Form C-141
Page 6

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2209639601
District RP	
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: ***Each of the following items must be included in the closure report.***

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Chase Settle Title: Rep Safety & Environmental Sr

Signature: Chase Settle Date: 06/29/2022

email: Chase_Settle@eogresources.com Telephone: 575-748-1471

OCD Only

Received by: Robert Hamlet Date: 11/2/2022

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Robert Hamlet Date: 11/2/2022

Printed Name: Robert Hamlet Title: Environmental Specialist - Advanced

June 24, 2022 Vertex Project #: 22E-00345

Spill Closure Report: Avalanche Journal State #1
Unit F, Section 04, Township 08 South, Range 27 East
County: Chaves
API: 30-005-10463
Tracking Number: nAPP2209639601

Prepared For: EOG Resources, Inc.
104 South 4th Street
Artesia, New Mexico 88210

New Mexico Oil Conservation Division – District 2 – Artesia
811 South 1st Street
Artesia, New Mexico 88210

EOG Resources, Inc., (EOG) retained Vertex Resource Services Inc. (Vertex) to conduct a spill assessment and remediation for historical crude oil and produced water releases that occurred at Avalanche Journal State #1 (hereafter referred to as "Avalanche #1"). EOG provided notification of the historical impacts to New Mexico Oil Conservation Division (NMOCD) District 2 and the New Mexico State Land Office (NMSLO), who own the property, on April 6, 2022, via the initial C-141 Release Notification (Attachment 1). The NMOCD tracking number assigned to this incident is nAPP2209639601.

This letter provides a description of the spill assessment and remediation activities and demonstrates that closure criteria established in 19.15.29.12 *New Mexico Administrative Code* (NMAC; New Mexico Oil Conservation Division, 2018) have been met and all applicable regulations are being followed. This document is intended to serve as a final report to obtain approval from NMOCD for closure of this release.

Incident Description

The Avalanche #1 site was owned and operated by Escudilla Oil Company prior to the time of abandonment. EOG was contacted by the NMSLO due to a past vested interest and stake regarding the Avalanche Journal State #001 and other wells in the immediate area. Escudilla Oil Company did not report any releases at the location during their tenure operating the site.

On April 5, 2022, Vertex investigated the reported presence of historical crude oil and produced water impacts at Avalanche #1 for EOG. An impacted area was observed approximately 230 feet south-southwest of the former well, along a former flowline path. The exact volumes of crude oil and produced water released were unknown, as were the release dates. No oil was released into undisturbed areas or waterways based on observations made in the field. The impacted area was determined to be definitively historical based on the hardening of surface deposits into asphaltene. Impacts assessed on the surface were deemed substantial enough to effectively quantify that a reportable release had occurred. Characterization of the site was performed thereafter to determine the horizontal and vertical extent of the contamination.

Site Characterization

The release at Avalanche #1 occurred on state-owned land, N 33.65041, W 104.20114, approximately 22 miles northeast of Roswell, New Mexico. The legal description for the site is Unit F, Section 04, Township 08 South, Range 27 East, Chaves County, New Mexico. This location is within the Permian Basin in southeast New Mexico and has historically been used for oil and gas exploration and production, and rangeland. An aerial photograph and site schematic are included in Attachment 2.

Avalanche #1 is typical of oil and gas exploration and production sites in the western portion of the Permian Basin and was used for oil and gas production. The following sections specifically describe the area in which the Avalanche #1 release is located.

The surrounding landscape is associated with terraces typical of elevations of 2,500 to 5,300 feet above sea level. The climate is semi-arid, with average annual precipitation ranging between 10 and 17 inches. Historically, the plant community was dominated by grasses, which stabilized the potentially erosive sandy soils; however, more recent conditions, resulting from fire suppression and extensive grazing, show increased woody plant abundance. The dominant grass species are blue grama and black grama, with scattered yucca, sand sage, and mesquite. Short grasses are a significant proportion of ground cover while shrubs, litter and, to a lesser extent, bare ground compose the remainder (United States Department of Agriculture, Natural Resources Conservation Service, 2022).

The *Geological Map of New Mexico* indicates the surface geology at Avalanche #1 is comprised of Qep – eolian and piedmont deposits that include eolian sands interlaid with piedmont-slope deposits (New Mexico Bureau of Geology and Mineral Resources, 2022). The Natural Resources Conservation Service *Web Soil Survey* characterizes the soil at the site as Ratliffe-Redona association, characterized by fine sandy loam and sandy clay loam soil. It tends to be well-drained with negligible to low runoff and moderate to high available moisture levels in the soil profile (United States Department of Agriculture, Natural Resources Conservation Service, 2022). There is medium potential for karst geology to be present near Avalanche #1, though some erosional karst is possible (United States Department of the Interior, Bureau of Land Management, 2018).

There is no surface water located at Avalanche #1. The nearest significant watercourse, as defined in Subsection P of 19.15.17.7 NMAC, is an intermittent stream located approximately 2,137 feet southwest of the site. A freshwater stock pond is located approximately 4,086 feet west of the release site (United States Fish and Wildlife Service, 2022). At Avalanche #1, there are no continuously flowing watercourses, lakebeds, sinkholes, playa lakes, or other critical water or community features nearby as outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC.

The nearest active well to Avalanche #1 is a New Mexico Office of the State Engineer-identified livestock water well, located approximately 1,646 feet southeast of the site. The nearest well with a depth to groundwater reference is a livestock and irrigation water well from 2001 located approximately 0.76 miles southwest of the site. The recorded depth to groundwater at that location was 87 feet below ground surface (bgs; New Mexico Office of the State Engineer, New Mexico Water Rights Reporting System, 2022). Documentation pertaining to site characterization and depth to groundwater determination is included in Attachment 3.

Closure Criteria Determination

Using site characterization information, a closure criteria determination worksheet (Attachment 3) was completed to determine if the release was subject to any of the special case scenarios outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC.

Based on data included in the closure criteria determination worksheet, the historical release at Avalanche #1 is not subject to the requirements of Paragraph (4) of Subsection C of 19.15.29.12 NMAC. The depth to groundwater reference exceeded 0.5 miles from the release area and the release is outside of the lease boundary, therefore the closure criteria for remediation and reclamation of the site was determined to be associated with the strictest constituent concentration limits presented in Table 1.

