

November 23, 2021

Hall Environmental
4901 Hawkins St NE Ste D
Albuquerque, NM 87109-4372

Work Order: B21111237 Quote ID: B5636

Project Name: Not Indicated

Energy Laboratories Inc Billings MT received the following 1 sample for Hall Environmental on 11/12/2021 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B21111237-001	2111603-006C SS-5A	11/10/21 12:03	11/12/21	Oil	Metals by ICP/ICPMS, Total or Soluble Mercury in Solid By CVAA Anions, Water Extractable Total Metals Digestion by SW3050B DI Water Soil Extract ASA10-3 Mercury Digestion by SW7471B

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: B21111237-001
Client Sample ID: 2111603-006C SS-5A

Report Date: 11/23/21
Collection Date: 11/10/21 12:03
Date Received: 11/12/21
Matrix: Oil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
WATER EXTRACTABLE CONSTITUENTS							
Chloride, 1:10	78	mg/kg		1		E300.0	11/17/21 20:17 / jph
METALS, TOTAL - EPA SW846							
Arsenic	4	mg/kg		1		SW6020	11/19/21 18:58 / car
Barium	21	mg/kg		1		SW6020	11/19/21 18:58 / car
Cadmium	ND	mg/kg		1		SW6020	11/19/21 18:58 / car
Lead	2	mg/kg		1		SW6020	11/23/21 15:22 / car
Mercury	ND	mg/kg		0.1		SW7471B	11/18/21 12:17 / jag

Report Definitions: RL - Analyte Reporting Limit
QCL - Quality Control Limit

MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental

Work Order: B21111237

Report Date: 11/23/21

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020 Analytical Run: ICPMS206-B_211119A										
Lab ID: ICSA	4	Interference Check Sample A								11/19/21 14:55
Arsenic		0.0000836	mg/L	0.0010						
Barium		0.0000784	mg/L	0.0010						
Cadmium		0.000558	mg/L	0.0010						
Lead		0.0000180	mg/L	0.0010						
Lab ID: ICSAB	4	Interference Check Sample AB								11/19/21 15:00
Arsenic		0.00964	mg/L	0.0010	96	80	120			
Barium		0.0000740	mg/L	0.0010						
Cadmium		0.0102	mg/L	0.0010	102	80	120			
Lead		0.0000112	mg/L	0.0010						
Lab ID: QCS	4	Initial Calibration Verification Standard								11/19/21 14:27
Arsenic		0.0510	mg/L	0.0010	102	90	110			
Barium		0.0539	mg/L	0.0010	108	90	110			
Cadmium		0.0257	mg/L	0.0010	103	90	110			
Lead		0.0516	mg/L	0.0010	103	90	110			
Method: SW6020 Batch: 161493										
Lab ID: MB-161493	4	Method Blank								Run: ICPMS206-B_211119A 11/19/21 17:56
Arsenic		ND	mg/kg	0.3						
Barium		0.1	mg/kg	0.06						
Cadmium		ND	mg/kg	0.01						
Lead		ND	mg/kg	0.2						
Lab ID: SRM2-161493	4	Standard Reference Material								Run: ICPMS206-B_211119A 11/19/21 18:02
Arsenic		90.7	mg/kg	13	91	70	130			
Barium		90.8	mg/kg	2.5	91	70	130			
Cadmium		93.2	mg/kg	1.0	93	70	130			
Lead		91.9	mg/kg	8.7	92	70	130			
Lab ID: B21111515-001ADIL	4	Serial Dilution								Run: ICPMS206-B_211119A 11/19/21 18:30
Arsenic		ND	mg/kg	3.0						10
Barium		ND	mg/kg	1.0						10
Cadmium		ND	mg/kg	1.0						10
Lead		ND	mg/kg	2.1						10
Lab ID: B21111515-001APDS1	4	Post Digestion/Distillation Spike								Run: ICPMS206-B_211119A 11/19/21 18:36
Arsenic		5.03	mg/kg	1.0	104	75	125			
Barium		4.44	mg/kg	1.0	92	75	125			
Cadmium		4.26	mg/kg	1.0	88	75	125			
Lead		4.30	mg/kg	1.0	89	75	125			
Lab ID: B21111515-001AMS3	4	Sample Matrix Spike								Run: ICPMS206-B_211119A 11/19/21 18:41
Arsenic		98.8	mg/kg	12	103	75	125			
Barium		95.9	mg/kg	2.4	100	75	125			
Cadmium		48.0	mg/kg	1.0	100	75	125			
Lead		96.5	mg/kg	8.4	101	75	125			

