General Information

NMOCD District:	District 2 – Artesia	Incident ID:	nAB1519733009
Landowner:	Federal	RP Reference:	2RP-3117
Client:	Devon Energy Production Company, LP	Site Location:	North Pure Gold 4 Federal #003
Date:	January 27, 2024	Project #:	21E-02816-06
Client Contact:	Jim Raley	Phone #:	575.748.1838
Vertex PM:	Kent Stallings	Phone #:	346.814.1413

Objective

The objective of the Environmental Site Remediation Work Plan is to identify exceedances found during the site assessment/characterization activity and propose an appropriate remediation technique to address the open release at North Pure Gold 4 Federal #003 (hereafter referred to as "North Pure Gold"). The incident occurred on July 11, 2015, when the tank battery caught fire after a lightning strike. Approximately 5 barrels (bbl) of crude oil and 400 bbl of produced water were released into the lined containment. Approximately 2 bbl of oil and 254 bbl of produced water were recovered from the release and were removed for disposal off-site. Areas of environmental concern identified and delineated include the pad north of the containment. An aerial photograph of the site with characterization locations is presented on Figure 1 (Attachment 1). Closure criteria has been selected as per New Mexico Administrative Code 19.15.29.

On December 18, 2023, a monitoring well was drilled on the site location of North Pure Gold 4 Federal #003 and registered with the New Mexico Office of the State Engineer. The well was confirmed dry at 55' and confirms the above noted closure criteria. Drilling and plugging logs and associated documents are included in Attachment 7. All other applicable research as it pertains to closure criteria selection is presented in Attachment 5. The completed NMOCD C-141 Report for the incident is included in Attachment 5.

Table 1. Closure Criteria for Soils to Remediation & Reclamation Standards

	Constituent	Limit
0-4 feet bgs (19.15.29.13)	Chloride	600 mg/kg
	TPH (GRO+DRO+MRO)	100 mg/kg
DTGW 51-100 feet (19.15.29.12)	Chloride	10,000 mg/kg
	TPH (GRO+DRO+MRO)	2,500 mg/kg
	GRO+DRO	1,000 mg/kg
	BTEX	50 mg/kg
	Benzene	10 mg/kg

bgs – Below ground surface
DTGW – Depth to groundwater
TPH – Total petroleum hydrocarbons = gasoline range organics (GRO) + diesel range organics (DRO) + motor oil range organics (MRO),
BTEX - Benzene, toluene, ethylbenzene, and xylenes

Site Assessment/Characterization

Site characterization was completed on March 24, 2023. A total of 22 sample points were established and samples collected for field screening. Samples at the deepest vertical distance below closure criteria were submitted to the laboratory for analysis. In total, 84 samples were submitted to Eurofins Environmental Testing South Central, formerly Hall Environmental Analysis Laboratory for analysis. The sample locations are presented on Figure 1 (Attachment 1). Laboratory analysis results have been compared to the above noted closure criteria and the results from the characterization activity are presented in Table 2 (Attachment 2). Daily field reports and laboratory data reports are included in Attachments 3 and 4, respectively. All applicable research as it pertains to closure criteria selection

is presented in Attachment 5. Exceedances to reclamation and remediation criteria are identified in the table in bold with green or grey background, respectively.

Remedial Activities

General

Areas identified with contaminant concentrations above closure criteria will be remediated through excavation. Laboratory results from the site assessment/characterization have been referenced to estimate both the vertical and horizontal limits of the impacts and the volume of soil to be removed. Soil will be excavated to the extents of the known contamination or in 2-foot increments, whichever is less. Field screening will be utilized to confirm removal of contaminated soil below the applicable closure criteria. Contaminated soils will be stored on a 30mil liner prior to disposal at an approved facility. Once excavation is complete, confirmatory samples will be collected and laboratory analysis completed to confirm closure criteria guidelines are met. Excavations will be backfilled with clean soil sourced locally.

2RP-3117, nAB1519733009 – Area North of Containment

All 22 sample points established during delineation were outside of the containment. Exceedances to closure criteria were found at sample points north of the containment, as shown on Figure 1 (Attachment 1). Soil will be excavated to a planned depth of 4 feet around sample points BH23-02, BH23-03, and BH23-18, and to a planned depth of 2 feet around BH23-17. A hydrovac truck will be utilized to remove contaminated soil next to the containment and within 30” of any lines or buried equipment that may be in the area. Heavy equipment will be used to complete excavation outside of the containment. Field screening will be utilized to find the horizontal and vertical extents of the spill area. Confirmatory samples will be collected as per New Mexico Oil Conservation Division guidance and submitted for laboratory analysis of all applicable parameters. The estimated volume to be excavated is **200 cubic yards**.

The excavation will be as close to the edge of containment as possible, which will remove support from the steps to the catwalk and the outlet pipe on the east side of the tank battery. The outlet pipe may need to be temporarily removed and the stairs supported while the excavation is open. The excavation will also be close to the outlet pipes on the east side of the tank battery, which will interfere with truck traffic and loading. The east outlet pipes will need to be re-routed to the far northeast corner of the containment for the duration of the excavation to facilitate loading.

Sample Point	Excavation Depth	Remediation Method
BH23-02	4'	Backhoe/Hydrovac/Hand
BH23-03	4'	Backhoe/Hydrovac/Hand
BH22-18	4'	Backhoe/Hydrovac/Hand
BH23-17	2'	Backhoe
BH23-19	4'	Backhoe
BH23-20	4'	Backhoe

Should you have any questions or concerns, please do not hesitate to contact Project Manager Kent Stallings at 346.814.1413 or kstallings@vertex.ca. The completed NMCOD C-141 Report for the incident is presented in Attachment 6.

Lakin Pullman

Lakin Pullman, B.Sc.
ENVIRONMENTAL SPECIALIST, REPORTING

January 27, 2024
Date

Kent Stallings P.G.

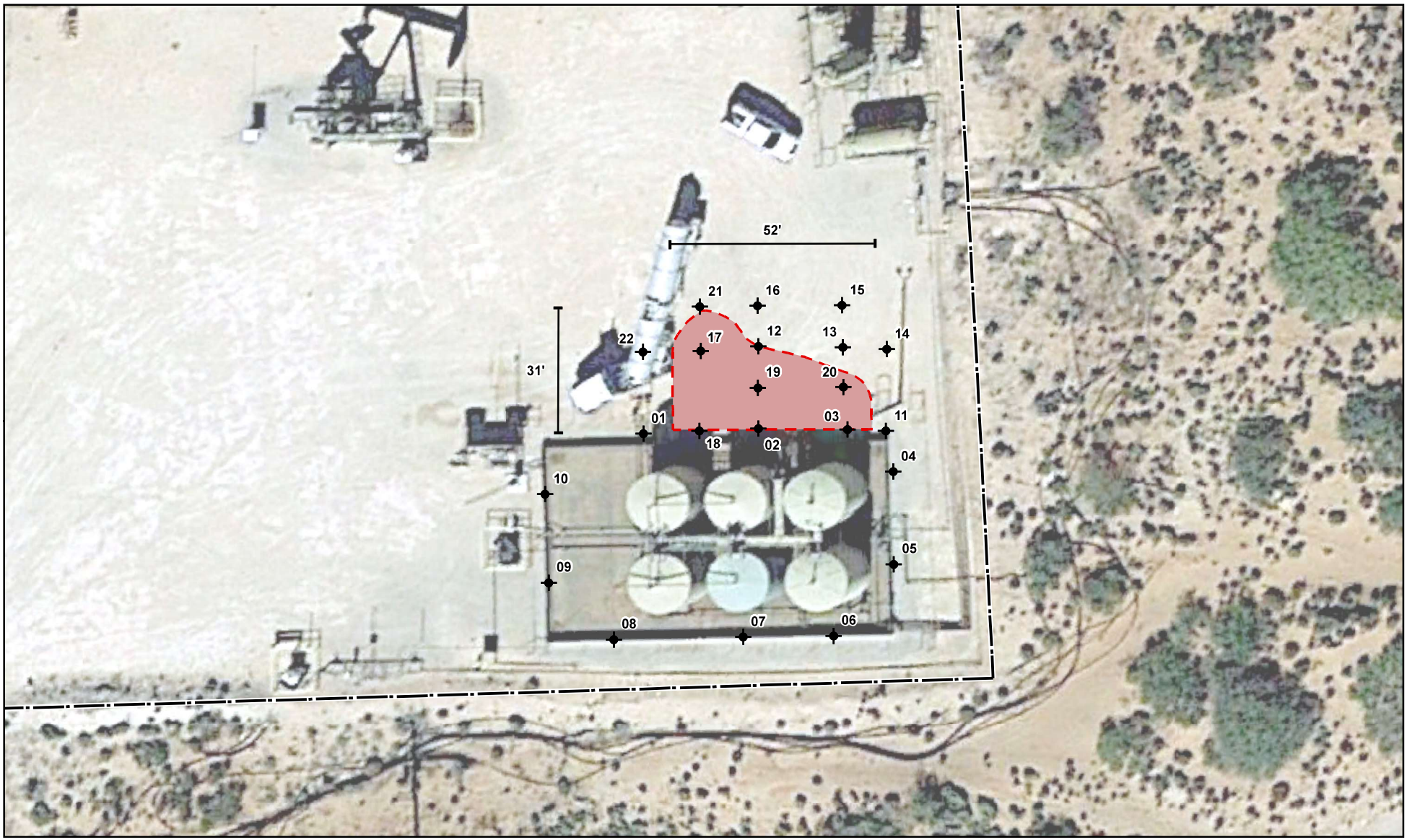
Kent Stallings, P.G.
PROJECT MANAGER, REPORT REVIEW

March 25, 2025
Date

Attachments

Attachment 1. Aerial Photograph and Characterization Figure
Attachment 2. Field Screening and Laboratory Results Table
Attachment 3. Daily Field Reports (with Photographs)
Attachment 4. Laboratory Data Reports (with Chain of Custody Forms)
Attachment 5. Closure Criteria Research
Attachment 6. NMOCD C 141 Report
Attachment 7. Drilling and Plugging Logs

ATTACHMENT 1



Borehole (Prefixed by "BH23-") | Approximate Lease Boundary | Approximate Release Area (~1,083 sq. ft.)

VERTEX

0 25 50 Feet

Map Center:
Lat/Long: 32.340040, -103.789040

NAD 1983 UTM Zone 13N
Date: Mar 27/23

N

Characterization Sample Locations
North Pure Gold 4 Federal #003

FIGURE: 1

devon

Geospatial data presented in this figure may be derived from external sources and Vertex does not assume any liability for inaccuracies. This figure is intended for reference use only and is not certified for legal, survey, or engineering purposes.

Note: Background imagery from Google Earth, 2017. Lease boundary from imagery. GPSfrom Vertex Professional Services Ltd., 2023.

VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects_US PROJECTS\Devon Energy Corporation\2021\21E-02816\006 - North Pure Gold 4 Federal 3\Figure 1 - Characterization Sample Locations

ATTACHMENT 2

Client Name: Devon Energy Production Company, LP
Site Name: North Pure Gold 4 Federal #003
NM OCD Tracking #: nAB1519733009
Project #: 21E-02816-06
Lab Reports: 2302852, 2302A66, 2302B06, and 2303D14

Table 3. Initial Characterization Sample Field Screen and Laboratory Results - Depth to Groundwater 51 feet - 100 feet

Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
						Volatile		Extractable					
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFlag)	Chloride Concentration	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride Concentration
			(ppm)	(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BH23-01	0	February 18, 2023	0	59	278	ND	ND	ND	ND	ND	ND	ND	110
	2	February 18, 2023	0	28	457	ND	ND	ND	ND	ND	ND	ND	230
	4	February 18, 2023	0	21	313	ND	ND	ND	ND	ND	ND	ND	160
	6	February 18, 2023	0	25	331	ND	ND	ND	ND	ND	ND	ND	170
BH23-02	0	February 18, 2023	0	164	1,296	ND	ND	ND	ND	ND	ND	ND	**620**
	2	February 18, 2023	0	65	1,363	ND	ND	ND	ND	ND	ND	ND	**730**
	4	February 18, 2023	0	56	1,124	ND	ND	ND	ND	ND	ND	ND	600
	6	February 18, 2023	0	52	629	ND	ND	ND	ND	ND	ND	ND	250
	7	February 18, 2023	0	30	483	ND	ND	ND	ND	ND	ND	ND	240
BH23-03	0	February 18, 2023	0	89	650	ND	ND	ND	ND	ND	ND	ND	240
	2	February 18, 2023	0	88	2,791	ND	ND	ND	ND	ND	ND	ND	**1,500**
	4	February 18, 2023	0	58	1,115	ND	ND	ND	ND	ND	ND	ND	**660**
	6	February 18, 2023	0	41	832	ND	ND	ND	ND	ND	ND	ND	430
	7	February 18, 2023	0	29	368	ND	ND	ND	ND	ND	ND	ND	140
BH23-04	0	February 19, 2023	0	30	67	ND	ND	ND	ND	ND	ND	ND	ND
	2	February 19, 2023	0	27	ND	ND	ND	ND	ND	ND	ND	ND	ND
	4	February 19, 2023	0	24	217	ND	ND	ND	ND	ND	ND	ND	92
BH23-05	0	February 19, 2023	0	50	38	ND	ND	ND	ND	ND	ND	ND	ND
	2	February 19, 2023	0	30	151	ND	ND	ND	ND	ND	ND	ND	ND
	4	February 19, 2023	0	24	552	ND	ND	ND	ND	ND	ND	ND	240
BH23-06	0	February 19, 2023	0	57	118	ND	ND	ND	12	ND	12	12	ND
	2	February 19, 2023	0	44	233	ND	ND	ND	ND	ND	ND	ND	84
	4	February 19, 2023	0	41	160	ND	ND	ND	ND	ND	ND	ND	ND
BH23-07	0	February 19, 2023	0	34	362	ND	ND	ND	ND	ND	ND	ND	100
	2	February 19, 2023	0	30	281	ND	ND	ND	ND	ND	ND	ND	100
	4	February 19, 2023	0	41	357	ND	ND	ND	ND	ND	ND	ND	140
BH23-08	0	February 19, 2023	0	31	174	ND	ND	ND	ND	ND	ND	ND	ND
	2	February 19, 2023	0	29	14	ND	ND	ND	ND	ND	ND	ND	ND
	4	February 19, 2023	0	23	105	ND	ND	ND	ND	ND	ND	ND	ND
BH23-09	0	February 19, 2023	0	50	170	ND	ND	ND	ND	ND	ND	ND	ND
	2	February 19, 2023	0	26	12	ND	ND	ND	ND	ND	ND	ND	ND
	4	February 19, 2023	0	21	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-10	0	February 19, 2023	0	39	202	ND	ND	ND	ND	ND	ND	ND	ND
	2	February 19, 2023	0	34	67	ND	ND	ND	ND	ND	ND	ND	ND
	4	February 19, 2023	0	12	131	ND	ND	ND	ND	ND	ND	ND	ND
BH23-11	0	February 18, 2023	0	87	272	ND	ND	ND	ND	ND	ND	ND	130
	2	February 18, 2023	0	39	251	ND	ND	ND	ND	ND	ND	ND	130
	4	February 18, 2023	0	36	298	ND	ND	ND	ND	ND	ND	ND	130
	6	February 18, 2023	0	40	269	ND	ND	ND	ND	ND	ND	ND	120
BH23-12	0	February 19, 2023	0	115	139	ND	ND	ND	18	ND	18	18	70
	2	February 19, 2023	0	26	ND	ND	ND	ND	ND	ND	ND	ND	ND
	4	February 19, 2023	0	55	44	ND	ND	ND	ND	ND	ND	ND	ND
	6	February 19, 2023	0	110	626	ND	ND	ND	ND	ND	ND	ND	290
	7	February 19, 2023	0	64	427	ND	ND	ND	ND	ND	ND	ND	280
BH23-13	0	February 19, 2023	0	135	36	ND	ND	ND	61	ND	61	61	ND
	2	February 19, 2023	0	31	ND	ND	ND	ND	ND	ND	ND	ND	ND
	4	February 19, 2023	0	53	979	ND	ND	ND	ND	ND	ND	ND	470
	6	February 19, 2023	0	41	829	ND	ND	ND	ND	ND	ND	ND	410

Client Name: Devon Energy Production Company, LP
Site Name: North Pure Gold 4 Federal #003
NM OCD Tracking #: nAB1519733009
Project #: 21E-02816-06
Lab Reports: 2302852, 2302A66, 2302B06, and 2303D14

Table 3. Initial Characterization Sample Field Screen and Laboratory Results - Depth to Groundwater 51 feet - 100 feet

Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
						Volatile		Extractable					
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFlag)	Chloride Concentration	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride Concentration
			(ppm)	(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BH23-14	0	February 22, 2023	0	35	580	ND	ND	ND	ND	ND	ND	ND	210
	2	February 22, 2023	0	25	310	ND	ND	ND	ND	ND	ND	ND	130
	4	February 22, 2023	0	55	375	ND	ND	ND	ND	ND	ND	ND	170
BH23-15	0	February 22, 2023	0	60	334	ND	ND	ND	ND	ND	ND	ND	160
	2	February 22, 2023	0	33	7	ND	ND	ND	ND	ND	ND	ND	ND
	4	February 22, 2023	0	31	46	ND	ND	ND	ND	ND	ND	ND	ND
BH23-16	0	February 22, 2023	0	29	343	ND	ND	ND	ND	ND	ND	ND	130
	2	February 22, 2023	0	38	79	ND	ND	ND	ND	ND	ND	ND	ND
	4	February 22, 2023	0	40	ND	ND	ND	ND	21	ND	21	21	ND
BH23-17	0	February 22, 2023	0	53	1,755	ND	ND	ND	ND	ND	ND	ND	**1,300**
	2	February 22, 2023	0	68	887	ND	ND	ND	ND	ND	ND	ND	360
	4	February 22, 2023	0	61	773	ND	ND	ND	ND	ND	ND	ND	330
BH23-18	0	February 22, 2023	0	152	922	ND	ND	ND	15	ND	15	15	340
	2	February 22, 2023	0	86	2,134	ND	ND	ND	ND	ND	ND	ND	**1,100**
	4	February 22, 2023	0	65	1,560	ND	ND	ND	ND	ND	ND	ND	**730**
	6	February 22, 2023	0	21	789	ND	ND	ND	ND	ND	ND	ND	350
	7	February 22, 2023	0	47	431	ND	ND	ND	ND	ND	ND	ND	170
BH23-19	0	February 22, 2023	0	31	5,874	ND	ND	ND	ND	ND	ND	ND	**4200**
	2	February 22, 2023	0	106	2,644	ND	ND	ND	ND	ND	ND	ND	**1000**
	4	February 22, 2023	0	66	2,063	ND	ND	ND	ND	ND	ND	ND	**1500**
	6	February 22, 2023	0	60	2,479	ND	ND	ND	ND	ND	ND	ND	**1500**
	7	February 22, 2023	0	46	2,892	ND	ND	ND	ND	ND	ND	ND	**1800**
	8	March 24, 2023	1	-	982	ND	ND	ND	ND	ND	ND	ND	**1100**
	10	March 24, 2023	1	72	225	ND	ND	ND	ND	ND	ND	ND	230
	12	March 24, 2023	0	35	95	ND	ND	ND	ND	ND	ND	ND	65
BH23-20	0	February 22, 2023	0	267	684	ND	ND	ND	110	56	**110**	**166**	410
	2	February 22, 2023	0	39	922	ND	ND	ND	ND	ND	ND	ND	380
	4	February 22, 2023	0	34	583	ND	ND	ND	ND	ND	ND	ND	220
	6	February 22, 2023	0	52	1,039	ND	ND	ND	ND	ND	ND	ND	430
	7	February 22, 2023	0	63	1,534	ND	ND	ND	ND	ND	ND	ND	**950**
BH23-21	0	February 23, 2023	0	40	484	ND	ND	ND	ND	ND	ND	ND	230
	2	February 23, 2023	0	53	381	ND	ND	ND	ND	ND	ND	ND	85
	4	February 23, 2023	0	32	284	ND	ND	ND	ND	ND	ND	ND	64
BH23-22	0	February 23, 2023	0	38	441	ND	ND	ND	ND	ND	ND	ND	120
	2	February 23, 2023	0	30	327	ND	ND	ND	ND	ND	ND	ND	110
	4	February 23, 2023	0	25	210	ND	ND	ND	ND	ND	ND	ND	73

"ND" Not Detected at the Reporting Limit
"-" indicates not analyzed/assessed
Bold and grey shaded indicates exceedance outside of NMOCD Remediation Closure Criteria
Bold and green shaded indicates exceedance outside of NMOCD Reclamation Closure Criteria

ATTACHMENT 3

Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	2/18/2023
Site Location Name:	North Pure Gold	Report Run Date:	2/19/2023 2:17 AM
4 Federal #003		API #:	
Client Contact Name:	Dale Woodall		
Client Contact Phone #:	(575) 748-1838	Project Owner:	
		Project Manager:	Kent Stallings

Summary of Times

Arrived at Site	
Departed Site	2/18/2023 5:26 PM

Field Notes

7:40 Project at North Pure Gold 4 Federal 003. Completed JSA on arrival. On site to delineate historical release at tank battery. Historical release supposedly did not leave lined containment.

8:29 Walked site and confirmed that current containment is lined. Will collect samples around containment and evaluate results before sampling under containment. Mapped initial 10 borehole locations around outside edge of containment in Arc Collector.

8:40 Swept sampling points with magnetic locator prior to ground disturbance. Locator received significant interference from tank battery infrastructure. Using hand tools to delineate.

16:59 Advanced BH23-01, BH23-02, and BH23-03 immediately outside north edge of containment to 6 feet bgs. Continued BH23-02 and BH23-03 to refusal at 7 feet bgs for vertical delineation.

17:03 Field screening results samples from BH23-01 were below NMOCD strictest criteria. Field screening results from surface to 6 feet bgs for samples from BH23-02 and BH23-03 exceeded thresholds, but results for samples at 7 feet were below NMOCD strictest criteria for chloride and TPH.

17:05 Advanced BH23-11 immediately outside northeast corner of containment. Field screening results for samples from BH23-11 were below NMOCD strictest criteria.

17:06 Delineation incomplete.

Daily Site Visit Report

Next Steps & Recommendations

1 Continue delineation.

Daily Site Visit Report

Site Photos

Viewing Direction: North	**Viewing Direction**: South
	
South of pump jack facing north.	Northwest of containment facing south.
Viewing Direction: East	**Viewing Direction**: East
	
West of containment facing east. Containment lined.	North of containment facing east. Advanced BH23-01 outside north edge of containment.

Daily Site Visit Report

Viewing Direction: West	**Viewing Direction**: West
	
North of containment facing west. Advanced BH23-02 outside north edge of containment.	North of containment facing west. Advanced BH23-03 outside north edge of containment.
Viewing Direction: West	**Viewing Direction**: Southeast
	
Northeast of containment facing west. Advanced BH23-11 outside northeast corner of containment.	At wellhead facing southeast towards tank battery release area.

Daily Site Visit Report

Viewing Direction: East

Northwest of containment and electrical boxes facing east.

Viewing Direction: West

Northeast of containment facing west.

Viewing Direction: South

Northeast of containment facing south.

Viewing Direction: North

Southeast of containment facing north.

Daily Site Visit Report

Viewing Direction: West

Southeast of containment facing west.

Viewing Direction: East

Southwest of containment facing east.

Viewing Direction: North

Southwest of containment facing north.

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Lakin Pullman

Signature: 
Signature

Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	2/19/2023
Site Location Name:	North Pure Gold	Report Run Date:	2/20/2023 1:53 AM
4 Federal #003		API #:	
Client Contact Name:	Dale Woodall		
Client Contact Phone #:	(575) 748-1838	Project Owner:	
		Project Manager:	

Summary of Times

Arrived at Site	2/19/2023 7:06 AM
Departed Site	2/19/2023 5:21 PM

Field Notes

7:21 North Pure Gold 4 Federal #003. Completed JSA on arrival. On site to continue delineation of historical release at tank battery.

9:10 Release occurred within lined containment. Delineation initially focused around outside edges of containment.

9:32 Advanced BH23-04, BH22-05, BH23-06, BH23-07, BH23-08, BH23-09, and BH23-10 outside east, south, and west edges of containment to 4 feet bgs.

17:21 Advanced BH23-12 and BH23-13 north of battery to refusal at 7 and 6 feet bgs, respectively.

Next Steps & Recommendations

1

Daily Site Visit Report

Site Photos

Viewing Direction: North

South of pump jack facing north.

Viewing Direction: South

North of containment facing south. Advanced BH23-12 north of BH23-02 to attempt horizontal delineation.

Viewing Direction: South

East of containment facing south. Advanced BH23-04 outside east edge of containment.

Viewing Direction: North

East of containment facing north. Advanced BH23-05 outside east edge of containment.

Daily Site Visit Report

Viewing Direction: West	**Viewing Direction**: West
	
South of containment facing west. Advanced BH23-06 outside south edge of containment.	South of containment facing west. Advanced BH23-07 outside south edge of containment.
Viewing Direction: East	**Viewing Direction**: North
	
South of containment facing east. Advanced BH23-08 outside south edge of containment.	West of containment facing north. Advanced BH23-09 outside west edge of containment.

Daily Site Visit Report

Viewing Direction: South	**Viewing Direction**: South
	
West of containment facing south. Advanced BH23-09 outside west edge of containment.	North of containment facing south. Advanced BH23-13 north of BH23-03 to attempt horizontal delineation.

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Lakin Pullman

Signature: 

Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	2/22/2023
Site Location Name:	North Pure Gold 4 Federal #003	Report Run Date:	2/23/2023 2:18 AM
Client Contact Name:	Jim Raley	API #:	
Client Contact Phone #:	575-748-0176		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	2/22/2023 6:56 AM
Departed Site	2/22/2023 5:16 PM

Daily Site Visit Report

Site Sketch

Site Sketch

Daily Site Visit Report

Field Notes

7:57 Completed JSA on arrival. On site to continue delineation of historical battery/containment release.

7:57 Swept sampling points with magnetic locator prior to ground disturbance.

17:16 Advanced BH23-14 through BH23-18 to refine horizontal delineation. Advanced BH23-19 and BH23-20 to attempt vertical delineation. Will require equipment to sample beyond 7 feet bgs due to refusal.

Next Steps & Recommendations

1 Complete horizontal delineation to east.

Daily Site Visit Report

Site Photos

Viewing Direction: North

South of pump jack facing north.

Viewing Direction: Southwest

Northeast of containment facing southwest. Advanced BH23-14 north of BH23-11 and east of BH23-13.

Viewing Direction: South

North of containment facing south. Advanced BH23-15 north of BH23-13.

Viewing Direction: South

North of containment facing south. Advanced BH23-16 north of BH23-12.

Daily Site Visit Report

Viewing Direction: Southeast	**Viewing Direction**: East
	
North of containment facing southeast. Advanced BH23-17 west of BH23-12.	Outside north edge of containment facing east. Advanced BH23-18 east of BH23-01 and west of BH23-02.
Viewing Direction: East	**Viewing Direction**: West
	
North of containment facing east. Advanced BH23-19 north of BH23-02 and south of BH23-12.	North of containment facing east. Advanced BH23-20 north of BH23-03 and south of BH23-13.

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Lakin Pullman

Signature: 

Signature

Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	2/23/2023
Site Location Name:	North Pure Gold 4 Federal #003	Report Run Date:	2/23/2023 10:01 PM
Client Contact Name:	Wes Matthews	API #:	
Client Contact Phone #:	(575) 748-0176		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	2/23/2023 7:18 AM
Departed Site	2/23/2023 12:44 PM

Daily Site Visit Report

VERTEX

Site Sketch

Site Sketch

Daily Site Visit Report

Field Notes

7:27 Completed JSA on arrival. On site to finish horizontal delineation of historical tank battery containment release.

7:38 Mapped additional base sample locations on west side of release area.

7:38 Swept borehole areas with magnetic locator prior to ground disturbance.

10:03 Advanced BH23-21 and BH23-22 to 4 feet bgs on west edge of potential release area for horizontal delineation.

11:11 Field screening results for all outside horizontal borehole samples including BH23-21 and BH23-22 were below NMOCD strictest criteria for TPH and chloride. Horizontal delineation completed pending laboratory results.

11:12 Vertical delineation not complete. Recommend using machinery to advance BH23-19 to 8 feet bgs and in 2-foot increments beyond that until vertical delineation is satisfied.

11:28 The potential excavation area starts on the north edge of the containment north of the tanks and extends approximately 30-35 feet north of the containment. The equipment on the front edge of the containment within the excavation area will either need to be supported, removed, or diverted during the excavation and while it is left open.

11:31 On the east side of the battery and extending into the excavation area are an outlet pipes and catwalk stairs. According to the pumper: the stairs are used every day but that pipe is not used frequently.

11:34 On the west side of the battery and extending immediately west of the potential excavation area are two outlet pipes that are used frequently according to the pumper. Even if we do not excavate under them, we may need to divert them further west so the truck can access them without maneuvering near the excavation.

12:36 Marked vertical delineation excavation point and submitted One Call.

Next Steps & Recommendations

1 Complete vertical delineation with equipment.

Daily Site Visit Report

Site Photos

Viewing Direction: North	**Viewing Direction**: South
	
South of pump jack facing north.	North of containment facing south. Some equipment will need to be supported, diverted, or moved during excavation.

Daily Site Visit Report

Viewing Direction: Southeast	**Viewing Direction**: South
	
North of containment facing southeast. Some equipment will need to be supported, diverted, or moved during excavation.	North of containment facing south. Advanced BH23-21 north of BH23-17 and west of BH23-16.
Viewing Direction: East	**Viewing Direction**: South
	
North of containment facing east. Advanced BH23-22 north of BH23-01 and west of BH23-17.	North of BH23-19 facing south. Marked BH23-19 for further excavation with equipment.

Daily Site Visit Report

Viewing Direction: West	**Viewing Direction**: East
	
Northeast corner of containment facing west. Outlet pipes and catwalk stairs on east side of battery will need to be supported or removed during excavation under them.	North of containment facing east. Outlet pipes and catwalk stairs on east side of battery will need to be supported or removed during excavation under them.

Daily Site Visit Report

Viewing Direction: West

North of containment facing west. Outlet pipes on west side of battery will need to be supported or diverted west during excavation.

Viewing Direction: East

Northwest corner of containment facing east. Outlet pipes on west side of battery will need to be supported or diverted west during excavation.

Viewing Direction: Southwest

North of containment facing southwest. Some equipment will need to be supported, diverted, or moved during excavation.

Daily Site Visit Report

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Lakin Pullman

Signature:

Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	3/24/2023
Site Location Name:	North Pure Gold 4 Federal #003	Report Run Date:	3/25/2023 1:16 AM
Client Contact Name:	Wes Matthews	API #:	
Client Contact Phone #:	(575) 748-0176		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	3/24/2023 11:48 AM
Departed Site	3/24/2023 3:44 PM

Field Notes

15:25 Completed JSA at previous location. On site with Geoprobe to complete vertical delineation.

15:26 Plan was to continue BH23-19 with Geoprobe until field screening results were below NMOCD strictest criteria for chloride and TPH.

15:28 Swept borehole area with magnetic locator prior to ground disturbance.

15:40 Advanced Geoprobe at and very close proximity to BH23-19 in attempt to break through caliche. When refusal was encountered, Geoprobe unit was moved horizontally and advanced again. At third attempt the borehole was successfully advanced through the caliche to 12 feet bgs.

15:41 Samples were collected at 8, 10, and 12 feet bgs. Field screening results for samples at 10 and 12 feet were below NMOCD strictest criteria for chloride and TPH.

15:42 Vertical delineation completed pending laboratory results.

Next Steps & Recommendations

1 Write remediation work plan pending laboratory results.

Daily Site Visit Report

Site Photos

Viewing Direction: North

South of artificial lift facing north.

Viewing Direction: Southeast

North of battery facing southeast. Advanced BH23-19 with Geoprobe to 12 feet bgs.

Viewing Direction: North

North of battery facing west. Advanced BH23-19 with Geoprobe to 12 feet bgs.

Viewing Direction: North

North of battery facing north. Advanced BH23-19 with Geoprobe to 12 feet bgs.

Daily Site Visit Report

Viewing Direction: South	**Viewing Direction**: Northeast
	
North of battery facing south. Advanced BH23-19 with Geoprobe to 12 feet bgs.	Southeast corner of pad facing northeast. Pinhole leak spewing vapor on east edge of pad.