Table 1. Closure Criteria for Soils Impacted by a Release

Minimum depth below any point within the horizontal boundary of the release to ground water less than 10,000 mg/l TDS[1]	Constituent	Limit
<50 feet	Chloride	600 mg/kg
	TPH[2] (GRO + DRO + MRO)	100 mg/kg
	BTEX[3]	50 mg/kg
	Benzene	10 mg/kg

[1]Total Dissolved Solids (TDS)
[2]Total petroleum hydrocarbons (TPH) = gasoline range organics (GRO) + diesel range organics (DRO) + motor oil range organics (MRO)
[3]Benzene, toluene, ethylbenzene and xylenes (BTEX)

Remedial Actions

Initial spill inspection and site characterization activities at Avalanche #1 were completed by Vertex between March 5, 2022, and May 9, 2022, including vertical and horizontal delineation. The daily field reports and field screening data associated with the site visits are included in Attachment 4. Using initial field screening and soil sample laboratory data as presented in Table 2 (Attachment 5), the historically impacted area was delineated horizontally as presented in Figure 1 (Attachment 2).

Starting on May 13, 2022, Vertex supervised excavation of contaminated material starting at the west edge of the release area. A Vertex representative was on-site to conduct excavation side wall field screening to guide and extend the excavation as needed to adhere to NMOCD reclamation requirements (strictest criteria). The west edge of excavation was 6 feet in depth. Proceeding east the excavation the depth gradually increased to 12 feet bgs before sloping up to 5 feet bgs on the east end. The final excavation depth ranged between 5 and 12 feet, with gradual transitioning slopes minimizing the need for additional interior wall excavation samples.

On May 12 and May 19, 2022, EOG provided 48-hour notification of confirmation sampling to NMOCD (Attachment 6), as required by Subparagraph (a) of Paragraph (1) of Subsection D 19.15.29.12 NMAC. Vertex collected a total of 42 confirmatory samples from the walls of the outer edge of the excavation, and four confirmatory wall samples from the steepest changes in slope within the interior of the excavation. Vertex collected 48 confirmatory excavation base samples from the base of the excavation.

On May 26, 2022, excavation was completed with approximately 2,352 total yards transferred to Gandy Marley landfill for disposal. The total surface area of the excavation walls was approximately 4,230 square feet, and the total surface area of the excavation base was 5,989 square feet. All confirmatory samples were collected as five-point composites. Each composite sample was representative of no more than 200 square feet per the alternate sampling method outlined in Subparagraph (c) of Paragraph (1) of Subsection D 19.15.29.12 NMAC, which does not require prior NMOCD approval. The composite samples were placed into laboratory-provided containers, preserved on ice, and submitted to a National Environmental Laboratory Accreditation Program (NELAP)-approved laboratory for chemical analysis.

Laboratory analyses included Method 300.0 for chlorides, Method 8021B for volatile organics, including BTEX, and EPA Method 8015 for TPH, including MRO, DRO and GRO. Confirmatory sample analytical data are summarized in Table 3 (Attachment 5). Laboratory data reports and chain of custody forms are included in Attachment 7.

A GeoExplorer 7000 Series Trimble global positioning system (GPS) unit, or equivalent, was used to map the approximate center of each of the five-point composite samples. The confirmatory sample locations and final horizontal extents of the excavation are presented in Figure 2 (Attachment 2).

Closure Request

Vertex recommends no additional reclamation or remediation actions to address the release at Avalanche #1. Due to the sensitive nature of the release site, the excavation was left open until confirmation of closure by the NMOCD. Pending closure, the excavation will be backfilled with non-waste-containing, uncontaminated, earthen material, sourced locally and placed to meet the site's existing grade to prevent ponding of water and erosion. The site will then be subsequently ripped and seeded with the appropriate mixture to complete the associated reclamation requirements under NMAC 19.15.29.13.

Laboratory analyses of the confirmatory samples showed constituent of concern concentration levels below NMOCD closure criteria for areas where depth to groundwater is less than 50 feet bgs as shown in Table 1. There are no anticipated risks to human, ecological or hydrological receptors associated with the release site.

Vertex requests that this incident (nAPP2209639601) be closed as all closure requirements set forth in Subsection E of 19.15.29.12 NMAC have been met. EOG certifies that all information in this report and the attachments is correct, and that they have complied with all applicable closure requirements and conditions specified in Division rules and directives to meet NMOCD requirements to obtain closure on the historical releases at Avalanche #1.

Should you have any questions or concerns, please do not hesitate to contact the undersigned at 575.988.2681 or mmoffitt@vertex.ca.

Lakin Pullman

Lakin Pullman, B.Sc.
ENVIRONMENTAL TECHNICIAN, REPORTING

June 24, 2022
Date

Michael Moffitt

Michael Moffitt, B.Sc.
PROJECT MANAGER, REPORT REVIEW

June 24, 2022
Date

Attachments

Attachment 1. NMOCD C-141 Initial Notification
Attachment 2. Site Schematic and Initial Characterization and Confirmatory Sample Locations
Attachment 3. Closure Criteria for Soils Impacted by a Release Research Determination Documentation
Attachment 4. Daily Field Reports with Photographs
Attachment 5. Characterization and Confirmatory Sampling Laboratory Results
Attachment 6. Required 48-hr Notification of Confirmatory Sampling to Regulatory Agencies
Attachment 7. Laboratory Data Reports and Chain of Custody Forms

References

New Mexico Bureau of Geology and Mineral Resources. (2022). *Interactive Geologic Map.* Retrieved from http://geoinfo.nmt.edu.

New Mexico Office of the State Engineer, New Mexico Water Rights Reporting System. (2022). *Water Column/Average Depth to Water Report.* Retrieved from http://nmwrrs.ose.state.nm.us/nmwrrs/waterColumn.html.

New Mexico Oil Conservation Division. (2018). *New Mexico Administrative Code – Natural Resources and Wildlife Oil and Gas Releases*. Santa Fe, New Mexico.

United States Department of Agriculture, Natural Resources Conservation Service. (2022). *Web Soil Survey*. Retrieved from https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx.

United States Department of the Interior, Bureau of Land Management. (2018). *CFO Karst Public*. https://www.nm.blm.gov/shapeFiles/cfo/carlsbad_spatial_data.html

United States Fish and Wildlife Service. (2022). *National Wetlands Inventory*. Retrieved from https://www.fws.gov/wetlands/data/Mapper.html.

Limitations

This report has been prepared for the sole benefit of EOG Resources, Inc. (EOG). This document may not be used by any other person or entity, with the exception of the New Mexico Oil Conservation Division, without the express written consent of Vertex Resource Services Inc. (Vertex) and EOG. Any use of this report by a third party, or any reliance on decisions made based on it, or damages suffered as a result of the use of this report are the sole responsibility of the user.