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental

Work Order: B21111237

Report Date: 11/23/21

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020 Batch: 161493										
Lab ID: B21111515-001AMSD	4	Sample Matrix Spike Duplicate					Run: ICPMS206-B_211119A			11/19/21 18:47
Arsenic		82.6	mg/kg	11	93	75	125	18	20	
Barium		82.8	mg/kg	2.2	94	75	125	15	20	
Cadmium		41.0	mg/kg	1.0	93	75	125	16	20	
Lead		82.2	mg/kg	7.8	93	75	125	16	20	
Method: SW6020 Analytical Run: ICPMS207-B_211123A										
Lab ID: ICSA		Interference Check Sample A								11/23/21 13:15
Lead		0.0000256	mg/L	0.0010						
Lab ID: ICSAB		Interference Check Sample AB								11/23/21 13:21
Lead		0.0000235	mg/L	0.0010						
Lab ID: QCS		Initial Calibration Verification Standard								11/23/21 12:39
Lead		0.0484	mg/L	0.0010	97	90	110			
Method: SW6020 Batch: 161493										
Lab ID: MB-161493		Method Blank					Run: ICPMS207-B_211123A			11/23/21 16:46
Lead		0.6	mg/kg	0.2						

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental

Work Order: B21111237

Report Date: 11/23/21

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual	
Method: SW7471B								Analytical Run: HGCV202-B_211118A			
Lab ID: ICV	Initial Calibration Verification Standard										
Mercury		0.00219	mg/kg	0.10	110	90	110			11/18/21 11:38	
Method: SW7471B								Batch: 161342			
Lab ID: MB-161342	Method Blank										
Mercury		0.006	mg/kg	0.005						Run: HGCV202-B_211118A 11/18/21 11:43	
Lab ID: LCS3-161342	Laboratory Control Sample										
Mercury		0.228	mg/kg	0.10	114	80	120			Run: HGCV202-B_211118A 11/18/21 11:45	
Lab ID: B21111049-001ADIL	Serial Dilution										
Mercury		0.132	mg/kg-dry	0.10				66	10	Run: HGCV202-B_211118A 11/18/21 12:09 R	
Lab ID: B21111049-001AMS3	Sample Matrix Spike										
Mercury		0.380	mg/kg-dry	0.10	60	80	120			Run: HGCV202-B_211118A 11/18/21 12:10 S	
Lab ID: B21111049-001AMSD	Sample Matrix Spike Duplicate										
Mercury		0.523	mg/kg-dry	0.10	132	80	120	32	20	Run: HGCV202-B_211118A 11/18/21 12:12 SR	
Lab ID: B21111049-001ADIL	Serial Dilution										
Mercury		0.136	mg/kg-dry	0.24						Run: HGCV202-B_211118A 11/18/21 12:45 10	

Qualifiers:

RL - Analyte Reporting Limit
R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)
S - Spike recovery outside of advisory limits



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental

Work Order: B21111237

Report Date: 11/18/21

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0										Batch: 161401
Lab ID: LCS-161401		Laboratory Control Sample								Run: IC METROHM 1_211117A 11/17/21 18:55
Chloride, 1:10		69.6	mg/kg	1.0	104	70	130			
Lab ID: B21110991-001AMS		Sample Matrix Spike								Run: IC METROHM 1_211117A 11/17/21 19:28
Chloride, 1:10		13400	mg/kg	1.0	106	70	130			
Lab ID: B21110991-001ADUP		Sample Duplicate								Run: IC METROHM 1_211117A 11/17/21 19:44
Chloride, 1:10		8220	mg/kg	1.0				1.9	30	

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



Work Order Receipt Checklist

Hall Environmental

B21111237

Login completed by: Richard L. Shular

Date Received: 11/12/2021

Reviewed by: BL2000\gmccartney

Received by: tkb

Reviewed Date: 11/17/2021

Carrier name: Return-UPS NDA

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all shipping container(s)/cooler(s)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	10.4°C Blue Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input checked="" type="checkbox"/>

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

Contact and Corrective Action Comments:

None

SUB CONTRACTOR		Energy Labs -Billings		COMPANY		Energy Laboratories		PHONE	(406) 869-6253	FAX	(406) 252-6069
ADDRESS		1120 South 27th Street									
CITY STATE ZIP		Billings, MT 59107									
ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS				
1	2111603-006C	SS-5A	125HDP	Oil	11/10/2021 12:03:00 PM	1	BSZ111237 Chloride, Lead, Mercury, Cadmium, Barium, Arsenic Standard TAT				