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Lakin Pullman

Signature:

ATTACHMENT 4

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

March 06, 2023

Kent Stallings

Vertex Resources Services, Inc.
3101 Boyd Drive
Carlsbad, NM 88220
TEL: (505) 506-0040
FAX:

RE: North Pure Gold Federal 003 OrderNo.: 2302852

Dear Kent Stallings:

Hall Environmental Analysis Laboratory received 48 sample(s) on 2/21/2023 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,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-01 0'
Project: North Pure Gold Federal 003 **Collection Date:** 2/17/2023 8:45:00 AM
Lab ID: 2302852-001 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	2/22/2023 6:01:02 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/22/2023 6:01:02 PM
Surr: DNOP	87.0	69-147		%Rec	1	2/22/2023 6:01:02 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/23/2023 6:46:54 AM
Surr: BFB	99.7	37.7-212		%Rec	1	2/23/2023 6:46:54 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	2/23/2023 6:46:54 AM
Toluene	ND	0.048		mg/Kg	1	2/23/2023 6:46:54 AM
Ethylbenzene	ND	0.048		mg/Kg	1	2/23/2023 6:46:54 AM
Xylenes, Total	ND	0.096		mg/Kg	1	2/23/2023 6:46:54 AM
Surr: 4-Bromofluorobenzene	92.5	70-130		%Rec	1	2/23/2023 6:46:54 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	110	59		mg/Kg	20	2/22/2023 3:10:28 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-01 2'
Project: North Pure Gold Federal 003 **Collection Date:** 2/17/2023 8:50:00 AM
Lab ID: 2302852-002 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	2/22/2023 6:11:32 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/22/2023 6:11:32 PM
Surr: DNOP	84.3	69-147		%Rec	1	2/22/2023 6:11:32 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/23/2023 11:21:23 PM
Surr: BFB	104	37.7-212		%Rec	1	2/23/2023 11:21:23 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	2/23/2023 11:21:23 PM
Toluene	ND	0.049		mg/Kg	1	2/23/2023 11:21:23 PM
Ethylbenzene	ND	0.049		mg/Kg	1	2/23/2023 11:21:23 PM
Xylenes, Total	ND	0.097		mg/Kg	1	2/23/2023 11:21:23 PM
Surr: 4-Bromofluorobenzene	98.1	70-130		%Rec	1	2/23/2023 11:21:23 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	230	60		mg/Kg	20	2/22/2023 3:22:52 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-01 4'
Project: North Pure Gold Federal 003
Collection Date: 2/17/2023 8:55:00 AM
Lab ID: 2302852-003 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	2/22/2023 6:22:02 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/22/2023 6:22:02 PM
Surr: DNOP	84.2	69-147		%Rec	1	2/22/2023 6:22:02 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/23/2023 11:45:02 PM
Surr: BFB	103	37.7-212		%Rec	1	2/23/2023 11:45:02 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	2/23/2023 11:45:02 PM
Toluene	ND	0.050		mg/Kg	1	2/23/2023 11:45:02 PM
Ethylbenzene	ND	0.050		mg/Kg	1	2/23/2023 11:45:02 PM
Xylenes, Total	ND	0.10		mg/Kg	1	2/23/2023 11:45:02 PM
Surr: 4-Bromofluorobenzene	97.9	70-130		%Rec	1	2/23/2023 11:45:02 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	160	60		mg/Kg	20	2/22/2023 3:35:17 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-01 6'
Project: North Pure Gold Federal 003 **Collection Date:** 2/17/2023 9:05:00 AM
Lab ID: 2302852-004 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	2/22/2023 6:32:30 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/22/2023 6:32:30 PM
Surr: DNOP	86.7	69-147		%Rec	1	2/22/2023 6:32:30 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/24/2023 12:08:34 AM
Surr: BFB	101	37.7-212		%Rec	1	2/24/2023 12:08:34 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	2/24/2023 12:08:34 AM
Toluene	ND	0.049		mg/Kg	1	2/24/2023 12:08:34 AM
Ethylbenzene	ND	0.049		mg/Kg	1	2/24/2023 12:08:34 AM
Xylenes, Total	ND	0.097		mg/Kg	1	2/24/2023 12:08:34 AM
Surr: 4-Bromofluorobenzene	95.6	70-130		%Rec	1	2/24/2023 12:08:34 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	170	60		mg/Kg	20	2/22/2023 3:47:42 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-02 0'
Project: North Pure Gold Federal 003 **Collection Date:** 2/17/2023 9:20:00 AM
Lab ID: 2302852-005 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	2/22/2023 6:42:57 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	2/22/2023 6:42:57 PM
Surr: DNOP	101	69-147		%Rec	1	2/22/2023 6:42:57 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/24/2023 12:32:14 AM
Surr: BFB	100	37.7-212		%Rec	1	2/24/2023 12:32:14 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	2/24/2023 12:32:14 AM
Toluene	ND	0.050		mg/Kg	1	2/24/2023 12:32:14 AM
Ethylbenzene	ND	0.050		mg/Kg	1	2/24/2023 12:32:14 AM
Xylenes, Total	ND	0.099		mg/Kg	1	2/24/2023 12:32:14 AM
Surr: 4-Bromofluorobenzene	94.6	70-130		%Rec	1	2/24/2023 12:32:14 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	620	60		mg/Kg	20	2/22/2023 4:49:45 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-02 2'
Project: North Pure Gold Federal 003
Collection Date: 2/17/2023 9:25:00 AM
Lab ID: 2302852-006 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	2/22/2023 6:53:22 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/22/2023 6:53:22 PM
Surr: DNOP	86.8	69-147		%Rec	1	2/22/2023 6:53:22 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/24/2023 12:55:47 AM
Surr: BFB	100	37.7-212		%Rec	1	2/24/2023 12:55:47 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	2/24/2023 12:55:47 AM
Toluene	ND	0.050		mg/Kg	1	2/24/2023 12:55:47 AM
Ethylbenzene	ND	0.050		mg/Kg	1	2/24/2023 12:55:47 AM
Xylenes, Total	ND	0.099		mg/Kg	1	2/24/2023 12:55:47 AM
Surr: 4-Bromofluorobenzene	93.7	70-130		%Rec	1	2/24/2023 12:55:47 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	730	60		mg/Kg	20	2/22/2023 5:02:09 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-02 4'
Project: North Pure Gold Federal 003 **Collection Date:** 2/17/2023 9:30:00 AM
Lab ID: 2302852-007 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	2/22/2023 7:03:46 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/22/2023 7:03:46 PM
Surr: DNOP	88.2	69-147		%Rec	1	2/22/2023 7:03:46 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	2/24/2023 1:19:15 AM
Surr: BFB	100	37.7-212		%Rec	1	2/24/2023 1:19:15 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	2/24/2023 1:19:15 AM
Toluene	ND	0.047		mg/Kg	1	2/24/2023 1:19:15 AM
Ethylbenzene	ND	0.047		mg/Kg	1	2/24/2023 1:19:15 AM
Xylenes, Total	ND	0.093		mg/Kg	1	2/24/2023 1:19:15 AM
Surr: 4-Bromofluorobenzene	94.5	70-130		%Rec	1	2/24/2023 1:19:15 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	600	60		mg/Kg	20	2/22/2023 5:14:34 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-02 6'
Project: North Pure Gold Federal 003 **Collection Date:** 2/17/2023 9:40:00 AM
Lab ID: 2302852-008 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	2/22/2023 7:14:10 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/22/2023 7:14:10 PM
Surr: DNOP	87.7	69-147		%Rec	1	2/22/2023 7:14:10 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/24/2023 1:42:44 AM
Surr: BFB	101	37.7-212		%Rec	1	2/24/2023 1:42:44 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	2/24/2023 1:42:44 AM
Toluene	ND	0.048		mg/Kg	1	2/24/2023 1:42:44 AM
Ethylbenzene	ND	0.048		mg/Kg	1	2/24/2023 1:42:44 AM
Xylenes, Total	ND	0.097		mg/Kg	1	2/24/2023 1:42:44 AM
Surr: 4-Bromofluorobenzene	95.6	70-130		%Rec	1	2/24/2023 1:42:44 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	250	60		mg/Kg	20	2/22/2023 5:26:59 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-02 7'
Project: North Pure Gold Federal 003 **Collection Date:** 2/17/2023 12:00:00 PM
Lab ID: 2302852-009 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	2/22/2023 7:24:31 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/22/2023 7:24:31 PM
Surr: DNOP	89.6	69-147		%Rec	1	2/22/2023 7:24:31 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/24/2023 2:06:12 AM
Surr: BFB	100	37.7-212		%Rec	1	2/24/2023 2:06:12 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	2/24/2023 2:06:12 AM
Toluene	ND	0.048		mg/Kg	1	2/24/2023 2:06:12 AM
Ethylbenzene	ND	0.048		mg/Kg	1	2/24/2023 2:06:12 AM
Xylenes, Total	ND	0.096		mg/Kg	1	2/24/2023 2:06:12 AM
Surr: 4-Bromofluorobenzene	94.9	70-130		%Rec	1	2/24/2023 2:06:12 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	240	60		mg/Kg	20	2/22/2023 5:39:24 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-03 0'
Project: North Pure Gold Federal 003 **Collection Date:** 2/17/2023 10:00:00 AM
Lab ID: 2302852-010 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	2/22/2023 7:34:52 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/22/2023 7:34:52 PM
Surr: DNOP	93.3	69-147		%Rec	1	2/22/2023 7:34:52 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/24/2023 2:29:41 AM
Surr: BFB	99.4	37.7-212		%Rec	1	2/24/2023 2:29:41 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	2/24/2023 2:29:41 AM
Toluene	ND	0.050		mg/Kg	1	2/24/2023 2:29:41 AM
Ethylbenzene	ND	0.050		mg/Kg	1	2/24/2023 2:29:41 AM
Xylenes, Total	ND	0.10		mg/Kg	1	2/24/2023 2:29:41 AM
Surr: 4-Bromofluorobenzene	93.3	70-130		%Rec	1	2/24/2023 2:29:41 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	240	60		mg/Kg	20	2/22/2023 10:37:13 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-03 2'
Project: North Pure Gold Federal 003 **Collection Date:** 2/17/2023 10:05:00 AM
Lab ID: 2302852-011 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	2/22/2023 7:45:13 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/22/2023 7:45:13 PM
Surr: DNOP	89.2	69-147		%Rec	1	2/22/2023 7:45:13 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/24/2023 2:53:06 AM
Surr: BFB	97.8	37.7-212		%Rec	1	2/24/2023 2:53:06 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	2/24/2023 2:53:06 AM
Toluene	ND	0.049		mg/Kg	1	2/24/2023 2:53:06 AM
Ethylbenzene	ND	0.049		mg/Kg	1	2/24/2023 2:53:06 AM
Xylenes, Total	ND	0.099		mg/Kg	1	2/24/2023 2:53:06 AM
Surr: 4-Bromofluorobenzene	92.7	70-130		%Rec	1	2/24/2023 2:53:06 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	1500	60		mg/Kg	20	2/22/2023 10:49:37 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-03 4'
Project: North Pure Gold Federal 003 **Collection Date:** 2/17/2023 10:10:00 AM
Lab ID: 2302852-012 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	2/22/2023 8:05:57 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/22/2023 8:05:57 PM
Surr: DNOP	103	69-147		%Rec	1	2/22/2023 8:05:57 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/28/2023 2:28:00 AM
Surr: BFB	101	37.7-212		%Rec	1	2/28/2023 2:28:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	2/28/2023 2:28:00 AM
Toluene	ND	0.048		mg/Kg	1	2/28/2023 2:28:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	2/28/2023 2:28:00 AM
Xylenes, Total	ND	0.095		mg/Kg	1	2/28/2023 2:28:00 AM
Surr: 4-Bromofluorobenzene	92.6	70-130		%Rec	1	2/28/2023 2:28:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	660	60		mg/Kg	20	2/22/2023 11:02:02 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-03 6'
Project: North Pure Gold Federal 003 **Collection Date:** 2/17/2023 10:15:00 AM
Lab ID: 2302852-013 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	2/22/2023 8:37:21 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/22/2023 8:37:21 PM
Surr: DNOP	103	69-147		%Rec	1	2/22/2023 8:37:21 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/28/2023 3:27:00 AM
Surr: BFB	103	37.7-212		%Rec	1	2/28/2023 3:27:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	2/28/2023 3:27:00 AM
Toluene	ND	0.048		mg/Kg	1	2/28/2023 3:27:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	2/28/2023 3:27:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	2/28/2023 3:27:00 AM
Surr: 4-Bromofluorobenzene	92.8	70-130		%Rec	1	2/28/2023 3:27:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	430	59		mg/Kg	20	2/22/2023 11:39:16 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-03 7'
Project: North Pure Gold Federal 003 **Collection Date:** 2/17/2023 12:10:00 PM
Lab ID: 2302852-014 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	8.9		mg/Kg	1	2/22/2023 8:47:47 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	2/22/2023 8:47:47 PM
Surr: DNOP	106	69-147		%Rec	1	2/22/2023 8:47:47 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	2/28/2023 4:26:00 AM
Surr: BFB	103	37.7-212		%Rec	1	2/28/2023 4:26:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	2/28/2023 4:26:00 AM
Toluene	ND	0.047		mg/Kg	1	2/28/2023 4:26:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	2/28/2023 4:26:00 AM
Xylenes, Total	ND	0.094		mg/Kg	1	2/28/2023 4:26:00 AM
Surr: 4-Bromofluorobenzene	92.4	70-130		%Rec	1	2/28/2023 4:26:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	140	60		mg/Kg	20	2/22/2023 11:51:40 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-04 0'
Project: North Pure Gold Federal 003 **Collection Date:** 2/18/2023 7:30:00 AM
Lab ID: 2302852-015 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	2/22/2023 8:58:11 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	2/22/2023 8:58:11 PM
Surr: DNOP	122	69-147		%Rec	1	2/22/2023 8:58:11 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	2/28/2023 4:45:00 AM
Surr: BFB	101	37.7-212		%Rec	1	2/28/2023 4:45:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.023		mg/Kg	1	2/28/2023 4:45:00 AM
Toluene	ND	0.046		mg/Kg	1	2/28/2023 4:45:00 AM
Ethylbenzene	ND	0.046		mg/Kg	1	2/28/2023 4:45:00 AM
Xylenes, Total	ND	0.093		mg/Kg	1	2/28/2023 4:45:00 AM
Surr: 4-Bromofluorobenzene	92.0	70-130		%Rec	1	2/28/2023 4:45:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	2/23/2023 12:28:54 AM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-04 2'
Project: North Pure Gold Federal 003 **Collection Date:** 2/18/2023 7:35:00 AM
Lab ID: 2302852-016 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	2/22/2023 9:08:36 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	2/22/2023 9:08:36 PM
Surr: DNOP	118	69-147		%Rec	1	2/22/2023 9:08:36 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/28/2023 5:05:00 AM
Surr: BFB	104	37.7-212		%Rec	1	2/28/2023 5:05:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.025		mg/Kg	1	2/28/2023 5:05:00 AM
Toluene	ND	0.049		mg/Kg	1	2/28/2023 5:05:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	2/28/2023 5:05:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	2/28/2023 5:05:00 AM
Surr: 4-Bromofluorobenzene	92.6	70-130		%Rec	1	2/28/2023 5:05:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	2/23/2023 12:41:18 AM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-04 4'
Project: North Pure Gold Federal 003 **Collection Date:** 2/18/2023 7:40:00 AM
Lab ID: 2302852-017 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	2/22/2023 9:19:01 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/22/2023 9:19:01 PM
Surr: DNOP	104	69-147		%Rec	1	2/22/2023 9:19:01 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/28/2023 5:24:00 AM
Surr: BFB	105	37.7-212		%Rec	1	2/28/2023 5:24:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.025		mg/Kg	1	2/28/2023 5:24:00 AM
Toluene	ND	0.049		mg/Kg	1	2/28/2023 5:24:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	2/28/2023 5:24:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	2/28/2023 5:24:00 AM
Surr: 4-Bromofluorobenzene	90.7	70-130		%Rec	1	2/28/2023 5:24:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	92	60		mg/Kg	20	2/24/2023 5:37:37 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-05 0'
Project: North Pure Gold Federal 003
Collection Date: 2/18/2023 7:50:00 AM
Lab ID: 2302852-018 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	2/22/2023 9:29:27 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	2/22/2023 9:29:27 PM
Surr: DNOP	101	69-147		%Rec	1	2/22/2023 9:29:27 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	2/28/2023 5:44:00 AM
Surr: BFB	99.0	37.7-212		%Rec	1	2/28/2023 5:44:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	2/28/2023 5:44:00 AM
Toluene	ND	0.047		mg/Kg	1	2/28/2023 5:44:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	2/28/2023 5:44:00 AM
Xylenes, Total	ND	0.094		mg/Kg	1	2/28/2023 5:44:00 AM
Surr: 4-Bromofluorobenzene	90.5	70-130		%Rec	1	2/28/2023 5:44:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	2/24/2023 5:50:29 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-05 2'
Project: North Pure Gold Federal 003 **Collection Date:** 2/18/2023 7:55:00 AM
Lab ID: 2302852-019 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	8.8		mg/Kg	1	2/22/2023 9:39:54 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	2/22/2023 9:39:54 PM
Surr: DNOP	127	69-147		%Rec	1	2/22/2023 9:39:54 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/28/2023 6:03:00 AM
Surr: BFB	102	37.7-212		%Rec	1	2/28/2023 6:03:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	2/28/2023 6:03:00 AM
Toluene	ND	0.048		mg/Kg	1	2/28/2023 6:03:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	2/28/2023 6:03:00 AM
Xylenes, Total	ND	0.095		mg/Kg	1	2/28/2023 6:03:00 AM
Surr: 4-Bromofluorobenzene	91.6	70-130		%Rec	1	2/28/2023 6:03:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	2/24/2023 6:03:21 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-05 4'
Project: North Pure Gold Federal 003
Collection Date: 2/18/2023 8:00:00 AM
Lab ID: 2302852-020 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	2/22/2023 9:50:22 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/22/2023 9:50:22 PM
Surr: DNOP	108	69-147		%Rec	1	2/22/2023 9:50:22 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/28/2023 6:23:00 AM
Surr: BFB	102	37.7-212		%Rec	1	2/28/2023 6:23:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.025		mg/Kg	1	2/28/2023 6:23:00 AM
Toluene	ND	0.049		mg/Kg	1	2/28/2023 6:23:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	2/28/2023 6:23:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	2/28/2023 6:23:00 AM
Surr: 4-Bromofluorobenzene	93.2	70-130		%Rec	1	2/28/2023 6:23:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	240	60		mg/Kg	20	2/24/2023 6:16:12 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-06 0'
Project: North Pure Gold Federal 003
Collection Date: 2/18/2023 8:05:00 AM
Lab ID: 2302852-021 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	12	9.2		mg/Kg	1	2/22/2023 10:00:51 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	2/22/2023 10:00:51 PM
Surr: DNOP	122	69-147		%Rec	1	2/22/2023 10:00:51 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/28/2023 6:42:00 AM
Surr: BFB	98.7	37.7-212		%Rec	1	2/28/2023 6:42:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	2/28/2023 6:42:00 AM
Toluene	ND	0.049		mg/Kg	1	2/28/2023 6:42:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	2/28/2023 6:42:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	2/28/2023 6:42:00 AM
Surr: 4-Bromofluorobenzene	90.7	70-130		%Rec	1	2/28/2023 6:42:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	2/24/2023 6:29:04 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-06 2'
Project: North Pure Gold Federal 003 **Collection Date:** 2/18/2023 8:10:00 AM
Lab ID: 2302852-022 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	2/22/2023 10:11:21 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/22/2023 10:11:21 PM
Surr: DNOP	105	69-147		%Rec	1	2/22/2023 10:11:21 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	2/28/2023 7:21:00 AM
Surr: BFB	98.0	37.7-212		%Rec	1	2/28/2023 7:21:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	2/28/2023 7:21:00 AM
Toluene	ND	0.047		mg/Kg	1	2/28/2023 7:21:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	2/28/2023 7:21:00 AM
Xylenes, Total	ND	0.094		mg/Kg	1	2/28/2023 7:21:00 AM
Surr: 4-Bromofluorobenzene	88.7	70-130		%Rec	1	2/28/2023 7:21:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	84	60		mg/Kg	20	2/24/2023 6:41:56 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-06 4'
Project: North Pure Gold Federal 003 **Collection Date:** 2/18/2023 8:15:00 AM
Lab ID: 2302852-023 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	2/22/2023 10:21:52 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/22/2023 10:21:52 PM
Surr: DNOP	86.3	69-147		%Rec	1	2/22/2023 10:21:52 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/28/2023 7:41:00 AM
Surr: BFB	101	37.7-212		%Rec	1	2/28/2023 7:41:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	2/28/2023 7:41:00 AM
Toluene	ND	0.049		mg/Kg	1	2/28/2023 7:41:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	2/28/2023 7:41:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	2/28/2023 7:41:00 AM
Surr: 4-Bromofluorobenzene	91.4	70-130		%Rec	1	2/28/2023 7:41:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	2/24/2023 3:05:31 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-07 0'
Project: North Pure Gold Federal 003 **Collection Date:** 2/18/2023 8:25:00 AM
Lab ID: 2302852-024 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	8.6		mg/Kg	1	2/22/2023 10:42:45 PM
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	2/22/2023 10:42:45 PM
Surr: DNOP	94.8	69-147		%Rec	1	2/22/2023 10:42:45 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/28/2023 8:00:00 AM
Surr: BFB	105	37.7-212		%Rec	1	2/28/2023 8:00:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	2/28/2023 8:00:00 AM
Toluene	ND	0.048		mg/Kg	1	2/28/2023 8:00:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	2/28/2023 8:00:00 AM
Xylenes, Total	ND	0.095		mg/Kg	1	2/28/2023 8:00:00 AM
Surr: 4-Bromofluorobenzene	90.9	70-130		%Rec	1	2/28/2023 8:00:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	100	60		mg/Kg	20	2/24/2023 3:17:51 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-07 2'
Project: North Pure Gold Federal 003 **Collection Date:** 2/18/2023 8:30:00 AM
Lab ID: 2302852-025 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	2/22/2023 10:53:17 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	2/22/2023 10:53:17 PM
Surr: DNOP	98.5	69-147		%Rec	1	2/22/2023 10:53:17 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	2/28/2023 8:20:00 AM
Surr: BFB	102	37.7-212		%Rec	1	2/28/2023 8:20:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.023		mg/Kg	1	2/28/2023 8:20:00 AM
Toluene	ND	0.046		mg/Kg	1	2/28/2023 8:20:00 AM
Ethylbenzene	ND	0.046		mg/Kg	1	2/28/2023 8:20:00 AM
Xylenes, Total	ND	0.093		mg/Kg	1	2/28/2023 8:20:00 AM
Surr: 4-Bromofluorobenzene	91.7	70-130		%Rec	1	2/28/2023 8:20:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	100	60		mg/Kg	20	2/24/2023 4:19:32 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-07 4'
Project: North Pure Gold Federal 003 **Collection Date:** 2/18/2023 8:35:00 AM
Lab ID: 2302852-026 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	2/22/2023 11:03:50 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	2/22/2023 11:03:50 PM
Surr: DNOP	90.6	69-147		%Rec	1	2/22/2023 11:03:50 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/28/2023 8:39:00 AM
Surr: BFB	101	37.7-212		%Rec	1	2/28/2023 8:39:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.025		mg/Kg	1	2/28/2023 8:39:00 AM
Toluene	ND	0.050		mg/Kg	1	2/28/2023 8:39:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	2/28/2023 8:39:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	2/28/2023 8:39:00 AM
Surr: 4-Bromofluorobenzene	91.7	70-130		%Rec	1	2/28/2023 8:39:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	140	60		mg/Kg	20	2/24/2023 4:31:53 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-08 0'
Project: North Pure Gold Federal 003
Collection Date: 2/18/2023 8:40:00 AM
Lab ID: 2302852-027 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	8.7		mg/Kg	1	2/22/2023 11:14:24 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	2/22/2023 11:14:24 PM
Surr: DNOP	88.6	69-147		%Rec	1	2/22/2023 11:14:24 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/28/2023 8:59:00 AM
Surr: BFB	99.1	37.7-212		%Rec	1	2/28/2023 8:59:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.025		mg/Kg	1	2/28/2023 8:59:00 AM
Toluene	ND	0.050		mg/Kg	1	2/28/2023 8:59:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	2/28/2023 8:59:00 AM
Xylenes, Total	ND	0.10		mg/Kg	1	2/28/2023 8:59:00 AM
Surr: 4-Bromofluorobenzene	90.2	70-130		%Rec	1	2/28/2023 8:59:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	2/24/2023 4:44:14 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-08 2'
Project: North Pure Gold Federal 003 **Collection Date:** 2/18/2023 8:45:00 AM
Lab ID: 2302852-028 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	2/22/2023 11:24:58 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/22/2023 11:24:58 PM
Surr: DNOP	93.1	69-147		%Rec	1	2/22/2023 11:24:58 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	2/28/2023 9:19:00 AM
Surr: BFB	101	37.7-212		%Rec	1	2/28/2023 9:19:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	2/28/2023 9:19:00 AM
Toluene	ND	0.047		mg/Kg	1	2/28/2023 9:19:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	2/28/2023 9:19:00 AM
Xylenes, Total	ND	0.095		mg/Kg	1	2/28/2023 9:19:00 AM
Surr: 4-Bromofluorobenzene	91.7	70-130		%Rec	1	2/28/2023 9:19:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	2/24/2023 4:56:35 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-08 4'
Project: North Pure Gold Federal 003 **Collection Date:** 2/18/2023 8:50:00 AM
Lab ID: 2302852-029 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	2/22/2023 11:35:44 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/22/2023 11:35:44 PM
Surr: DNOP	89.0	69-147		%Rec	1	2/22/2023 11:35:44 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/28/2023 9:38:00 AM
Surr: BFB	103	37.7-212		%Rec	1	2/28/2023 9:38:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	2/28/2023 9:38:00 AM
Toluene	ND	0.048		mg/Kg	1	2/28/2023 9:38:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	2/28/2023 9:38:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	2/28/2023 9:38:00 AM
Surr: 4-Bromofluorobenzene	91.8	70-130		%Rec	1	2/28/2023 9:38:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	2/24/2023 5:08:55 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-09 0'
Project: North Pure Gold Federal 003
Collection Date: 2/18/2023 9:00:00 AM
Lab ID: 2302852-030 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	2/22/2023 11:46:29 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	2/22/2023 11:46:29 PM
Surr: DNOP	95.8	69-147		%Rec	1	2/22/2023 11:46:29 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/28/2023 9:58:00 AM
Surr: BFB	102	37.7-212		%Rec	1	2/28/2023 9:58:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	2/28/2023 9:58:00 AM
Toluene	ND	0.049		mg/Kg	1	2/28/2023 9:58:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	2/28/2023 9:58:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	2/28/2023 9:58:00 AM
Surr: 4-Bromofluorobenzene	91.3	70-130		%Rec	1	2/28/2023 9:58:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	2/24/2023 5:21:16 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-09 2'
Project: North Pure Gold Federal 003 **Collection Date:** 2/18/2023 9:05:00 AM
Lab ID: 2302852-031 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	8.6		mg/Kg	1	2/22/2023 11:57:12 PM
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	2/22/2023 11:57:12 PM
Surr: DNOP	93.3	69-147		%Rec	1	2/22/2023 11:57:12 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/28/2023 10:18:00 AM
Surr: BFB	108	37.7-212		%Rec	1	2/28/2023 10:18:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	2/28/2023 10:18:00 AM
Toluene	ND	0.048		mg/Kg	1	2/28/2023 10:18:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	2/28/2023 10:18:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	2/28/2023 10:18:00 AM
Surr: 4-Bromofluorobenzene	92.5	70-130		%Rec	1	2/28/2023 10:18:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	2/24/2023 10:46:23 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-09 4'
Project: North Pure Gold Federal 003
Collection Date: 2/18/2023 9:10:00 AM
Lab ID: 2302852-032 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**
Diesel Range Organics (DRO)	ND	8.9		mg/Kg	1	2/23/2023 11:24:33 AM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	2/23/2023 11:24:33 AM
Surr: DNOP	92.5	69-147		%Rec	1	2/23/2023 11:24:33 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/28/2023 3:30:16 AM
Surr: BFB	101	37.7-212		%Rec	1	2/28/2023 3:30:16 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	2/28/2023 3:30:16 AM
Toluene	ND	0.050		mg/Kg	1	2/28/2023 3:30:16 AM
Ethylbenzene	ND	0.050		mg/Kg	1	2/28/2023 3:30:16 AM
Xylenes, Total	ND	0.099		mg/Kg	1	2/28/2023 3:30:16 AM
Surr: 4-Bromofluorobenzene	93.3	70-130		%Rec	1	2/28/2023 3:30:16 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	2/24/2023 10:59:14 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-10 0'
Project: North Pure Gold Federal 003 **Collection Date:** 2/18/2023 9:15:00 AM
Lab ID: 2302852-033 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	2/23/2023 12:35:48 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	2/23/2023 12:35:48 PM
Surr: DNOP	91.0	69-147		%Rec	1	2/23/2023 12:35:48 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/28/2023 3:53:42 AM
Surr: BFB	102	37.7-212		%Rec	1	2/28/2023 3:53:42 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	2/28/2023 3:53:42 AM
Toluene	ND	0.048		mg/Kg	1	2/28/2023 3:53:42 AM
Ethylbenzene	ND	0.048		mg/Kg	1	2/28/2023 3:53:42 AM
Xylenes, Total	ND	0.096		mg/Kg	1	2/28/2023 3:53:42 AM
Surr: 4-Bromofluorobenzene	94.5	70-130		%Rec	1	2/28/2023 3:53:42 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	2/24/2023 11:12:06 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-10 2'
Project: North Pure Gold Federal 003 **Collection Date:** 2/18/2023 9:20:00 AM
Lab ID: 2302852-034 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	2/23/2023 12:59:41 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/23/2023 12:59:41 PM
Surr: DNOP	102	69-147		%Rec	1	2/23/2023 12:59:41 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/28/2023 4:17:08 AM
Surr: BFB	99.2	37.7-212		%Rec	1	2/28/2023 4:17:08 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	2/28/2023 4:17:08 AM
Toluene	ND	0.049		mg/Kg	1	2/28/2023 4:17:08 AM
Ethylbenzene	ND	0.049		mg/Kg	1	2/28/2023 4:17:08 AM
Xylenes, Total	ND	0.097		mg/Kg	1	2/28/2023 4:17:08 AM
Surr: 4-Bromofluorobenzene	92.1	70-130		%Rec	1	2/28/2023 4:17:08 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	2/24/2023 11:24:57 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-10 4'
Project: North Pure Gold Federal 003 **Collection Date:** 2/18/2023 9:25:00 AM
Lab ID: 2302852-035 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**
Diesel Range Organics (DRO)	ND	8.9		mg/Kg	1	2/23/2023 1:23:32 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	2/23/2023 1:23:32 PM
Surr: DNOP	106	69-147		%Rec	1	2/23/2023 1:23:32 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	2/28/2023 4:40:35 AM
Surr: BFB	98.5	37.7-212		%Rec	1	2/28/2023 4:40:35 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	2/28/2023 4:40:35 AM
Toluene	ND	0.047		mg/Kg	1	2/28/2023 4:40:35 AM
Ethylbenzene	ND	0.047		mg/Kg	1	2/28/2023 4:40:35 AM
Xylenes, Total	ND	0.094		mg/Kg	1	2/28/2023 4:40:35 AM
Surr: 4-Bromofluorobenzene	91.0	70-130		%Rec	1	2/28/2023 4:40:35 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	2/24/2023 11:37:49 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-11 0'
Project: North Pure Gold Federal 003 **Collection Date:** 2/17/2023 12:30:00 PM
Lab ID: 2302852-036 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	2/23/2023 1:47:24 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	2/23/2023 1:47:24 PM
Surr: DNOP	98.7	69-147		%Rec	1	2/23/2023 1:47:24 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	2/28/2023 5:03:59 AM
Surr: BFB	99.2	37.7-212		%Rec	1	2/28/2023 5:03:59 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	2/28/2023 5:03:59 AM
Toluene	ND	0.047		mg/Kg	1	2/28/2023 5:03:59 AM
Ethylbenzene	ND	0.047		mg/Kg	1	2/28/2023 5:03:59 AM
Xylenes, Total	ND	0.095		mg/Kg	1	2/28/2023 5:03:59 AM
Surr: 4-Bromofluorobenzene	92.1	70-130		%Rec	1	2/28/2023 5:03:59 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	130	60		mg/Kg	20	2/24/2023 11:50:41 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-11 2'
Project: North Pure Gold Federal 003
Collection Date: 2/17/2023 12:35:00 PM
Lab ID: 2302852-037 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	2/23/2023 2:11:22 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/23/2023 2:11:22 PM
Surr: DNOP	94.0	69-147		%Rec	1	2/23/2023 2:11:22 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/28/2023 5:27:24 AM
Surr: BFB	101	37.7-212		%Rec	1	2/28/2023 5:27:24 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	2/28/2023 5:27:24 AM
Toluene	ND	0.049		mg/Kg	1	2/28/2023 5:27:24 AM
Ethylbenzene	ND	0.049		mg/Kg	1	2/28/2023 5:27:24 AM
Xylenes, Total	ND	0.099		mg/Kg	1	2/28/2023 5:27:24 AM
Surr: 4-Bromofluorobenzene	93.1	70-130		%Rec	1	2/28/2023 5:27:24 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	130	60		mg/Kg	20	2/25/2023 12:29:15 AM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-11 4'
Project: North Pure Gold Federal 003
Collection Date: 2/17/2023 12:40:00 PM
Lab ID: 2302852-038 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	2/23/2023 2:35:16 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/23/2023 2:35:16 PM
Surr: DNOP	90.6	69-147		%Rec	1	2/23/2023 2:35:16 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/28/2023 5:50:48 AM
Surr: BFB	98.3	37.7-212		%Rec	1	2/28/2023 5:50:48 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	2/28/2023 5:50:48 AM
Toluene	ND	0.050		mg/Kg	1	2/28/2023 5:50:48 AM
Ethylbenzene	ND	0.050		mg/Kg	1	2/28/2023 5:50:48 AM
Xylenes, Total	ND	0.10		mg/Kg	1	2/28/2023 5:50:48 AM
Surr: 4-Bromofluorobenzene	90.7	70-130		%Rec	1	2/28/2023 5:50:48 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	130	60		mg/Kg	20	2/25/2023 1:07:50 AM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-11 6'
Project: North Pure Gold Federal 003 **Collection Date:** 2/17/2023 12:50:00 PM
Lab ID: 2302852-039 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	2/23/2023 2:59:22 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/23/2023 2:59:22 PM
Surr: DNOP	88.6	69-147		%Rec	1	2/23/2023 2:59:22 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/28/2023 6:14:12 AM
Surr: BFB	98.8	37.7-212		%Rec	1	2/28/2023 6:14:12 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	2/28/2023 6:14:12 AM
Toluene	ND	0.050		mg/Kg	1	2/28/2023 6:14:12 AM
Ethylbenzene	ND	0.050		mg/Kg	1	2/28/2023 6:14:12 AM
Xylenes, Total	ND	0.10		mg/Kg	1	2/28/2023 6:14:12 AM
Surr: 4-Bromofluorobenzene	91.2	70-130		%Rec	1	2/28/2023 6:14:12 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	120	60		mg/Kg	20	2/25/2023 1:20:41 AM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-12 0'
Project: North Pure Gold Federal 003 **Collection Date:** 2/18/2023 2:35:00 PM
Lab ID: 2302852-040 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**
Diesel Range Organics (DRO)	18	10		mg/Kg	1	2/23/2023 3:23:23 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/23/2023 3:23:23 PM
Surr: DNOP	99.8	69-147		%Rec	1	2/23/2023 3:23:23 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/28/2023 6:37:40 AM
Surr: BFB	98.4	37.7-212		%Rec	1	2/28/2023 6:37:40 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	2/28/2023 6:37:40 AM
Toluene	ND	0.048		mg/Kg	1	2/28/2023 6:37:40 AM
Ethylbenzene	ND	0.048		mg/Kg	1	2/28/2023 6:37:40 AM
Xylenes, Total	ND	0.096		mg/Kg	1	2/28/2023 6:37:40 AM
Surr: 4-Bromofluorobenzene	90.2	70-130		%Rec	1	2/28/2023 6:37:40 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	70	60		mg/Kg	20	2/25/2023 1:33:33 AM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-12 2'
Project: North Pure Gold Federal 003 **Collection Date:** 2/18/2023 2:40:00 PM
Lab ID: 2302852-041 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	2/23/2023 3:47:19 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	2/23/2023 3:47:19 PM
Surr: DNOP	103	69-147		%Rec	1	2/23/2023 3:47:19 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/28/2023 7:01:08 AM
Surr: BFB	99.4	37.7-212		%Rec	1	2/28/2023 7:01:08 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	2/28/2023 7:01:08 AM
Toluene	ND	0.048		mg/Kg	1	2/28/2023 7:01:08 AM
Ethylbenzene	ND	0.048		mg/Kg	1	2/28/2023 7:01:08 AM
Xylenes, Total	ND	0.095		mg/Kg	1	2/28/2023 7:01:08 AM
Surr: 4-Bromofluorobenzene	90.2	70-130		%Rec	1	2/28/2023 7:01:08 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	61		mg/Kg	20	2/25/2023 10:22:36 AM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-12 4'
Project: North Pure Gold Federal 003
Collection Date: 2/18/2023 2:45:00 PM
Lab ID: 2302852-042 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	2/23/2023 4:11:16 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/23/2023 4:11:16 PM
Surr: DNOP	94.3	69-147		%Rec	1	2/23/2023 4:11:16 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/28/2023 11:46:11 AM
Surr: BFB	104	37.7-212		%Rec	1	2/28/2023 11:46:11 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	2/28/2023 11:46:11 AM
Toluene	ND	0.048		mg/Kg	1	2/28/2023 11:46:11 AM
Ethylbenzene	ND	0.048		mg/Kg	1	2/28/2023 11:46:11 AM
Xylenes, Total	ND	0.095		mg/Kg	1	2/28/2023 11:46:11 AM
Surr: 4-Bromofluorobenzene	93.8	70-130		%Rec	1	2/28/2023 11:46:11 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	2/25/2023 10:59:51 AM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-12 6'
Project: North Pure Gold Federal 003 **Collection Date:** 2/18/2023 2:55:00 PM
Lab ID: 2302852-043 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	2/23/2023 4:59:10 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/23/2023 4:59:10 PM
Surr: DNOP	97.6	69-147		%Rec	1	2/23/2023 4:59:10 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	2/28/2023 12:10:09 PM
Surr: BFB	101	37.7-212		%Rec	1	2/28/2023 12:10:09 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	2/28/2023 12:10:09 PM
Toluene	ND	0.047		mg/Kg	1	2/28/2023 12:10:09 PM
Ethylbenzene	ND	0.047		mg/Kg	1	2/28/2023 12:10:09 PM
Xylenes, Total	ND	0.094		mg/Kg	1	2/28/2023 12:10:09 PM
Surr: 4-Bromofluorobenzene	93.1	70-130		%Rec	1	2/28/2023 12:10:09 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	290	60		mg/Kg	20	3/1/2023 1:42:17 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-12 7'
Project: North Pure Gold Federal 003
Collection Date: 2/18/2023 3:05:00 PM
Lab ID: 2302852-044 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	2/23/2023 6:10:23 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/23/2023 6:10:23 PM
Surr: DNOP	107	69-147		%Rec	1	2/23/2023 6:10:23 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/28/2023 12:34:00 PM
Surr: BFB	102	37.7-212		%Rec	1	2/28/2023 12:34:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	2/28/2023 12:34:00 PM
Toluene	ND	0.049		mg/Kg	1	2/28/2023 12:34:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	2/28/2023 12:34:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	2/28/2023 12:34:00 PM
Surr: 4-Bromofluorobenzene	93.9	70-130		%Rec	1	2/28/2023 12:34:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	280	61		mg/Kg	20	3/1/2023 1:54:37 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-13 0'
Project: North Pure Gold Federal 003 **Collection Date:** 2/18/2023 3:15:00 PM
Lab ID: 2302852-045 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**
Diesel Range Organics (DRO)	61	9.1		mg/Kg	1	2/23/2023 6:34:01 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	2/23/2023 6:34:01 PM
Surr: DNOP	120	69-147		%Rec	1	2/23/2023 6:34:01 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	2/28/2023 12:57:50 PM
Surr: BFB	102	37.7-212		%Rec	1	2/28/2023 12:57:50 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	2/28/2023 12:57:50 PM
Toluene	ND	0.047		mg/Kg	1	2/28/2023 12:57:50 PM
Ethylbenzene	ND	0.047		mg/Kg	1	2/28/2023 12:57:50 PM
Xylenes, Total	ND	0.094		mg/Kg	1	2/28/2023 12:57:50 PM
Surr: 4-Bromofluorobenzene	92.8	70-130		%Rec	1	2/28/2023 12:57:50 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	2/25/2023 11:37:04 AM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-13 2'
Project: North Pure Gold Federal 003 **Collection Date:** 2/18/2023 3:20:00 PM
Lab ID: 2302852-046 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	2/23/2023 6:57:35 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	2/23/2023 6:57:35 PM
Surr: DNOP	108	69-147		%Rec	1	2/23/2023 6:57:35 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	2/28/2023 1:21:42 PM
Surr: BFB	105	37.7-212		%Rec	1	2/28/2023 1:21:42 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	2/28/2023 1:21:42 PM
Toluene	ND	0.047		mg/Kg	1	2/28/2023 1:21:42 PM
Ethylbenzene	ND	0.047		mg/Kg	1	2/28/2023 1:21:42 PM
Xylenes, Total	ND	0.094		mg/Kg	1	2/28/2023 1:21:42 PM
Surr: 4-Bromofluorobenzene	96.0	70-130		%Rec	1	2/28/2023 1:21:42 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	61		mg/Kg	20	2/25/2023 11:49:29 AM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-13 4'
Project: North Pure Gold Federal 003 **Collection Date:** 2/18/2023 3:25:00 PM
Lab ID: 2302852-047 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	2/23/2023 7:21:10 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/23/2023 7:21:10 PM
Surr: DNOP	97.2	69-147		%Rec	1	2/23/2023 7:21:10 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/28/2023 1:45:38 PM
Surr: BFB	103	37.7-212		%Rec	1	2/28/2023 1:45:38 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	2/28/2023 1:45:38 PM
Toluene	ND	0.049		mg/Kg	1	2/28/2023 1:45:38 PM
Ethylbenzene	ND	0.049		mg/Kg	1	2/28/2023 1:45:38 PM
Xylenes, Total	ND	0.098		mg/Kg	1	2/28/2023 1:45:38 PM
Surr: 4-Bromofluorobenzene	93.0	70-130		%Rec	1	2/28/2023 1:45:38 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	470	60		mg/Kg	20	3/1/2023 2:06:57 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302852**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-13 6'
Project: North Pure Gold Federal 003 **Collection Date:** 2/18/2023 3:30:00 PM
Lab ID: 2302852-048 **Matrix:** SOIL **Received Date:** 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	2/23/2023 7:44:38 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/23/2023 7:44:38 PM
Surr: DNOP	98.5	69-147		%Rec	1	2/23/2023 7:44:38 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	2/28/2023 2:09:27 PM
Surr: BFB	105	37.7-212		%Rec	1	2/28/2023 2:09:27 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	2/28/2023 2:09:27 PM
Toluene	ND	0.046		mg/Kg	1	2/28/2023 2:09:27 PM
Ethylbenzene	ND	0.046		mg/Kg	1	2/28/2023 2:09:27 PM
Xylenes, Total	ND	0.092		mg/Kg	1	2/28/2023 2:09:27 PM
Surr: 4-Bromofluorobenzene	94.7	70-130		%Rec	1	2/28/2023 2:09:27 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	410	60		mg/Kg	20	3/1/2023 2:19:18 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2302852**

06-Mar-23

Client: Vertex Resources Services, Inc.