The information and conclusions contained in this report are based upon work undertaken by trained professional and technical staff in accordance with generally accepted scientific practices current at the time the work was performed. The conclusions and recommendations presented represent the best judgement of Vertex based on the data collected during the assessment. Due to the nature of the assessment and the data available, Vertex cannot warrant against undiscovered environmental liabilities. Conclusions and recommendations presented in this report should not be considered legal advice.

ATTACHMENT 1

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	nAPP2209639601
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party EOG Resources, Inc.	OGRID 7377
Contact Name Chase Settle	Contact Telephone 575-748-1471
Contact email Chase_Settle@eogresources.com	Incident # *nAPP2209639601*
Contact mailing address 104 S. 4th Street, Artesia, NM 88210	

Location of Release Source

Latitude 33.65040 Longitude -104.20114
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Avalanche Journal State #1	Site Type Flowline
Date Release Discovered 04/05/2022	API# *30-005-10463*

Unit Letter	Section	Township	Range	County
F	4	8S	27E	Chaves

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) Unknown	Volume Recovered (bbls) 0
☑ Produced Water	Volume Released (bbls) Unknown	Volume Recovered (bbls) 0
	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

This site was owned and operated by a defunct operator at the time of it's abandonment, however EOG Resources, Inc. was still the lease holder on record. There are historical impacts present along the flowline, the environmental consultant that has been retained to complete the remediation believes that the release volume most likely breached the reportable threshold based on analytical data collected and historical imagery. Notification was recieved from the consultant on April 5, 2022.

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2209639601
District RP	
Facility ID	
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?
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.

Type text here

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: Chase Settle
Title: Rep Safety & Environmental Sr

Signature: Chase Settle
Date: 04/06/2022

email: Chase_Settle@eogresources.com
Telephone: 575-748-1471

OCD Only

Received by: Jocelyn Harimon
Date: 04/06/2022

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2209639601
District RP	
Facility ID	
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?	<50 (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.

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2209639601
District RP	
Facility ID	
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: Chase Settle Title: Rep Safety & Environmental Sr

Signature: Chase Settle Date: 06/29/2022

email: Chase_Settle@eogresources.com Telephone: 575-748-1471

OCD Only

Received by: _____ Date: _____

Incident ID	nAPP2209639601
District RP	
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: ***Each of the following items must be included in the closure report.***

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Chase Settle Title: Rep Safety & Environmental Sr

Signature: Chase Settle Date: 06/29/2022

email: Chase_Settle@eogresources.com Telephone: 575-748-1471

OCD Only

Received by: _____ Date: _____

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

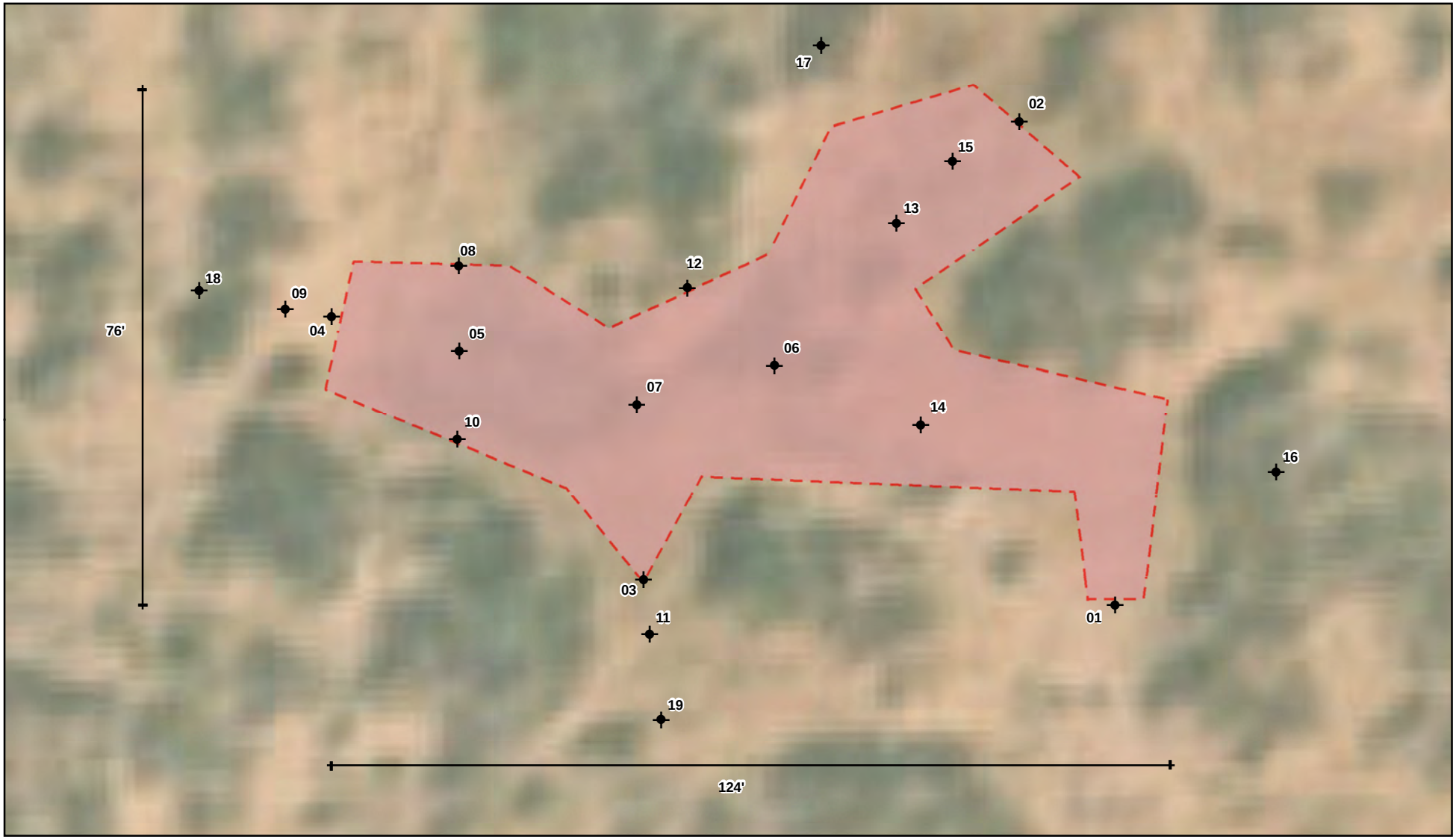
CONDITIONS

Operator: EOG RESOURCES INC P.O. Box 2267 Midland, TX 79702	OGRID: 7377
	Action Number: 96535
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jharimon	When submitting future reports regarding this release, please submit the calculations used or specific justification for the volumes reported on the initial C-141	4/6/2022

ATTACHMENT 2



Borehole (Prefixed by "BH22-")

Approximate Release Area (~4,003 sq. ft.)