SPECIAL INSTRUCTIONS/COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By	<i>See</i>	Date	11/11/2021	Time	2:13 PM	Received By	<i>[Signature]</i>	Date		Time	
Relinquished By		Date		Time		Received By	<i>[Signature]</i>	Date		Time	
Relinquished By		Date		Time		Received By	<i>[Signature]</i>	Date		Time	
TAT	Standard <input checked="" type="checkbox"/>					Next BD	<input type="checkbox"/>	2nd BD	<input type="checkbox"/>	3rd BD	<input type="checkbox"/>

REPORT TRANSMITTAL DESIRED
 HARDCOPY (extra cost) FAX EMAIL ONLINE

FOR LAB USE ONLY
 Temp of samples _____ Attempt to Cool? _____
 Comments _____

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2111603

29-Nov-21

Client: EA Engineering
Project: NMOCD

Sample ID: MB-63931	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 63931	RunNo: 82840								
Prep Date: 11/15/2021	Analysis Date: 11/15/2021	SeqNo: 2942094	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-63931	SampType: ics	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 63931	RunNo: 82840								
Prep Date: 11/15/2021	Analysis Date: 11/15/2021	SeqNo: 2942095	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.7	90	110			

Sample ID: MB-63947	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 63947	RunNo: 82860								
Prep Date: 11/15/2021	Analysis Date: 11/15/2021	SeqNo: 2942182	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-63947	SampType: ics	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 63947	RunNo: 82860								
Prep Date: 11/15/2021	Analysis Date: 11/15/2021	SeqNo: 2942183	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	90.4	90	110			

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| PQL Practical Quantitative Limit | RL Reporting Limit |
| S % Recovery outside of range due to dilution or matrix interference | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2111603

29-Nov-21

Client: EA Engineering

Project: NMOCD

Sample ID: MB	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBW	Batch ID: R82800	RunNo: 82800								
Prep Date:	Analysis Date: 11/11/2021	SeqNo: 2939624	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID: LCS	SampType: ics	TestCode: EPA Method 300.0: Anions								
Client ID: LCSW	Batch ID: R82800	RunNo: 82800								
Prep Date:	Analysis Date: 11/11/2021	SeqNo: 2939625	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.6	0.50	5.000	0	92.1	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2111603

29-Nov-21

Client: EA Engineering
Project: NMOCD

Sample ID: MB-63939	SampType: MBLK	TestCode: DRO by 8015D								
Client ID: PBW	Batch ID: 63939	RunNo: 82832								
Prep Date: 11/15/2021	Analysis Date: 11/15/2021	SeqNo: 2941226	Units: wt%							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.10								
Motor Oil Range Organics (MRO)	ND	0.50								
Surr: DNOP	0.090		0.1000		90.5	64.9	131			

Sample ID: MB-63939	SampType: MBLK	TestCode: DRO by 8015D								
Client ID: PBW	Batch ID: 63939	RunNo: 82831								
Prep Date: 11/15/2021	Analysis Date: 11/15/2021	SeqNo: 2942249	Units: wt%							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.10								
Motor Oil Range Organics (MRO)	ND	0.50								
Surr: DNOP	0.11		0.1000		108	64.9	131			

Sample ID: LCS-63939	SampType: LCS	TestCode: DRO by 8015D								
Client ID: LCSW	Batch ID: 63939	RunNo: 82888								
Prep Date: 11/15/2021	Analysis Date: 11/16/2021	SeqNo: 2943440	Units: wt%							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.44	0.10	0.5000	0	88.8	69.1	125			
Surr: DNOP	0.051		0.05000		102	64.9	131			

Sample ID: LCSD-63939	SampType: LCSD	TestCode: DRO by 8015D								
Client ID: LCSS02	Batch ID: 63939	RunNo: 82888								
Prep Date: 11/15/2021	Analysis Date: 11/16/2021	SeqNo: 2943441	Units: wt%							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.43	0.10	0.5000	0	85.8	69.1	125	3.42	20	
Surr: DNOP	0.048		0.05000		96.5	64.9	131	0	0	

Sample ID: MB-63939	SampType: MBLK	TestCode: DRO by 8015D								
Client ID: PBW	Batch ID: 63939	RunNo: 82888								
Prep Date: 11/15/2021	Analysis Date: 11/16/2021	SeqNo: 2943442	Units: wt%							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.10								
Motor Oil Range Organics (MRO)	ND	0.50								
Surr: DNOP	0.10		0.1000		103	64.9	131			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2111603

29-Nov-21

Client: EA Engineering
Project: NMOCD

Sample ID: 2111603-001AMS	SampType: MS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: BG-1	Batch ID: 63901	RunNo: 82883								
Prep Date: 11/12/2021	Analysis Date: 11/16/2021	SeqNo: 2943502	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	49.90	0	96.3	39.3	155			
Surr: DNOP	5.1		4.990		102	70	130			