Project: North Pure Gold Federal 003

Sample ID: **MB-73315**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **73315**	RunNo: **94813**							
Prep Date: **2/22/2023**	Analysis Date: **2/22/2023**	SeqNo: **3426772**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-73315**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **73315**	RunNo: **94813**							
Prep Date: **2/22/2023**	Analysis Date: **2/22/2023**	SeqNo: **3426773**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.7	90	110			

Sample ID: **MB-73325**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **73325**	RunNo: **94813**							
Prep Date: **2/22/2023**	Analysis Date: **2/22/2023**	SeqNo: **3426804**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-73325**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **73325**	RunNo: **94813**							
Prep Date: **2/22/2023**	Analysis Date: **2/22/2023**	SeqNo: **3426805**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.4	90	110			

Sample ID: **MB-73370**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **73370**	RunNo: **94862**							
Prep Date: **2/24/2023**	Analysis Date: **2/24/2023**	SeqNo: **3428892**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-73370**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **73370**	RunNo: **94862**							
Prep Date: **2/24/2023**	Analysis Date: **2/24/2023**	SeqNo: **3428893**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	96.9	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2302852**

06-Mar-23

Client: Vertex Resources Services, Inc.

Project: North Pure Gold Federal 003

Sample ID: **LCS-73368**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **73368**	RunNo: **94864**							
Prep Date: **2/24/2023**	Analysis Date: **2/24/2023**	SeqNo: **3429240**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.5	90	110			

Sample ID: **MB-73368**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **73368**	RunNo: **94864**							
Prep Date: **2/24/2023**	Analysis Date: **2/24/2023**	SeqNo: **3429242**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **MB-73382**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **73382**	RunNo: **94864**							
Prep Date: **2/24/2023**	Analysis Date: **2/24/2023**	SeqNo: **3429281**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-73382**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **73382**	RunNo: **94864**							
Prep Date: **2/24/2023**	Analysis Date: **2/24/2023**	SeqNo: **3429282**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.3	90	110			

Sample ID: **MB-73383**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **73383**	RunNo: **94885**							
Prep Date: **2/25/2023**	Analysis Date: **2/25/2023**	SeqNo: **3429558**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-73383**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **73383**	RunNo: **94885**							
Prep Date: **2/25/2023**	Analysis Date: **2/25/2023**	SeqNo: **3429559**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.6	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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2302852**

06-Mar-23

Client: Vertex Resources Services, Inc.

Project: North Pure Gold Federal 003

Sample ID: **MB-73384**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **73384**	RunNo: **94885**
Prep Date: **2/25/2023**	Analysis Date: **2/25/2023**	SeqNo: **3429588** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-73384**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **73384**	RunNo: **94885**
Prep Date: **2/25/2023**	Analysis Date: **2/25/2023**	SeqNo: **3429589** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.8	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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2302852**

06-Mar-23

Client: Vertex Resources Services, Inc.

Project: North Pure Gold Federal 003

Sample ID: **2302852-012AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH23-03 4'**	Batch ID: **73295**	RunNo: **94831**
Prep Date: **2/21/2023**	Analysis Date: **2/22/2023**	SeqNo: **3427359** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	9.6	47.85	0	89.1	54.2	135			
Surr: DNOP	4.2		4.785		88.0	69	147			

Sample ID: **2302852-012AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH23-03 4'**	Batch ID: **73295**	RunNo: **94831**
Prep Date: **2/21/2023**	Analysis Date: **2/22/2023**	SeqNo: **3427360** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	9.6	47.98	0	89.1	54.2	135	0.231	29.2	
Surr: DNOP	4.1		4.798		85.6	69	147	0	0	

Sample ID: **LCS-73285**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **73285**	RunNo: **94831**
Prep Date: **2/21/2023**	Analysis Date: **2/22/2023**	SeqNo: **3427389** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	41	10	50.00	0	82.1	61.9	130			
Surr: DNOP	4.3		5.000		85.3	69	147			

Sample ID: **LCS-73295**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **73295**	RunNo: **94831**
Prep Date: **2/21/2023**	Analysis Date: **2/22/2023**	SeqNo: **3427391** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	92.3	61.9	130			
Surr: DNOP	5.1		5.000		101	69	147			

Sample ID: **MB-73285**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **73285**	RunNo: **94831**
Prep Date: **2/21/2023**	Analysis Date: **2/22/2023**	SeqNo: **3427393** 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	9.5		10.00		94.7	69	147			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2302852**

06-Mar-23

Client: Vertex Resources Services, Inc.

Project: North Pure Gold Federal 003

Sample ID: **MB-73295**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **73295**	RunNo: **94831**
Prep Date: **2/21/2023**	Analysis Date: **2/22/2023**	SeqNo: **3427395** 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	12		10.00		118	69	147			

Sample ID: **MB-73305**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **73305**	RunNo: **94840**
Prep Date: **2/22/2023**	Analysis Date: **2/23/2023**	SeqNo: **3427623** 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	9.6		10.00		96.2	69	147			

Sample ID: **LCS-73305**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **73305**	RunNo: **94840**
Prep Date: **2/22/2023**	Analysis Date: **2/23/2023**	SeqNo: **3427624** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	10	50.00	0	103	61.9	130			
Surr: DNOP	4.3		5.000		86.2	69	147			

Sample ID: **2302852-032AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH23-09 4'**	Batch ID: **73305**	RunNo: **94840**
Prep Date: **2/22/2023**	Analysis Date: **2/23/2023**	SeqNo: **3427626** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	9.7	48.31	0	108	54.2	135			
Surr: DNOP	4.6		4.831		95.4	69	147			

Sample ID: **2302852-032AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH23-09 4'**	Batch ID: **73305**	RunNo: **94840**
Prep Date: **2/22/2023**	Analysis Date: **2/23/2023**	SeqNo: **3427627** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	58	9.6	47.98	0	120	54.2	135	9.49	29.2	
Surr: DNOP	5.2		4.798		108	69	147	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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2302852**

06-Mar-23

Client: Vertex Resources Services, Inc.

Project: North Pure Gold Federal 003

Sample ID: **lcs-73276**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **73276**	RunNo: **94799**
Prep Date: **2/21/2023**	Analysis Date: **2/23/2023**	SeqNo: **3427151** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	92.8	72.3	137			
Surr: BFB	1900		1000		190	37.7	212			

Sample ID: **mb-73276**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **73276**	RunNo: **94799**
Prep Date: **2/21/2023**	Analysis Date: **2/23/2023**	SeqNo: **3427152** 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	990		1000		99.2	37.7	212			

Sample ID: **MB-73287**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **73287**	RunNo: **94903**
Prep Date: **2/21/2023**	Analysis Date: **2/28/2023**	SeqNo: **3430989** 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		102	37.7	212			

Sample ID: **2302852-012AMS**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-03 4'**	Batch ID: **73287**	RunNo: **94903**
Prep Date: **2/21/2023**	Analysis Date: **2/28/2023**	SeqNo: **3430991** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	4.8	23.81	0	92.9	70	130			
Surr: BFB	2100		952.4		219	37.7	212			S

Sample ID: **2302852-012AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-03 4'**	Batch ID: **73287**	RunNo: **94903**
Prep Date: **2/21/2023**	Analysis Date: **2/28/2023**	SeqNo: **3430992** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	4.8	23.81	0	91.9	70	130	1.13	20	
Surr: BFB	2100		952.4		217	37.7	212	0	0	S

Sample ID: **lcs-73291**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **73291**	RunNo: **94890**
Prep Date: **2/21/2023**	Analysis Date: **2/28/2023**	SeqNo: **3431010** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2302852**

06-Mar-23

Client: Vertex Resources Services, Inc.

Project: North Pure Gold Federal 003

Sample ID: **lcs-73291**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **73291**	RunNo: **94890**
Prep Date: **2/21/2023**	Analysis Date: **2/28/2023**	SeqNo: **3431010** 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	99.0	72.3	137			
Surr: BFB	2000		1000		200	37.7	212			

Sample ID: **mb-73291**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **73291**	RunNo: **94890**
Prep Date: **2/21/2023**	Analysis Date: **2/28/2023**	SeqNo: **3431011** 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	990		1000		98.5	37.7	212			

Sample ID: **LCS-73287**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **73287**	RunNo: **94903**
Prep Date: **2/21/2023**	Analysis Date: **2/28/2023**	SeqNo: **3431190** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.3	72.3	137			
Surr: BFB	2200		1000		224	37.7	212			S

Sample ID: **2302852-032ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-09 4'**	Batch ID: **73291**	RunNo: **94910**
Prep Date: **2/21/2023**	Analysis Date: **2/28/2023**	SeqNo: **3431695** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	24.78	0	98.8	70	130			
Surr: BFB	2000		991.1		202	37.7	212			

Sample ID: **2302852-032amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-09 4'**	Batch ID: **73291**	RunNo: **94910**
Prep Date: **2/21/2023**	Analysis Date: **2/28/2023**	SeqNo: **3431696** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	24.78	0	101	70	130	2.00	20	
Surr: BFB	2000		991.1		205	37.7	212	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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2302852**

06-Mar-23

Client: Vertex Resources Services, Inc.

Project: North Pure Gold Federal 003

Sample ID: **LCS-73276**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **73276**	RunNo: **94799**
Prep Date: **2/21/2023**	Analysis Date: **2/23/2023**	SeqNo: **3427180** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	1.000	0	89.7	80	120			
Toluene	0.92	0.050	1.000	0	92.2	80	120			
Ethylbenzene	0.90	0.050	1.000	0	90.2	80	120			
Xylenes, Total	2.7	0.10	3.000	0	90.7	80	120			
Surr: 4-Bromofluorobenzene	0.96		1.000		96.3	70	130			

Sample ID: **mb-73276**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **73276**	RunNo: **94799**
Prep Date: **2/21/2023**	Analysis Date: **2/23/2023**	SeqNo: **3427181** 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	0.93		1.000		93.0	70	130			

Sample ID: **LCS-73291**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **73291**	RunNo: **94890**
Prep Date: **2/21/2023**	Analysis Date: **2/28/2023**	SeqNo: **3431022** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.025	1.000	0	91.2	80	120			
Toluene	0.95	0.050	1.000	0	94.6	80	120			
Ethylbenzene	0.93	0.050	1.000	0	93.2	80	120			
Xylenes, Total	2.8	0.10	3.000	0	93.3	80	120			
Surr: 4-Bromofluorobenzene	0.95		1.000		94.6	70	130			

Sample ID: **mb-73291**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **73291**	RunNo: **94890**
Prep Date: **2/21/2023**	Analysis Date: **2/28/2023**	SeqNo: **3431023** 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	0.91		1.000		91.2	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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2302852**

06-Mar-23

Client: Vertex Resources Services, Inc.

Project: North Pure Gold Federal 003

Sample ID: **MB-73287**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **73287**	RunNo: **94903**
Prep Date: **2/21/2023**	Analysis Date: **2/28/2023**	SeqNo: **3431194** 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	0.93		1.000		93.1	70	130			

Sample ID: **2302852-013AMS**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-03 6'**	Batch ID: **73287**	RunNo: **94903**
Prep Date: **2/21/2023**	Analysis Date: **2/28/2023**	SeqNo: **3431198** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.024	0.9690	0	90.4	68.8	120			
Toluene	0.89	0.048	0.9690	0	91.8	73.6	124			
Ethylbenzene	0.88	0.048	0.9690	0	90.7	72.7	129			
Xylenes, Total	2.6	0.097	2.907	0	90.3	75.7	126			
Surr: 4-Bromofluorobenzene	0.91		0.9690		93.7	70	130			

Sample ID: **2302852-013AMSD**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-03 6'**	Batch ID: **73287**	RunNo: **94903**
Prep Date: **2/21/2023**	Analysis Date: **2/28/2023**	SeqNo: **3431199** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.024	0.9699	0	90.8	68.8	120	0.579	20	
Toluene	0.89	0.048	0.9699	0	91.3	73.6	124	0.475	20	
Ethylbenzene	0.89	0.048	0.9699	0	91.6	72.7	129	1.06	20	
Xylenes, Total	2.6	0.097	2.910	0	90.7	75.7	126	0.565	20	
Surr: 4-Bromofluorobenzene	0.90		0.9699		93.2	70	130	0	0	

Sample ID: **LCS-73287**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **73287**	RunNo: **94903**
Prep Date: **2/21/2023**	Analysis Date: **2/28/2023**	SeqNo: **3431241** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.86	0.025	1.000	0	86.3	80	120			
Toluene	0.87	0.050	1.000	0	86.8	80	120			
Ethylbenzene	0.86	0.050	1.000	0	86.4	80	120			
Xylenes, Total	2.6	0.10	3.000	0	86.7	80	120			
Surr: 4-Bromofluorobenzene	0.95		1.000		95.2	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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2302852**

06-Mar-23

Client: Vertex Resources Services, Inc.

Project: North Pure Gold Federal 003

Sample ID: **2302852-033ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-10 0'**	Batch ID: **73291**	RunNo: **94910**
Prep Date: **2/21/2023**	Analysis Date: **2/28/2023**	SeqNo: **3431711** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.024	0.9625	0	91.1	68.8	120			
Toluene	0.91	0.048	0.9625	0.01665	92.3	73.6	124			
Ethylbenzene	0.89	0.048	0.9625	0	92.5	72.7	129			
Xylenes, Total	2.7	0.096	2.887	0	93.5	75.7	126			
Surr: 4-Bromofluorobenzene	0.93		0.9625		97.1	70	130			

Sample ID: **2302852-033amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-10 0'**	Batch ID: **73291**	RunNo: **94910**
Prep Date: **2/21/2023**	Analysis Date: **2/28/2023**	SeqNo: **3431712** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.85	0.024	0.9643	0	88.5	68.8	120	2.66	20	
Toluene	0.89	0.048	0.9643	0.01665	90.5	73.6	124	1.79	20	
Ethylbenzene	0.88	0.048	0.9643	0	91.6	72.7	129	0.709	20	
Xylenes, Total	2.7	0.096	2.893	0	91.6	75.7	126	1.79	20	
Surr: 4-Bromofluorobenzene	0.94		0.9643		97.1	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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: Vertex Resources Services, Inc.

Work Order Number: 2302852

RcptNo: 1

Received By: **Tracy Casarrubias** 2/21/2023 7:20:00 AM

Completed By: **Tracy Casarrubias** 2/21/2023 7:56:04 AM

Reviewed By: JN 2/21/23

Chain of Custody

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

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? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
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? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: JH 2-21-23

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	5.2	Good	Yes	Yogi		
2	5.4	Good	Yes	Yogi		

Chain-of-Custody Record

Client: **Vertex**

(direct bill to Devon)

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☒ Rush 5 Day

Project Name:
North Pure Gold 4 Federal #003

Project #:
22E-02816-06

Project Manager:
Kent Stallings
kstallings@vertex.ca

Sampler: L. Pullman
On Ice: ☒ Yes ☐ No ygi
# of Coolers: 2
Cooler Temp(including CF): 5.3 -0.1 = 5.2°C; 5.5 -0.1 = 5.4°C

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2302852	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	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)						
02/17/23	8:45	Soil	BH22-01 0'	1, 4oz jar		001	X	X					X									
02/17/23	8:50	Soil	BH22-01 2'	1, 4oz jar		002	X	X					X									
02/17/23	8:55	Soil	BH22-01 4'	1, 4oz jar		003	X	X					X									
02/17/23	9:05	Soil	BH22-01 6'	1, 4oz jar		004	X	X					X									
02/17/23	9:20	Soil	BH22-02 0'	1, 4oz jar		005	X	X					X									
02/17/23	9:25	Soil	BH22-02 2'	1, 4oz jar		006	X	X					X									
02/17/23	9:30	Soil	BH22-02 4'	1, 4oz jar		007	X	X					X									
02/17/23	9:40	Soil	BH22-02 6'	1, 4oz jar		008	X	X					X									
02/17/23	12:00	Soil	BH22-02 7'	1, 4oz jar		009	X	X					X									
02/17/23	10:00	Soil	BH22-03 0'	1, 4oz jar		010	X	X					X									
02/17/23	10:05	Soil	BH22-03 2'	1, 4oz jar		011	X	X					X									
02/17/23	10:10	Soil	BH22-03 4'	1, 4oz jar		012	X	X					X									

BH23 1 per EGN 2/21/23

Date	Time	Relinquished by	Received by	Via	Date	Time
2-20-2023	0700	[signature]	[signature]		2/20/23	700
2/20/23	1900	[signature]	[signature]	Courier	2/21/23	7:20

Remarks:
Direct bill to Devon, Dale Woodall
cc. kstallings@vertex.ca for Final Report

1/4

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Client: **Vertex**
(direct bill to Devon)
Mailing Address:
Phone #:
email or Fax#:
QA/QC Package: ☐ Standard ☐ Level 4 (Full Validation)
Accreditation: ☐ Az Compliance ☐ NELAC ☐ Other
☐ EDD (Type)

Turn-Around Time: ☒ Standard ☒ Rush 5 Day
Project Name: **North Pure Gold 4 Federal #003**
Project #: **22E-02816-06**
Project Manager: Kent Stallings
kstallings@vertex.ca
Sampler: L. Pullman
On Ice: ☒ Yes ☐ No yogi
# of Coolers: 2
Cooler Temp(including CF): 5.3 -0.1 = 5.2 °C; 5.5 -0.1 = 5.4 °C

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2302852	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	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)						
02/17/23	10:15	Soil	BH22-03 6'	1, 4oz jar		013	X	X					X									
02/17/23	12:10	Soil	BH22-03 7'	1, 4oz jar		014	X	X					X									
02/18/23	7:30	Soil	BH22-04 0'	1, 4oz jar		015	X	X					X									
02/18/23	7:35	Soil	BH22-04 2'	1, 4oz jar		016	X	X					X									
02/18/23	7:40	Soil	BH22-04 4'	1, 4oz jar		017	X	X					X									
02/18/23	7:50	Soil	BH22-05 0'	1, 4oz jar		018	X	X					X									
02/18/23	7:55	Soil	BH22-05 2'	1, 4oz jar		019	X	X					X									
02/18/23	8:00	Soil	BH22-05 4'	1, 4oz jar		020	X	X					X									
02/18/23	8:05	Soil	BH22-06 0'	1, 4oz jar		021	X	X					X									
02/18/23	8:10	Soil	BH22-06 2'	1, 4oz jar		022	X	X					X									
02/18/23	8:15	Soil	BH22-06 4'	1, 4oz jar		023	X	X					X									
02/18/23	8:25	Soil	BH22-07 0'	1, 4oz jar		024	X	X					X									

BH23 per Orin [illegible] 2/21/23

Date	Time	Relinquished by	Received by	Via	Date	Time
2-20-2023	07:00	[signature]	[signature]		2/20/23	700
2/20/23	1900	[signature]	[signature]	cour	2/21/23	7:20

Remarks:
Direct bill to Devon, Dale Woodall
cc. kstallings@vertex.ca for Final Report

2/4

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Chain-of-Custody Record

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

Client: **Vertex**
(direct bill to Devon)
Mailing Address:
Phone #:
email or Fax#:
QA/QC Package: ☐ Standard ☐ Level 4 (Full Validation)
Accreditation: ☐ Az Compliance ☐ NELAC ☐ Other
☐ EDD (Type)

Turn-Around Time: ☒ Standard ☒ Rush 5 Day
Project Name: **North Pure Gold 4 Federal #003**
Project #: **22E-02816-06**
Project Manager: Kent Stallings
kstallings@vertex.ca
Sampler: L. Pullman
On Ice: ☒ Yes ☐ No yogi
# of Coolers: 2
Cooler Temp (including CF): 5.3 -0.1 = 5.2 °C; 5.5 -0.1 = 5.4 °C

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2302852	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	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)
02/18/23	8:30	Soil	BH22-07 2'	1, 4oz jar		025	X	X					X			
02/18/23	8:35	Soil	BH22-07 4'	1, 4oz jar		026	X	X					X			
02/18/23	8:40	Soil	BH22-08 0'	1, 4oz jar		027	X	X					X			
02/18/23	8:45	Soil	BH22-08 2'	1, 4oz jar		028	X	X					X			
02/18/23	8:50	Soil	BH22-08 4'	1, 4oz jar		029	X	X					X			
02/18/23	9:00	Soil	BH22-09 0'	1, 4oz jar		030	X	X					X			
02/18/23	9:05	Soil	BH22-09 2'	1, 4oz jar		031	X	X					X			
02/18/23	9:10	Soil	BH22-09 4'	1, 4oz jar		032	X	X					X			
02/18/23	9:15	Soil	BH22-10 0'	1, 4oz jar		033	X	X					X			
02/18/23	9:20	Soil	BH22-10 2'	1, 4oz jar		034	X	X					X			
02/18/23	9:25	Soil	BH22-10 4'	1, 4oz jar		035	X	X					X			
02/17/23	12:30	Soil	BH22-11 0'	1, 4oz jar		036	X	X					X			

BH23 per cnw 3/21/23

Date	Time	Relinquished by	Received by	Via	Date	Time
2-20-2023	07:00	[signature]	[signature]		2/20/23	700
2/20/23	1900	[signature]	[signature]	Cour	2/21/23	7:20

Remarks:
Direct bill to Devon, Dale Woodall
cc. kstallings@vertex.ca for Final Report

3/4

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Chain-of-Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY
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Tel. 505-345-3975 Fax 505-345-4107

Client: Vertex
(direct bill to Devon)
Mailing Address:
Phone #:
email or Fax#:
QA/QC Package: ☐ Standard ☐ Level 4 (Full Validation)
Accreditation: ☐ Az Compliance ☐ NELAC ☐ Other
☐ EDD (Type)

Turn-Around Time: ☒ Standard ☒ Rush 5 Day
Project Name: North Pure Gold 4 Federal #003
Project #: 22E-02816-06
Project Manager: Kent Stallings
kstallings@vertex.ca
Sampler: L. Pullman
On Ice: ☒ Yes ☐ No yogi
\# of Coolers: 2
Cooler Temp(Including CF): 5.3 -0.1 = 5.2 °C; 5.5 -0.1 = 5.4 °C

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2302852	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	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)
02/17/23	12:35	Soil	BH22-11 2'	1, 4oz jar		037	X	X					X			
02/17/23	12:40	Soil	BH22-11 4'	1, 4oz jar		038	X	X					X			
02/17/23	12:50	Soil	BH22-11 6'	1, 4oz jar		039	X	X					X			
02/18/23	14:35	Soil	BH22-12 0'	1, 4oz jar		040	X	X					X			
02/18/23	14:40	Soil	BH22-12 2'	1, 4oz jar		041	X	X					X			
02/18/23	14:45	Soil	BH22-12 4'	1, 4oz jar		042	X	X					X			
02/18/23	14:55	Soil	BH22-12 6'	1, 4oz jar		043	X	X					X			
02/18/23	15:05	Soil	BH22-12 7'	1, 4oz jar		044	X	X					X			
02/18/23	15:15	Soil	BH22-13 0'	1, 4oz jar		045	X	X					X			
02/18/23	15:20	Soil	BH22-13 2'	1, 4oz jar		046	X	X					X			
02/18/23	15:25	Soil	BH22-13 4'	1, 4oz jar		047	X	X					X			
02/18/23	15:30	Soil	BH22-13 6'	1, 4oz jar		048	X	X					X			

BH23 re-sample? ... 2/21/23

Date	Time	Relinquished by	Received by	Via	Date	Time
2-20-2023	0700	[signature]	[signature]		2/20/23	700
2/20/23	1900	[signature]		courier	2/21/23	7:20

Remarks:
Direct bill to Devon, Dale Woodall
cc. kstallings@vertex.ca for Final Report

4/4

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HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

March 08, 2023

Kent Stallings

Vertex Resources Services, Inc.
3101 Boyd Drive
Carlsbad, NM 88220
TEL: (505) 506-0040
FAX:

RE: North Pure Gold 4 Federal 003 OrderNo.: 2302A66

Dear Kent Stallings:

Hall Environmental Analysis Laboratory received 27 sample(s) on 2/24/2023 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,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2302A66**
Date Reported: **3/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-14 0'
Project: North Pure Gold 4 Federal 003 **Collection Date:** 2/22/2023 7:40:00 AM
Lab ID: 2302A66-001 **Matrix:** SOIL **Received Date:** 2/24/2023 7:28:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	2/28/2023 12:41:59 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/28/2023 12:41:59 AM
Surr: DNOP	98.6	69-147		%Rec	1	2/28/2023 12:41:59 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/1/2023 1:05:17 PM
Surr: BFB	100	37.7-212		%Rec	1	3/1/2023 1:05:17 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	3/1/2023 1:05:17 PM
Toluene	ND	0.047		mg/Kg	1	3/1/2023 1:05:17 PM
Ethylbenzene	ND	0.047		mg/Kg	1	3/1/2023 1:05:17 PM
Xylenes, Total	ND	0.094		mg/Kg	1	3/1/2023 1:05:17 PM
Surr: 4-Bromofluorobenzene	93.5	70-130		%Rec	1	3/1/2023 1:05:17 PM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	210	60		mg/Kg	20	2/28/2023 2:31:10 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302A66**
Date Reported: **3/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-14 2'
Project: North Pure Gold 4 Federal 003
Collection Date: 2/22/2023 7:45:00 AM
Lab ID: 2302A66-002 **Matrix:** SOIL **Received Date:** 2/24/2023 7:28:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	2/28/2023 12:55:41 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	2/28/2023 12:55:41 AM
Surr: DNOP	97.9	69-147		%Rec	1	2/28/2023 12:55:41 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/1/2023 1:29:00 PM
Surr: BFB	99.9	37.7-212		%Rec	1	3/1/2023 1:29:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	3/1/2023 1:29:00 PM
Toluene	ND	0.047		mg/Kg	1	3/1/2023 1:29:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	3/1/2023 1:29:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	3/1/2023 1:29:00 PM
Surr: 4-Bromofluorobenzene	92.6	70-130		%Rec	1	3/1/2023 1:29:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	130	60		mg/Kg	20	2/28/2023 2:43:34 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302A66**
Date Reported: **3/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-14 4'
Project: North Pure Gold 4 Federal 003
Collection Date: 2/22/2023 7:50:00 AM
Lab ID: 2302A66-003 **Matrix:** SOIL **Received Date:** 2/24/2023 7:28:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	2/28/2023 1:08:54 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/28/2023 1:08:54 AM
Surr: DNOP	94.3	69-147		%Rec	1	2/28/2023 1:08:54 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/1/2023 1:52:45 PM
Surr: BFB	103	37.7-212		%Rec	1	3/1/2023 1:52:45 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	3/1/2023 1:52:45 PM
Toluene	ND	0.048		mg/Kg	1	3/1/2023 1:52:45 PM
Ethylbenzene	ND	0.048		mg/Kg	1	3/1/2023 1:52:45 PM
Xylenes, Total	ND	0.096		mg/Kg	1	3/1/2023 1:52:45 PM
Surr: 4-Bromofluorobenzene	91.1	70-130		%Rec	1	3/1/2023 1:52:45 PM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	170	60		mg/Kg	20	2/28/2023 2:55:59 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302A66**
Date Reported: **3/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-15 0'
Project: North Pure Gold 4 Federal 003
Collection Date: 2/22/2023 8:00:00 AM
Lab ID: 2302A66-004 **Matrix:** SOIL **Received Date:** 2/24/2023 7:28:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	2/28/2023 1:21:58 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	2/28/2023 1:21:58 AM
Surr: DNOP	95.4	69-147		%Rec	1	2/28/2023 1:21:58 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/1/2023 2:16:22 PM
Surr: BFB	99.4	37.7-212		%Rec	1	3/1/2023 2:16:22 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	3/1/2023 2:16:22 PM
Toluene	ND	0.049		mg/Kg	1	3/1/2023 2:16:22 PM
Ethylbenzene	ND	0.049		mg/Kg	1	3/1/2023 2:16:22 PM
Xylenes, Total	ND	0.098		mg/Kg	1	3/1/2023 2:16:22 PM
Surr: 4-Bromofluorobenzene	90.8	70-130		%Rec	1	3/1/2023 2:16:22 PM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	160	60		mg/Kg	20	2/28/2023 3:08:24 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302A66**
Date Reported: **3/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-15 2'
Project: North Pure Gold 4 Federal 003
Collection Date: 2/22/2023 8:05:00 AM
Lab ID: 2302A66-005 **Matrix:** SOIL **Received Date:** 2/24/2023 7:28:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	2/28/2023 1:34:52 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	2/28/2023 1:34:52 AM
Surr: DNOP	101	69-147		%Rec	1	2/28/2023 1:34:52 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/1/2023 2:39:53 PM
Surr: BFB	101	37.7-212		%Rec	1	3/1/2023 2:39:53 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	3/1/2023 2:39:53 PM
Toluene	ND	0.047		mg/Kg	1	3/1/2023 2:39:53 PM
Ethylbenzene	ND	0.047		mg/Kg	1	3/1/2023 2:39:53 PM
Xylenes, Total	ND	0.094		mg/Kg	1	3/1/2023 2:39:53 PM
Surr: 4-Bromofluorobenzene	93.2	70-130		%Rec	1	3/1/2023 2:39:53 PM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	60		mg/Kg	20	2/28/2023 3:20:48 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302A66**
Date Reported: **3/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-15 4'
Project: North Pure Gold 4 Federal 003
Collection Date: 2/22/2023 8:10:00 AM
Lab ID: 2302A66-006 **Matrix:** SOIL **Received Date:** 2/24/2023 7:28:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	2/28/2023 1:47:53 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/28/2023 1:47:53 AM
Surr: DNOP	100	69-147		%Rec	1	2/28/2023 1:47:53 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/1/2023 3:03:13 PM
Surr: BFB	103	37.7-212		%Rec	1	3/1/2023 3:03:13 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	3/1/2023 3:03:13 PM
Toluene	ND	0.048		mg/Kg	1	3/1/2023 3:03:13 PM
Ethylbenzene	ND	0.048		mg/Kg	1	3/1/2023 3:03:13 PM
Xylenes, Total	ND	0.097		mg/Kg	1	3/1/2023 3:03:13 PM
Surr: 4-Bromofluorobenzene	94.0	70-130		%Rec	1	3/1/2023 3:03:13 PM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	60		mg/Kg	20	2/28/2023 3:33:12 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302A66**
Date Reported: **3/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-16 0'
Project: North Pure Gold 4 Federal 003
Collection Date: 2/22/2023 8:15:00 AM
Lab ID: 2302A66-007 **Matrix:** SOIL **Received Date:** 2/24/2023 7:28:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	2/28/2023 2:00:38 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	2/28/2023 2:00:38 AM
Surr: DNOP	98.8	69-147		%Rec	1	2/28/2023 2:00:38 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/1/2023 3:50:02 PM
Surr: BFB	104	37.7-212		%Rec	1	3/1/2023 3:50:02 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	3/1/2023 3:50:02 PM
Toluene	ND	0.049		mg/Kg	1	3/1/2023 3:50:02 PM
Ethylbenzene	ND	0.049		mg/Kg	1	3/1/2023 3:50:02 PM
Xylenes, Total	ND	0.099		mg/Kg	1	3/1/2023 3:50:02 PM
Surr: 4-Bromofluorobenzene	95.0	70-130		%Rec	1	3/1/2023 3:50:02 PM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	130	60		mg/Kg	20	2/28/2023 3:45:36 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302A66**
Date Reported: **3/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-16 2'
Project: North Pure Gold 4 Federal 003 **Collection Date:** 2/22/2023 8:20:00 AM
Lab ID: 2302A66-008 **Matrix:** SOIL **Received Date:** 2/24/2023 7:28:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	2/28/2023 2:13:22 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/28/2023 2:13:22 AM
Surr: DNOP	96.2	69-147		%Rec	1	2/28/2023 2:13:22 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/1/2023 4:13:40 PM
Surr: BFB	102	37.7-212		%Rec	1	3/1/2023 4:13:40 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	3/1/2023 4:13:40 PM
Toluene	ND	0.048		mg/Kg	1	3/1/2023 4:13:40 PM
Ethylbenzene	ND	0.048		mg/Kg	1	3/1/2023 4:13:40 PM
Xylenes, Total	ND	0.097		mg/Kg	1	3/1/2023 4:13:40 PM
Surr: 4-Bromofluorobenzene	92.4	70-130		%Rec	1	3/1/2023 4:13:40 PM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	60		mg/Kg	20	2/28/2023 3:58:01 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302A66**
Date Reported: **3/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-16 4'
Project: North Pure Gold 4 Federal 003
Collection Date: 2/22/2023 8:25:00 AM
Lab ID: 2302A66-009 **Matrix:** SOIL **Received Date:** 2/24/2023 7:28:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	21	9.3		mg/Kg	1	2/28/2023 2:26:08 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	2/28/2023 2:26:08 AM
Surr: DNOP	101	69-147		%Rec	1	2/28/2023 2:26:08 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/1/2023 4:37:14 PM
Surr: BFB	101	37.7-212		%Rec	1	3/1/2023 4:37:14 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	3/1/2023 4:37:14 PM
Toluene	ND	0.049		mg/Kg	1	3/1/2023 4:37:14 PM
Ethylbenzene	ND	0.049		mg/Kg	1	3/1/2023 4:37:14 PM
Xylenes, Total	ND	0.098		mg/Kg	1	3/1/2023 4:37:14 PM
Surr: 4-Bromofluorobenzene	91.4	70-130		%Rec	1	3/1/2023 4:37:14 PM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	60		mg/Kg	20	2/28/2023 10:10:16 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302A66**
Date Reported: **3/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-17 0'
Project: North Pure Gold 4 Federal 003
Collection Date: 2/22/2023 8:30:00 AM
Lab ID: 2302A66-010 **Matrix:** SOIL **Received Date:** 2/24/2023 7:28:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	2/28/2023 2:38:44 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/28/2023 2:38:44 AM
Surr: DNOP	102	69-147		%Rec	1	2/28/2023 2:38:44 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/1/2023 5:00:53 PM
Surr: BFB	101	37.7-212		%Rec	1	3/1/2023 5:00:53 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	3/1/2023 5:00:53 PM
Toluene	ND	0.047		mg/Kg	1	3/1/2023 5:00:53 PM
Ethylbenzene	ND	0.047		mg/Kg	1	3/1/2023 5:00:53 PM
Xylenes, Total	ND	0.093		mg/Kg	1	3/1/2023 5:00:53 PM
Surr: 4-Bromofluorobenzene	91.7	70-130		%Rec	1	3/1/2023 5:00:53 PM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	1300	60		mg/Kg	20	2/28/2023 10:22:40 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2302A66**
Date Reported: **3/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-17 2'
Project: North Pure Gold 4 Federal 003
Collection Date: 2/22/2023 8:35:00 AM
Lab ID: 2302A66-011 **Matrix:** SOIL **Received Date:** 2/24/2023 7:28:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	2/28/2023 2:51:29 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	2/28/2023 2:51:29 AM
Surr: DNOP	102	69-147		%Rec	1	2/28/2023 2:51:29 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/1/2023 5:24:35 PM
Surr: BFB	103	37.7-212		%Rec	1	3/1/2023 5:24:35 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	3/1/2023 5:24:35 PM
Toluene	ND	0.047		mg/Kg	1	3/1/2023 5:24:35 PM
Ethylbenzene	ND	0.047		mg/Kg	1	3/1/2023 5:24:35 PM
Xylenes, Total	ND	0.094		mg/Kg	1	3/1/2023 5:24:35 PM
Surr: 4-Bromofluorobenzene	92.4	70-130		%Rec	1	3/1/2023 5:24:35 PM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	360	60		mg/Kg	20	2/28/2023 10:35:05 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302A66**
Date Reported: **3/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-17 4'
Project: North Pure Gold 4 Federal 003 **Collection Date:** 2/22/2023 8:40:00 AM
Lab ID: 2302A66-012 **Matrix:** SOIL **Received Date:** 2/24/2023 7:28:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	2/28/2023 3:04:04 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	2/28/2023 3:04:04 AM
Surr: DNOP	92.7	69-147		%Rec	1	2/28/2023 3:04:04 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/1/2023 5:48:09 PM
Surr: BFB	104	37.7-212		%Rec	1	3/1/2023 5:48:09 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	3/1/2023 5:48:09 PM
Toluene	ND	0.048		mg/Kg	1	3/1/2023 5:48:09 PM
Ethylbenzene	ND	0.048		mg/Kg	1	3/1/2023 5:48:09 PM
Xylenes, Total	ND	0.096		mg/Kg	1	3/1/2023 5:48:09 PM
Surr: 4-Bromofluorobenzene	94.2	70-130		%Rec	1	3/1/2023 5:48:09 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	330	60		mg/Kg	20	2/28/2023 5:12:46 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2302A66**
Date Reported: **3/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-18 0'
Project: North Pure Gold 4 Federal 003 **Collection Date:** 2/22/2023 8:50:00 AM
Lab ID: 2302A66-013 **Matrix:** SOIL **Received Date:** 2/24/2023 7:28:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	15	9.0		mg/Kg	1	2/28/2023 3:16:49 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	2/28/2023 3:16:49 AM
Surr: DNOP	99.2	69-147		%Rec	1	2/28/2023 3:16:49 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/1/2023 6:11:46 PM
Surr: BFB	99.4	37.7-212		%Rec	1	3/1/2023 6:11:46 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	3/1/2023 6:11:46 PM
Toluene	ND	0.049		mg/Kg	1	3/1/2023 6:11:46 PM
Ethylbenzene	ND	0.049		mg/Kg	1	3/1/2023 6:11:46 PM
Xylenes, Total	ND	0.097		mg/Kg	1	3/1/2023 6:11:46 PM
Surr: 4-Bromofluorobenzene	90.2	70-130		%Rec	1	3/1/2023 6:11:46 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	340	60		mg/Kg	20	2/28/2023 5:49:59 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302A66**
Date Reported: **3/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-18 2'
Project: North Pure Gold 4 Federal 003
Collection Date: 2/22/2023 8:55:00 AM
Lab ID: 2302A66-014 **Matrix:** SOIL **Received Date:** 2/24/2023 7:28:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	2/28/2023 3:29:59 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/28/2023 3:29:59 AM
Surr: DNOP	91.9	69-147		%Rec	1	2/28/2023 3:29:59 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/1/2023 6:35:22 PM
Surr: BFB	103	37.7-212		%Rec	1	3/1/2023 6:35:22 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	3/1/2023 6:35:22 PM
Toluene	ND	0.050		mg/Kg	1	3/1/2023 6:35:22 PM
Ethylbenzene	ND	0.050		mg/Kg	1	3/1/2023 6:35:22 PM
Xylenes, Total	ND	0.10		mg/Kg	1	3/1/2023 6:35:22 PM
Surr: 4-Bromofluorobenzene	92.6	70-130		%Rec	1	3/1/2023 6:35:22 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	1100	60		mg/Kg	20	2/28/2023 6:52:03 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302A66**
Date Reported: **3/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-18 4'
Project: North Pure Gold 4 Federal 003
Collection Date: 2/22/2023 9:00:00 AM
Lab ID: 2302A66-015 **Matrix:** SOIL **Received Date:** 2/24/2023 7:28:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	8.9		mg/Kg	1	2/28/2023 3:43:20 AM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	2/28/2023 3:43:20 AM
Surr: DNOP	96.6	69-147		%Rec	1	2/28/2023 3:43:20 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/1/2023 6:58:53 PM
Surr: BFB	101	37.7-212		%Rec	1	3/1/2023 6:58:53 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	3/1/2023 6:58:53 PM
Toluene	ND	0.047		mg/Kg	1	3/1/2023 6:58:53 PM
Ethylbenzene	ND	0.047		mg/Kg	1	3/1/2023 6:58:53 PM
Xylenes, Total	ND	0.095		mg/Kg	1	3/1/2023 6:58:53 PM
Surr: 4-Bromofluorobenzene	91.8	70-130		%Rec	1	3/1/2023 6:58:53 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	730	60		mg/Kg	20	2/28/2023 7:04:28 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302A66**
Date Reported: **3/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-18 6'
Project: North Pure Gold 4 Federal 003
Collection Date: 2/22/2023 9:05:00 AM
Lab ID: 2302A66-016 **Matrix:** SOIL **Received Date:** 2/24/2023 7:28:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	2/28/2023 3:56:53 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	2/28/2023 3:56:53 AM
Surr: DNOP	99.9	69-147		%Rec	1	2/28/2023 3:56:53 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/1/2023 7:22:26 PM
Surr: BFB	101	37.7-212		%Rec	1	3/1/2023 7:22:26 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	3/1/2023 7:22:26 PM
Toluene	ND	0.049		mg/Kg	1	3/1/2023 7:22:26 PM
Ethylbenzene	ND	0.049		mg/Kg	1	3/1/2023 7:22:26 PM
Xylenes, Total	ND	0.097		mg/Kg	1	3/1/2023 7:22:26 PM
Surr: 4-Bromofluorobenzene	92.0	70-130		%Rec	1	3/1/2023 7:22:26 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	350	60		mg/Kg	20	2/28/2023 7:16:53 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302A66**
Date Reported: **3/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-18 7'
Project: North Pure Gold 4 Federal 003
Collection Date: 2/22/2023 9:10:00 AM
Lab ID: 2302A66-017 **Matrix:** SOIL **Received Date:** 2/24/2023 7:28:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	8.7		mg/Kg	1	2/27/2023 2:13:39 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	2/27/2023 2:13:39 PM
Surr: DNOP	99.2	69-147		%Rec	1	2/27/2023 2:13:39 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/3/2023 1:55:13 PM
Surr: BFB	106	37.7-212		%Rec	1	3/3/2023 1:55:13 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	3/3/2023 1:55:13 PM
Toluene	ND	0.049		mg/Kg	1	3/3/2023 1:55:13 PM
Ethylbenzene	ND	0.049		mg/Kg	1	3/3/2023 1:55:13 PM
Xylenes, Total	ND	0.099		mg/Kg	1	3/3/2023 1:55:13 PM
Surr: 4-Bromofluorobenzene	93.3	70-130		%Rec	1	3/3/2023 1:55:13 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	170	60		mg/Kg	20	2/28/2023 7:29:17 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302A66**
Date Reported: **3/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-19 0'
Project: North Pure Gold 4 Federal 003
Collection Date: 2/22/2023 9:25:00 AM
Lab ID: 2302A66-018 **Matrix:** SOIL **Received Date:** 2/24/2023 7:28:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	2/27/2023 2:54:15 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/27/2023 2:54:15 PM
Surr: DNOP	103	69-147		%Rec	1	2/27/2023 2:54:15 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/3/2023 2:19:15 PM
Surr: BFB	106	37.7-212		%Rec	1	3/3/2023 2:19:15 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	3/3/2023 2:19:15 PM
Toluene	ND	0.048		mg/Kg	1	3/3/2023 2:19:15 PM
Ethylbenzene	ND	0.048		mg/Kg	1	3/3/2023 2:19:15 PM
Xylenes, Total	ND	0.096		mg/Kg	1	3/3/2023 2:19:15 PM
Surr: 4-Bromofluorobenzene	93.7	70-130		%Rec	1	3/3/2023 2:19:15 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	4200	150		mg/Kg	50	3/1/2023 10:35:58 AM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302A66**
Date Reported: **3/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-19 2'
Project: North Pure Gold 4 Federal 003
Collection Date: 2/22/2023 9:30:00 AM
Lab ID: 2302A66-019 **Matrix:** SOIL **Received Date:** 2/24/2023 7:28:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	2/27/2023 3:07:52 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/27/2023 3:07:52 PM
Surr: DNOP	108	69-147		%Rec	1	2/27/2023 3:07:52 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/3/2023 2:43:18 PM
Surr: BFB	106	37.7-212		%Rec	1	3/3/2023 2:43:18 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	3/3/2023 2:43:18 PM
Toluene	ND	0.048		mg/Kg	1	3/3/2023 2:43:18 PM
Ethylbenzene	ND	0.048		mg/Kg	1	3/3/2023 2:43:18 PM
Xylenes, Total	ND	0.097		mg/Kg	1	3/3/2023 2:43:18 PM
Surr: 4-Bromofluorobenzene	95.0	70-130		%Rec	1	3/3/2023 2:43:18 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	1000	60		mg/Kg	20	2/28/2023 7:54:06 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302A66**
Date Reported: **3/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-19 4'
Project: North Pure Gold 4 Federal 003
Collection Date: 2/22/2023 9:35:00 AM
Lab ID: 2302A66-020 **Matrix:** SOIL **Received Date:** 2/24/2023 7:28:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	2/27/2023 3:21:23 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/27/2023 3:21:23 PM
Surr: DNOP	104	69-147		%Rec	1	2/27/2023 3:21:23 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/3/2023 3:06:44 PM
Surr: BFB	104	37.7-212		%Rec	1	3/3/2023 3:06:44 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	3/3/2023 3:06:44 PM
Toluene	ND	0.048		mg/Kg	1	3/3/2023 3:06:44 PM
Ethylbenzene	ND	0.048		mg/Kg	1	3/3/2023 3:06:44 PM
Xylenes, Total	ND	0.095		mg/Kg	1	3/3/2023 3:06:44 PM
Surr: 4-Bromofluorobenzene	92.3	70-130		%Rec	1	3/3/2023 3:06:44 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	1500	61		mg/Kg	20	2/28/2023 8:06:31 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302A66**
Date Reported: **3/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-19 6'
Project: North Pure Gold 4 Federal 003
Collection Date: 2/22/2023 9:40:00 AM
Lab ID: 2302A66-021 **Matrix:** SOIL **Received Date:** 2/24/2023 7:28:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	2/27/2023 3:34:54 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	2/27/2023 3:34:54 PM
Surr: DNOP	95.8	69-147		%Rec	1	2/27/2023 3:34:54 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/3/2023 3:30:11 PM
Surr: BFB	105	37.7-212		%Rec	1	3/3/2023 3:30:11 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	3/3/2023 3:30:11 PM
Toluene	ND	0.048		mg/Kg	1	3/3/2023 3:30:11 PM
Ethylbenzene	ND	0.048		mg/Kg	1	3/3/2023 3:30:11 PM
Xylenes, Total	ND	0.096		mg/Kg	1	3/3/2023 3:30:11 PM
Surr: 4-Bromofluorobenzene	94.4	70-130		%Rec	1	3/3/2023 3:30:11 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	1500	60		mg/Kg	20	2/28/2023 8:18:55 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302A66**
Date Reported: **3/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-19 7'
Project: North Pure Gold 4 Federal 003 **Collection Date:** 2/22/2023 9:45:00 AM
Lab ID: 2302A66-022 **Matrix:** SOIL **Received Date:** 2/24/2023 7:28:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	2/27/2023 3:48:24 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/27/2023 3:48:24 PM
Surr: DNOP	95.4	69-147		%Rec	1	2/27/2023 3:48:24 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	3/3/2023 3:53:47 PM
Surr: BFB	105	37.7-212		%Rec	1	3/3/2023 3:53:47 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	3/3/2023 3:53:47 PM
Toluene	ND	0.046		mg/Kg	1	3/3/2023 3:53:47 PM
Ethylbenzene	ND	0.046		mg/Kg	1	3/3/2023 3:53:47 PM
Xylenes, Total	ND	0.091		mg/Kg	1	3/3/2023 3:53:47 PM
Surr: 4-Bromofluorobenzene	93.3	70-130		%Rec	1	3/3/2023 3:53:47 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	1800	60		mg/Kg	20	2/28/2023 8:31:19 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302A66**
Date Reported: **3/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-20 0'
Project: North Pure Gold 4 Federal 003
Collection Date: 2/22/2023 9:55:00 AM
Lab ID: 2302A66-023 **Matrix:** SOIL **Received Date:** 2/24/2023 7:28:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	110	9.4		mg/Kg	1	2/27/2023 4:02:13 PM
Motor Oil Range Organics (MRO)	56	47		mg/Kg	1	2/27/2023 4:02:13 PM
Surr: DNOP	95.3	69-147		%Rec	1	2/27/2023 4:02:13 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/3/2023 4:17:27 PM
Surr: BFB	103	37.7-212		%Rec	1	3/3/2023 4:17:27 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	3/3/2023 4:17:27 PM
Toluene	ND	0.049		mg/Kg	1	3/3/2023 4:17:27 PM
Ethylbenzene	ND	0.049		mg/Kg	1	3/3/2023 4:17:27 PM
Xylenes, Total	ND	0.098		mg/Kg	1	3/3/2023 4:17:27 PM
Surr: 4-Bromofluorobenzene	90.6	70-130		%Rec	1	3/3/2023 4:17:27 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	410	60		mg/Kg	20	2/28/2023 8:43:44 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2302A66**
Date Reported: **3/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-20 2'
Project: North Pure Gold 4 Federal 003
Collection Date: 2/22/2023 10:00:00 AM
Lab ID: 2302A66-024 **Matrix:** SOIL **Received Date:** 2/24/2023 7:28:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	2/27/2023 4:15:59 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	2/27/2023 4:15:59 PM
Surr: DNOP	95.6	69-147		%Rec	1	2/27/2023 4:15:59 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/3/2023 4:41:04 PM
Surr: BFB	105	37.7-212		%Rec	1	3/3/2023 4:41:04 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	3/3/2023 4:41:04 PM
Toluene	ND	0.047		mg/Kg	1	3/3/2023 4:41:04 PM
Ethylbenzene	ND	0.047		mg/Kg	1	3/3/2023 4:41:04 PM
Xylenes, Total	ND	0.094		mg/Kg	1	3/3/2023 4:41:04 PM
Surr: 4-Bromofluorobenzene	95.0	70-130		%Rec	1	3/3/2023 4:41:04 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	380	60		mg/Kg	20	2/28/2023 9:20:56 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302A66**
Date Reported: **3/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-20 4'
Project: North Pure Gold 4 Federal 003
Collection Date: 2/22/2023 10:05:00 AM
Lab ID: 2302A66-025 **Matrix:** SOIL
Received Date: 2/24/2023 7:28:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	2/27/2023 4:29:47 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/27/2023 4:29:47 PM
Surr: DNOP	99.0	69-147		%Rec	1	2/27/2023 4:29:47 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/3/2023 5:04:48 PM
Surr: BFB	103	37.7-212		%Rec	1	3/3/2023 5:04:48 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	3/3/2023 5:04:48 PM
Toluene	ND	0.048		mg/Kg	1	3/3/2023 5:04:48 PM
Ethylbenzene	ND	0.048		mg/Kg	1	3/3/2023 5:04:48 PM
Xylenes, Total	ND	0.096		mg/Kg	1	3/3/2023 5:04:48 PM
Surr: 4-Bromofluorobenzene	92.6	70-130		%Rec	1	3/3/2023 5:04:48 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	220	60		mg/Kg	20	2/28/2023 9:33:21 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302A66**
Date Reported: **3/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-20 6'
Project: North Pure Gold 4 Federal 003
Collection Date: 2/22/2023 10:10:00 AM
Lab ID: 2302A66-026 **Matrix:** SOIL **Received Date:** 2/24/2023 7:28:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	2/27/2023 4:43:35 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	2/27/2023 4:43:35 PM
Surr: DNOP	97.6	69-147		%Rec	1	2/27/2023 4:43:35 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/3/2023 5:28:46 PM
Surr: BFB	107	37.7-212		%Rec	1	3/3/2023 5:28:46 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	3/3/2023 5:28:46 PM
Toluene	ND	0.048		mg/Kg	1	3/3/2023 5:28:46 PM
Ethylbenzene	ND	0.048		mg/Kg	1	3/3/2023 5:28:46 PM
Xylenes, Total	ND	0.096		mg/Kg	1	3/3/2023 5:28:46 PM
Surr: 4-Bromofluorobenzene	95.0	70-130		%Rec	1	3/3/2023 5:28:46 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	430	61		mg/Kg	20	2/28/2023 9:45:46 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2302A66**
Date Reported: **3/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-20 7'
Project: North Pure Gold 4 Federal 003
Collection Date: 2/22/2023 10:15:00 AM
Lab ID: 2302A66-027 **Matrix:** SOIL **Received Date:** 2/24/2023 7:28:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	2/27/2023 4:57:18 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/27/2023 4:57:18 PM
Surr: DNOP	102	69-147		%Rec	1	2/27/2023 4:57:18 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/3/2023 6:40:34 PM
Surr: BFB	105	37.7-212		%Rec	1	3/3/2023 6:40:34 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	3/3/2023 6:40:34 PM
Toluene	ND	0.047		mg/Kg	1	3/3/2023 6:40:34 PM
Ethylbenzene	ND	0.047		mg/Kg	1	3/3/2023 6:40:34 PM
Xylenes, Total	ND	0.094		mg/Kg	1	3/3/2023 6:40:34 PM
Surr: 4-Bromofluorobenzene	94.1	70-130		%Rec	1	3/3/2023 6:40:34 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	950	60		mg/Kg	20	2/28/2023 9:58:11 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2302A66**

08-Mar-23

Client: Vertex Resources Services, Inc.

Project: North Pure Gold 4 Federal 003

Sample ID: **MB-73437** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **73437** RunNo: **94936**
Prep Date: **2/28/2023** Analysis Date: **2/28/2023** SeqNo: **3432107** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-73437** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **73437** RunNo: **94936**
Prep Date: **2/28/2023** Analysis Date: **2/28/2023** SeqNo: **3432108** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.0	90	110			

Sample ID: **LCS-73413** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **73413** RunNo: **94937**
Prep Date: **2/28/2023** Analysis Date: **2/28/2023** SeqNo: **3432174** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.0	90	110			

Sample ID: **MB-73423** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **73423** RunNo: **94937**
Prep Date: **2/28/2023** Analysis Date: **2/28/2023** SeqNo: **3432208** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-73423** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **73423** RunNo: **94937**
Prep Date: **2/28/2023** Analysis Date: **2/28/2023** SeqNo: **3432210** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.5	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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2302A66**

08-Mar-23

Client: Vertex Resources Services, Inc.

Project: North Pure Gold 4 Federal 003

Sample ID: **LCS-73377**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **73377**	RunNo: **94894**
Prep Date: **2/24/2023**	Analysis Date: **2/27/2023**	SeqNo: **3430273** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	36	10	50.00	0	72.8	61.9	130			
Surr: DNOP	3.9		5.000		79.0	69	147			

Sample ID: **LCS-73378**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **73378**	RunNo: **94894**
Prep Date: **2/24/2023**	Analysis Date: **2/27/2023**	SeqNo: **3430274** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	10	50.00	0	86.5	61.9	130			
Surr: DNOP	4.2		5.000		83.2	69	147			

Sample ID: **MB-73377**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **73377**	RunNo: **94894**
Prep Date: **2/24/2023**	Analysis Date: **2/27/2023**	SeqNo: **3430279** 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	7.9		10.00		79.3	69	147			

Sample ID: **MB-73378**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **73378**	RunNo: **94894**
Prep Date: **2/24/2023**	Analysis Date: **2/27/2023**	SeqNo: **3430280** 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	11		10.00		107	69	147			

Sample ID: **2302A66-017AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH23-18 7'**	Batch ID: **73378**	RunNo: **94957**
Prep Date: **2/24/2023**	Analysis Date: **2/27/2023**	SeqNo: **3433112** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	9.5	47.44	0	93.4	54.2	135			
Surr: DNOP	4.6		4.744		97.9	69	147			

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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2302A66**

08-Mar-23

Client: Vertex Resources Services, Inc.

Project: North Pure Gold 4 Federal 003

Sample ID: **2302A66-017AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **BH23-18 7'** Batch ID: **73378** RunNo: **94957**

Prep Date: **2/24/2023** Analysis Date: **2/27/2023** SeqNo: **3433113** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	9.9	49.41	0	95.2	54.2	135	6.02	29.2	
Surr: DNOP	4.9		4.941		98.4	69	147	0	0	

Sample ID: **MB-73474** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **73474** RunNo: **94965**

Prep Date: **3/2/2023** Analysis Date: **3/2/2023** SeqNo: **3434009** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.4		10.00		84.0	69	147			

Sample ID: **LCS-73474** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **73474** RunNo: **94965**

Prep Date: **3/2/2023** Analysis Date: **3/2/2023** SeqNo: **3434010** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.5		5.000		90.1	69	147			

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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2302A66**

08-Mar-23

Client: Vertex Resources Services, Inc.

Project: North Pure Gold 4 Federal 003

Sample ID: **lcs-73371**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **73371**	RunNo: **94929**							
Prep Date: **2/24/2023**	Analysis Date: **2/28/2023**	SeqNo: **3431929**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	96.3	72.3	137			
Surr: BFB	2200		1000		217	37.7	212			S

Sample ID: **mb-73371**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBS**	Batch ID: **73371**	RunNo: **94929**							
Prep Date: **2/24/2023**	Analysis Date: **2/28/2023**	SeqNo: **3431930**	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		100	37.7	212			

Sample ID: **mb-73371**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBS**	Batch ID: **73371**	RunNo: **94933**							
Prep Date: **2/24/2023**	Analysis Date: **3/1/2023**	SeqNo: **3432056**	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		102	37.7	212			

Sample ID: **lcs-73374**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **73374**	RunNo: **95021**							
Prep Date: **2/24/2023**	Analysis Date: **3/3/2023**	SeqNo: **3435872**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	91.4	72.3	137			
Surr: BFB	2000		1000		197	37.7	212			

Sample ID: **mb-73374**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBS**	Batch ID: **73374**	RunNo: **95021**							
Prep Date: **2/24/2023**	Analysis Date: **3/3/2023**	SeqNo: **3435873**	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		103	37.7	212			

Sample ID: **2302a66-017ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **BH23-18 7'**	Batch ID: **73374**	RunNo: **95021**							
Prep Date: **2/24/2023**	Analysis Date: **3/3/2023**	SeqNo: **3436653**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2302A66**

08-Mar-23

Client: Vertex Resources Services, Inc.

Project: North Pure Gold 4 Federal 003

Sample ID: **2302a66-017ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-18 7'**	Batch ID: **73374**	RunNo: **95021**
Prep Date: **2/24/2023**	Analysis Date: **3/3/2023**	SeqNo: **3436653** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	4.9	24.73	0	89.0	70	130			
Surr: BFB	1900		989.1		197	37.7	212			

Sample ID: **2302a66-017amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-18 7'**	Batch ID: **73374**	RunNo: **95021**
Prep Date: **2/24/2023**	Analysis Date: **3/3/2023**	SeqNo: **3436654** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	4.9	24.56	0	89.2	70	130	0.376	20	
Surr: BFB	1900		982.3		195	37.7	212	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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2302A66**

08-Mar-23

Client: Vertex Resources Services, Inc.

Project: North Pure Gold 4 Federal 003

Sample ID: **LCS-73371**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **73371**	RunNo: **94933**
Prep Date: **2/24/2023**	Analysis Date: **3/1/2023**	SeqNo: **3432053** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.025	1.000	0	87.5	80	120			
Toluene	0.92	0.050	1.000	0	91.6	80	120			
Ethylbenzene	0.89	0.050	1.000	0	89.3	80	120			
Xylenes, Total	2.7	0.10	3.000	0	90.3	80	120			
Surr: 4-Bromofluorobenzene	0.96		1.000		95.8	70	130			

Sample ID: **mb-73371**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **73371**	RunNo: **94933**
Prep Date: **2/24/2023**	Analysis Date: **3/1/2023**	SeqNo: **3432077** 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	0.93		1.000		93.4	70	130			

Sample ID: **LCS-73374**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **73374**	RunNo: **95021**
Prep Date: **2/24/2023**	Analysis Date: **3/3/2023**	SeqNo: **3435881** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.82	0.025	1.000	0	82.1	80	120			
Toluene	0.85	0.050	1.000	0	84.9	80	120			
Ethylbenzene	0.84	0.050	1.000	0	84.1	80	120			
Xylenes, Total	2.5	0.10	3.000	0	84.4	80	120			
Surr: 4-Bromofluorobenzene	0.95		1.000		94.6	70	130			

Sample ID: **mb-73374**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **73374**	RunNo: **95021**
Prep Date: **2/24/2023**	Analysis Date: **3/3/2023**	SeqNo: **3435882** 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	0.93		1.000		93.1	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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2302A66**

08-Mar-23

Client: Vertex Resources Services, Inc.

Project: North Pure Gold 4 Federal 003

Sample ID: **2302a66-018ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-19 0'**	Batch ID: **73374**	RunNo: **95021**
Prep Date: **2/24/2023**	Analysis Date: **3/3/2023**	SeqNo: **3436692** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.77	0.024	0.9653	0	79.8	68.8	120			
Toluene	0.80	0.048	0.9653	0.01686	81.1	73.6	124			
Ethylbenzene	0.79	0.048	0.9653	0	82.2	72.7	129			
Xylenes, Total	2.4	0.097	2.896	0	82.3	75.7	126			
Surr: 4-Bromofluorobenzene	0.91		0.9653		94.2	70	130			

Sample ID: **2302a66-018amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-19 0'**	Batch ID: **73374**	RunNo: **95021**
Prep Date: **2/24/2023**	Analysis Date: **3/3/2023**	SeqNo: **3436693** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.78	0.024	0.9671	0	81.0	68.8	120	1.67	20	
Toluene	0.82	0.048	0.9671	0.01686	82.9	73.6	124	2.30	20	
Ethylbenzene	0.81	0.048	0.9671	0	83.7	72.7	129	2.00	20	
Xylenes, Total	2.4	0.097	2.901	0	83.0	75.7	126	1.08	20	
Surr: 4-Bromofluorobenzene	0.90		0.9671		92.7	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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: Vertex Resources Services, Inc.

Work Order Number: 2302A66

RcptNo: 1

Received By: Tracy Casarrubias 2/24/2023 7:28:00 AM

Completed By: Tracy Casarrubias 2/24/2023 8:02:35 AM

Reviewed By: JN 2/24/23

Chain of Custody

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

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? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
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? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: JN 2/24/23

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	3.6	Good	Yes	Morty		
2	2.4	Good	Yes	Morty		

Chain-of-Custody Record

Client: **Vertex**

(direct bill to Devon)

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

~~X~~ Standard X Rush 5 Day

Project Name:

North Pure Gold 4 Federal #003

Project #:

22E-02816-06

Project Manager:

Kent Stallings

kstallings@vertex.ca

Sampler: L. Pullman

On Ice: X Yes ☐ No many

# of Coolers: 2

Cooler Temp(Including CF): 3.6 -0 = 3.6c

2.4 -0 = 2.4c

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2302A06	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	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)
02/22/23	7:40	Soil	BH23-14 0'	1, 4oz jar		001	X	X					X			
02/22/23	7:45	Soil	BH23-14 2'	1, 4oz jar		002	X	X					X			
02/22/23	7:50	Soil	BH23-14 4'	1, 4oz jar		003	X	X					X			
02/22/23	8:00	Soil	BH23-15 0'	1, 4oz jar		004	X	X					X			
02/22/23	8:05	Soil	BH23-15 2'	1, 4oz jar		005	X	X					X			
02/22/23	8:10	Soil	BH23-15 4'	1, 4oz jar		006	X	X					X			
02/22/23	8:15	Soil	BH23-16 0'	1, 4oz jar		007	X	X					X			
02/22/23	8:20	Soil	BH23-16 2'	1, 4oz jar		008	X	X					X			
02/22/23	8:25	Soil	BH23-16 4'	1, 4oz jar		009	X	X					X			
02/22/23	8:30	Soil	BH23-17 0'	1, 4oz jar		010	X	X					X			
02/22/23	8:35	Soil	BH23-17 2'	1, 4oz jar		011	X	X					X			
02/22/23	8:40	Soil	BH23-17 4'	1, 4oz jar		012	X	X					X			

Analysis Request

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
2-23-23	07:00	Lab Pullman				
2/23/23	1410				2/23/23	700
				Courier	2/24/23	7:28

Remarks:

Direct bill to Devon, Dale Woodall

cc. kstallings@vertex.ca for Final Report

1/3

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: **Vertex**

(direct bill to Devon)

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☒ Standard ☒ Rush 5 Day

Project Name:

North Pure Gold 4 Federal #003

Project #:

22E-02816-06

Project Manager:

Kent Stallings

kstallings@vertex.ca

Sampler: L. Pullman

On Ice: ☒ Yes ☐ No marty

# of Coolers: 2

Cooler Temp(including CF): 3.6 - 0 = 3.6°c

2.4 - 0 = 2.4°c

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2302A665	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	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)
02/22/23	8:50	Soil	BH23-18 0'	1, 4oz jar		013	X	X					X			
02/22/23	8:55	Soil	BH23-18 2'	1, 4oz jar		014	X	X					X			
02/22/23	9:00	Soil	BH23-18 4'	1, 4oz jar		015	X	X					X			
02/22/23	9:05	Soil	BH23-18 6'	1, 4oz jar		016	X	X					X			
02/22/23	9:10	Soil	BH23-18 7'	1, 4oz jar		017	X	X					X			
02/22/23	9:25	Soil	BH23-19 0'	1, 4oz jar		018	X	X					X			
02/22/23	9:30	Soil	BH23-19 2'	1, 4oz jar		019	X	X					X			
02/22/23	9:35	Soil	BH23-19 4'	1, 4oz jar		020	X	X					X			
02/22/23	9:40	Soil	BH23-19 6'	1, 4oz jar		021	X	X					X			
02/22/23	9:45	Soil	BH23-19 7'	1, 4oz jar		022	X	X					X			
02/22/23	9:55	Soil	BH23-20 0'	1, 4oz jar		023	X	X					X			
02/22/23	10:00	Soil	BH23-20 2'	1, 4oz jar		024	X	X					X			

Analysis Request

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
2/23/23	07:00				2/23/23	700
2/23/23	1900				2/24/23	7:28

Remarks:

Direct bill to Devon, Dale Woodall

cc. kstallings@vertex.ca for Final Report

2/3

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: **Vertex**

(direct bill to Devon)

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☒ Standard ☒ Rush 5 Day

Project Name:

North Pure Gold 4 Federal #003

Project #:

22E-02816-06

Project Manager:

Kent Stallings

kstallings@vertex.ca

Sampler: L. Pullman

On Ice: ☑ Yes ☐ No

# of Coolers: 2

Cooler Temp(including CF): 3.6 - 0 = 3.6 °C

2.4 - 0 = 2.4 °C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2302A105	(BTEX) MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	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)
02/22/23	10:05	Soil	BH23-20 4'	1, 4oz jar		025	X	X					X			
02/22/23	10:10	Soil	BH23-20 6'	1, 4oz jar		026	X	X					X			
02/22/23	10:15	Soil	BH23-20 7'	1, 4oz jar		027	X	X					X			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
2-23-2023	0700				2/23/23	700
Date:	Time:	Relinquished by:	Received by:	Via: courier	Date	Time
2/23/23	1900				2/24/23	7:28

Remarks:

Direct bill to Devon, Dale Woodall

cc. kstallings@vertex.ca for Final Report

3/3

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.