VERTEX

0 7.5 15 30 ft.

Map Center:
Lat/Long: 33.650353, -104.200975

NAD 1983 UTM Zone 13N

Date: Jun 10/22

N

Characterization Sample Locations
Avalanche Journal State #1

FIGURE: 1

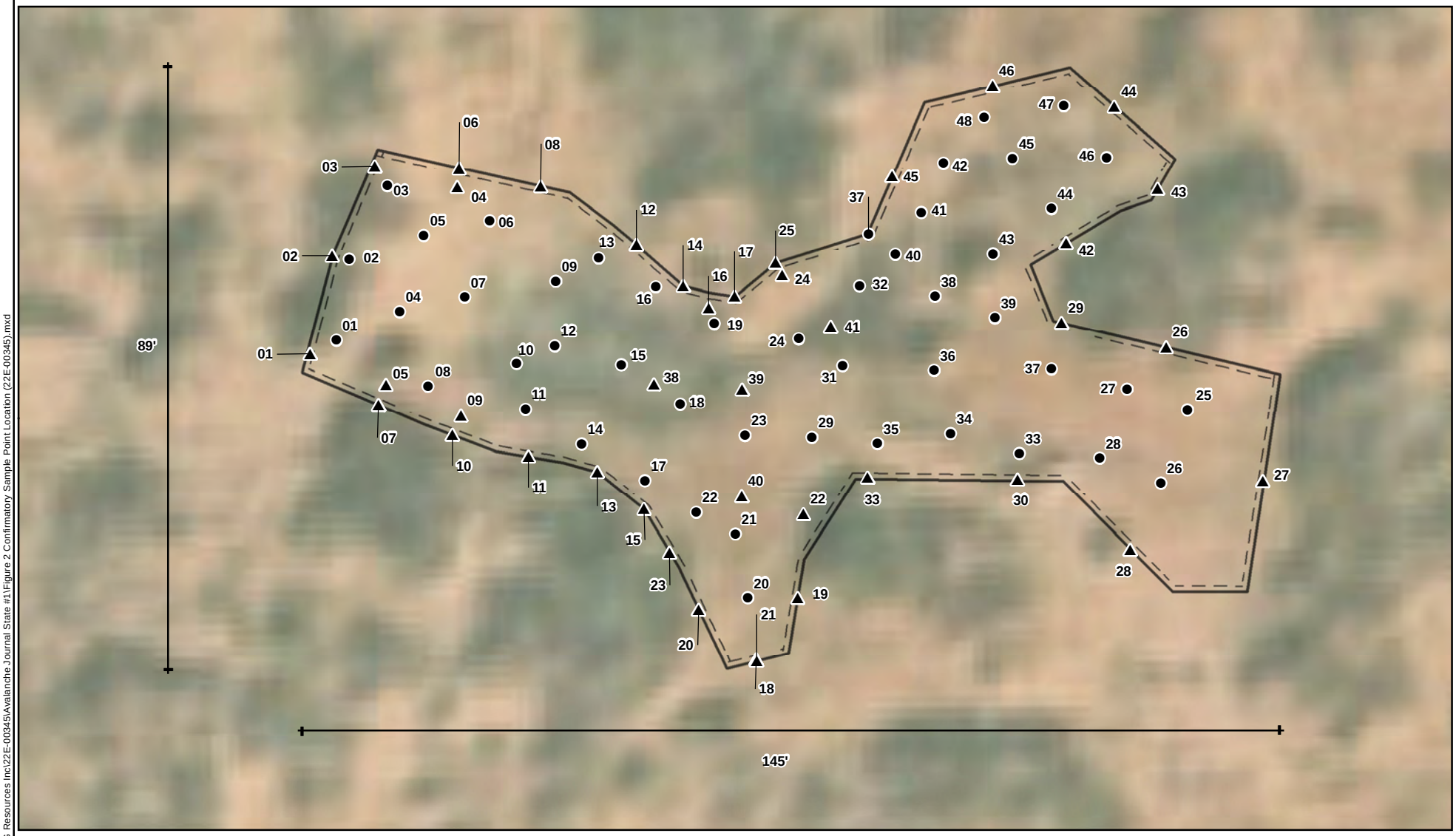
eog resources

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 image from Esri., 2021. Borehole locations and approximate release boundary from GPS., Vertex Professional Services., 2022.

VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects_US PROJECT S\EOG Resources Inc\22E-00345\Avalanche Journal State #1\Figure 1 Characterization Sample Point Location (22E-00345).mxd



● Base Sample (Prefixed by "BES22-")

▲ Wall Sample (Prefixed by "WES22-")

Excavation Area (~5,989 sq. ft.)

VERTEX

0 7.5 15 30 ft.

Map Center:
Lat/Long: 33.650346, -104.201020

NAD 1983 UTM Zone 13N

Date: Jun 13/22

N

Confirmatory Sample Locations
Avalanche Journal State #1

FIGURE:
2

eog resources

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 image from Esri., 2021. Feature locations from GPS., Vertex Professional Services., 2022.

VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects_US PROJECT S\EOG Resources Inc\22E-00345\Avalanche Journal State #1\Figure 2 Confirmatory Sample Point Location (22E-00345).mxd

ATTACHMENT 3

Closure Criteria Worksheet				
Site Name: Avalanche Journal State #1				
Spill Coordinates:		X: 33.65041	Y: -104.20114	
Site Specific Conditions		Value	Unit	Reference
1	Depth to Groundwater	**87**	feet	1
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	2,137	feet	2
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	4,086	feet	3
4	Within 300 feet from an occupied residence, school, hospital, institution or church	28,600	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**	1,646	feet	5
	ii) Within 1000 feet of any fresh water well or spring	1,646	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	7,689	feet	7
8	Within the area overlying a subsurface mine	No	(Y/N)	8
9	Within an unstable area (Karst Map)	Medium	Critical High Medium Low	9
10	Within a 100-year Floodplain	500	year	10
11	Soil Type	fine sandy loam, sandy clay loam, clay loam		11
12	Ecological Classification	Sandy loam 12-18 inches precipitation		12
13	Geology	Eolian and piedmont deposits		13
NMAC 19.15.29.12 E (Table 1) Closure Criteria		<50'	<50' 51-100' >100'	