Sample ID: 2111603-001AMSD	SampType: MSD	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: BG-1	Batch ID: 63901	RunNo: 82883								
Prep Date: 11/12/2021	Analysis Date: 11/16/2021	SeqNo: 2943503	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	9.3	46.51	0	95.6	39.3	155	7.75	23.4	
Surr: DNOP	4.5		4.651		97.7	70	130	0	0	

Sample ID: MB-63901	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 63901	RunNo: 82883								
Prep Date: 11/12/2021	Analysis Date: 11/16/2021	SeqNo: 2943533	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		105	70	130			

Sample ID: LCS-63901	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 63901	RunNo: 82883								
Prep Date: 11/12/2021	Analysis Date: 11/16/2021	SeqNo: 2943542	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	96.7	68.9	135			
Surr: DNOP	5.3		5.000		106	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2111603

29-Nov-21

Client: EA Engineering
Project: NMOCD

Sample ID: MB-63878	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range								
Client ID: PBW	Batch ID: 63878	RunNo: 82831								
Prep Date: 11/11/2021	Analysis Date: 11/15/2021	SeqNo: 2942252	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	0.54		0.5000		109	64.8	167			

Sample ID: LCS-63878	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range								
Client ID: LCSW	Batch ID: 63878	RunNo: 82831								
Prep Date: 11/11/2021	Analysis Date: 11/15/2021	SeqNo: 2942253	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.1	1.0	2.500	0	83.6	73	138			
Surr: DNOP	0.24		0.2500		95.1	64.8	167			

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| PQL Practical Quantitative Limit | RL Reporting Limit |
| S % Recovery outside of range due to dilution or matrix interference | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2111603

29-Nov-21

Client: EA Engineering
Project: NMOCD

Sample ID: mb-63972	SampType: MBLK		TestCode: GRO by 8015D							
Client ID: PBW	Batch ID: 63972		RunNo: 82920							
Prep Date: 11/16/2021	Analysis Date: 11/17/2021		SeqNo: 2944115		Units: wt%					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		103	58.9	156			

Sample ID: ics-63972	SampType: LCS		TestCode: GRO by 8015D							
Client ID: LCSW	Batch ID: 63972		RunNo: 82920							
Prep Date: 11/16/2021	Analysis Date: 11/17/2021		SeqNo: 2944116		Units: wt%					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	25.00	0	108	80	120			
Surr: BFB	1200		1000		119	58.9	156			

Sample ID: icsd-63972	SampType: LCSD		TestCode: GRO by 8015D							
Client ID: LCSS02	Batch ID: 63972		RunNo: 82920							
Prep Date: 11/16/2021	Analysis Date: 11/17/2021		SeqNo: 2944117		Units: wt%					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	101	80	120	6.05	20	
Surr: BFB	1200		1000		120	58.9	156	0	0	

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| PQL Practical Quantitative Limit | RL Reporting Limit |
| S % Recovery outside of range due to dilution or matrix interference | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2111603

29-Nov-21

Client: EA Engineering
Project: NMOCD

Sample ID: Ics-63886	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: 63886	RunNo: 82818								
Prep Date: 11/11/2021	Analysis Date: 11/12/2021	SeqNo: 2940171	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	105	78.6	131			
Surr: BFB	1200		1000		120	70	130			

Sample ID: mb-63886	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: 63886	RunNo: 82818								
Prep Date: 11/11/2021	Analysis Date: 11/12/2021	SeqNo: 2940172	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		101	70	130			

Sample ID: mb-water	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: R82818	RunNo: 82818								
Prep Date:	Analysis Date: 11/12/2021	SeqNo: 2940434	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	980		1000		98.2	70	130			

Sample ID: 2.5ug gro lcs	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: R82818	RunNo: 82818								
Prep Date:	Analysis Date: 11/12/2021	SeqNo: 2940435	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	101	78.6	131			
Surr: BFB	1100		1000		110	70	130			

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| PQL Practical Quantitative Limit | RL Reporting Limit |
| S % Recovery outside of range due to dilution or matrix interference | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2111603

29-Nov-21

Client: EA Engineering

Project: NMOCD

Sample ID: 2.5ug gro lcs	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSW	Batch ID: R82818		RunNo: 82818							
Prep Date:	Analysis Date: 11/12/2021		SeqNo: 2940169		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.50	0.050	0.5000	0	101	80	120			
Surr: BFB	22		20.00		110	68.5	136			