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

March 06, 2023

Kent Stallings

Vertex Resources Services, Inc.
3101 Boyd Drive
Carlsbad, NM 88220
TEL: (505) 506-0040
FAX

RE: North Pure Gold 4 Federal 003 OrderNo.: 2302B06

Dear Kent Stallings:

Hall Environmental Analysis Laboratory received 6 sample(s) on 2/25/2023 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,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2302B06**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-21 0'
Project: North Pure Gold 4 Federal 003
Collection Date: 2/23/2023 7:45:00 AM
Lab ID: 2302B06-001 **Matrix:** SOIL **Received Date:** 2/25/2023 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	3/1/2023 2:52:38 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	3/1/2023 2:52:38 PM
Surr: DNOP	112	69-147		%Rec	1	3/1/2023 2:52:38 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/2/2023 6:21:39 AM
Surr: BFB	100	37.7-212		%Rec	1	3/2/2023 6:21:39 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	3/2/2023 6:21:39 AM
Toluene	ND	0.048		mg/Kg	1	3/2/2023 6:21:39 AM
Ethylbenzene	ND	0.048		mg/Kg	1	3/2/2023 6:21:39 AM
Xylenes, Total	ND	0.096		mg/Kg	1	3/2/2023 6:21:39 AM
Surr: 4-Bromofluorobenzene	93.1	70-130		%Rec	1	3/2/2023 6:21:39 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	230	60		mg/Kg	20	2/28/2023 10:47:29 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2302B06**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-21 2'
Project: North Pure Gold 4 Federal 003
Collection Date: 2/23/2023 7:50:00 AM
Lab ID: 2302B06-002 **Matrix:** SOIL **Received Date:** 2/25/2023 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	3/1/2023 3:03:19 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/1/2023 3:03:19 PM
Surr: DNOP	117	69-147		%Rec	1	3/1/2023 3:03:19 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/2/2023 6:45:07 AM
Surr: BFB	101	37.7-212		%Rec	1	3/2/2023 6:45:07 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	3/2/2023 6:45:07 AM
Toluene	ND	0.048		mg/Kg	1	3/2/2023 6:45:07 AM
Ethylbenzene	ND	0.048		mg/Kg	1	3/2/2023 6:45:07 AM
Xylenes, Total	ND	0.096		mg/Kg	1	3/2/2023 6:45:07 AM
Surr: 4-Bromofluorobenzene	91.4	70-130		%Rec	1	3/2/2023 6:45:07 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	85	60		mg/Kg	20	2/28/2023 10:59:53 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2302B06**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-21 4'
Project: North Pure Gold 4 Federal 003
Collection Date: 2/23/2023 7:55:00 AM
Lab ID: 2302B06-003 **Matrix:** SOIL **Received Date:** 2/25/2023 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	3/1/2023 3:13:59 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/1/2023 3:13:59 PM
Surr: DNOP	109	69-147		%Rec	1	3/1/2023 3:13:59 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/2/2023 7:08:35 AM
Surr: BFB	102	37.7-212		%Rec	1	3/2/2023 7:08:35 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	3/2/2023 7:08:35 AM
Toluene	ND	0.049		mg/Kg	1	3/2/2023 7:08:35 AM
Ethylbenzene	ND	0.049		mg/Kg	1	3/2/2023 7:08:35 AM
Xylenes, Total	ND	0.098		mg/Kg	1	3/2/2023 7:08:35 AM
Surr: 4-Bromofluorobenzene	91.5	70-130		%Rec	1	3/2/2023 7:08:35 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	64	60		mg/Kg	20	2/28/2023 11:12:18 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302B06**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-22 0'
Project: North Pure Gold 4 Federal 003
Collection Date: 2/23/2023 8:05:00 AM
Lab ID: 2302B06-004 **Matrix:** SOIL **Received Date:** 2/25/2023 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	3/1/2023 3:24:41 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/1/2023 3:24:41 PM
Surr: DNOP	114	69-147		%Rec	1	3/1/2023 3:24:41 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	120	60		mg/Kg	20	3/3/2023 5:24:11 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JR**
Benzene	ND	0.023		mg/Kg	1	2/28/2023 1:55:17 PM
Toluene	ND	0.046		mg/Kg	1	2/28/2023 1:55:17 PM
Ethylbenzene	ND	0.046		mg/Kg	1	2/28/2023 1:55:17 PM
Xylenes, Total	ND	0.093		mg/Kg	1	2/28/2023 1:55:17 PM
Surr: 1,2-Dichloroethane-d4	94.7	70-130		%Rec	1	2/28/2023 1:55:17 PM
Surr: 4-Bromofluorobenzene	94.2	70-130		%Rec	1	2/28/2023 1:55:17 PM
Surr: Dibromofluoromethane	98.0	70-130		%Rec	1	2/28/2023 1:55:17 PM
Surr: Toluene-d8	98.1	70-130		%Rec	1	2/28/2023 1:55:17 PM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JR**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	2/28/2023 1:55:17 PM
Surr: BFB	101	70-130		%Rec	1	2/28/2023 1:55:17 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302B06**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-22 2'
Project: North Pure Gold 4 Federal 003
Collection Date: 2/23/2023 8:10:00 AM
Lab ID: 2302B06-005 **Matrix:** SOIL **Received Date:** 2/25/2023 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**
Diesel Range Organics (DRO)	ND	8.3		mg/Kg	1	3/1/2023 3:35:22 PM
Motor Oil Range Organics (MRO)	ND	42		mg/Kg	1	3/1/2023 3:35:22 PM
Surr: DNOP	131	69-147		%Rec	1	3/1/2023 3:35:22 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	110	60		mg/Kg	20	3/3/2023 6:25:56 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JR**
Benzene	ND	0.023		mg/Kg	1	2/28/2023 3:17:25 PM
Toluene	ND	0.047		mg/Kg	1	2/28/2023 3:17:25 PM
Ethylbenzene	ND	0.047		mg/Kg	1	2/28/2023 3:17:25 PM
Xylenes, Total	ND	0.093		mg/Kg	1	2/28/2023 3:17:25 PM
Surr: 1,2-Dichloroethane-d4	94.5	70-130		%Rec	1	2/28/2023 3:17:25 PM
Surr: 4-Bromofluorobenzene	94.7	70-130		%Rec	1	2/28/2023 3:17:25 PM
Surr: Dibromofluoromethane	96.7	70-130		%Rec	1	2/28/2023 3:17:25 PM
Surr: Toluene-d8	94.1	70-130		%Rec	1	2/28/2023 3:17:25 PM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JR**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	2/28/2023 3:17:25 PM
Surr: BFB	100	70-130		%Rec	1	2/28/2023 3:17:25 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2302B06**
Date Reported: **3/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-22 4'
Project: North Pure Gold 4 Federal 003
Collection Date: 2/23/2023 8:15:00 AM
Lab ID: 2302B06-006 **Matrix:** SOIL **Received Date:** 2/25/2023 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	3/1/2023 3:46:04 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/1/2023 3:46:04 PM
Surr: DNOP	98.3	69-147		%Rec	1	3/1/2023 3:46:04 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	73	60		mg/Kg	20	3/3/2023 6:38:16 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JR**
Benzene	ND	0.025		mg/Kg	1	2/28/2023 3:44:40 PM
Toluene	ND	0.050		mg/Kg	1	2/28/2023 3:44:40 PM
Ethylbenzene	ND	0.050		mg/Kg	1	2/28/2023 3:44:40 PM
Xylenes, Total	ND	0.10		mg/Kg	1	2/28/2023 3:44:40 PM
Surr: 1,2-Dichloroethane-d4	104	70-130		%Rec	1	2/28/2023 3:44:40 PM
Surr: 4-Bromofluorobenzene	97.1	70-130		%Rec	1	2/28/2023 3:44:40 PM
Surr: Dibromofluoromethane	98.0	70-130		%Rec	1	2/28/2023 3:44:40 PM
Surr: Toluene-d8	97.8	70-130		%Rec	1	2/28/2023 3:44:40 PM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JR**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/28/2023 3:44:40 PM
Surr: BFB	104	70-130		%Rec	1	2/28/2023 3:44:40 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2302B06**
06-Mar-23

Client: Vertex Resources Services, Inc.
Project: North Pure Gold 4 Federal 003

Sample ID: **MB-73423**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **73423**	RunNo: **94937**							
Prep Date: **2/28/2023**	Analysis Date: **2/28/2023**	SeqNo: **3432208**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-73423**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **73423**	RunNo: **94937**							
Prep Date: **2/28/2023**	Analysis Date: **2/28/2023**	SeqNo: **3432210**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.5	90	110			

Sample ID: **MB-73511**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **73511**	RunNo: **95029**							
Prep Date: **3/3/2023**	Analysis Date: **3/3/2023**	SeqNo: **3436153**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-73511**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **73511**	RunNo: **95029**							
Prep Date: **3/3/2023**	Analysis Date: **3/3/2023**	SeqNo: **3436154**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.1	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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2302B06**
06-Mar-23

Client: Vertex Resources Services, Inc.
Project: North Pure Gold 4 Federal 003

Sample ID: **LCS-73421** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **73421** RunNo: **94952**
Prep Date: **2/28/2023** Analysis Date: **3/1/2023** SeqNo: **3432996** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	41	10	50.00	0	81.2	61.9	130			
Surr: DNOP	4.5		5.000		90.0	69	147			

Sample ID: **MB-73421** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **73421** RunNo: **94952**
Prep Date: **2/28/2023** Analysis Date: **3/1/2023** SeqNo: **3432998** 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		104	69	147			

Sample ID: **MB-73436** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **73436** RunNo: **94952**
Prep Date: **2/28/2023** Analysis Date: **3/1/2023** SeqNo: **3433068** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.2		10.00		92.3	69	147			

Sample ID: **LCS-73436** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **73436** RunNo: **94952**
Prep Date: **2/28/2023** Analysis Date: **3/1/2023** SeqNo: **3433069** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.6		5.000		92.6	69	147			

Sample ID: **MB-73474** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **73474** RunNo: **94965**
Prep Date: **3/2/2023** Analysis Date: **3/2/2023** SeqNo: **3434009** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.4		10.00		84.0	69	147			

Sample ID: **LCS-73474** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **73474** RunNo: **94965**
Prep Date: **3/2/2023** Analysis Date: **3/2/2023** SeqNo: **3434010** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.5		5.000		90.1	69	147			

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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2302B06**
06-Mar-23

Client: Vertex Resources Services, Inc.
Project: North Pure Gold 4 Federal 003

Sample ID: **MB-73456**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **73456**	RunNo: **94965**
Prep Date: **3/1/2023**	Analysis Date: **3/2/2023**	SeqNo: **3434451** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	11		10.00		113	69	147			

Sample ID: **LCS-73456**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **73456**	RunNo: **94965**
Prep Date: **3/1/2023**	Analysis Date: **3/2/2023**	SeqNo: **3434452** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.0		5.000		100	69	147			

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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2302B06**

06-Mar-23

Client: Vertex Resources Services, Inc.

Project: North Pure Gold 4 Federal 003

Sample ID: **lcs-73396**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **73396**	RunNo: **94933**
Prep Date: **2/27/2023**	Analysis Date: **3/1/2023**	SeqNo: **3433434** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	87.8	72.3	137			
Surr: BFB	1900		1000		193	37.7	212			

Sample ID: **mb-73396**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **73396**	RunNo: **94933**
Prep Date: **2/27/2023**	Analysis Date: **3/1/2023**	SeqNo: **3433435** 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		102	37.7	212			

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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2302B06**

06-Mar-23

Client: Vertex Resources Services, Inc.

Project: North Pure Gold 4 Federal 003

Sample ID: **LCS-73396** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSS** Batch ID: **73396** RunNo: **94933**

Prep Date: **2/27/2023** Analysis Date: **3/1/2023** SeqNo: **3433469** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.84	0.025	1.000	0	83.5	80	120			
Toluene	0.87	0.050	1.000	0	87.0	80	120			
Ethylbenzene	0.86	0.050	1.000	0	85.8	80	120			
Xylenes, Total	2.6	0.10	3.000	0	86.2	80	120			
Surr: 4-Bromofluorobenzene	0.94		1.000		94.2	70	130			

Sample ID: **mb-73396** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **73396** RunNo: **94933**

Prep Date: **2/27/2023** Analysis Date: **3/1/2023** SeqNo: **3433470** 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	0.92		1.000		91.9	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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2302B06**
06-Mar-23

Client: Vertex Resources Services, Inc.
Project: North Pure Gold 4 Federal 003

Sample ID: **2302b06-004ams** SampType: **MS4** TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **BH23-22 0'** Batch ID: **73404** RunNo: **94927**
Prep Date: **2/27/2023** Analysis Date: **2/28/2023** SeqNo: **3431732** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.023	0.9294	0	99.1	75.8	123			
Toluene	1.0	0.046	0.9294	0	111	68.3	130			
Ethylbenzene	1.1	0.046	0.9294	0	114	76.6	132			
Xylenes, Total	3.2	0.093	2.788	0	114	74.7	132			
Surr: 1,2-Dichloroethane-d4	0.45		0.4647		97.4	70	130			
Surr: 4-Bromofluorobenzene	0.44		0.4647		94.8	70	130			
Surr: Dibromofluoromethane	0.45		0.4647		96.2	70	130			
Surr: Toluene-d8	0.45		0.4647		96.3	70	130			

Sample ID: **2302b06-004amsd** SampType: **MSD4** TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **BH23-22 0'** Batch ID: **73404** RunNo: **94927**
Prep Date: **2/27/2023** Analysis Date: **2/28/2023** SeqNo: **3431733** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.023	0.9285	0	100	75.8	123	1.06	20	
Toluene	1.1	0.046	0.9285	0	116	68.3	130	4.26	20	
Ethylbenzene	1.1	0.046	0.9285	0	119	76.6	132	4.60	20	
Xylenes, Total	3.3	0.093	2.786	0	119	74.7	132	3.81	20	
Surr: 1,2-Dichloroethane-d4	0.46		0.4643		99.4	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.44		0.4643		94.3	70	130	0	0	
Surr: Dibromofluoromethane	0.47		0.4643		102	70	130	0	0	
Surr: Toluene-d8	0.45		0.4643		96.9	70	130	0	0	

Sample ID: **lcs-73404** SampType: **LCS4** TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **BatchQC** Batch ID: **73404** RunNo: **94927**
Prep Date: **2/27/2023** Analysis Date: **2/28/2023** SeqNo: **3431736** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.82	0.025	1.000	0	82.0	80	120			
Toluene	0.94	0.050	1.000	0	94.0	80	120			
Ethylbenzene	0.96	0.050	1.000	0	96.3	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.1	80	120			
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		94.1	70	130			
Surr: 4-Bromofluorobenzene	0.47		0.5000		94.5	70	130			
Surr: Dibromofluoromethane	0.48		0.5000		95.3	70	130			
Surr: Toluene-d8	0.50		0.5000		99.6	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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2302B06**
06-Mar-23

Client: Vertex Resources Services, Inc.
Project: North Pure Gold 4 Federal 003

Sample ID: **mb-73404** SampType: **MBLK** TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **PBS** Batch ID: **73404** RunNo: **94927**
Prep Date: **2/27/2023** Analysis Date: **2/28/2023** SeqNo: **3431737** 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: 1,2-Dichloroethane-d4	0.48		0.5000		95.1	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		100	70	130			
Surr: Dibromofluoromethane	0.49		0.5000		97.1	70	130			
Surr: Toluene-d8	0.49		0.5000		98.7	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2302B06**
06-Mar-23

Client: Vertex Resources Services, Inc.
Project: North Pure Gold 4 Federal 003

Sample ID: **lcs-73404** SampType: **LCS** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS** Batch ID: **73404** RunNo: **94927**
Prep Date: **2/27/2023** Analysis Date: **2/28/2023** SeqNo: **3431792** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	5.0	25.00	0	78.4	70	130			
Surr: BFB	500		500.0		99.4	70	130			

Sample ID: **mb-73404** SampType: **MBLK** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS** Batch ID: **73404** RunNo: **94927**
Prep Date: **2/27/2023** Analysis Date: **2/28/2023** SeqNo: **3431793** 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	530		500.0		105	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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: Vertex Resources Services, Inc. Work Order Number: 2302B06 RcptNo: 1

Received By: Tracy Casarrubias 2/25/2023 9:00:00 AM

Completed By: Tracy Casarrubias 2/25/2023 10:42:48 AM

Reviewed By: DAD 2/27/23

Chain of Custody

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

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? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
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? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: TMC 2/25/23

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	2.1	Good	Yes	Yogi		

Chain-of-Custody Record

Client: **Vertex**

(direct bill to Devon)

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☒ Standard ☒ Rush 5 Day

Project Name:

North Pure Gold 4 Federal #003

Project #:

22E-02816-06

Project Manager:

Kent Stallings

kstallings@vertex.ca

Sampler: L. Pullman

On Ice: ☒ Yes ☐ No 4009

# of Coolers: 1

Cooler Temp(including CF): 2.1 - 0 = 2.1

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2302B06	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	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)
02/23/23	7:45	Soil	BH23-21 0'	1, 4oz jar		001	X	X					X			
02/23/23	7:50	Soil	BH23-21 2'	1, 4oz jar		002	X	X					X			
02/23/23	7:55	Soil	BH23-21 4'	1, 4oz jar		003	X	X					X			
02/23/23	8:05	Soil	BH23-22 0'	1, 4oz jar		004	X	X					X			
02/23/23	8:10	Soil	BH23-22 2'	1, 4oz jar		005	X	X					X			
02/23/23	8:15	Soil	BH23-22 4'	1, 4oz jar		006	X	X					X			

Date	Time	Relinquished by	Received by	Via	Date	Time
2-24-2023	07:00					
2/24/23	1910			Courier	2/24/23	9:00

Remarks:

Direct bill to Devon, Dale Woodall

cc. kstallings@vertex.ca for Final Report

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.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

March 30, 2023

Kent Stallings

Vertex Resources Services, Inc.
3101 Boyd Drive
Carlsbad, NM 88220
TEL: (505) 506-0040
FAX:

RE: North Pure Gold 4 Federal 003 OrderNo.: 2303D14

Dear Kent Stallings:

Hall Environmental Analysis Laboratory received 3 sample(s) on 3/28/2023 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,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2303D14**
Date Reported: **3/30/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-19 8'
Project: North Pure Gold 4 Federal 003 **Collection Date:** 3/24/2023 1:20:00 PM
Lab ID: 2303D14-001 **Matrix:** SOIL **Received Date:** 3/28/2023 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	3/30/2023 2:40:28 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/30/2023 2:40:28 AM
Surr: DNOP	110	69-147		%Rec	1	3/30/2023 2:40:28 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/29/2023 3:21:51 PM
Surr: BFB	100	37.7-212		%Rec	1	3/29/2023 3:21:51 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	3/29/2023 3:21:51 PM
Toluene	ND	0.049		mg/Kg	1	3/29/2023 3:21:51 PM
Ethylbenzene	ND	0.049		mg/Kg	1	3/29/2023 3:21:51 PM
Xylenes, Total	ND	0.099		mg/Kg	1	3/29/2023 3:21:51 PM
Surr: 4-Bromofluorobenzene	89.4	70-130		%Rec	1	3/29/2023 3:21:51 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	1100	59		mg/Kg	20	3/28/2023 10:27:35 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2303D14**
Date Reported: **3/30/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-19 10'
Project: North Pure Gold 4 Federal 003
Collection Date: 3/24/2023 1:40:00 PM
Lab ID: 2303D14-002 **Matrix:** SOIL **Received Date:** 3/28/2023 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	3/30/2023 2:51:02 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	3/30/2023 2:51:02 AM
Surr: DNOP	131	69-147		%Rec	1	3/30/2023 2:51:02 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/29/2023 3:45:23 PM
Surr: BFB	103	37.7-212		%Rec	1	3/29/2023 3:45:23 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	3/29/2023 3:45:23 PM
Toluene	ND	0.048		mg/Kg	1	3/29/2023 3:45:23 PM
Ethylbenzene	ND	0.048		mg/Kg	1	3/29/2023 3:45:23 PM
Xylenes, Total	ND	0.096		mg/Kg	1	3/29/2023 3:45:23 PM
Surr: 4-Bromofluorobenzene	91.6	70-130		%Rec	1	3/29/2023 3:45:23 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	230	60		mg/Kg	20	3/28/2023 11:29:19 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2303D14**
Date Reported: **3/30/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-19 12'
Project: North Pure Gold 4 Federal 003
Collection Date: 3/24/2023 2:05:00 PM
Lab ID: 2303D14-003 **Matrix:** SOIL **Received Date:** 3/28/2023 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	3/30/2023 3:12:02 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/30/2023 3:12:02 AM
Surr: DNOP	123	69-147		%Rec	1	3/30/2023 3:12:02 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/29/2023 4:08:50 PM
Surr: BFB	101	37.7-212		%Rec	1	3/29/2023 4:08:50 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	3/29/2023 4:08:50 PM
Toluene	ND	0.048		mg/Kg	1	3/29/2023 4:08:50 PM
Ethylbenzene	ND	0.048		mg/Kg	1	3/29/2023 4:08:50 PM
Xylenes, Total	ND	0.097		mg/Kg	1	3/29/2023 4:08:50 PM
Surr: 4-Bromofluorobenzene	88.8	70-130		%Rec	1	3/29/2023 4:08:50 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	65	60		mg/Kg	20	3/28/2023 11:41:41 PM

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	Above Quantitation Range/Estimated Value
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2303D14**

30-Mar-23

Client: Vertex Resources Services, Inc.

Project: North Pure Gold 4 Federal 003

Sample ID: **MB-73990**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **73990**	RunNo: **95609**							
Prep Date: **3/28/2023**	Analysis Date: **3/28/2023**	SeqNo: **3461355**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-73990**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **73990**	RunNo: **95609**							
Prep Date: **3/28/2023**	Analysis Date: **3/28/2023**	SeqNo: **3461356**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.6	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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2303D14**

30-Mar-23

Client: Vertex Resources Services, Inc.

Project: North Pure Gold 4 Federal 003

Sample ID: **MB-73986**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **73986**	RunNo: **95645**
Prep Date: **3/28/2023**	Analysis Date: **3/29/2023**	SeqNo: **3461196** 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	11		10.00		109	69	147			

Sample ID: **LCS-73986**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **73986**	RunNo: **95645**
Prep Date: **3/28/2023**	Analysis Date: **3/29/2023**	SeqNo: **3461197** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	57	10	50.00	0	114	61.9	130			
Surr: DNOP	5.9		5.000		119	69	147			

Sample ID: **MB-73987**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **73987**	RunNo: **95646**
Prep Date: **3/28/2023**	Analysis Date: **3/29/2023**	SeqNo: **3461648** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.2		10.00		91.6	69	147			

Sample ID: **LCS-73987**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **73987**	RunNo: **95646**
Prep Date: **3/28/2023**	Analysis Date: **3/29/2023**	SeqNo: **3461649** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.4		5.000		87.3	69	147			

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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2303D14**

30-Mar-23

Client: Vertex Resources Services, Inc.

Project: North Pure Gold 4 Federal 003

Sample ID: **lcs-73975** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **LCSS** Batch ID: **73975** RunNo: **95642**

Prep Date: **3/28/2023** Analysis Date: **3/29/2023** SeqNo: **3461081** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.6	70	130			
Surr: BFB	2000		1000		202	37.7	212			

Sample ID: **mb-73975** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **PBS** Batch ID: **73975** RunNo: **95642**

Prep Date: **3/28/2023** Analysis Date: **3/29/2023** SeqNo: **3461082** 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		102	37.7	212			

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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2303D14**

30-Mar-23

Client: Vertex Resources Services, Inc.

Project: North Pure Gold 4 Federal 003

Sample ID: **LCS-73975** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSS** Batch ID: **73975** RunNo: **95642**

Prep Date: **3/28/2023** Analysis Date: **3/29/2023** SeqNo: **3461088** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.025	1.000	0	91.9	80	120			
Toluene	0.91	0.050	1.000	0	91.2	80	120			
Ethylbenzene	0.90	0.050	1.000	0	90.0	80	120			
Xylenes, Total	2.7	0.10	3.000	0	89.9	80	120			
Surr: 4-Bromofluorobenzene	0.94		1.000		93.8	70	130			

Sample ID: **mb-73975** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **73975** RunNo: **95642**

Prep Date: **3/28/2023** Analysis Date: **3/29/2023** SeqNo: **3461089** 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	0.89		1.000		89.4	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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **Vertex Resources Services, Inc.** Work Order Number: **2303D14** RcptNo: **1**

Received By: **Juan Rojas** **3/28/2023 7:55:00 AM** Juan Rojas

Completed By: **Desiree Dominguez** **3/28/2023 8:27:41 AM** DD

Reviewed By: DAD 3/28/23

Chain of Custody

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

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? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
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? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: JM 3/28/23

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:

Client information missing on COC. -DAD 3/28/23

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.7	Good	Not Present	Morty		

Chain-of-Custody Record

Client: **Vertex**

(direct bill to Devon)

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☐ Standard ☒ Rush 48-hr

Project Name: **North Pure Gold 4 Federal #003**

Project #: **22E-02816-06**

Project Manager: Kent Stallings

kstallings@vertex.ca

Sampler: L. Pullman

On Ice: ~~☐ Yes~~ ☐ No

# of Coolers: 1 Mon-7

Cooler Temp(including CF): 0.8-0.1=0.7

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2303D14	(BTEX) / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	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)
03/24/23	13:20	Soil	BH23-19 8'	1, 4oz jar		-001	X	X					X			
03/24/23	13:40	Soil	BH23-19 10'	1, 4oz jar		-002	X	X					X			
03/24/23	14:05	Soil	BH23-19 12'	1, 4oz jar		-003	X	X					X			

Date	Time	Relinquished by	Received by	Via	Date	Time
3-27-23	07:00	Jakan Pullman				
3/27/23	1900			Courier	3/28/23	7:55

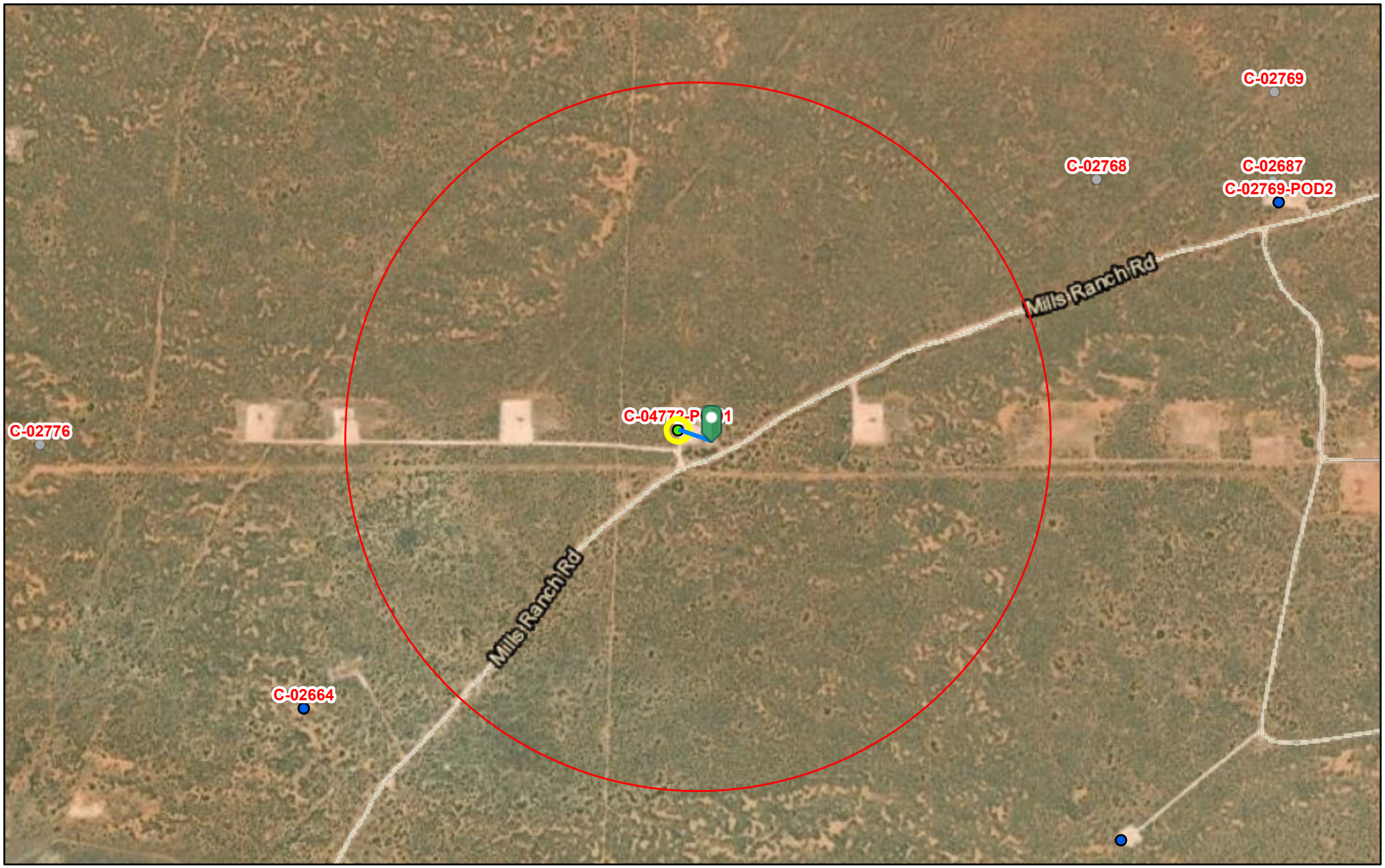
Remarks:
Direct bill to Devon, Dale Woodall
cc. kstallings@vertex.ca for Final Report

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.

ATTACHMENT 5

Closure Criteria Determination				
Site Name: North Pure Gold 4 Federal #003				
Spill Coordinates: 32.339958,-103.788999		X: 613965	Y: 3578763	
Site Specific Conditions		Value	Unit	Reference
1	Depth to Groundwater (nearest reference)	>55	feet	1
	Distance between release and nearest DTGW reference	240	feet	
		0.05	miles	
	Date of nearest DTGW reference measurement	December 18, 2023		
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	3,546	feet	2
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	4,508	feet	3
4	Within 300 feet from an occupied residence, school, hospital, institution or church	7,681	feet	4
5	i) Within 500 feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, **or**		feet	5
	ii) Within 1000 feet of any fresh water well or spring	3,356	feet	5
6	Within incorporated municipal boundaries or within a defined municipal fresh water field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended, unless the municipality specifically approves	No	(Y/N)	6
7	Within 300 feet of a wetland	4,074	feet	7
8	Within the area overlying a subsurface mine	No	(Y/N)	8
	Distance between release and nearest registered mine	29,600	feet	
9	Within an unstable area (Karst Map)	Low	Critical High Medium Low	9
	Distance between release and nearest unstable area	11,656	feet	
10	Within a 100-year Floodplain	>500	year	10
	Distance between release and nearest FEMA Zone A (100-year Floodplain)	38,283	feet	
11	Soil Type	Fine sand and fine sandy loam		11
12	Ecological Classification	Deep sand and loamy sand		12
13	Geology	Eolian and piedmont deposits		13
	NMAC 19.15.29.12 E (Table 1) Closure Criteria	51-100'	<50' 51-100' >100'	

North Pure Gold 4 Federal 3 - 240 ft from DTGW reference



1/26/2024, 3:27:41 PM

1:14,623

0 0.1 0.2 0.4 mi

0 0.15 0.3 0.6 km

Esri, HERE, iPC, Esri, HERE, Garmin, iPC, Maxar

Online web user

This is an unofficial map from the OSE's online application.