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	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
RA 09960		RA	CH		4	2	05	08S	27E	573393	3723707*	682	265		
RA 11697 POD1		RA	CH	2	1	1	09	08S	27E	573916	3722682	1010	250		
RA 11696 POD1		RA	CH	2	1	1	09	08S	27E	573938	3722600	1088	250		
RA 08112		RA	LI	2	1	1	09	08S	27E	573900	3722599*	1096	670	564	106
RA 08212		RA	CH	2	1	1	09	08S	27E	573900	3722599*	1096	220		
RA 11698 POD1		RA	CH	2	1	1	09	08S	27E	573820	3722600	1110	250		
RA 10050		RA	CH	2	2	2	08	08S	27E	573498	3722597*	1228	240	87	153
RA 08555		RA	CH	4	2	1	05	08S	27E	572685	3724003*	1426	290	196	94
RA 13051 POD1		RA	CH	1	4	4	12	08S	26E	570102	3721365	4598	300		

Average Depth to Water: **282 feet**
Minimum Depth: **87 feet**
Maximum Depth: **564 feet**

Record Count: 9

UTMNAD83 Radius Search (in meters):

Easting (X): 574075 **Northing (Y):** 3723681 **Radius:** 5000

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

5/2/22 10:42 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER

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	Twn	Rng	X	Y
	RA 10050	2	2	2	08	08S	27E	573498	3722597*

Driller License: 555 **Driller Company:** L & C DRILLING COMPANY

Driller Name: PARNELL, LLOYD

Drill Start Date:	05/23/2001	**Drill Finish Date:**	05/30/2001	**Plug Date:**	
Log File Date:	02/19/2002	**PCW Rcv Date:**		**Source:**	Shallow
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	
Casing Size:	8.63	**Depth Well:**	240 feet	**Depth Water:**	87 feet

Water Bearing Stratifications:	Top	Bottom	Description
	180	240	Shallow Alluvium/Basin Fill

Casing Perforations:	Top	Bottom
	195	235

Meter Number:	4856	**Meter Make:**	HERSEY
Meter Serial Number:	0104944	**Meter Multiplier:**	1000.0000
Number of Dials:	6	**Meter Type:**	Diversion
Unit of Measure:	Gallons	**Return Flow Percent:**	
Usage Multiplier:		**Reading Frequency:**	

Meter Readings (in Acre-Feet)

Read Date	Year	Mtr Reading	Flag	Rdr	Comment	Mtr Amount	Online
11/08/2001	2001	0	A	CH	initial reading	0	
11/08/2001	2001	221033	A	CH		67.833	
02/25/2002	2002	306878	A	RPT	rpt by Eric Gibson	26.345	
02/25/2002	2002	0	A	CH		0	
03/22/2002	2002	848	A	MB		2.603	
04/24/2002	2002	1933	A	AM		3.330	

**YTD Meter Amounts:	Year	Amount
	2001	67.833
	2002	32.278

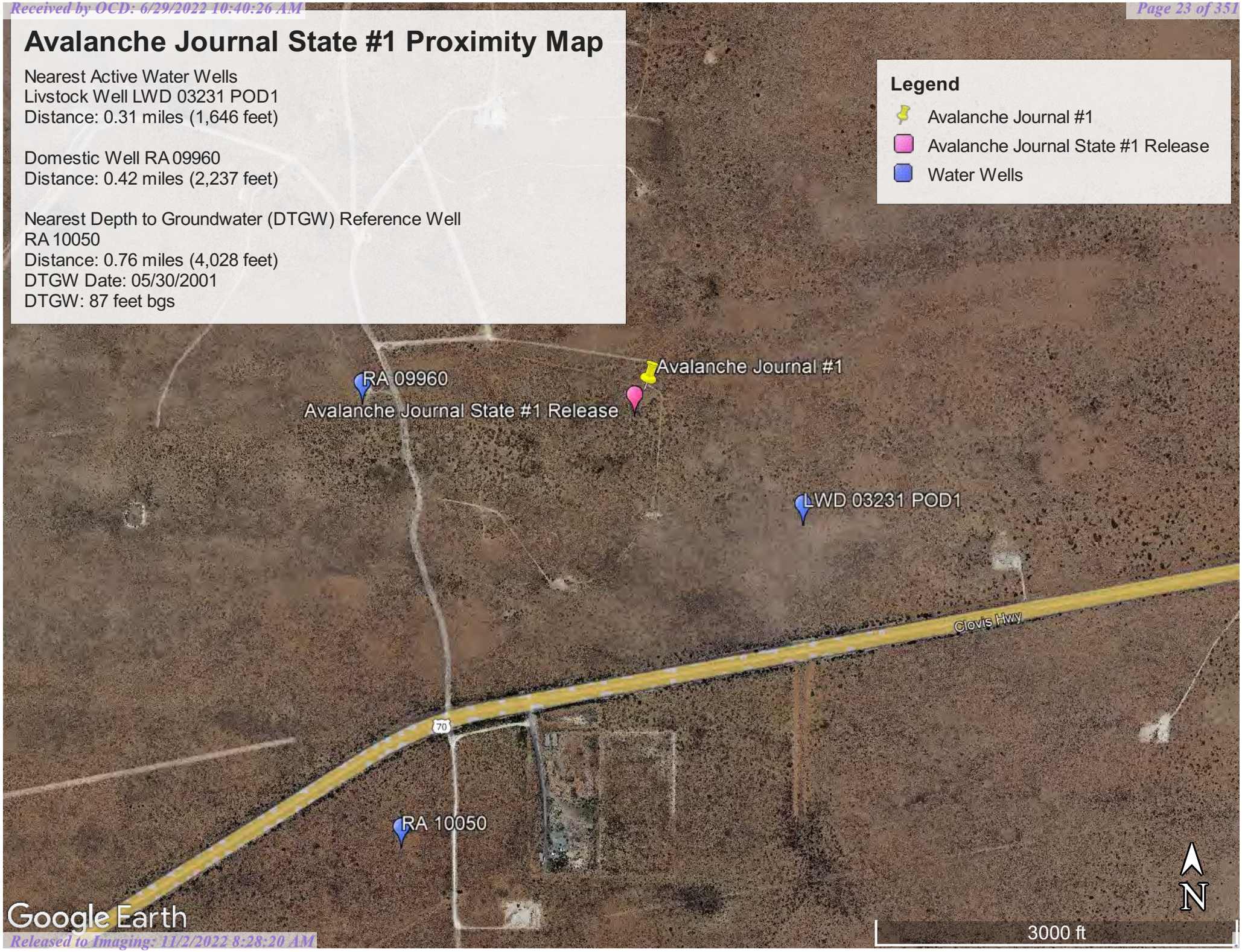
***UTM location was derived from PLSS - see Help**

Avalanche Journal State #1 Proximity Map

Nearest Active Water Wells
Livstock Well LWD 03231 POD1
Distance: 0.31 miles (1,646 feet)

Domestic Well RA 09960
Distance: 0.42 miles (2,237 feet)

Nearest Depth to Groundwater (DTGW) Reference Well
RA 10050
Distance: 0.76 miles (4,028 feet)
DTGW Date: 05/30/2001
DTGW: 87 feet bgs



U.S. Fish and Wildlife Service
National Wetlands Inventory

Intermittent 2137 feet

May 2, 2022

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.