Sample ID: mb-water	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBW	Batch ID: R82818		RunNo: 82818							
Prep Date:	Analysis Date: 11/12/2021		SeqNo: 2940170		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	20		20.00		98.2	68.5	136			

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| PQL Practical Quantitative Limit | RL Reporting Limit |
| S % Recovery outside of range due to dilution or matrix interference | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2111603

29-Nov-21

Client: EA Engineering
Project: NMOCD

Sample ID: mb-63972	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBW	Batch ID: 63972	RunNo: 82920								
Prep Date: 11/16/2021	Analysis Date: 11/17/2021	SeqNo: 2944120	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	2.5								
Toluene	ND	2.5								
Ethylbenzene	ND	2.5								
Xylenes, Total	ND	5.0								
m,p-Xylene	ND	2.5								
o-Xylene	ND	2.5								
Surr: 4-Bromofluorobenzene	57		50.00		114	70	130			

Sample ID: lcs-63972	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSW	Batch ID: 63972	RunNo: 82920								
Prep Date: 11/16/2021	Analysis Date: 11/17/2021	SeqNo: 2944121	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	53	2.5	50.00	0	106	80	120			
Toluene	57	2.5	50.00	0	113	80	120			
Ethylbenzene	53	2.5	50.00	0	106	80	120			
Xylenes, Total	160	5.0	150.0	0	108	80	120			
Surr: 4-Bromofluorobenzene	57		50.00		114	70	130			

Sample ID: lcsd-63972	SampType: LCSD	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS02	Batch ID: 63972	RunNo: 82920								
Prep Date: 11/16/2021	Analysis Date: 11/17/2021	SeqNo: 2944122	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	53	2.5	50.00	0	106	80	120	0.379	20	
Toluene	52	2.5	50.00	0	104	80	120	8.22	20	
Ethylbenzene	52	2.5	50.00	0	104	80	120	1.45	20	
Xylenes, Total	160	5.0	150.0	0	107	80	120	0.716	20	
Surr: 4-Bromofluorobenzene	58		50.00		116	70	130	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2111603

29-Nov-21

Client: EA Engineering
Project: NMOCD

Sample ID: Ics-63886	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch ID: 63886	RunNo: 82818								
Prep Date: 11/11/2021	Analysis Date: 11/12/2021	SeqNo: 2940223	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	107	80	120			
Toluene	1.1	0.050	1.000	0	109	80	120			
Ethylbenzene	1.1	0.050	1.000	0	106	80	120			
Xylenes, Total	3.3	0.10	3.000	0	108	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		113	70	130			

Sample ID: mb-63886	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	Batch ID: 63886	RunNo: 82818								
Prep Date: 11/11/2021	Analysis Date: 11/12/2021	SeqNo: 2940224	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		112	70	130			

Sample ID: 2111603-001ams	SampType: MS	TestCode: EPA Method 8021B: Volatiles								
Client ID: BG-1	Batch ID: 63886	RunNo: 82818								
Prep Date: 11/11/2021	Analysis Date: 11/12/2021	SeqNo: 2940227	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.024	0.9747	0	112	80	120			
Toluene	1.0	0.049	0.9747	0	103	80	120			
Ethylbenzene	1.1	0.049	0.9747	0	112	80	120			
Xylenes, Total	3.3	0.097	2.924	0	112	80	120			
Surr: 4-Bromofluorobenzene	0.96		0.9747		98.6	70	130			

Sample ID: 2111603-001amsd	SampType: MSD	TestCode: EPA Method 8021B: Volatiles								
Client ID: BG-1	Batch ID: 63886	RunNo: 82818								
Prep Date: 11/11/2021	Analysis Date: 11/12/2021	SeqNo: 2940228	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.024	0.9497	0	113	80	120	1.61	20	
Toluene	1.1	0.047	0.9497	0	112	80	120	5.64	20	
Ethylbenzene	1.1	0.047	0.9497	0	116	80	120	0.525	20	
Xylenes, Total	3.3	0.095	2.849	0	117	80	120	1.65	20	
Surr: 4-Bromofluorobenzene	0.99		0.9497		104	70	130	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2111603

29-Nov-21

Client: EA Engineering

Project: NMOCD

Sample ID: 100ng btex lcs	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch ID: R82818	RunNo: 82818								
Prep Date:	Analysis Date: 11/12/2021	SeqNo: 2940436	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	105	80	120			
Toluene	0.98	0.050	1.000	0	97.5	80	120			
Ethylbenzene	1.0	0.050	1.000	0	104	80	120			
Xylenes, Total	3.2	0.10	3.000	0	106	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		108	70	130			