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Twn	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 04772 POD1		CUB	ED	1	1	1	04	23S	31E	613895	3578780	72	55		
C 02774		CUB	ED	3	1	3	04	23S	31E	613857	3577745*	1023	1660		
C 02767		CUB	ED	4	1	4	33	22S	31E	614844	3579360*	1062	785		
C 02768		CUB	ED	4	1	4	33	22S	31E	614844	3579360*	1062	787		
C 02664		CUB	ED	3	3	2	05	23S	31E	613049	3578138*	1108	4291	354	3937
C 03351		C	ED	4	1	4	04	23S	31E	614917	3577861	1311	320	168	152
C 02769 POD2		CUB	ED	4	2	4	33	22S	31E	615261	3579312	1407	753	428	325
C 02687		CUB	ED	4	2	4	33	22S	31E	615246	3579364*	1414	779		
C 02769		CUB	ED	2	2	4	33	22S	31E	615246	3579564*	1510	765		
C 02776		CUB	ED	2	1	1	05	23S	31E	612440	3578731*	1525	661		
C 03140		CUB	ED	4	2	4	04	23S	31E	615266	3577758*	1643	684		
C 02725		CUB	ED	1	1	1	05	23S	31E	612240	3578731*	1725	532		
C 02775		CUB	ED	1	1	1	05	23S	31E	612240	3578731*	1725	529		
C 02417		CUB	ED	4	4	4	29	22S	31E	613623	3580554*	1823	681		
C 02773		CUB	ED	4	1	3	03	23S	31E	615668	3577762*	1975	880		
C 02757		CUB	ED	4	4	4	28	22S	31E	615232	3580571*	2207	4057		
C 03207		CUB	ED	4	2	4	29	22S	31E	613618	3580956*	2220	150		
C 02420		CUB	ED	4	2	3	28	22S	31E	614423	3580964*	2248	779	450	329
C 02421		CUB	ED	4	2	3	28	22S	31E	614423	3580964*	2248	786	450	336
C 02422		CUB	ED	4	2	3	28	22S	31E	614423	3580964*	2248	785	450	335
C 02423		CUB	ED	4	2	3	28	22S	31E	614423	3580964*	2248	782	450	332
C 02424		CUB	ED	4	2	3	28	22S	31E	614423	3580964*	2248	786	450	336
C 02425		CUB	ED	4	2	3	28	22S	31E	614423	3580964*	2248	788	450	338
C 02426		CUB	ED	4	2	3	28	22S	31E	614423	3580964*	2248	785	450	335
C 02761 POD1		CUB	ED	2	2	4	29	22S	31E	613651	3581101	2359	725		
C 02492		CUB	ED	4	4	4	06	23S	31E	612056	3577320*	2393	135	85	50
C 02865		CUB	ED	4	4	4	06	23S	31E	612056	3577320*	2393	174		
C 02760		CUB	ED	2	2	4	29	22S	31E	613618	3581156*	2418	725		
C 02761		CUB	ED	2	2	4	29	22S	31E	613618	3581156*	2418	730		
C 02764		CUB	ED	2	2	4	29	22S	31E	613618	3581156*	2418	902		
C 02416		CUB	ED	3	2	4	28	22S	31E	615027	3580973*	2451	800	401	399
C 02766		CUB	ED	3	3	3	29	22S	31E	612216	3580541*	2494	589		

C 02418	CUB	ED	3	2	3	29	22S	31E	612613	3580948*	2569	617	413	204
C 02419	CUB	ED	3	2	3	29	22S	31E	612613	3580948*	2569	225		
C 02811	CUB	ED	2	4	2	29	22S	31E	613613	3581558*	2817	80		
C 02492 POD2	C	ED	3	2	2	07	23S	31E	611767	3576996	2819	400	125	275
C 02737	C	ED	2	4	2	29	22S	31E	613604	3581567	2827	710		
C 04402 POD1	CUB	ED	1	3	2	29	22S	31E	612911	3581565	2994	42		
C 04402 POD2	CUB	ED	1	3	2	29	22S	31E	612911	3581565	2994	240		
C 04712 POD5	CUB	ED	4	4	3	09	23S	31E	614393	3575754	3038	55		
C 04776 POD1	CUB	ED	3	3	3	09	23S	31E	613953	3575651	3111		105	
C 04712 POD6	CUB	ED	3	3	4	08	23S	31E	613147	3575740	3131	55		
C 04399 POD1	CUB	ED	2	1	1	28	22S	31E	613937	3581991	3228	68		
C 02662	CUB	ED	1	2	2	29	22S	31E	613409	3581960*	3244	856		
C 02765	CUB	ED	1	2	2	29	22S	31E	613409	3581960*	3244	856		
C 02758	CUB	ED	3	2	1	29	22S	31E	612604	3581752*	3284	661		
C 02762	CUB	ED	3	2	1	29	22S	31E	612604	3581752*	3284	672		
C 02763	CUB	ED	3	2	1	29	22S	31E	612604	3581752*	3284	660		
C 02505	CUB	ED	4	4	4	20	22S	31E	613604	3582162*	3418	69	48	21
C 02506	CUB	ED	4	4	4	20	22S	31E	613604	3582162*	3418	69	48	21
C 02507	CUB	ED	4	4	4	20	22S	31E	613604	3582162*	3418	73	45	28
C 02752	CUB	ED	4	4	4	20	22S	31E	613604	3582162*	3418	2875		
C 02801	CUB	ED	4	4	4	20	22S	31E	613604	3582162*	3418	65		
C 02802	CUB	ED	4	4	4	20	22S	31E	613604	3582162*	3418	65		
C 02803	CUB	ED	4	4	4	20	22S	31E	613604	3582162*	3418	65		
C 02981	CUB	ED	4	4	4	20	22S	31E	613604	3582162*	3418	62		
C 02983	CUB	ED	4	4	4	20	22S	31E	613604	3582162*	3418	60		
C 02987	CUB	ED	4	4	4	20	22S	31E	613604	3582162*	3418	68		
C 02991	CUB	ED	4	4	4	20	22S	31E	613604	3582162*	3418	64		
C 02989	CUB	ED	3	4	4	20	22S	31E	613404	3582162*	3444	54		
C 02685	CUB	ED	2	2	2	28	22S	31E	615218	3581978*	3450	900		
C 02759	CUB	ED	1	2	1	29	22S	31E	612604	3581952*	3467	795		
C 03138	CUB	ED	3	3	3	26	22S	31E	617043	3580591*	3579	750		
C 02980	CUB	ED	2	4	4	20	22S	31E	613604	3582362*	3617	62		
C 02982	CUB	ED	2	4	4	20	22S	31E	613604	3582362*	3617	65		
C 02984	CUB	ED	2	4	4	20	22S	31E	613604	3582362*	3617	65		
C 02985	CUB	ED	2	4	4	20	22S	31E	613604	3582362*	3617	62		
C 02988	CUB	ED	2	4	4	20	22S	31E	613604	3582362*	3617	75		
C 02753	CUB	ED	1	4	4	20	22S	31E	613404	3582362*	3642	851		
C 02986	CUB	ED	1	4	4	20	22S	31E	613404	3582362*	3642	71		
C 02990	CUB	ED	1	4	4	20	22S	31E	613404	3582362*	3642	71		
C 03139	CUB	ED	4	2	4	01	23S	30E	610424	3577764*	3679	425		

C 03520 POD1	C	ED	3	1	1	07	23S	31E	610733	3576905	3727	500			
C 03976 POD4	CUB	ED	1	3	4	20	22S	31E	612968	3582386	3758	71			
C 03976 POD1	CUB	ED	1	3	4	20	22S	31E	612967	3582387	3759	180			
C 03976 POD2	CUB	ED	1	3	4	20	22S	31E	612967	3582387	3759	70			
C 03976 POD3	CUB	ED	1	3	4	20	22S	31E	612967	3582387	3759	182			
C 02754	CUB	ED	4	2	4	20	22S	31E	613599	3582564*	3818	1045			
C 04709 POD1	CUB	ED	3	1	1	15	23S	31E	615509	3575262	3825				
C 03559 POD1	CUB	ED	4	3	2	01	23S	30E	609928	3578260	4067	50	0	50	
C 03559 POD2	CUB	ED	4	3	2	01	23S	30E	609928	3578260	4067	25	0	25	
C 03559 POD3	CUB	ED	4	3	2	01	23S	30E	609928	3578260	4067	20	0	20	
C 03559 POD4	CUB	ED	4	3	2	01	23S	30E	609928	3578260	4067	25	0	25	
C 03559 POD5	CUB	ED	4	3	2	01	23S	30E	609912	3578236	4086	50			
C 02755	CUB	ED	4	4	2	20	22S	31E	613595	3582966*	4219	1040			
C 02777	CUB	ED	4	4	4	10	23S	31E	616974	3575662	4320	890			
C 03749 POD1	CUB	ED		2	2	15	23S	31E	616974	3575662	4320	865	639	226	
C 03221 EXPLORE	CUB	ED	1	2	1	30	22S	31E	610995	3581935*	4345	651			
C 03561 POD4	CUB	ED	3	2	3	36	22S	30E	609419	3579425	4594	25	0	25	
C 03561 POD5	CUB	ED	3	2	3	36	22S	30E	609419	3579425	4594	20	0	20	
C 03561 POD3	CUB	ED	3	2	3	36	22S	30E	609393	3579425	4619	25	0	25	
C 02684	CUB	ED	4	2	2	20	22S	31E	613590	3583368*	4620	1060			
C 02756	CUB	ED	3	4	4	26	22S	31E	618250	3580606*	4664	1998			
C 03152	CUB	ED	3	4	4	26	22S	31E	618250	3580606*	4664	938			
C 03561 POD2	CUB	ED	3	2	3	36	22S	30E	609314	3579424	4697	25	0	25	
C 03561 POD1	CUB	ED	3	2	3	36	22S	30E	609288	3579393	4718	30	0	30	
C 03222 EXPLORE	CUB	ED	1	1	4	12	23S	30E	609833	3576349*	4785	365			
C 02683	CUB	ED	3	1	1	20	22S	31E	612184	3583356*	4926	840			
C 04773 POD1	CUB	ED	4	4	4	24	22S	30E	610415	3582262	4984	55			
C 02413	CUB	ED	1	2	1	20	22S	31E	612586	3583560*	4991	737			

Average Depth to Water: **214 feet**

Minimum Depth: **0 feet**

Maximum Depth: **639 feet**

Record Count: 100

UTMNAD83 Radius Search (in meters):

Easting (X): 613965 **Northing (Y):** 3578763 **Radius:** 5000

***UTM location was derived from PLSS - see Help**

New Mexico Office of the State Engineer

Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
NA	C 04772 POD1	1	1	1	04	23S	31E	613895	3578780

Driller License:	1833	**Driller Company:**	VISION RESOURCES, INC		
Driller Name:	JASON MALEY				
Drill Start Date:	12/18/2023	**Drill Finish Date:**	12/18/2023	**Plug Date:**	12/22/2023
Log File Date:	01/12/2024	**PCW Rcv Date:**		**Source:**	
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	
Casing Size:		**Depth Well:**	55 feet	**Depth Water:**	

New Mexico Office of the State Engineer
Water Right Summary

get image list

WR File Number: C 04772 **Subbasin:** CUB **Cross Reference:** -

Primary Purpose: MON MONITORING WELL

Primary Status: PMT PERMIT

Total Acres: **Subfile:** - **Header:** -

Total Diversion: 0 **Cause/Case:** -

Owner: DEVON ENERGY RESOURCES

Contact: DALE WOODALL

Documents on File

	Trn #	Doc	File/Act	Status 1	Status 2	Transaction Desc.	From/ To	Acres	Diversion	Consumptive
get images	751175	EXPL	2023-09-19	PMT	APR	C-4772 POD1	T	0	0	

Current Points of Diversion

(NAD83 UTM in meters)

POD Number	Well Tag	Source	Q 64	Q16	Q4	Sec	Tws	Rng	X	Y	Other Location Desc
C 04772 POD1	NA		1	1	1	04	23S	31E	613895	3578780	

Source

Acres	Diversion	CU	Use	Priority	Source	Description
0	0		MON		GW	

New Mexico Office of the State Engineer
Transaction Summary

EXPL Permit To Explore

Transaction Number: 751175 **Transaction Desc:** C-4772 POD1 **File Date:** 09/15/2023

Primary Status: PMT Permit
Secondary Status: APR Approved
Person Assigned: *******
Applicant: DEVON ENERGY RESOURCES
Contact: DALE WOODALL

Events

	Date	Type	Description	Comment	Processed By
get images	09/15/2023	APP	Application Received	*	*******
get images	09/15/2023	TEC	Technical Report	*PLUG PLAN C-4772	*******
	09/19/2023	FTN	Finalize non-published Trans.		*******
	10/26/2023	QAT	Quality Assurance Completed	SQ2	*******
	10/31/2023	QAT	Quality Assurance Completed	IMAGE	*******
	01/12/2024	LOG	Well Log Received	*POD1	*******
	01/12/2024	LGI	Well Log Image	*PLG RECORD	*******
	01/23/2024	DRY	Dry well log received		*******

Water Right Information

WR File Nbr	Acres	Diversion	Consumptive	Purpose of Use
C 04772	0	0		MON MONITORING WELL
**Point of Diversion				
C 04772 POD1		613895	3578780	

Conditions

1A Depth of the well shall not exceed the thickness of the valley fill.

4 No water shall be appropriated and beneficially used under this permit.

B The well shall be drilled by a driller licensed in the State of New Mexico in accordance with 72-12-12 NMSA 1978. A licensed driller shall not be required for the construction of a well driven without the use of a drill rig, provided that the casing shall not exceed two and three-eighths (2 3/8) inches outside diameter.

C The well driller must file the well record with the State Engineer and the applicant within 30 days after the well is drilled or driven. It is the well owner's responsibility to ensure that the well driller files the well record. The well driller may obtain the well record form from any District Office or the Office of the State Engineer website.

6 The well authorized by this permit shall be plugged completely using the following method per Rules and Regulations Governing Well Driller Licensing,

Construction, Repair and Plugging of Wells; Subsection C of 19.27.4.30 NMAC unless an alternative plugging method is proposed by the well owner and approved by the State Engineer upon completion of the permitted use. All pumping appurtenance shall be removed from the well prior to plugging. To plug a well, the entire well shall be filled from the bottom upwards to ground surface using a tremie pipe. The bottom of the tremie shall remain submerged in the sealant throughout the entire sealing process; other placement methods may be acceptable

7 The Permittee shall utilize the highest and best technology available to ensure conservation of water to the maximum extent practical.

16 Construction of a water well by anyone without a valid New Mexico Well Driller License is illegal, and the landowner shall bear the cost of plugging the well by a licensed New Mexico well driller. This does not apply to driven wells, the casing of which does not exceed two and three-eighths inches outside diameter.

P The well shall be constructed, maintained, and operated to prevent inter-aquifer exchange of water and to prevent loss of hydraulic head between hydrogeologic zones.

Q The State Engineer retains jurisdiction over this permit.

R Pursuant to section 72-8-1 NMSA 1978, the permittee shall allow the State Engineer and OSE representatives entry upon private property for the performance of their respective duties, including access to the ditch or acequia to measure flow and also to the well for meter reading and water level measurement.

---

x

Action of the State Engineer

SHOULD THE PERMITTEE CHANGE THE PURPOSE OF USE OTHER THAN MONITORING PURPOSES, AN APPLICATION SHALL BE ACQUIRED FROM THE OFFICE OF THE STATE ENGINEER.

**** See Image For Any Additional Conditions of Approval ****

Approval Code: A - Approved

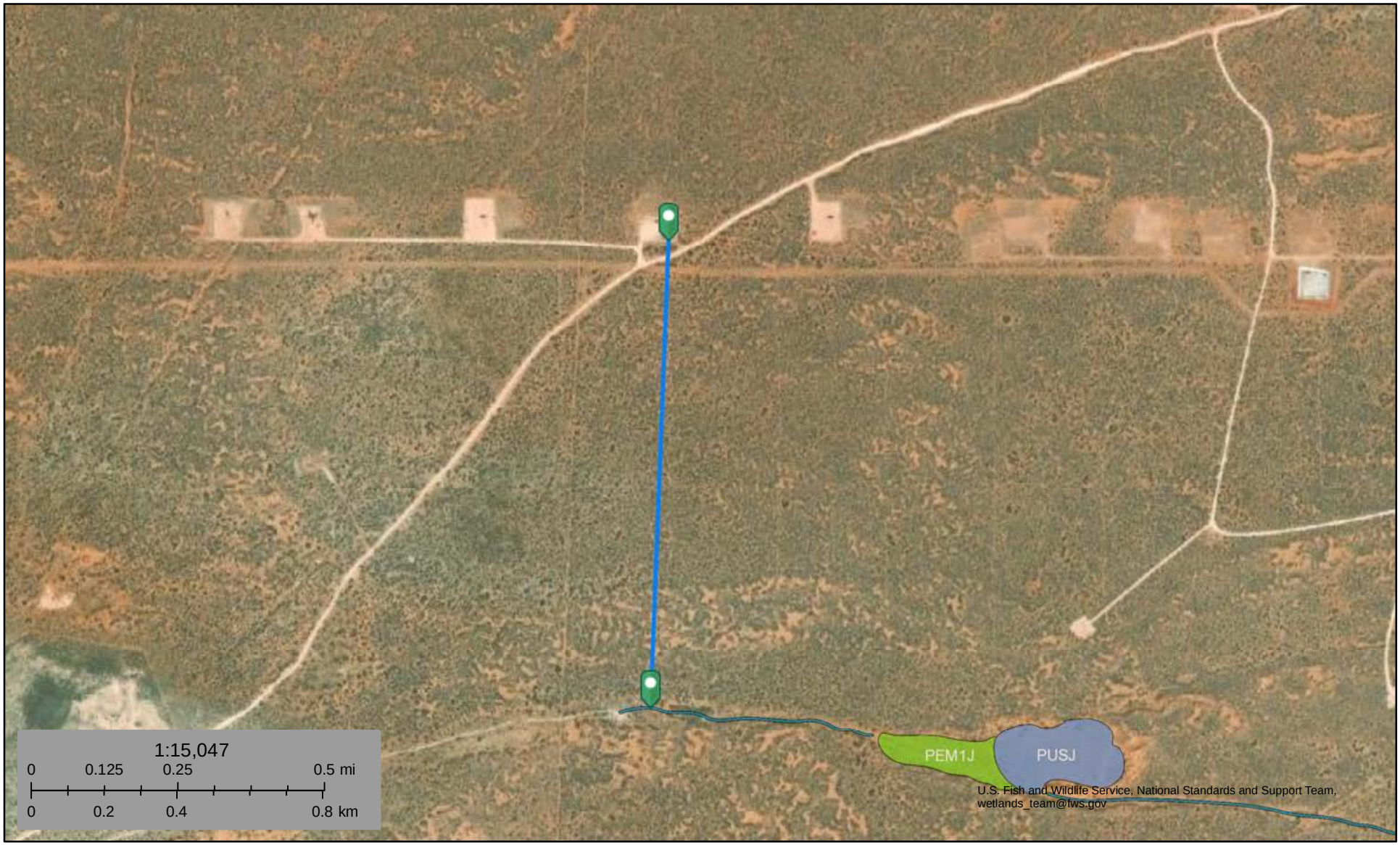
Action Date: 09/19/2023

Log Due Date: 09/18/2024

State Engineer: Mike A. Hamman, P.

U.S. Fish and Wildlife Service
National Wetlands Inventory

Intermittent 3,546 feet



February 25, 2023

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

U.S. Fish and Wildlife Service
National Wetlands Inventory

Pond 4,508 feet

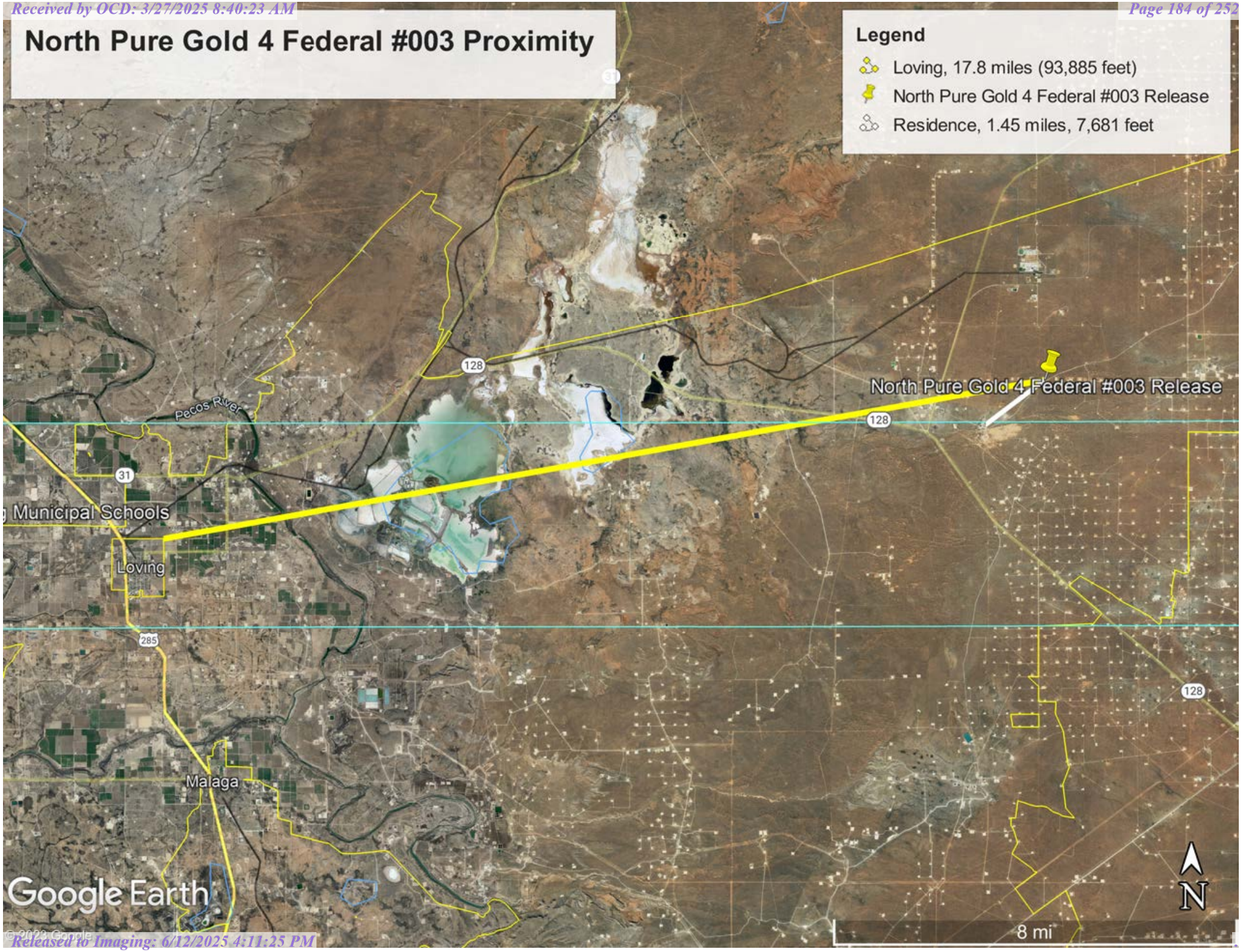
February 25, 2023

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper


North Pure Gold 4 Federal #003 Proximity
Legend
Loving, 17.8 miles (93,885 feet)
North Pure Gold 4 Federal #003 Release
Residence, 1.45 miles, 7,681 feet
North Pure Gold 4 Federal #003 Release
128
Pecos River
31
Municipal Schools
Loving
285
Malaga
Google Earth
© 2023 Google
8 mi
N

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(acre ft per annum)

(R=POD has been replaced and no longer serves this file, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Well Tag	Code	Grant	Source	q 64	q 16	q 4	Sec	Twn	Rng	X	Y	Distance
C 02774	CUB	MON	0	U.S. DEPT. OF ENERGY - WIPP	ED	C 02774					3	1	3	04	23S	31E	613857	3577745*	1023
C 02767	CUB	MON	0	U.S. DEPT. OF ENERGY - WIPP	ED	C 02767					4	1	4	33	22S	31E	614844	3579360*	1062
C 02768	CUB	MON	0	U.S. DEPT. OF ENERGY - WIPP	ED	C 02768					4	1	4	33	22S	31E	614844	3579360*	1062
C 02664	CUB	MON	0	SANDIA NATIONAL LABORATORIES	ED	C 02664				Shallow	3	3	2	05	23S	31E	613049	3578138*	1108
C 03351	C	STK	3	BUREAU OF LAND MANAGEMENT	ED	C 03351				Shallow	4	1	4	04	23S	31E	614916	3577861	1311
C 02769	CUB	MON	0	U.S. DEPT. OF ENERGY - WIPP	ED	C 02769 POD2				Artesian	4	2	4	33	22S	31E	615260	3579312	1407
C 02687	CUB	MON	0	SANDIA NATIONAL LABORATORIES	ED	C 02687					4	2	4	33	22S	31E	615246	3579364*	1414
C 02769	CUB	MON	0	U.S. DEPT. OF ENERGY - WIPP	ED	C 02769					2	2	4	33	22S	31E	615246	3579564*	1510
C 02776	CUB	MON	0	U.S. DEPT. OF ENERGY - WIPP	ED	C 02776					2	1	1	05	23S	31E	612440	3578731*	1525
C 03140	CUB	MON	0	US DEPT OF ENERGY	ED	C 03140				Shallow	4	2	4	04	23S	31E	615266	3577758*	1643
C 02725	CUB	MON	0	U.S. DEPT. OF ENERGY, WIPP	ED	C 02725					1	1	1	05	23S	31E	612240	3578731*	1725
C 02775	CUB	MON	0	U.S. DEPT. OF ENERGY - WIPP	ED	C 02775					1	1	1	05	23S	31E	612240	3578731*	1725
C 02417	CUB	MON	0	U.S. DEPT. OF ENERGY	ED	C 02417				Artesian	4	4	4	29	22S	31E	613623	3580554*	1823
C 02773	CUB	MON	0	U.S. DEPT. OF ENERGY - WIPP	ED	C 02773					4	1	3	03	23S	31E	615668	3577762*	1975

Record Count: 14

UTMNAD83 Radius Search (in meters):

Easting (X): 613965 **Northing (Y):** 3578763 **Radius:** 2000

Sorted by: Distance

***UTM location was derived from PLSS - see Help**

New Mexico Office of the State Engineer
Water Right Summary

WR File Number: C 02774 **Subbasin:** CUB **Cross Reference:** -

Primary Purpose: MON MONITORING WELL

Primary Status: DCL DECLARATION

Total Acres: 0 **Subfile:** - **Header:** -

Total Diversion: 0 **Cause/Case:** -

Owner: U.S. DEPT. OF ENERGY - WIPP

Contact: D.C. LYNN

Documents on File

Trn #	Doc	File/Act	Status 1	Status 2	Transaction Desc.	From/ To	Acres	Diversion	Consumptive
195794	DCL	2000-11-06	DCL	PRC	C 02774	T	0	0	

Current Points of Diversion

(NAD83 UTM in meters)

POD Number	Well Tag	Source	Q 64	Q16	Q4	Sec	Tws	Rng	X	Y	Other Location Desc
C 02774			3	1	3	04	23S	31E	613857	3577745*	

***An (*) after northing value indicates UTM location was derived from PLSS - see Help**

Source

Acres	Diversion	CU	Use	Priority	Source	Description
0	0		MON		GW	

New Mexico Office of the State Engineer

Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
	C 02774	3	1	3	04	23S	31E	613857	3577745*

Driller License: **Driller Company:**

Driller Name: SANDIA NATIONAL LABS/USGS

Drill Start Date:		**Drill Finish Date:**	12/31/1976	**Plug Date:**	
Log File Date:		**PCW Rcv Date:**		**Source:**	
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	
Casing Size:	4.50	**Depth Well:**	1660 feet	**Depth Water:**	

***UTM location was derived from PLSS - see Help**

U.S. Fish and Wildlife Service
National Wetlands Inventory

Wetland 4,074 feet

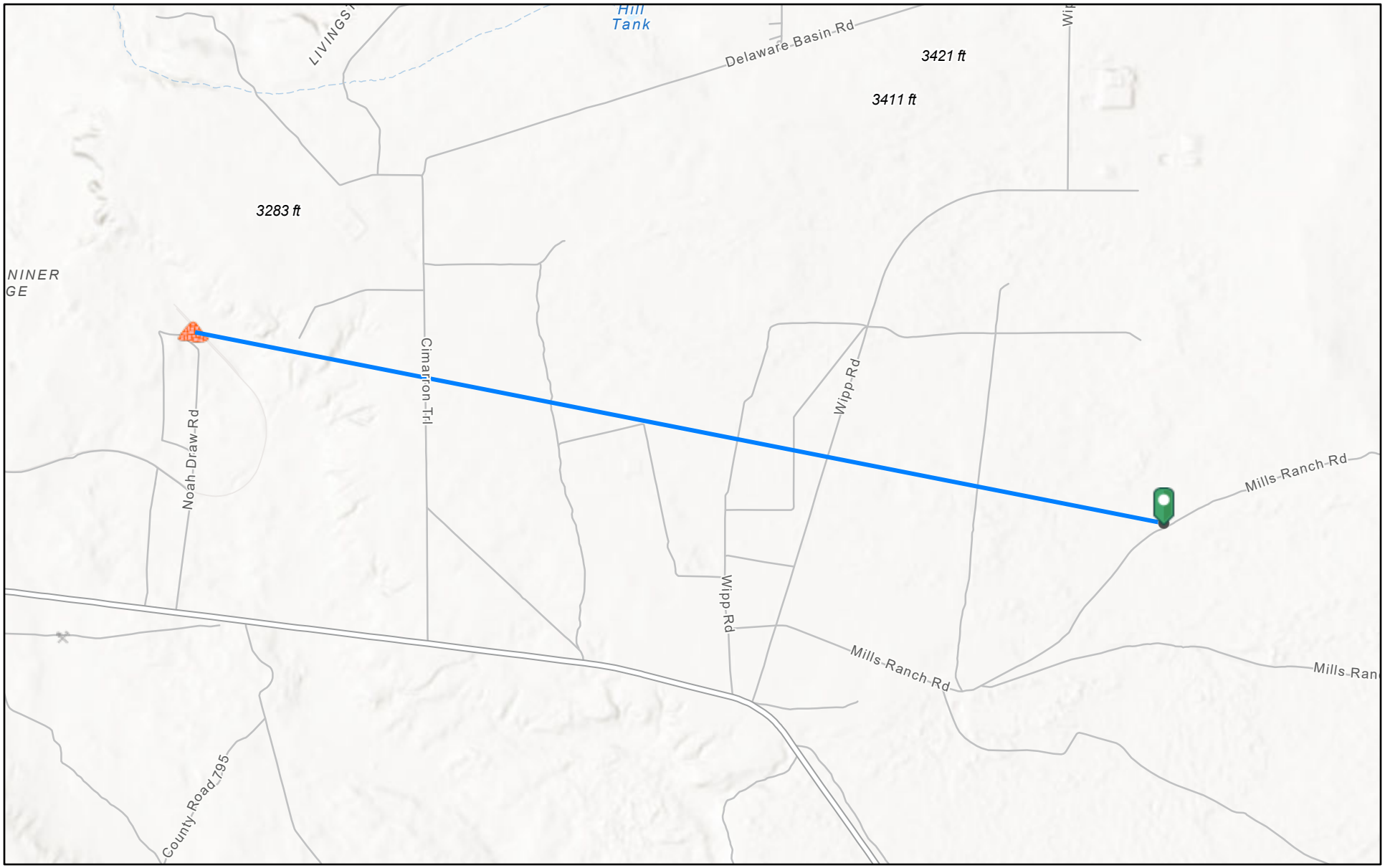
February 25, 2023

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

North Pure Gold 4 Federal 3 - 29,600 feet from mine



1/26/2024, 3:44:13 PM

Registered Mines

Potash

Aggregate, Stone etc.

1:58,494

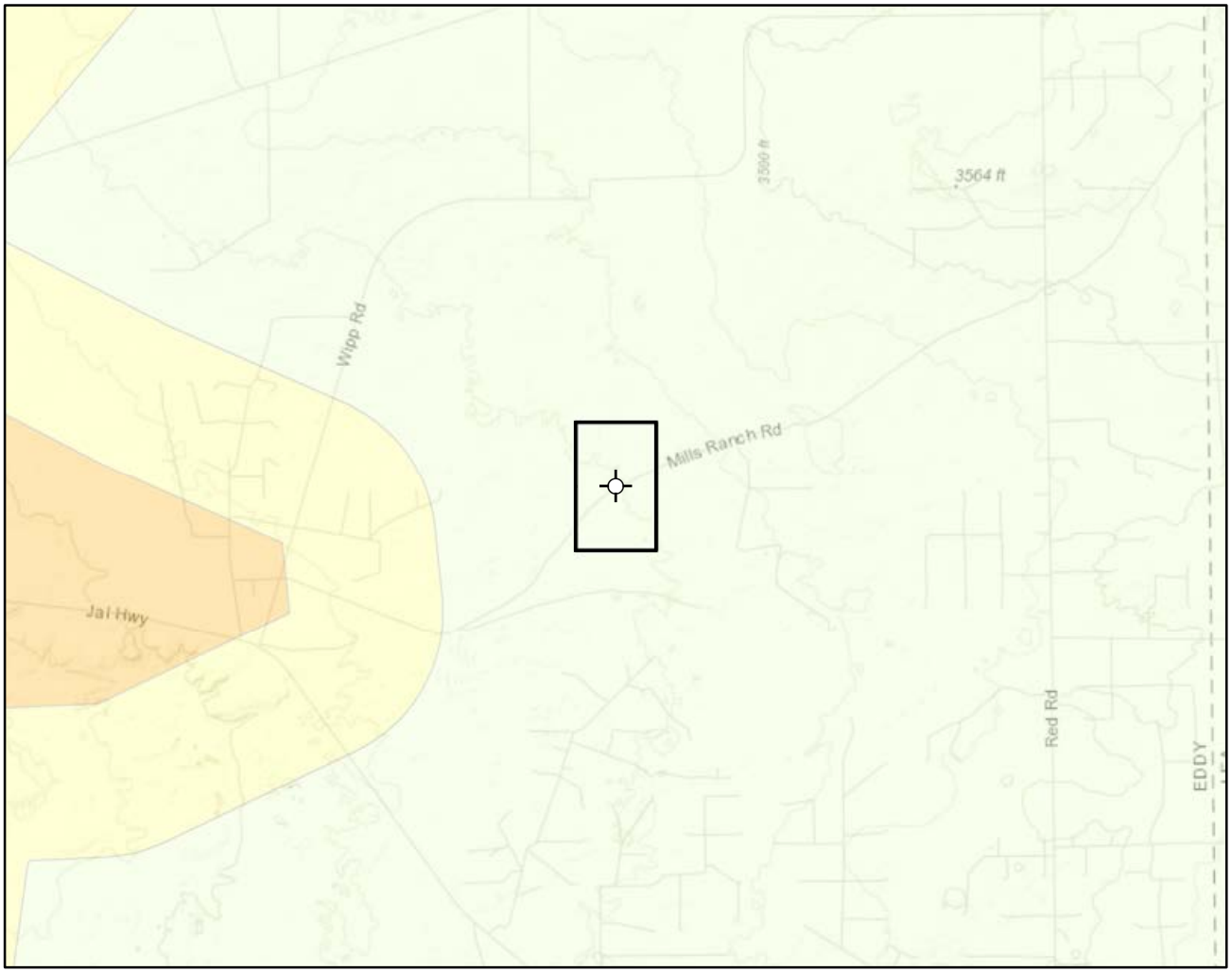
0 0.42 0.85 1.7 mi

0 0.5 1 2 km

Texas Parks & Wildlife, CONANP, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS, Esri,

EMNRD MMD GIS Coordinator

NM Energy, Minerals and Natural Resources Department (http://nm-emnrd.maps.arcgis.com/apps/webappviewer/index.html?id=1b5e577974664d689b47790897ca2795)



Karst Potential

- Critical
- High
- Medium
- Low

- Site Location
- Site Buffer (1,000 sq. ft.)

Overview Map

0 0.25 0.5 1 mi

Detail Map

0 150 300 600 ft.

VERTEX

Map Center:
Lat/Long: 32.339958, -103.789000

NAD 1983 UTM Zone 13N
Date: Mar 01/23

N

Karst Potential
North Pure Gold 4 Federal #003

FIGURE:
X

devon

Geospatial data presented in this figure may be derived from external sources and Vertex does not assume any liability for inaccuracies. This figure is intended for reference use only and is not certified for legal, survey, or engineering purposes.

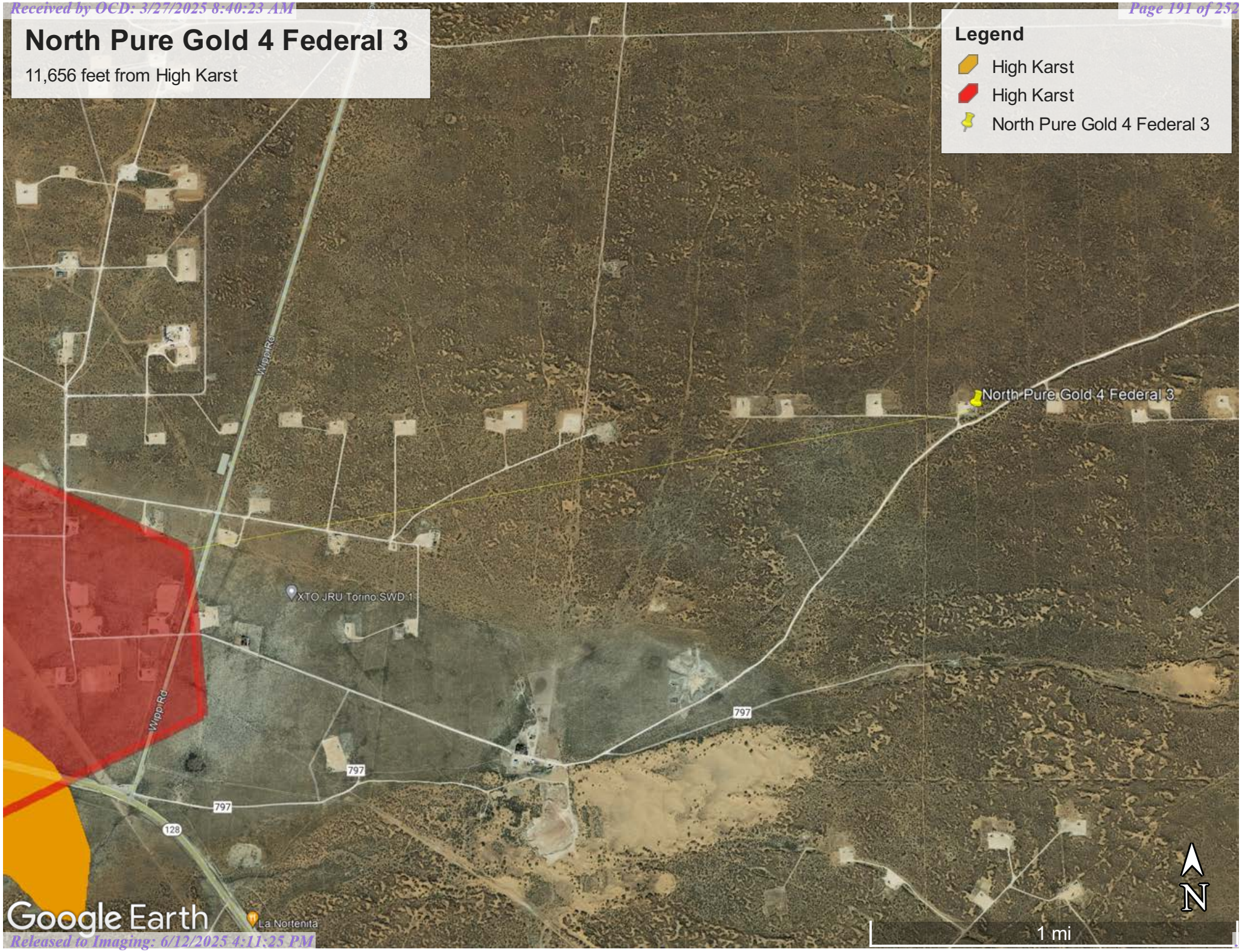
Note: Inset Map, ESRI 2021; Overview Map: ESRI World Topographic. Karst potential data sourced from Rosswell Field Office, Bureau of Land Management, 2020 or United States Department of the Interior, Bureau of Land Management. (2018). Karst Potential.