U.S. Fish and Wildlife Service
National Wetlands Inventory

Stock Pond 4086 feet

May 2, 2022

Wetlands

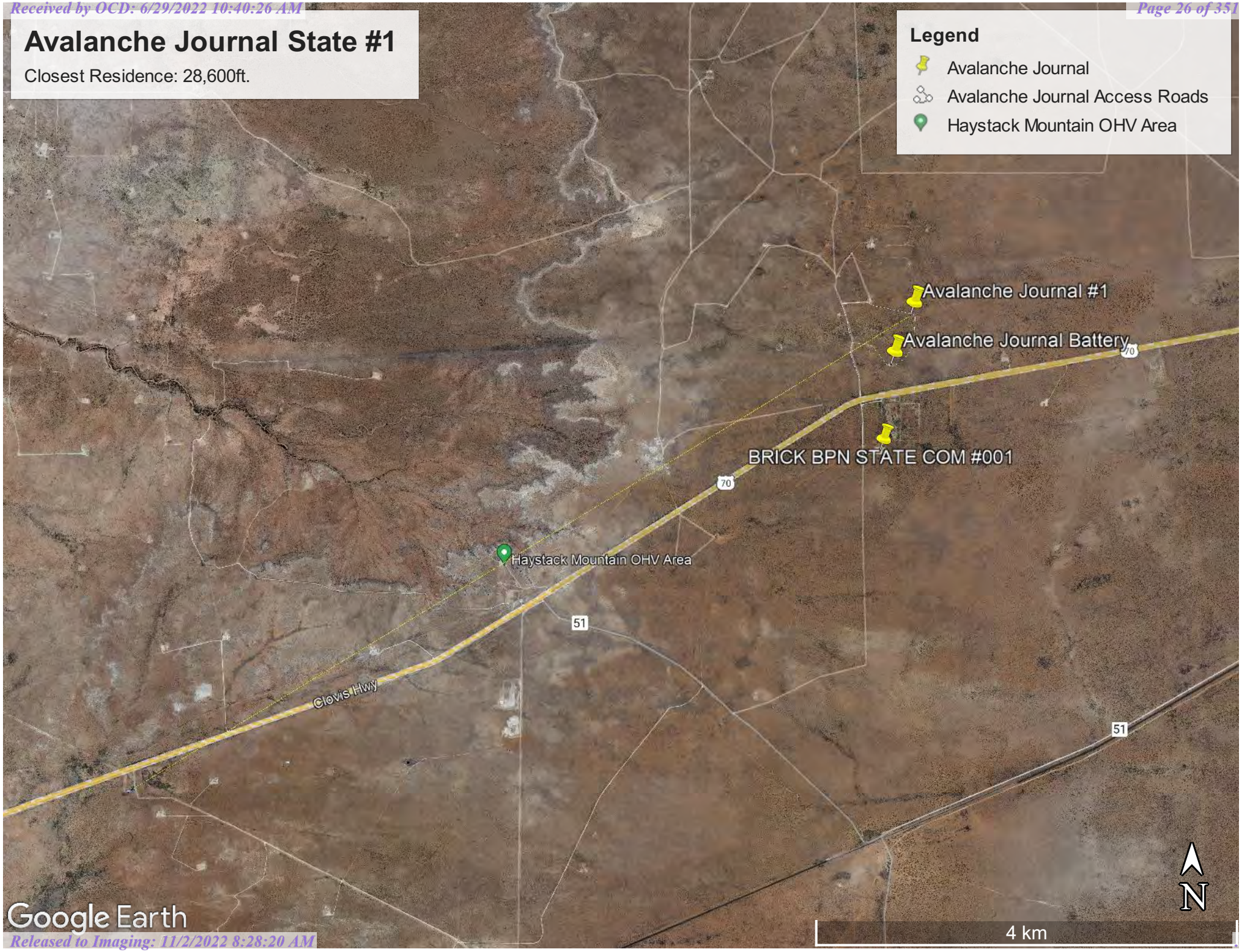
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

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

Avalanche Journal State #1

Closest Residence: 28,600ft.



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**
	LWD 03231 POD1	1	1	4	04	08S	27E	574500	3723412*

Driller License: **Driller Company:**

Driller Name:

Drill Start Date:	**Drill Finish Date:**	**Plug Date:**
Log File Date:	**PCW Rcv Date:**	**Source:**
Pump Type:	**Pipe Discharge Size:**	**Estimated Yield:**
Casing Size:	**Depth Well:**	**Depth Water:**

***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
	RA 09960		4	2	05	08S	27E	573393	3723707*

Driller License: **Driller Company:**

Driller Name:

Drill Start Date: **Drill Finish Date:** **Plug Date:**

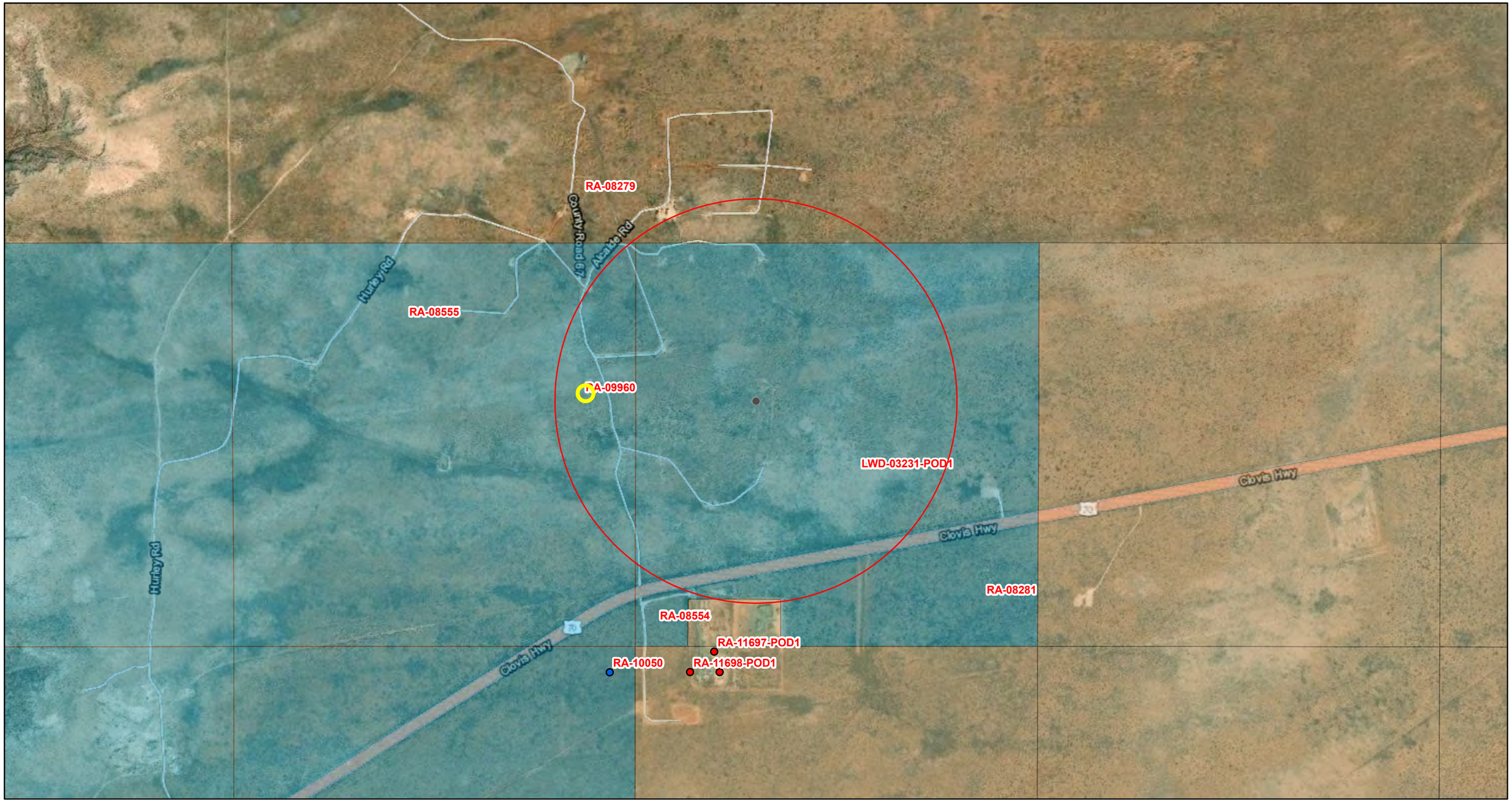
Log File Date: **PCW Rcv Date:** **Source:**

Pump Type: **Pipe Discharge Size:** **Estimated Yield:**

Casing Size: 7.00 **Depth Well:** 265 feet **Depth Water:**

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

OSE POD Locations 0.5 mile



5/2/2022, 10:44:42 AM

GIS WATERS PODs
- Active
- Plugged

OSE District Boundary

New Mexico State Trust Lands

Subsurface Estate

Both Estates

SiteBoundaries

1:18,056

0 0.17 0.35 0.7 mi

0 0.3 0.6 1.2 km

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Esri, HERE, Garmin, (c) OpenStreetMap contributors, Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community, U.S. Department of Energy Office of Legacy

Unofficial Online Map
These maps are distributed “as is” without warranty of any kind.

New Mexico Office of the State Engineer
Water Right Summary

get image list

WR File Number: LWD 03231 **Subbasin:** RA **Cross Reference:** LWD-RA-317

Primary Purpose: PLS NON 72-12-1 LIVESTOCK WATERING

Primary Status: DCL DECLARATION

Total Acres: 0.1 **Subfile:** - **Header:** -

Total Diversion: 0.1 **Cause/Case:** -

Owner: STRALEY BROS INC

Contact: GEORGE L STRALEY JR

Documents on File

	Trn #	Doc	File/Act	Status 1	Status 2	Transaction Desc.	From/ To	Acres	Diversion	Consumptive
get images	696708	DCL	1992-04-23	DCL	PRC	LWD-RA-317	T	0.1	0.1	

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
LWD 03231 POD1			1	1	4	04	08S	27E	574500	3723412*	

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

Priority Summary

Priority	Status	Acres	Diversion	Pod Number
12/31/1940	DCL	0.1	0.1	LWD 03231 POD1

Place of Use

Q 256	Q 64	Q16	Q4	Sec	Tws	Rng	Acres	Diversion	CU	Use	Priority	Status	Other Location Desc
	1	1	4	04	08S	27E	0.1	0.1		PLS	12/31/1940	DCL	

Source

Acres	Diversion	CU	Use	Priority	Source	Description
0.1	0.1		PLS	12/31/1940	SW	

New Mexico Office of the State Engineer
Water Right Summary

get image list

WR File Number: RA 09960 **Subbasin:** RA **Cross Reference:** -

Primary Purpose: DOM 72-12-1 DOMESTIC ONE HOUSEHOLD

Primary Status: PMT PERMIT

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

Total Diversion: 3 **Cause/Case:** -

Agent: MATHIS LAND AND CATTLE INC.

Contact: GERALD D. MATHIS

x

Documents on File

	Trn #	Doc	File/Act	Status 1	Status 2	Transaction Desc.	From/ To	Acres	Diversion	Consumptive
get images	531734	COWNF	2013-08-02	CHG	PRC	RA 09960	T		0	
	189733	72121	2000-09-01	PMT	APR	RA 09960	T		3	

x

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
RA 09960				4	2	05	08S	27E	573393	3723707*	