Sample ID: mb-water	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	Batch ID: R82818	RunNo: 82818								
Prep Date:	Analysis Date: 11/12/2021	SeqNo: 2940437	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		109	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2111603

29-Nov-21

Client: EA Engineering

Project: NMOCD

Sample ID: 100ng btex lcs	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSW	Batch ID: R82818	RunNo: 82818								
Prep Date:	Analysis Date: 11/12/2021	SeqNo: 2940216	Units: µg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	105	80	120			
Toluene	20	1.0	20.00	0	97.5	80	120			
Ethylbenzene	21	1.0	20.00	0	104	80	120			
Xylenes, Total	63	2.0	60.00	0	106	80	120			
1,2,4-Trimethylbenzene	21	1.0	20.00	0	106	80	120			
1,3,5-Trimethylbenzene	20	1.0	20.00	0	102	80	120			
Surr: 4-Bromofluorobenzene	22		20.00		108	70	130			

Sample ID: mb-water	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBW	Batch ID: R82818	RunNo: 82818								
Prep Date:	Analysis Date: 11/12/2021	SeqNo: 2940217	Units: µg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
Surr: 4-Bromofluorobenzene	22		20.00		109	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2111603

29-Nov-21

Client: EA Engineering
Project: NMOCD

Sample ID: MB-63999	SampType: MBLK	TestCode: EPA Method 7471B: Mercury								
Client ID: PBS	Batch ID: 63999	RunNo: 82916								
Prep Date: 11/17/2021	Analysis Date: 11/17/2021	SeqNo: 2944019	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID: LCSLL-63999	SampType: LCSLL	TestCode: EPA Method 7471B: Mercury								
Client ID: BatchQC	Batch ID: 63999	RunNo: 82916								
Prep Date: 11/17/2021	Analysis Date: 11/17/2021	SeqNo: 2944020	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033	0.006660	0	70.2	70	130			

Sample ID: LCS-63999	SampType: LCS	TestCode: EPA Method 7471B: Mercury								
Client ID: LCSS	Batch ID: 63999	RunNo: 82916								
Prep Date: 11/17/2021	Analysis Date: 11/17/2021	SeqNo: 2944021	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.16	0.033	0.1667	0	95.6	80	120			

Sample ID: 2111603-001AMS	SampType: MS	TestCode: EPA Method 7471B: Mercury								
Client ID: BG-1	Batch ID: 63999	RunNo: 82916								
Prep Date: 11/17/2021	Analysis Date: 11/17/2021	SeqNo: 2944023	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.16	0.033	0.1668	0	97.0	80	120			

Sample ID: 2111603-001AMSD	SampType: MSD	TestCode: EPA Method 7471B: Mercury								
Client ID: BG-1	Batch ID: 63999	RunNo: 82916								
Prep Date: 11/17/2021	Analysis Date: 11/17/2021	SeqNo: 2944024	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.16	0.033	0.1662	0	99.2	80	120	1.83	20	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2111603

29-Nov-21

Client: EA Engineering
Project: NMOCD

Sample ID: MB-64017	SampType: MBLK	TestCode: EPA Method 7470A: Mercury								
Client ID: PBW	Batch ID: 64017	RunNo: 82945								
Prep Date: 11/18/2021	Analysis Date: 11/18/2021	SeqNo: 2945202	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: LCSLL-64017	SampType: LCSLL	TestCode: EPA Method 7470A: Mercury								
Client ID: BatchQC	Batch ID: 64017	RunNo: 82945								
Prep Date: 11/18/2021	Analysis Date: 11/18/2021	SeqNo: 2945203	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020	0.0001500	0	95.4	50	150			

Sample ID: LCS-64017	SampType: LCS	TestCode: EPA Method 7470A: Mercury								
Client ID: LCSW	Batch ID: 64017	RunNo: 82945								
Prep Date: 11/18/2021	Analysis Date: 11/18/2021	SeqNo: 2945204	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	101	85	115			

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| PQL Practical Quantitative Limit | RL Reporting Limit |
| S % Recovery outside of range due to dilution or matrix interference | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2111603

29-Nov-21

Client: EA Engineering

Project: NMOCD

Sample ID: MB-63898	SampType: MBLK	TestCode: EPA Method 6010B: Soil Metals								
Client ID: PBS	Batch ID: 63898	RunNo: 82896								
Prep Date: 11/11/2021	Analysis Date: 11/16/2021	SeqNo: 2943602	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Arsenic	ND	5.0								
Barium	ND	0.10								
Cadmium	ND	0.10								