VERSATILITY. EXPERTISE.

Document Path: \\vtx-s-fs01.corp.internal\shared\vps\04 - Geomatics\1-Projects_US PROJECTS\Devon Energy Corporation\2022\21E-02816 - North Pure Gold 4 Federal #003\Figure X Karst Potential (North Pure Gold 4 Fed 003).mxd

North Pure Gold 4 Federal 3

11,656 feet from High Karst



National Flood Hazard Layer FIRMette

FEMA

103°47'39"W 32°20'39"N

103°47'2"W 32°20'9"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

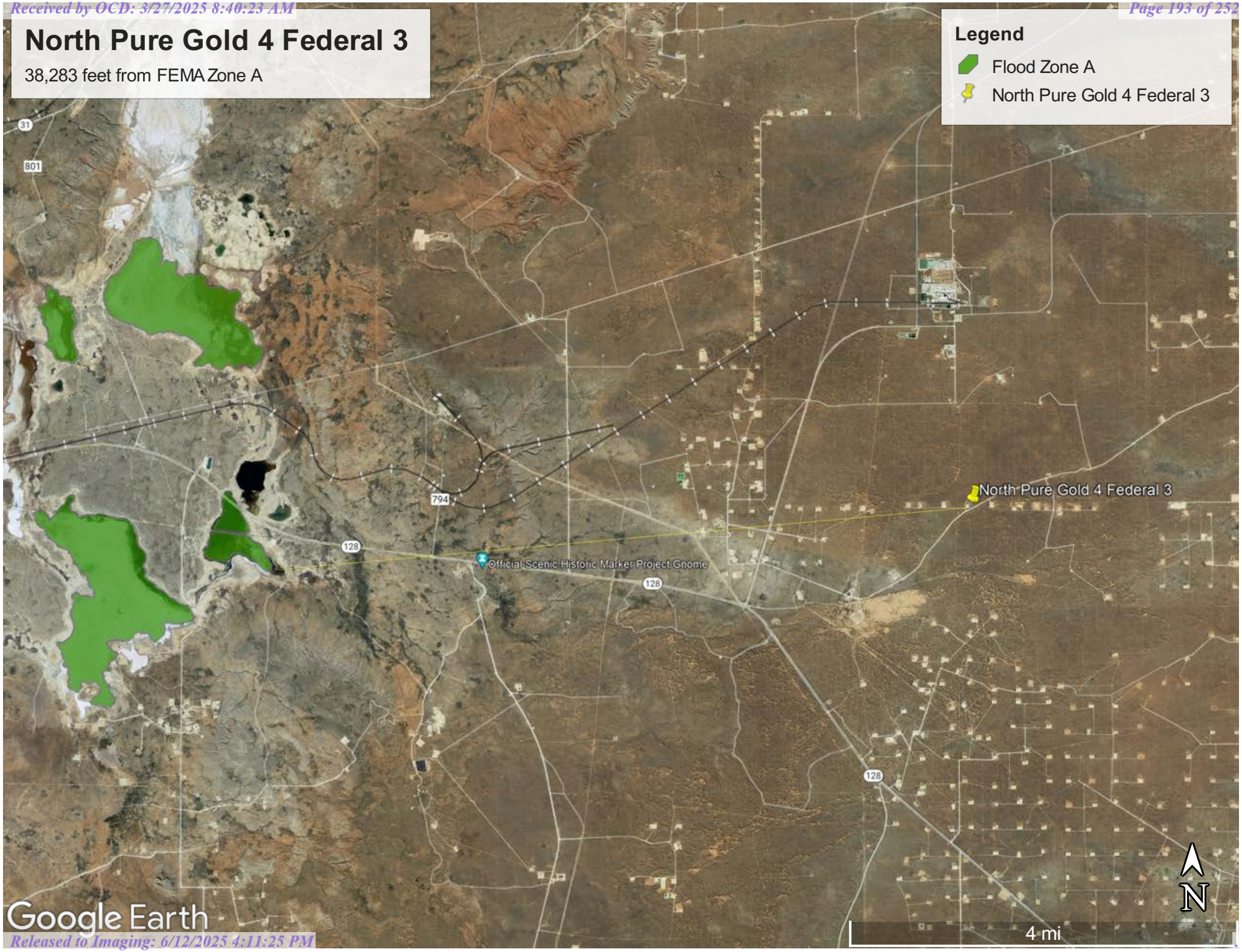
This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 2/23/2023 at 9:32 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

North Pure Gold 4 Federal 3

38,283 feet from FEMA Zone A



United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Eddy Area, New Mexico

February 23, 2023

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 18, Sep 8, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 7, 2020—May 12, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
KM	Kermit-Berino fine sands, 0 to 3 percent slopes	2.0	100.0%
Totals for Area of Interest		**2.0**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Eddy Area, New Mexico

KM—Kermit-Berino fine sands, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 1w4q
Elevation: 3,100 to 4,200 feet
Mean annual precipitation: 10 to 14 inches
Mean annual air temperature: 60 to 64 degrees F
Frost-free period: 190 to 230 days
Farmland classification: Not prime farmland

Map Unit Composition

Kermit and similar soils: 50 percent
Berino and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kermit

Setting

Landform: Plains, alluvial fans
Landform position (three-dimensional): Talf, rise
Down-slope shape: Convex, linear
Across-slope shape: Linear
Parent material: Mixed alluvium and/or eolian sands

Typical profile

H1 - 0 to 7 inches: fine sand
H2 - 7 to 60 inches: fine sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Very high (20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: R070BD005NM - Deep Sand
Hydric soil rating: No

Description of Berino

Setting

Landform: Plains, fan piedmonts
Landform position (three-dimensional): Riser

Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Mixed alluvium and/or eolian sands

Typical profile

H1 - 0 to 17 inches: fine sand
H2 - 17 to 50 inches: fine sandy loam
H3 - 50 to 58 inches: loamy sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Maximum salinity: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Moderate (about 7.2 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: R070BD003NM - Loamy Sand
Hydric soil rating: No

Minor Components

Active dune land

Percent of map unit: 15 percent
Hydric soil rating: No

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

USDA Natural Resources Conservation Service

Ecological site R070BD003NM
Loamy Sand

Accessed: 02/24/2023

General information

Provisional. A provisional ecological site description has undergone quality control and quality assurance review. It contains a working state and transition model and enough information to identify the ecological site.

Figure 1. Mapped extent

Areas shown in blue indicate the maximum mapped extent of this ecological site. Other ecological sites likely occur within the highlighted areas. It is also possible for this ecological site to occur outside of highlighted areas if detailed soil survey has not been completed or recently updated.

Associated sites

R070BD004NM	**Sandy** Sandy
R070BD005NM	**Deep Sand** Deep Sand

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site is on uplands, plains, dunes, fan piedmonts and in inter dunal areas. The parent material consists of mixed alluvium and or eolian sands derived from sedimentary rock. Slope range on this site range from 0 to 9 percent with the average of 5 percent.

Low stabilized dunes may occur occasionally on this site. Elevations range from 2,800 to 5,000 feet.

Table 2. Representative physiographic features

Landforms	(1) Fan piedmont (2) Alluvial fan (3) Dune
Elevation	2,800–5,000 ft
Slope	0–9%
Aspect	Aspect is not a significant factor

Climatic features

The average annual precipitation ranges from 8 to 13 inches. Variations of 5 inches, more or less, are common. Over 80 percent of the precipitation falls from April through October. Most of the summer precipitation comes in the form of high intensity-short duration thunderstorms.
Temperatures are characterized by distinct seasonal changes and large annual and diurnal temperature changes.

The average annual temperature is 61 degrees with extremes of 25 degrees below zero in the winter to 112 degrees in the summer.
The average frost-free season is 207 to 220 days. The last killing frost being late March or early April and the first killing frost being in later October or early November.
Temperature and rainfall both favor warm season perennial plant growth. In years of abundant spring moisture, annual forbs and cool season grasses can make up an important component of this site. Strong winds blow from the southwest from January through June, which accelerates soil drying during a critical period for cool season plant growth.

Climate data was obtained from http://www.wrcc.sage.dri.edu/summary/climsmnm.html web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

Table 3. Representative climatic features

Frost-free period (average)	221 days
Freeze-free period (average)	240 days
Precipitation total (average)	13 in

Influencing water features

This site is not influenced from water from wetlands or streams.

Soil features

Soils are moderately deep or very deep. Surface textures are loamy fine sand, fine sandy loam, loamy very fine sand or gravelly sandy loam.

Subsurface is a loamy fine sand, coarse sandy loam, fine sandy loam or loam that averages less than 18 percent clay and less than 15 percent carbonates.

Substratum is a fine sandy loam or gravelly fine sandy loam with less than 15 percent gravel and with less than 40 percent calcium carbonate. Some layers high in lime or with caliche fragments may occur at depths of 20 to 30 inches.

These soils, if unprotected by plant cover and organic residue, become wind blown and low hummocks are formed.

Minimum and maximum values listed below represent the characteristic soils for this site.

Characteristic soils are:
Maljamar
Berino
Parjarito
Palomas
Wink
Pyote

Table 4. Representative soil features

Surface texture	(1) Fine sand (2) Fine sandy loam (3) Loamy fine sand
Family particle size	(1) Sandy
Drainage class	Well drained to somewhat excessively drained
Permeability class	Moderate to moderately rapid

Soil depth	40–72 in
Surface fragment cover <=3"	0–10%
Surface fragment cover >3"	0%
Available water capacity (0-40in)	5–7 in
Calcium carbonate equivalent (0-40in)	3–40%
Electrical conductivity (0-40in)	2–4 mmhos/cm
Sodium adsorption ratio (0-40in)	0–2
Soil reaction (1:1 water) (0-40in)	6.6–8.4
Subsurface fragment volume <=3" (Depth not specified)	4–12%
Subsurface fragment volume >3" (Depth not specified)	0%

Ecological dynamics

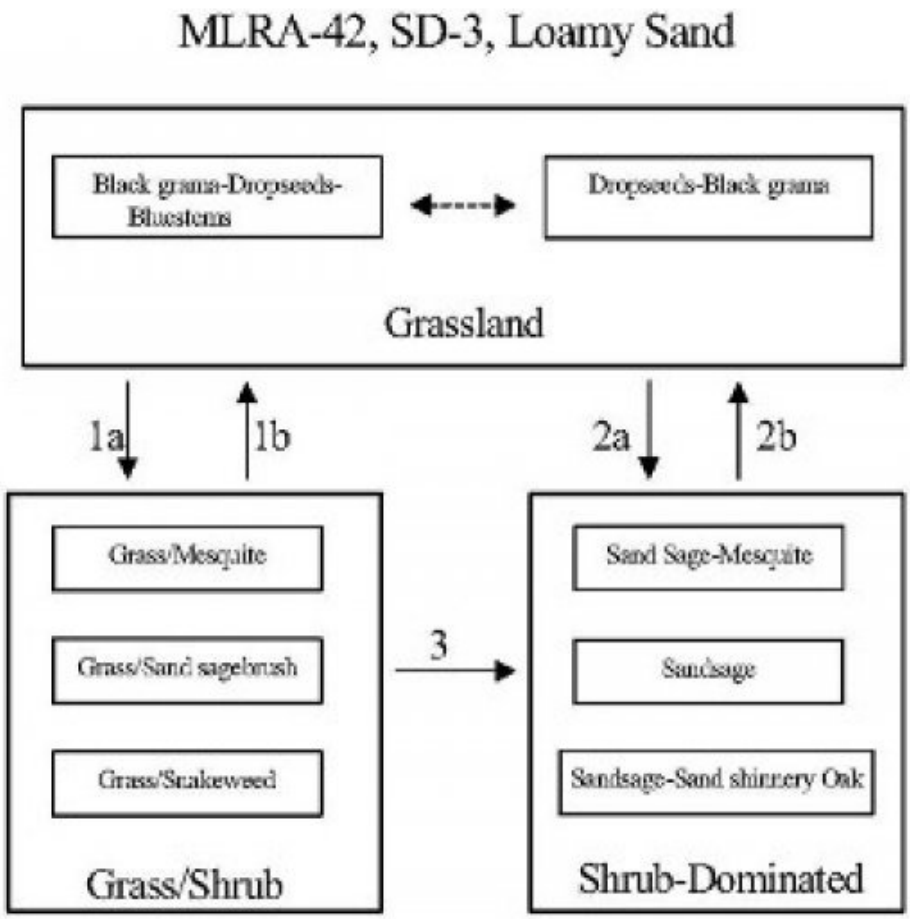
Overview

The Loamy Sand site intergrades with the Deep Sand and Sandy sites (SD-3). These sites can be differentiated by surface soil texture and depth to a textural change. Loamy Sand and Deep Sand sites have coarse textured (sands and loamy sand) surface soils while Sandy sites have moderately coarse textured (sandy loam and fine sandy loam) surfaces. Although Loamy Sand and Deep Sand sites have similar surface textures, the depth to a textural change is different—Loamy Sand sub-surface textures typically increase in clay at approximately 20 to 30 inches, and Deep Sand sites not until around 40 inches.

The historic plant community of Loamy Sand sites is dominated by black grama (*Bouteloua eriopoda*), dropseeds (*Sporobolus flexuosus*, *S. contractus*, *S. cryptandrus*), and bluestems (*Schizachyrium scoparium* and *Andropogon hallii*), with scattered shinnery oak (*Quercus havardii*) and sand sage (*Artemisia filifolia*). Perennial and annual forb abundance and distribution are dependent on precipitation. Litter and to a lesser extent, bare ground, are a significant proportion of ground cover while grasses compose the remainder. Decreases in black grama indicate a transition to either a grass/shrub or shrub-dominated state. The grass/shrub state is composed of grasses/honey mesquite (*Prosopis glandulosa*), grasses/broom snakeweed (*Gutierrezia sarothrae*), or grasses/sand sage. The shrub-dominated state occurs after a severe loss of grass cover and a prevalence of sand sage with secondary shinnery oak and mesquite. Heavy grazing intensity and/or drought are influential drivers in decreasing black grama and bluestems and subsequently increasing shrub cover, erosion, and bare patches. Historical fire suppression also encourages shrub pervasiveness and a competitive advantage over grass species (McPherson 1995). Brush and grazing management, however, may reverse grass/shrub and shrub-dominated states toward the grassland-dominated historic plant community.

State and transition model

Plant Communities and Transitional Pathways (diagram):



1a. Drought, over grazing, fire suppression.
1b. Brush control, prescribed grazing

2.a Severe loss of grass cover, fire suppression, erosion.
2b. Brush control, seeding, prescribed grazing.

3. Continued loss of grass cover, erosion.

State 1
Historic Climax Plant Community

Community 1.1
Historic Climax Plant Community

Grassland: The historic plant community is a uniformly distributed grassland dominated by black grama, dropseeds, and bluestems. Sand sage and shinnery oak are evenly dispersed throughout the grassland due to the coarse soil

surface texture. Perennial and annual forbs are common but their abundance and distribution are reflective of precipitation. Bluestems initially, followed by black grama, decrease with drought and heavy grazing intensity. Historical fire frequency is unknown but likely occurred enough to remove small shrubs to the competitive advantage of grass species. Fire suppression, drought conditions, and excessive grazing drive most grass species out of competition with shrub species. Diagnosis: Grassland dominated by black grama, dropseeds, and bluestems. Shrubs, such as sand sage, shinnery oak, and mesquite are dispersed throughout the grassland. Forbs are present and populations fluctuate with precipitation variability.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	442	833	1224
Forb	110	208	306
Shrub/Vine	98	184	270
Total	**650**	**1225**	**1800**

Table 6. Ground cover

Tree foliar cover	0%
Shrub/vine/liana foliar cover	0%
Grass/grasslike foliar cover	28%
Forb foliar cover	0%
Non-vascular plants	0%
Biological crusts	0%
Litter	50%
Surface fragments >0.25" and <=3"	0%
Surface fragments >3"	0%
Bedrock	0%
Water	0%
Bare ground	22%

Figure 5. Plant community growth curve (percent production by month). NM2803, R042XC003NM-Loamy Sand-HCPC. SD-3 Loamy Sand - Warm season plant community .

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	3	5	10	10	25	30	12	5	0	0

State 2
Grass/Shrub

Community 2.1
Grass/Shrub

Grass/Shrub State: The grass/shrub state is dominated by communities of grasses/mesquite, grasses/snakeweed, or grasses/sand sage. Decreases in black grama and bluestem species lead to an increase in bare patches and mesquite which further competes with grass species. An increase of dropseeds and threeawns occurs. Grass distribution becomes more patchy with an absence or severe decrease in black grama and bluestems. Mesquite provides nitrogen and soil organic matter to co-dominant grasses (Ansley and Jacoby 1998, Ansley et al. 1998). Mesquite mortality when exposed to fire is low due to aggressive resprouting abilities. Herbicide application combined with subsequent prescribed fire may be more effective in mesquite reduction (Britton and Wright 1971). Diagnosis: This state is dominated by an increased abundance of communities including grass/mesquite, grass/snakeweed, or grass/sand sage. Dropseeds and threeawns have a patchy distribution. Transition to Grass/Shrub State (1a): The historic plant community begins to shift toward the grass/shrub state as drivers such as drought, fire suppression, interspecific competition, and excessive grazing contribute to alterations in soil properties and herbaceous cover. Cover loss and surface soil erosion are initial indicators of transition followed by a decrease in black grama with a subsequent increase of dropseeds, threeawns, mesquite, and snakeweed. Snakeweed has been documented to outcompete black grama especially under conditions of fire suppression and drought (McDaniel et al. 1984). Key indicators of approach to transition: • Loss of black grama cover • Surface soil erosion • Bare patch expansion • Increased dropseed/threeawn and mesquite, snakeweed, or sand sage abundances Transition to Historic Plant Community (1b): Brush and grazing management may restore the grassland component and reverse shrub or grass/shrub dominated states back toward the historic plant community.

State 3
Shrub Dominated

Community 3.1
Shrub Dominated

Shrub-Dominated State: The shrub-dominated state results from a severe loss of grass cover. This state's primary species is sand sage. Shinnery oak and mesquite also occur; however, grass cover is limited to intershrub distribution. Sand sage stabilizes light sandy soils from wind erosion, which enhances protected grass/forb cover (Davis and Bonham 1979). However, shinnery oak also responds to the sandy soils with dense stands due to an

aggressive rhizome system. Shinnery oak's extensive root system promotes competitive exclusion of grasses and forbs. Sand sage, shinnery oak, and mesquite can be controlled with herbicide (Herbel et al. 1979, Pettit 1986). Transition to Shrub-Dominated (2a): Severe loss of grass species with increased erosion and fire suppression will result in a transition to a shrub-dominated state with sand sage, Shin oak, and honey mesquite directly from the grassland-dominated state. Key indicators of approach to transition: • Severe loss of grass species cover • Surface soil erosion • Bare patch expansion • Increased sand sage, shinnery oak, and mesquite abundance Transition to Historic Plant Community (2b): Brush and grazing management may restore the grassland component and reverse shrub or grass/shrub dominated states back toward the historic plant community. In addition, seeding with native grass species will augment the transition to a grassland-dominated state. Transition to Shrub-Dominated (3): If the grass/shrub site continues to lose grass cover with soil erosion, the site will transition to a shrub-dominated state with sand sage, shinnery oak, and honey mesquite. Key indicators of approach to transition: • Continual loss of dropseeds/threeawns cover • Surface soil erosion • Bare patch expansion • Increased sand sage, shinnery oak, and mesquite/dropseed/threeawn and mesquite/snakeweed abundance

Additional community tables

Table 7. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
Grass/Grasslike					
1	**Warm Season**			61–123	
	little bluestem	SCSC	*Schizachyrium scoparium*	61–123	–
2	**Warm Season**			37–61	
	sand bluestem	ANHA	*Andropogon hallii*	37–61	–
3	**Warm Season**			37–61	
	cane bluestem	BOBA3	*Bothriochloa barbinodis*	37–61	–
	silver bluestem	BOSA	*Bothriochloa saccharoides*	37–61	–
4	**Warm Season**			123–184	
	black grama	BOER4	*Bouteloua eriopoda*	123–184	–
	bush muhly	MUPO2	*Muhlenbergia porteri*	123–184	–
5	**Warm Season**			123–184	
	thin paspalum	PASE5	*Paspalum setaceum*	123–184	–
	plains bristlegrass	SEVU2	*Setaria vulpiseta*	123–184	–
	fringed signalgrass	URCI	*Urochloa ciliatissima*	123–184	–
6	**Warm Season**			123–184	
	spike dropseed	SPCO4	*Sporobolus contractus*	123–184	–
	sand dropseed	SPCR	*Sporobolus cryptandrus*	123–184	–
	mesa dropseed	SPFL2	*Sporobolus flexuosus*	123–184	–
7	**Warm Season**			61–123	
	hooded windmill grass	CHCU2	*Chloris cucullata*	61–123	–
	Arizona cottontop	DICA8	*Digitaria californica*	61–123	–
9	**Other Perennial Grasses**			37–61	
	Grass, perennial	2GP	*Grass, perennial*	37–61	–
Shrub/Vine					
8	**Warm Season**			37–61	
	New Mexico feathergrass	HENE5	*Hesperostipa neomexicana*	37–61	–
	giant dropseed	SPGI	*Sporobolus giganteus*	37–61	–
10	**Shrub**			61–123	

	sand sagebrush	ARFI2	*Artemisia filifolia*	61–123	–
	Havard oak	QUHA3	*Quercus havardii*	61–123	–
11	**Shrub**			34–61	
	fourwing saltbush	ATCA2	*Atriplex canescens*	37–61	–
	featherplume	DAFO	*Dalea formosa*	37–61	–
12	**Shrub**			37–61	
	jointfir	EPHED	*Ephedra*	37–61	–
	littleleaf ratany	KRER	*Krameria erecta*	37–61	–
13	**Other Shrubs**			37–61	
	Shrub (>.5m)	2SHRUB	*Shrub (>.5m)*	37–61	–
Forb					
14	**Forb**			61–123	
	leatherweed	CRPOP	*Croton pottsii var. pottsii*	61–123	–
	Indian blanket	GAPU	*Gaillardia pulchella*	61–123	–
	globemallow	SPHAE	*Sphaeralcea*	61–123	–
15	**Forb**			12–37	
	woolly groundsel	PACA15	*Packera cana*	12–37	–
16	**Forb**			61–123	
	touristplant	DIWI2	*Dimorphocarpa wislizeni*	61–123	–
	woolly plantain	PLPA2	*Plantago patagonica*	61–123	–
17	**Other Forbs**			37–61	
	Forb (herbaceous, not grass nor grass-like)	2FORB	*Forb (herbaceous, not grass nor grass-like)*	37–61	–

Animal community

This Ecological Site provides habitat which supports a resident animal community that is characterized by pronghorn antelope, desert cottontail, spotted ground squirrel, black-tailed prairie dog, yellow faced pocket gopher, Ord’s kangaroo rat, northern grasshopper mouse, southern plains woodrat, badger, roadrunner, meadowlark, burrowing owl, white necked raven, lesser prairie chicken, morning dove, scaled quail, Harris hawk, side blotched lizard, marbled whiptail, Texas horned lizard, western diamondback rattlesnake, dusty hognose snake and ornate box turtle.
Where mesquite has invaded, most resident birds and scissor-tailed flycatcher, morning dove and Swainson’s hawk, nest. Vesper and grasshopper sparrows utilize the site during migration.

Hydrological functions

The runoff curve numbers are determined by field investigations using hydraulic cover conditions and hydrologic soil groups.
Hydrologic Interpretations
Soil Series Hydrologic Group
Berino B
Kinco A
Maljamar B
Pajarito B
Palomas B
Wink B
Pyote A

Recreational uses

This site offers recreation potential for hiking, borseback riding, nature observation, photography and hunting. During years of abundant spring moisture, this site displays a colorful array of wildflowers during May and June.

Wood products

This site has no potential for wood products.

Other products

This site is suitable for grazing by all kinds and classes of livestock at any time of year. In cases where this site has been invaded by brush species it is especially suited for goats. Mismanagement of this site will cause a decrease in species such as the bluestems, blsck grama, bush muhly, plains bristlegrass, New Mexico feathergrass, Arizona cottontop and fourwing saltbush. A corresponding increase in the dropseeds, windmill grass, fall witchgrass, silver bluestem, sand sagebrush, shinery oak and ephedra will occur. This will also cause an increase in bare ground which will increase soil erodibility. This site will respond well to a system of management that rotates the season of use.

Other information

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month
Similarity Index Ac/AUM
100 - 76 2.3 – 3.5
75 – 51 3.0 – 4.5
50 – 26 4.6 – 9.0
25 – 0 9.1 +

Inventory data references

Data collection for this site was done in conjunction with the progressive soil surveys within the Southern Desertic Basins, Plains and Mountains, Major Land Resource Areas of New Mexico. This site has been mapped and correlated with soils in the following soil surveys. Eddy County, Lea County, and Chaves County.

Other references

Literature Cited:

Ansley, R. J.; Jacoby, P. W. 1998. Manipulation of fire intensity to achieve mesquite management goals in north Texas. In: Pruden, Teresa L.; Brennan, Leonard A., eds. Fire in ecosystem management: shifting the paradigm from suppression to prescription: Proceedings, Tall Timbers fire ecology conference; 1996 May 7-10; Boise, ID. No. 20. Tallahassee, FL: Tall Timbers Research Station: 195-204.

Ansley, R. J.; Jones, D. L.; Tunnell, T. R.; [and others]. 1998. Honey mesquite canopy responses to single winter fires: relation to herbaceous fuel, weather and fire temperature. International Journal of Wildland Fire 8(4):241-252.

Britton, Carlton M.; Wright, Henry A. 1971. Correlation of weather and fuel variables to mesquite damage by fire. Journal of Range Management 24:136-141.

Davis, Joseph H., III and Bonham, Charles D. 1979. Interference of sand sagebrush canopy with needleandthread. Journal of Range Management 32(5):384-386.

Herbel, C. H, Steger, R, Gould, W. L. 1974. Managing semidesert ranges of the Southwest Circular 456. Las Cruces, NM: New Mexico State University, Cooperative Extension Service. 48 p.

McDaniel, Kirk C.; Pieper, Rex D.; Loomis, Lyn E.; Osman, Abdelgader A. 1984. Taxonomy and ecology of perennial snakeweeds in New Mexico. Bulletin 711. Las Cruces, NM: New Mexico State University, Agricultural Experiment Station. 34 p.

McPherson, Guy R. 1995. The role of fire in the desert grasslands. In: McClaran, Mitchel P.; Van Devender, Thomas R., eds. The desert grassland. Tucson, AZ: The University of Arizona Press: 130-151.

Pettit, Russell D. 1986. Sand shinnery oak: control and management. Management Note 8. Lubbock, TX: Texas Tech University, College of Agricultural Sciences, Department of Range and Wildlife Management. 5 p.

Contributors

Don Sylvester
Quinn Hodgson

Rangeland health reference sheet

Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators are typically considered in an assessment. The ecological site(s) representative of an assessment location must be known prior to applying the protocol and must be verified based on soils and climate. Current plant community cannot be used to identify the ecological site.

Author(s)/participant(s)	
Contact for lead author	
Date	
Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:**

2. **Presence of water flow patterns:**

3. **Number and height of erosional pedestals or terracettes:**

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):**

5. **Number of gullies and erosion associated with gullies:**

6. **Extent of wind scoured, blowouts and/or depositional areas:**

7. **Amount of litter movement (describe size and distance expected to travel):**

---

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):**

---

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):**

---

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:**

---

11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):**

---

12. **Functional/Structural Groups (list in order of descending dominance by above-ground annual-production or live foliar cover using symbols: >>, >, = to indicate much greater than, greater than, and equal to):**

    Dominant:

    Sub-dominant:

    Other:

    Additional:

---

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):**

---

14. **Average percent litter cover (%) and depth (in):**

---

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):**

---

16. **Potential invasive (including noxious) species (native and non-native). List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment and growth is not actively controlled by management interventions. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants. Note that unlike other indicators, we are describing what is NOT expected in the reference state for the ecological site:**

---

17. **Perennial plant reproductive capability:**

USDA Natural Resources Conservation Service

Ecological site R070BD005NM
Deep Sand

Accessed: 02/24/2023

General information

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Figure 1. Mapped extent

Areas shown in blue indicate the maximum mapped extent of this ecological site. Other ecological sites likely occur within the highlighted areas. It is also possible for this ecological site to occur outside of highlighted areas if detailed soil survey has not been completed or recently updated.

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site occurs on terraces, Piedmonts, dunes fields, or upland plains. Parent material consists of eolian deposits and alluvium derived from sandstone. Slopes range from 0 to 15 percent, usually less than 5 percent. Low, stabilized hummocks or dunes frequently occur. Elevations range from 2,842 to 4,500 feet.

Table 2. Representative physiographic features

Landforms	(1) Dune (2) Parna dune (3) Terrace
Flooding frequency	None
Ponding frequency	None
Elevation	2,842–4,500 ft
Slope	0–15%
Aspect	Aspect is not a significant factor

Climatic features

The average annual precipitation ranges from 8 to 13 inches. Variations of 5 inches, more or less, are common. Over 80 percent of the precipitation falls from April through October. Most of the summer precipitation comes in the form of high intensity – short duration thunderstorms.

Temperatures are characterized by distinct seasonal changes and large annual and diurnal temperature changes. The average annual temperature is 61 degrees with extremes of 25 degrees below zero in the winter to 112 degrees in the summer.

The average frost-free season is 207 to 220 days. The last killing frost is in late March or early April, and the first killing frost is in late October or early November.

Both temperature and moisture favor warm season perennial plant growth. During years of abundant winter and early spring moisture, cool season growth and annual forbs, make up an important component of this site. Strong winds blow from the west from January through June, which accelerates soil drying during a critical period for cool

season plant growth.

Climate data was obtained from http://www.wrcc.sage.dri.edu/summary/climsmnm.html web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

Table 3. Representative climatic features

Frost-free period (average)	221 days
Freeze-free period (average)	240 days
Precipitation total (average)	13 in

Influencing water features

This site is not influenced from water from wetlands or streams.

Soil features

Soils are deep or very deep. Surface textures are sand loam, fine sand or loamy fine sand, Underlying material textures are loamy fine sand, fine sand, sand or fine sandy loam. Because of the coarse textures and rapid drying of the surface, the soil, if unprotected by plant cover and organic residue, becomes windblown and low hummocks or dunes are formed around shrubs.

Characteristic soils are:
Anthony
Aguena
Kermit
Likes
Pintura
Bluepoint

Table 4. Representative soil features

Surface texture	(1) Sand (2) Fine sand (3) Loamy fine sand
Family particle size	(1) Sandy
Drainage class	Well drained to excessively drained
Permeability class	Moderate to very rapid
Soil depth	60–72 in
Surface fragment cover <=3"	0–5%
Surface fragment cover >3"	0%
Available water capacity (0-40in)	3–5 in
Calcium carbonate equivalent (0-40in)	5–15%
Electrical conductivity (0-40in)	0–4 mmhos/cm
Sodium adsorption ratio (0-40in)	0–2
Soil reaction (1:1 water) (0-40in)	6.6–7.8

Subsurface fragment volume <=3" (Depth not specified)	5–10%
Subsurface fragment volume >3" (Depth not specified)	0%

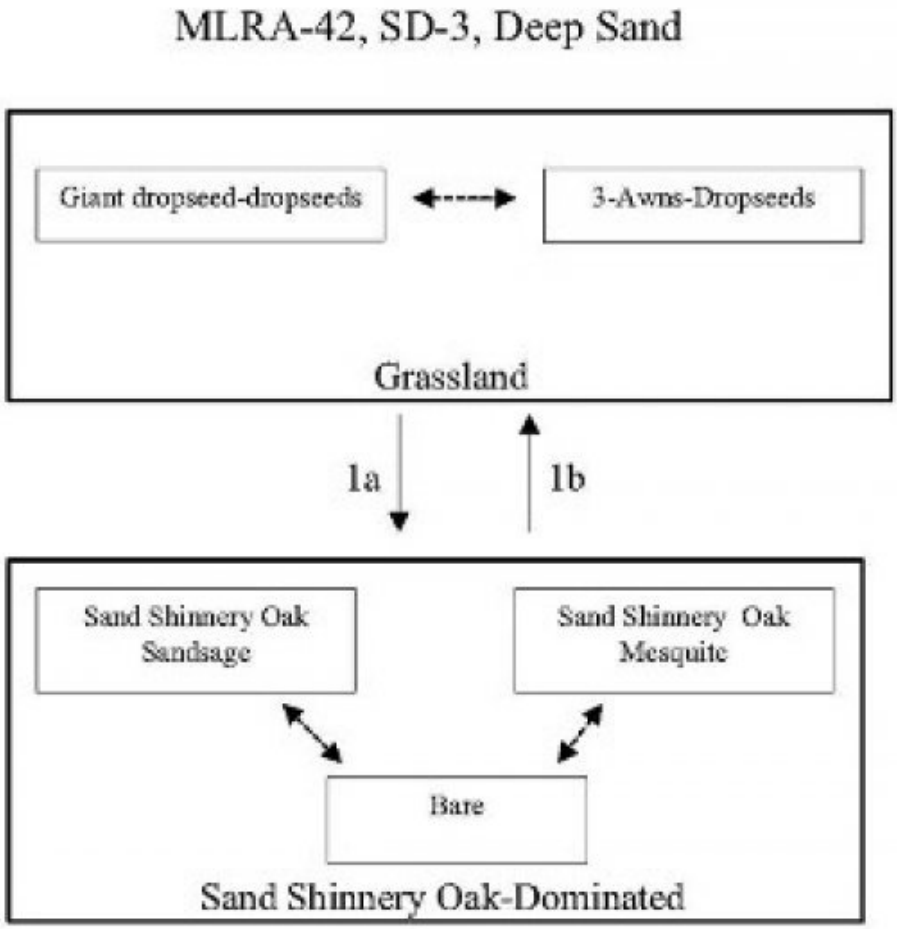
Ecological dynamics

Overview

The Deep Sand site occurs adjacent to and/or intergraded with the Sandhills and Sandy sites (SD-3). The Deep Sand site can be distinguished by slopes less than eight percent (approximately five percent) and textural changes at depths greater than 40 inches. The Deep Sand site has well drained soils with a surface texture of sand or loamy fine sand. The Sandhills site has slopes greater than eight percent and textural depths greater than 60 inches. Conversely, the Sandy site has slopes less than five percent and depths to textural change commonly around 20 inches. The historic plant community of the Deep Sand site is dominated primarily by giant dropseed (*Sporobolus giganteus*) and other dropseeds (*S. flexuosus*, *S. contractus*, *S. cryptandrus*), with scattered shinnery oak (*Quercus havardii*) and soapweed yucca (*Yucca glauca*). Other herbaceous species include threeawns (Aristida spp.), bluestems (*Schizachyrium scoparium* and *Andropogon hallii*), and annual and perennial forbs distributed relative to precipitation occurrences. Bare ground and litter compose a significant proportion of ground cover while grasses are the remainder. Shinnery oak will increase with an associated decrease in dropseed and bluestem abundance possibly due to climatic change, fire suppression, interspecific competition, and excessive grazing. Continued grass cover loss may result in a transition to a shinnery oak dominated state with increases in sand sage (*Artemisia filifolia*) and honey mesquite (*Prosopis glandulosa*). However, brush management may restore the grassland component and reverse the shinnery oak state back toward the historic plant community.