Sample ID: LCS-63898	SampType: LCS	TestCode: EPA Method 6010B: Soil Metals								
Client ID: LCSS	Batch ID: 63898	RunNo: 82896								
Prep Date: 11/11/2021	Analysis Date: 11/16/2021	SeqNo: 2943604	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Arsenic	23	5.0	25.00	0	92.1	80	120			
Barium	25	0.10	25.00	0	99.3	80	120			
Cadmium	25	0.10	25.00	0	98.6	80	120			

Sample ID: MB-63898	SampType: MBLK	TestCode: EPA Method 6010B: Soil Metals								
Client ID: PBS	Batch ID: 63898	RunNo: 82942								
Prep Date: 11/11/2021	Analysis Date: 11/17/2021	SeqNo: 2945037	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Lead	ND	1.0								
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Sample ID: LCS-63898	SampType: LCS	TestCode: EPA Method 6010B: Soil Metals								
Client ID: LCSS	Batch ID: 63898	RunNo: 82942								
Prep Date: 11/11/2021	Analysis Date: 11/17/2021	SeqNo: 2945039	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Lead	25	1.0	25.00	0	101	80	120			
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Sample ID: 2111603-019AMS	SampType: MS	TestCode: EPA Method 6010B: Soil Metals								
Client ID: BG-2	Batch ID: 63898	RunNo: 82942								
Prep Date: 11/11/2021	Analysis Date: 11/17/2021	SeqNo: 2945115	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Arsenic	22	4.9	24.42	0	91.3	75	125			
Cadmium	21	0.098	24.42	0	86.8	75	125			
Lead	23	0.98	24.42	2.530	84.5	75	125			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2111603

29-Nov-21

Client: EA Engineering
Project: NMOCD

Sample ID: 2111603-019AMSD	SampType: MSD	TestCode: EPA Method 6010B: Soil Metals								
Client ID: BG-2	Batch ID: 63898	RunNo: 82942								
Prep Date: 11/11/2021	Analysis Date: 11/17/2021	SeqNo: 2945116	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	23	4.9	24.46	0	93.3	75	125	2.39	20	
Cadmium	21	0.098	24.46	0	86.2	75	125	0.519	20	
Lead	23	0.98	24.46	2.530	82.5	75	125	1.99	20	

Sample ID: 2111603-019AMS	SampType: MS	TestCode: EPA Method 6010B: Soil Metals								
Client ID: BG-2	Batch ID: 63898	RunNo: 82987								
Prep Date: 11/11/2021	Analysis Date: 11/18/2021	SeqNo: 2946696	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	130	0.098	24.42	90.56	154	75	125			S

Sample ID: 2111603-019AMSD	SampType: MSD	TestCode: EPA Method 6010B: Soil Metals								
Client ID: BG-2	Batch ID: 63898	RunNo: 82987								
Prep Date: 11/11/2021	Analysis Date: 11/18/2021	SeqNo: 2946697	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	130	0.098	24.46	90.56	141	75	125	2.36	20	S

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| PQL Practical Quantitative Limit | RL Reporting Limit |
| S % Recovery outside of range due to dilution or matrix interference | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2111603

29-Nov-21

Client: EA Engineering

Project: NMOCD

Sample ID: MB-63941	SampType: MBLK	TestCode: EPA 6010B: Total Recoverable Metals								
Client ID: PBW	Batch ID: 63941	RunNo: 82894								
Prep Date: 11/15/2021	Analysis Date: 11/16/2021	SeqNo: 2943536	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.030								
Barium	ND	0.0020								
Cadmium	ND	0.0020								
Lead	ND	0.020								

Sample ID: LCS-63941	SampType: LCS	TestCode: EPA 6010B: Total Recoverable Metals								
Client ID: LCSW	Batch ID: 63941	RunNo: 82894								
Prep Date: 11/15/2021	Analysis Date: 11/16/2021	SeqNo: 2943538	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.49	0.030	0.5000	0	97.7	80	120			
Barium	0.46	0.0020	0.5000	0	91.7	80	120			
Cadmium	0.46	0.0020	0.5000	0	91.5	80	120			
Lead	0.46	0.020	0.5000	0	92.7	80	120			

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| PQL Practical Quantitative Limit | RL Reporting Limit |
| S % Recovery outside of range due to dilution or matrix interference | |

Sample Log-In Check List

Client Name: EA Engineering

Work Order Number: 2111603

RcptNo: 1

Received By: Cheyenne Cason 11/11/2021 11:40:00 AM

Completed By: Sean Livingston 11/11/2021 12:16:29 PM

Reviewed By: *jan 11/11/21*

Chad
Sean Livingston

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
2. How was the sample delivered? Client