State and transition model

Plant Communities and Transitional Pathways (diagram)



1.a Climate, fire suppression, competition, over grazing

1.b Brush control, Prescribed grazing

State 1
Historic Climax Plant Community

Community 1.1
Historic Climax Plant Community

State Containing Historic Plant Community Grassland: The historic plant community is dominated by giant dropseed, other dropseeds, threeawns, and bluestems. Dominant woody plants include shinnery oak and soapweed yucca. Forb abundance and distribution varies and is dependent on annual rainfall. The Deep Sand site typically exists in sandy plains and dunes (Sosebee 1983). Grass dominance stabilizes the potentially erosive sandy soils. Historical fire suppression, however, may have contributed to increased woody plant abundance, which has reduced grass species. Further, drought conditions compounded with excessive grazing likely has driven most grass species out of competition with shrubs which has resulted in a shinnery oak dominated state with sand sage and mesquite (Young et al. 1948). Diagnosis: Grassland dominated by dropseeds, threeawns, and bluestems. Small shrubs, such as shinnery oak and soapweed yucca, and subshrubs are dispersed throughout the grassland. Other grasses that could appear on this site would include: flatsedge, almejita signalgrass, big bluestem, Indiangrass, fall witchgrass, hairy grama and red lovegrass Other shrubs include: fourwing saltbush, mesquite, ephedra and broom snakeweed. Other forbs include: wooly and scarlet gaura, wooly dalea, phlox heliotrope, scorpionweed, deerstongue, fleabane, nama, hoffmanseggia, lemon beebalm and stickleaf.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	396	858	1320
Shrub/Vine	108	234	360
Forb	96	208	320
Total	**600**	**1300**	**2000**

Table 6. Ground cover

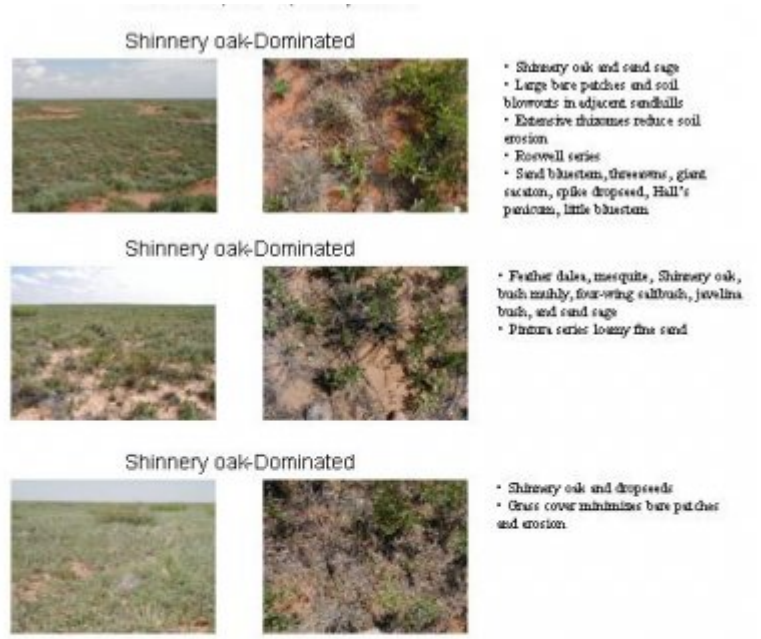
Tree foliar cover	0%
Shrub/vine/liana foliar cover	0%
Grass/grasslike foliar cover	15-20%
Forb foliar cover	0%
Non-vascular plants	0%
Biological crusts	0%
Litter	35-40%
Surface fragments >0.25" and <=3"	0%
Surface fragments >3"	0%
Bedrock	0%
Water	0%
Bare ground	35-40%

Figure 5. Plant community growth curve (percent production by month). NM2805, HCPC. SD-3 Deep Sand - Warm season plant community .

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	3	5	10	10	25	30	12	5	0	0

State 2
Shinnery Oak Dominated

Community 2.1
Shinnery Oak Dominated



Shinnery Oak Dominated: This state is dominated by shinnery oak with subdominants of sand sage or mesquite. Bare ground is a significant component in this state as well. shinnery oak is characterized by dense stands in sandy soils; however, as clay percentage increases, shinnery oak decreases. Shinnery oak abundance and distribution increase with disturbances, such as excessive grazing and fire, due to an aggressive rhizome system. As shinnery oak abundance increases, an associated increase of mesquite, sand sage, and soapweed yucca also occurs. Shinnery oak's extensive root system allows the oak to competitively exclude grasses and forbs. Sand sage, however, stabilizes light sandy soils from wind erosion and can co-exist with herbaceous species by protecting them in heavily grazed conditions (Davis and Bonham 1979). Shinnery oak has been found primarily in very deep, excessively drained, and rapidly permeable soils. Shinnery oak is associated with landforms which are gently undulating to rolling uplands, very gently sloping to moderately steep slopes, and upland plains, alluvial fans and valley sideslopes. Shinnery oak and sand sage can be controlled with herbicide if applied in the spring with a subsequent rest from grazing (Herbel et al. 1979, Pettit 1986). In addition, repetitive seasons of goat browsing can also reduce shinnery oak abundance. Patches should be maintained during brush control, however, to prevent erosion and to provide wildlife cover and forage. Further, as shinnery oak and other shrubs increase, bare patches and erosion will increase due to a lack of herbaceous ground cover. Diagnosis: Shinnery oak dominated with subdominant sand sage, honey mesquite, and soapweed yucca with increasing frequency and size of bare patches. Transition to Shinnery oak dominated state (1a): The historic plant community begins to shift toward the shinnery oak dominated state as drivers such as climate change, fire suppression, interspecific competition, and excessive grazing contribute to alterations in soil properties and herbaceous cover. Cover loss and surface soil erosion are initial indicators of transition followed by an increase of shrub species abundance and bare patch expansion. Key indicators of approach to transition: • Loss of grass and forb cover • Surface soil erosion • Bare patch expansion • Increased shrub species abundance and composition Transition to Historic Plant Community (1b): The shinnery oak dominated state may transition back toward the historic plant community as new drivers are introduced such as prescribed grazing, brush control, and discontinued drought conditions.

Additional community tables

Table 7. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)

Grass/Grasslike					
1	**Warm Season**			450–585	
	spike dropseed	SPCO4	*Sporobolus contractus*	450–585	–
	sand dropseed	SPCR	*Sporobolus cryptandrus*	450–585	–
	mesa dropseed	SPFL2	*Sporobolus flexuosus*	450–585	–
	giant dropseed	SPGI	*Sporobolus giganteus*	450–585	–
2	**Warm Season**			65–104	
	sand bluestem	ANHA	*Andropogon hallii*	65–104	–
	little bluestem	SCSC	*Schizachyrium scoparium*	65–104	–
3	**Warm Season**			39–91	
	threeawn	ARIST	*Aristida*	39–91	–
4	**Warm Season**			13–39	
	thin paspalum	PASE5	*Paspalum setaceum*	13–39	–
5	**Warm Season**			13–39	
	black grama	BOER4	*Bouteloua eriopoda*	13–39	–
6	**Warm Season**			13–39	
	mat sandbur	CELO3	*Cenchrus longispinus*	13–39	–
7	**Warm Season**			13–39	
	Havard's panicgrass	PAHA2	*Panicum havardii*	13–39	–
8	**Warm Season**			13–65	
	plains bristlegrass	SEVU2	*Setaria vulpiseta*	13–65	–
9	**Other Annual Grasses**			13–65	
	Grass, annual	2GA	*Grass, annual*	13–65	–
Shrub/Vine					
10	**Shrub**			65–130	
	Havard oak	QUHA3	*Quercus havardii*	65–130	–
11	**Shrub**			13–39	
	sand sagebrush	ARFI2	*Artemisia filifolia*	13–39	–
12	**Shrub**			65–130	
	yucca	YUCCA	*Yucca*	65–130	–
13	**Shrub**			13–39	
	rabbitbrush	CHRYS9	*Chrysothamnus*	13–39	–
14	**Other Shrubs**			13–39	
	Shrub (>.5m)	2SHRUB	*Shrub (>.5m)*	13–39	–
Forb					
15	**Forb**			39–91	
	croton	CROTO	*Croton*	39–91	–
	Indian blanket	GAPU	*Gaillardia pulchella*	39–91	–
16	**Forb**			39–91	
	aster	ASTER	*Aster*	39–91	–
	whitest evening primrose	OEAL	*Oenothera albicaulis*	39–91	–
	beardtongue	PENST	*Penstemon*	39–91	–
17	**Forb**			39–91	
	touristplant	DIWI2	*Dimorphocarpa wislizeni*	39–91	–

	[illegible]	[illegible]	[illegible]	[illegible]	
	buckwheat	ERIOG	*Eriogonum*	39–91	–
	sunflower	HELIA3	*Helianthus*	39–91	–
	spiny false fiddleleaf	HYSP	*Hydrolea spinosa*	39–91	–
	threadleaf ragwort	SEFLF	*Senecio flaccidus var. flaccidus*	39–91	–
18	**Other Forbs**			13–65	
	Forb (herbaceous, not grass nor grass-like)	2FORB	*Forb (herbaceous, not grass nor grass-like)*	13–65	–

Animal community

This site provides habitat which supports a resident animal population characterized by pronghorn, antelope, black-tailed jackrabbit, spotted ground squirrel, Ord's kangaroo rat, northern grasshopper mouse, southern plains woodrat, badger, meadowlark, roadrunner, white-necked raven, cactus wren, lesser prairie chicken, morning dove, scaled quail, Harris hawk, side blotched lizard, marbled whiptail, Texas horned lizard, western diamondback rattlesnake and ornate box turtle. In the area called Mescalero Sands, there are white-tailed and mule deer.

Hydrological functions

The runoff curve numbers are determined by field investigations using hydraulic cover conditions and hydrologic soil groups.
Hydrologic Interpretations
Soil Series Hydrologic Group
Anthony B
Bluepoint A
Kermit A
Aguena A
Likes A
Pintura A

Recreational uses

This site offers limited recreation potential for hiking, horseback riding, nature observation and photography; game bird, predator, antelope, and deer hunting.

Wood products

This site has no potential for wood products.

Other products

This site is suitable for grazing by all kinds and classes of livestock during all seasons of the year. Shinnery oak is toxic in the late bud or early leaf stage. Shinnery oak will increase, as will sand sagebrush following drought. Changes in the fire return interval have also favored an increase in shrub cover. The dropseeds and bluestem will decrease. This site responds very well to brush manangement and deferment. This site is well suited to a grazing system that rotates the season of use. Nesting habitat for lesser prairie chicken can be improved by providing residual cover that is at least 14 inches high.

Other information

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index Ac/AUM
100 - 76 2.0 – 3.8
75 – 51 3.0 – 6.0

50 – 26 5.0 – 10.0
25 – 0 10.1 +

Inventory data references

Other References:
Data collection for this site was done in conjunction with the progressive soil surveys within the Southern Desertic Basins, Plains and Mountains, Major Land Resource Areas of New Mexico. This site has been mapped and correlated with soils in the following soil surveys. Eddy County, Lea County, and Chaves County.

Other references

Literature Cited

Davis, Joseph H., III and Bonham, Charles D. 1979. Interference of sand sagebrush canopy with needleandthread. Journal of Range Management 32(5):384-386.

Herbel, C. H, Steger, R, Gould, W. L. 1974. Managing semidesert ranges of the Southwest. Circular 456. Las Cruces, NM: New Mexico State University, Cooperative Extension Service. 48 p.

Pettit, Russell D. 1986. Sand shinnery oak: control and management. Management Note 8. Lubbock, TX: Texas Tech University, College of Agricultural Sciences, Department of Range and Wildlife Management. 5 p.

Sosebee, Ronald E. 1983. Physiological, phenological, and environmental considerations in brush and weed control. In: McDaniel, Kirk C., ed. Proceedings--brush management symposium; 1983 February 16; Albuquerque, NM. Denver, CO: Society for Range Management: 27-43.

Young, Vernon A., Anderwald, Frank R.,McCully, Wayne G. 1948. Brush problems on Texas ranges. Miscellaneous Publication 21. College Station, TX: Texas Agricultural Experiment Station. 19 p.

Contributors

Don Sylvester
Quinn Hodgson

Rangeland health reference sheet

Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators are typically considered in an assessment. The ecological site(s) representative of an assessment location must be known prior to applying the protocol and must be verified based on soils and climate. Current plant community cannot be used to identify the ecological site.

Author(s)/participant(s)	
Contact for lead author	
Date	
Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:**

2. **Presence of water flow patterns:**

3. **Number and height of erosional pedestals or terracettes:**

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):**

5. **Number of gullies and erosion associated with gullies:**

6. **Extent of wind scoured, blowouts and/or depositional areas:**

7. **Amount of litter movement (describe size and distance expected to travel):**

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):**

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):**

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:**

11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):**

12. **Functional/Structural Groups (list in order of descending dominance by above-ground annual-production or live foliar cover using symbols: >>, >, = to indicate much greater than, greater than, and equal to):**

    Dominant:

    Sub-dominant:

    Other:

    Additional:

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or**

decadence):

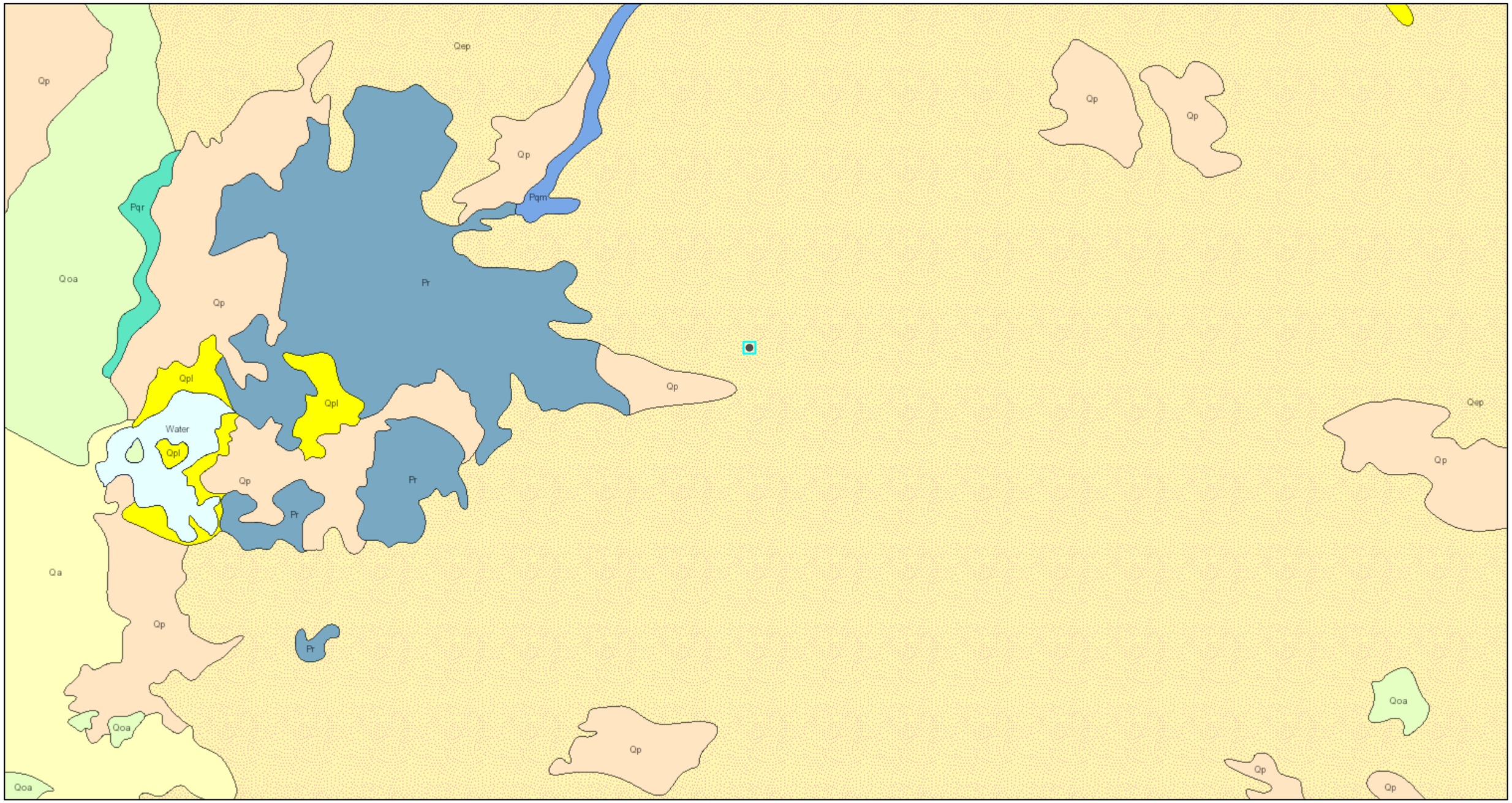
14. **Average percent litter cover (%) and depth (in):**

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):**

16. **Potential invasive (including noxious) species (native and non-native). List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment and growth is not actively controlled by management interventions. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants. Note that unlike other indicators, we are describing what is NOT expected in the reference state for the ecological site:**

17. **Perennial plant reproductive capability:**

ArcGIS Web Map



2/23/2023, 7:18:05 PM

1:144,448

0 1.5 3 6 mi

0 2.5 5 10 km

Lithologic Units

🟦 Playa——Alluvium and evaporite deposits (Holocene)

🟦 Water——Perenial standing water

🟨 Qa——Alluvium (Holocene to upper Pleistocene)

▨ Ql——Landslide deposits and colluvium (Holocene to Pleistocene) — Landslide deposits on western flanks of Socorro Mountains not shown for clarity

🟨 Qpl——Lacustrine and playa deposits (Holocene) — Includes associated alluvial and eolian deposits of major lake basins

🟧 Qp——Piedmont alluvial deposits (Holocene to lower Pleistocene)

🟨 Qe——Eolian deposits (Holocene to middle Pleistocene)

🟨 Qeg——Gypsiferous eolian deposits (Holocene to middle Pleistocene)

Esri, NASA, NGA, USGS, USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census

ArcGIS Web AppBuilder

USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line

ATTACHMENT 6

NM OIL CONSERVATION
ARTESIA DISTRICT
JUL 14 2015
RECEIVED

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

nAB1519733009

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Devon Energy Production 6137	**Contact** Dan Suniga
Address 6488 Seven Rivers Hwy Artesia, NM 88220	**Telephone No.** 575-390-5850
Facility Name North Pure Gold 4 Fed 3	**Facility Type** Oil

Surface Owner Federal	**Mineral Owner** Federal	**API No.** 30-015-35702

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	4	23S	31E	180	FNL	660	FWL	Eddy

Latitude: 32.340135 **Longitude:** 103.788762

NATURE OF RELEASE

Type of Release Spill Fire with 5 BBL oil and 254 BBL of produced water	**Volume of Release** 5 BBL oil & 254 BBL produced water	**Volume Recovered** 2 BBL oil & 400 produced water and water
Source of Release Lightning struck facility and caught battery on fire	**Date and Hour of Occurrence** 7/11/15 at 7:00 am	**Date and Hour of Discovery** 7/11/15 at 7:00 am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	**If YES, To Whom?** Jeff Robertson BLM Mike Bratcher OCD	
By Whom? Ray Carter	**Date and Hour** 7/11/15 at 9:30 am	
Was a Watercourse Reached? ☐ Yes ☒ No	**If YES, Volume Impacting the Watercourse**	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
7/11/15 on the North Pure Gold 4 Fed 3 at 7:00 am the battery caught fire due to lightning. Lease operator called 911 and fire was contained.

Describe Area Affected and Cleanup Action Taken.*
5 BBL of oil and 254 BBL of water was released all in lined containment. Liner will be evaluated once time permits. Facility will need to be rebuilt.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: Jeanette Barron

Printed Name: Jeanette Barron

Title: Field Admin Support

E-mail Address: Jeanette.barron@dvn.com

Date: 7/13/15 Phone: 575.748.1813

OIL CONSERVATION DIVISION

Signed By Mike Bratcher

Approved by Environmental Specialist:

Approval Date: 7/16/15 Expiration Date: N/A

Conditions of Approval: Attached ☐

Remediation per O.C.D. Rules & Guidelines
SUBMIT REMEDIATION PROPOSAL NO LATER THAN: 8/16/15

2RP-3117

* Attach Additional Sheets If Necessary

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	nAB1519733009
District RP	2RP-3117
Facility ID	30-015-35702
Application ID	

Release Notification

Responsible Party

Responsible Party **Harvard Petroleum Company, LLC**	OGRID **10155**
Contact Name **Jeff Harvard**	Contact Telephone **575-208-7135**
Contact email **jharvard@hpcnm.com**	Incident # **NAB1519733009**
Contact mailing address **P.O. Box 936 Roswell, NM 88202**	

Location of Release Source

Latitude **32.339958** Longitude **-103.788999**
(NAD 83 in decimal degrees to 5 decimal places)

Site Name **North Pure Gold 4 Federal #003**	Site Type
Date Release Discovered **July 11, 2015**	API# **30-015-35702**

Unit Letter	Section	Township	Range	County
D	**04**	**23**	**31**	**Eddy**

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (*Name:* _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☒ Crude Oil	Volume Released (bbls) **5**	Volume Recovered (bbls) **2**
☒ Produced Water	Volume Released (bbls) **254**	Volume Recovered (bbls) **400**
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☒ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

7/11/15 on the North Pure Gold 4 Fed 3 at 7:00 am the battery caught fire due to lightning. Lease operator called 911 and fire was contained. 5 BBL of oil and 254 BBL of water was released all in lined containment. Liner will be evaluated once time permits. Facility will need to be rebuilt.

****Rain water and fire department water was added to the produced water resulting in the recovery volume exceeding the released volume.**

State of New Mexico
Oil Conservation Division

Incident ID	nAB1519733009
District RP	2RP-3117
Facility ID	30-015-35702
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? **Release involved fire. Release volume also exceeded 25 bbl.**
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

☒ The source of the release has been stopped.
☒ The impacted area has been secured to protect human health and the environment.
☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Jeff Harvard Title: President and Manager

Signature: _____ Date: _____

email: jharvard@hpcnm.com Telephone: 575-208-7135

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	nAB1519733009
District RP	2RP-3117
Facility ID	30-015-35702
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	**51-100 (ft bgs)**
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
☒ Field data
☒ Data table of soil contaminant concentration data
☒ Depth to water determination
☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
☒ Boring or excavation logs
☒ Photographs including date and GIS information
☒ Topographic/Aerial maps
☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

Incident ID	nAB1519733009
District RP	2RP-3117
Facility ID	30-015-35702
Application ID	

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Jeff Harvard Title: President and Manager

Signature: Date:

email: jharvard@hpcnm.com Telephone: 575-208-7135

OCD Only

Received by: Date:

State of New Mexico
Oil Conservation Division

Incident ID	nAB1519733009
District RP	2RP-3117
Facility ID	30-015-35702
Application ID	

Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be included in the plan.***

☒ Detailed description of proposed remediation technique
☒ Scaled sitemap with GPS coordinates showing delineation points
☒ Estimated volume of material to be remediated
☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
☒ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☐ Extents of contamination must be fully delineated.

☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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Printed Name: Jeff Harvard Title: President and Manager

Signature: _____ Date: _____

email: jharvard@hpcnm.com Telephone: 575-208-7135

OCD Only

Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: _____ Date: _____

ATTACHMENT 7

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER N. Pure Grd 95

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NO. (WELL NO.) C-4772 POD1	WELL TAG ID NO.	OSE FILE NO(S). C04772
WELL OWNER NAME(S) Devon Energy Resources		PHONE (OPTIONAL)
WELL OWNER MAILING ADDRESS 205 E. Bender Road #150		CITY Hobbs / STATE NM / ZIP 88240

WELL LOCATION (FROM GPS)	DEGREES	MINUTES	SECONDS	
LATITUDE	32	20	24.45	N
LONGITUDE	-103	47	23.0748	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND
* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS – PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE

2. DRILLING & CASING INFORMATION

LICENSE NO.	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
1833	Jason Maley	Vision Resources

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
12-18-23	12-18-23	55'	55'	Dry hole

COMPLETED WELL IS: ☐ ARTESIAN *add Centralizer info below ☑ DRY HOLE ☐ SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): N/A

DATE STATIC MEASURED: 12-21-23

DRILLING FLUID: ☑ AIR ☐ MUD ADDITIVES – SPECIFY:

DRILLING METHOD: ☑ ROTARY ☐ HAMMER ☐ CABLE TOOL ☐ OTHER – SPECIFY:

CHECK HERE IF PITLESS ADAPTER IS INSTALLED ☐

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	45'	6"	2" PVC SCH40	Thread	2"	SCH40	N/A
45'	55'	6"	2" PVC SCH40	Thread	2"	SCH40	.02

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL *(if using Centralizers for Artesian wells- indicate the spacing below)	AMOUNT (cubic feet)	METHOD OF PLACEMENT
			None Pulled and plugged		

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 09/22/2022)

FILE NO.	POD NO.	TRN NO.
LOCATION	WELL TAG ID NO.	PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	5'	5'	Red Coarse sand	Y ✓N	
5'	10'	5'	Tan coarse sand	Y ✓N	
10'	55'	45'	Red fine sand with clay	Y ✓N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
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				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:

☐ PUMP ☐ AIR LIFT ☐ BAILER ☐ OTHER – SPECIFY: DRY

TOTAL ESTIMATED WELL YIELD (gpm): N/A

5. TEST; RIG SUPERVISION

WELL TEST — TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION:

PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:

6. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 30 DAYS AFTER COMPLETION OF WELL DRILLING:

Jason Maley — 1/10/24

SIGNATURE OF DRILLER / PRINT SIGNEE NAME — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 09/22/2022)

FILE NO.	POD NO.	TRN NO.	
LOCATION		WELL TAG ID NO.	PAGE 2 OF 2

PLUGGING RECORD

NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC

I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: C-4772

Well owner: Devon Energy Resources Phone No.: _____

Mailing address: 205 E. Bender Road # 150

City: Hobbs State: NM Zip code: 88240

II. WELL PLUGGING INFORMATION:

1) Name of well drilling company that plugged well: Vision Resources

2) New Mexico Well Driller License No.: 1833 Expiration Date: 10-7-25

3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Jason Maley

4) Date well plugging began: 12-22-23 Date well plugging concluded: 12-22-23

5) GPS Well Location: Latitude: 32 deg, 20 min, 24.45 sec
Longitude: -103 deg, 47 min, 23.0748 sec, WGS 84

6) Depth of well confirmed at initiation of plugging as: 55' ft below ground level (bgl), by the following manner: Tape

7) Static water level measured at initiation of plugging: N/A ft bgl

8) Date well plugging plan of operations was approved by the State Engineer: 9-21-23

9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

10) Log of Plugging Activities - Label vertical scale with depths, and indicate separate plugging intervals with horizontal lines as necessary to illustrate material or methodology changes. Attach additional pages if necessary.

For each interval plugged, describe within the following columns:

Depth (ft bgl)	Plugging Material Used (include any additives used)	Volume of Material Placed (gallons)	Theoretical Volume of Borehole/ Casing (gallons)	Placement Method (tremie pipe, other)	Comments ("casing perforated first", "open annular space also plugged", etc.)
0		77.50	77.50	Tremie Pipe open hole	
	Wyoming Bentonite				
55'					

MULTIPLY		BY		AND OBTAIN
cubic feet	x	7.4805	=	gallons
cubic yards	x	201.97	=	gallons

III. SIGNATURE:

I, Jason Maley, say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Signature of Well Driller

4/10/24
Date

Version: September 8, 2009
Page 2 of 2

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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

QUESTIONS

Action 445731

QUESTIONS

Operator: HARVARD PETROLEUM COMPANY, LLC P.O. Box 936 Roswell, NM 88202	OGRID: 10155
	Action Number: 445731
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Prerequisites	
Incident ID (n#)	**nAB1519733009**
Incident Name	**NAB1519733009 NORTH PURE GOLD 4 FED 3 @ 30-015-35702**
Incident Type	**Produced Water Release**
Incident Status	**Remediation Plan Received**
Incident Well	**[30-015-35702] NORTH PURE GOLD 4 FEDERAL #003**

Location of Release Source	
Please answer all the questions in this group.	
Site Name	NORTH PURE GOLD 4 FED 3
Date Release Discovered	07/11/2015
Surface Owner	Federal

Incident Details	
Please answer all the questions in this group.	
Incident Type	Produced Water Release
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release	
Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.	
Crude Oil Released (bbls) Details	Cause: Fire | Tank (Any) | Crude Oil | Released: 5 BBL | Recovered: 2 BBL | Lost: 3 BBL.
Produced Water Released (bbls) Details	Cause: Fire | Tank (Any) | Produced Water | Released: 400 BBL | Recovered: 254 BBL | Lost: 146 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
Condensate Released (bbls) Details	*Not answered.*
Natural Gas Vented (Mcf) Details	*Not answered.*
Natural Gas Flared (Mcf) Details	*Not answered.*
Other Released Details	*Not answered.*
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	*Not answered.*

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QUESTIONS (continued)

Operator: HARVARD PETROLEUM COMPANY, LLC P.O. Box 936 Roswell, NM 88202	OGRID: 10155
	Action Number: 445731
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	**No, according to supplied volumes this does not appear to be a "gas only" report.**
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	**Yes**
Reasons why this would be considered a submission for a notification of a major release	**From paragraph A. "Major release" determine using:** **(1) an unauthorized release of a volume, excluding gases, of 25 barrels or more;** **(2) an unauthorized release of a volume that:** **(a) results in a fire or is the result of a fire.**
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.	

Initial Response	
The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury.	
The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	*Not answered.*
Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.	

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

I hereby agree and sign off to the above statement	Name: Roni Kidd Title: Business Manager Email: rkidd@buckhornproduction.com Date: 03/26/2025

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QUESTIONS (continued)

Operator: HARVARD PETROLEUM COMPANY, LLC P.O. Box 936 Roswell, NM 88202	OGRID: 10155
	Action Number: 445731
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Site Characterization	
Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 51 and 75 (ft.)
What method was used to determine the depth to ground water	Direct Measurement
Did this release impact groundwater or surface water	No
What is the minimum distance, between the closest lateral extents of the release and the following surface areas:	
A continuously flowing watercourse or any other significant watercourse	Between ½ and 1 (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between ½ and 1 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Between 1 and 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between ½ and 1 (mi.)
Any other fresh water well or spring	Between ½ and 1 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between ½ and 1 (mi.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Between 1 and 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Low
A 100-year floodplain	Greater than 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	No

Remediation Plan	
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
Requesting a remediation plan approval with this submission	Yes
Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
Soil Contamination Sampling: (Provide the highest observable value for each, in milligrams per kilograms.)	
Chloride (EPA 300.0 or SM4500 Cl B)	4200
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	166
GRO+DRO (EPA SW-846 Method 8015M)	110
BTEX (EPA SW-846 Method 8021B or 8260B)	0
Benzene (EPA SW-846 Method 8021B or 8260B)	0
Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.	
On what estimated date will the remediation commence	04/15/2025
On what date will (or did) the final sampling or liner inspection occur	07/15/2025
On what date will (or was) the remediation complete(d)	07/15/2025
What is the estimated surface area (in square feet) that will be reclaimed	1083
What is the estimated volume (in cubic yards) that will be reclaimed	161
What is the estimated surface area (in square feet) that will be remediated	1083
What is the estimated volume (in cubic yards) that will be remediated	161
These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.	
The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.	

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QUESTIONS (continued)

Operator: HARVARD PETROLEUM COMPANY, LLC P.O. Box 936 Roswell, NM 88202	OGRID: 10155
	Action Number: 445731
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Remediation Plan (continued)	
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:	
(Select all answers below that apply.)	
(Ex Situ) Excavation and **off-site** disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for **off-site** disposal	HALFWAY DISPOSAL AND LANDFILL [fEEM0112334510]
OR which OCD approved well (API) will be used for **off-site** disposal	*Not answered.*
OR is the **off-site** disposal site, to be used, out-of-state	*Not answered.*
OR is the **off-site** disposal site, to be used, an NMED facility	*Not answered.*
(Ex Situ) Excavation and **on-site** remediation (i.e. On-Site Land Farms)	*Not answered.*
(In Situ) Soil Vapor Extraction	*Not answered.*
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	*Not answered.*
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	*Not answered.*
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	*Not answered.*
Ground Water Abatement pursuant to 19.15.30 NMAC	*Not answered.*
OTHER (Non-listed remedial process)	*Not answered.*
Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
I hereby agree and sign off to the above statement	Name: Roni Kidd Title: Business Manager Email: rkidd@buckhornproduction.com Date: 03/26/2025
The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.	

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QUESTIONS (continued)

Operator: HARVARD PETROLEUM COMPANY, LLC P.O. Box 936 Roswell, NM 88202	OGRID: 10155
	Action Number: 445731
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Deferral Requests Only *Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.*	
Requesting a deferral of the remediation closure due date with the approval of this submission	No

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QUESTIONS (continued)

Operator: HARVARD PETROLEUM COMPANY, LLC P.O. Box 936 Roswell, NM 88202	OGRID: 10155
	Action Number: 445731
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	***{Unavailable.}***

Remediation Closure Request	
Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.	
Requesting a remediation closure approval with this submission	No

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CONDITIONS

Operator: HARVARD PETROLEUM COMPANY, LLC P.O. Box 936 Roswell, NM 88202	OGRID: 10155
	Action Number: 445731
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

CONDITIONS

Created By	Condition	Condition Date
scott.rodgers	The Remediation Plan is Conditionally Approved. All samples must be analyzed for all constituents listed in Table I of 19.15.29.12 NMAC. Floor confirmation samples should be delineated/excavated to meet closure criteria standards for site assessment/characterization/proven depth to water determination. Sidewall samples should be delineated/excavated to 600 mg/kg for chlorides and 100 mg/kg for TPH to define the edge of the release. Confirmation samples should be collected every 200 ft2. The work will need to occur in 90 days after the work plan has been reviewed.	6/12/2025