Log In

3. Was an attempt made to cool the samples? Yes No NA
4. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
5. Sample(s) in proper container(s)? Yes No
6. Sufficient sample volume for indicated test(s)? Yes No
7. Are samples (except VOA and ONG) properly preserved? Yes No
8. Was preservative added to bottles? Yes No NA
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes No NA
10. Were any sample containers received broken? Yes No
11. Does paperwork match bottle labels? Yes No
 (Note discrepancies on chain of custody)
12. Are matrices correctly identified on Chain of Custody? Yes No
13. Is it clear what analyses were requested? Yes No
14. Were all holding times able to be met? Yes No
 (If no, notify customer for authorization.)

of preserved bottles checked for pH: 1
 (<2 or >12 unless noted)
 Adjusted? No
 Checked by: *SK 11/11/21*

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes No NA

Person Notified: _____ Date: _____
 By Whom: _____ Via: eMail Phone Fax In Person
 Regarding: _____
 Client Instructions: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.9	Good				
2	1.4	Good				

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Chain-of-Custody Record

Client: EA Engineering
 Mailing Address: 320 Gold Ave. SW Ste. 1300
ABQ, NM
 Phone #: 505-235-9037
 email or Fax#: MMCVEY@EAEST.COM

QA/QC Package:
 Standard Level 4 (Full Validation)
 Accreditation: Az Compliance
 NELAC Other
 EDD (Type) _____

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.	
11/10/21	1054	Soil	B6-1	2x 4oz jars	NONE	2111603	
	1107		SS-1			001	
	1120		SS-2			002	
	1132		SS-4			003	
	1145		SS-3			004	
	1203	Ag	SS-5a	250ml plastic 5x VOA Hubs 250ml Amber 100ml plastic HCl		005	
	1210	Soil	SS-5	2x 4oz jars	NONE	006	
	1220	Soil	SS-6			007	
	1240	Ag	SS-7a	250ml plastic 5x VOA Hubs 250ml Amber 100ml plastic HCl		008	
	1305	Soil	SS-8	2x 4oz jars	NONE	009	
	1355		SS-9			010	
	1435		SS-10			011	
Date:	Time:	Relinquished by:		Received by:		Date	Time
11-11-21	1135	J. Messenger		me		11/11/21	1140
Date:	Time:	Relinquished by:		Received by:		Date	Time

Turn-Around Time: Standard Rush 5-7 days
 Project Name: NMOC D
 Project #: 6375601
 Project Manager: Mike McVey
 Sampler: J. Messenger
 On Ice: Yes No
 # of Coolers: 2 19-0-1.4
 Cooler Temp (including CF): 14-0-1.4 (°C)

Received by: me Date: 11/11/21 Time: 1140
 Received by: _____ Date: _____ Time: _____



HALL ENVIRONMENTAL ANALYSIS LABORATORY
 www.hallenvironmental.com
 4901 Hawkins NE - Albuquerque, NM 87109
 Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Analysis Request	TPH:8015D(GRO/DR0/MRO)	8081 Pesticides/8082 PCBs	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO ₃ , NO ₂ , PO ₄ , SO ₄	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
MTBE / TMB's (8021)	X								
BTEX	X								
300.0 Chloride	X								
6010/7471 Pb, Hg, Cd, Ba, Cr	X								

Remarks: please email results to: MMCVEY@EAEST.COM

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: EA Engineering
 Mailing Address: 320 Gold Ave. SW Ste. 1300
ABQ, NM
 Phone #: 505-235-9037
 email or Fax#: MMCVEY@EAEST.COM

QA/QC Package:
 Standard Level 4 (Full Validation)
 Accreditation: AZ Compliance
 NELAC Other
 EDD (Type) _____

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.
11/10/21	1500	Soil	SS-11	2x 4oz jars	NONE	013
	1535		SS-12			014
	1600		SS-13			015
	1645		SS-14			016
	1720		SS-15			017
	1732		SS-16			018
	1750		BG-2			019
11/10/21	1800	Ag	TB-1	2x 4oz jars	HCl	020

Date: 11-11-21 Time: 1155 Relinquished by: J. Messenger
 Date: _____ Time: _____ Relinquished by: _____

Turn-Around Time:
 Standard Rush 5-7 days
 Project Name:
NM OCD

Project #:
6375601

Project Manager:
Mike McVey

Sampler: J. Messenger
 On Ice: Yes No
 # of Coolers: 1, 9-0 = 1, 9
 Cooler Temp (including CF): 1, 4-0 = 1, 4 (°C)

TPH: 8015D (GRO / DRO / MRO)	8081 Pesticides/8082 PCBs	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO ₃ , NO ₂ , PO ₄ , SO ₄	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
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