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

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
LWD 03230	RA	PLS	0.1	STRALEY BROS INC	CH	LWD 03230 POD1					3	1	4	18	08S	27E	571300	3719966*	4637
LWD 03231	RA	PLS	0.1	STRALEY BROS INC	CH	LWD 03231 POD1					1	1	4	04	08S	27E	574500	3723412*	502
RA 00960	RA	IRR	281.05	DAVID HINCKLEY	CH	RA 10050				Shallow	2	2	2	08	08S	27E	573498	3722597*	1228
RA 08112	RA	STK	3	DONALDSON SAM A	LI	RA 08112				Shallow	2	1	1	09	08S	27E	573900	3722599*	1096
RA 08211	RA	STK	3	JIM K. MILLER	CH	RA 08211					2	1	3	35	07S	27E	577105	3725039*	3320
RA 08212	RA	STK	3	JIM K. MILLER	CH	RA 08212					2	1	1	09	08S	27E	573900	3722599*	1096
RA 08277	RA	STK	3	MATHIS LAND AND CATTLE	CH	RA 08277					3	3	3	29	07S	27E	572070	3726017*	3078
RA 08278	RA	STK	3	MATHIS LAND AND CATTLE	CH	RA 08278							3	08	08S	27E	572401	3721482*	2763
RA 08279	RA	STK	3	MATHIS LAND AND CATTLE	CH	RA 08279						4	4	32	07S	27E	573387	3724509*	1076
RA 08281	RA	STK	3	STRANLEY BROS., INC.	CH	RA 08281						4	4	04	08S	27E	575005	3722914*	1205
RA 08283	RA	STK	3	STRALEY BROS., INC.	CH	RA 08283					2	1	1	09	08S	27E	573900	3722599*	1096
RA 08284	RA	STK	3	STRANLEY BROS., INC.	CH	RA 08284					2	1	1	09	08S	27E	573900	3722599*	1096
RA 08554	RA	DOM	0	STRALEY BROTHERS INC	CH	RA 08554					3	3	3	04	08S	27E	573698	3722802*	956
RA 08555	RA	DOM	3	MATHIS LAND AND CATTLE INC.	CH	RA 08555				Shallow	4	2	1	05	08S	27E	572685	3724003*	1426
RA 08556	RA	COM	280.66	JEROME JOSEPH DENKEVITZ REVOCABLE LIVING TRU	CH	RA 08556				Shallow	2	1	1	09	08S	27E	573900	3722599*	1096
					CH	RA 08556 S					2	1	1	09	08S	27E	573900	3722599*	1096
RA 09960	RA	DOM	3	MATHIS LAND AND CATTLE INC.	CH	RA 09960						4	2	05	08S	27E	573393	3723707*	682
RA 10050	RA	STK	3	MATHIS LAND AND CATTLE INC.	CH	RA 10050				Shallow	2	2	2	08	08S	27E	573498	3722597*	1228
RA 11365	RA	STK	0	MILLER LAND AND CATTLE COMPANY	CH	RA 11365 POD1					1	2	2	35	07S	27E	578034	3725845	4512
RA 11696	RA	MON	0	US ARMY CORPS OF ENGINEERS	CH	RA 11696 POD1					2	1	1	09	08S	27E	573938	3722600	1088
RA 11697	RA		0	US ARMY CORPS OF ENGINEERS	CH	RA 11697 POD1					2	1	1	09	08S	27E	573915	3722682	1010
RA 11698	RA		0	US ARMY CORPS OF ENGINEERS	CH	RA 11698 POD1					2	1	1	09	08S	27E	573819	3722600	1110
RA 13051	RA	EXP	0	BUREAU OF LAND MANAGEMENT	CH	RA 13051 POD1	NA			Shallow	1	4	4	12	08S	26E	570102	3721365	4598
RA 13142	RA	STK	3	MATHIS LAND & CATTLE INC	CH	RA 13142 POD1	2109A				3	3	2	08	08S	27E	572822	3721912	2167

Record Count: 24

UTMNAD83 Radius Search (in meters):

Easting (X): 574075 **Northing (Y):** 3723681 **Radius:** 5000

Sorted by: File Number

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

New Mexico Office of the State Engineer
Water Right Summary

get image list

WR File Number: RA 00960 **Subbasin:** RA **Cross Reference:** -

Primary Purpose: IRR IRRIGATION

Primary Status: PMT PERMIT

Total Acres: 80.3 **Subfile:** 138 **Header:** -

Total Diversion: 281.05 **Cause/Case:** -

Owner: DAVID HINCKLEY

Documents on File

	Trn #	Doc	File/Act	Status 1	Status 2	Transaction Desc.	From/ To	Acres	Diversion	Consumptive
	297057	COMB	2006-01-19	PMT	APR	RA 00701	F	0	0	
get images	336415	72121	2005-07-11	PMT	APR	RA 00960 & RA00961 COMB-E	T		3	
get images	320296	72121	2005-01-06	PMT	APR	RA 00960 & RA 00961 COMB E	T		3	
get images	255739	CLWPL	2003-05-16	PMT	APR	RA-701 INTO RA-960(T)	T	10	35	
	233323	CLWPL	2002-06-24	PMT	APR	RA-701 INTO RA-960	T	66.2	231.7	
	176529	ADM	1996-11-01	PMT	APR	RA 00960	T	80.3	281.05	

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
RA 00960		Artesian	2	3	1	07	11S	21E	510980	3692761*	
RA 10050		Shallow	2	2	2	08	08S	27E	573498	3722597*	

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

Priority Summary

Priority	Status	Acres	Diversion	Pod Number	
12/31/1906	PMT	7.3	25.55	RA 00960	Artesian
				RA 10050	Shallow
12/31/1912	PMT	28	98	RA 00960	Artesian
				RA 10050	Shallow
12/31/1924	ADJ	45	157.5	RA 00960	Artesian
				RA 10050	Shallow

Place of Use

Q 256	Q 64	Q16	Q4	Sec	Tws	Rng	Acres	Diversion	CU	Use	Priority	Status	Other Location Desc
				23	12S	25E	5	17		IND	06/17/1906	PMT	
				23	12S	25E	61.2	214.2		IRR	03/31/1909	PMT	
				23	12S	25E	10	35		IRR	06/17/1906	PMT	
				23	12S	26E	35.3	105.9		IRR	03/31/1906	PMT	3/31/1912
	3	16		10S	24E		45	135		IRR	12/31/1924	PMT	

Source

Acres	Diversion	CU	Use	Priority	Source	Description
7.3	21.33		IRR	03/31/1906	GW	ARTESIAN
0	124		HWY	12/31/1924	GW	
28	84		IRR	12/31/1912	GW	ARTESIAN
45	135		IRR	12/31/1924	GW	ARTESIAN
10	35		IRR	06/17/1906	GW	
20	70		IRR	06/17/1906	GW	
61.2	214.2		IND	03/31/1909	GW	

5/2/22 10:51 AM

WATER RIGHT SUMMARY

U.S. Fish and Wildlife Service
National Wetlands Inventory

Avalanche Wetland 7689ft

February 3, 2022

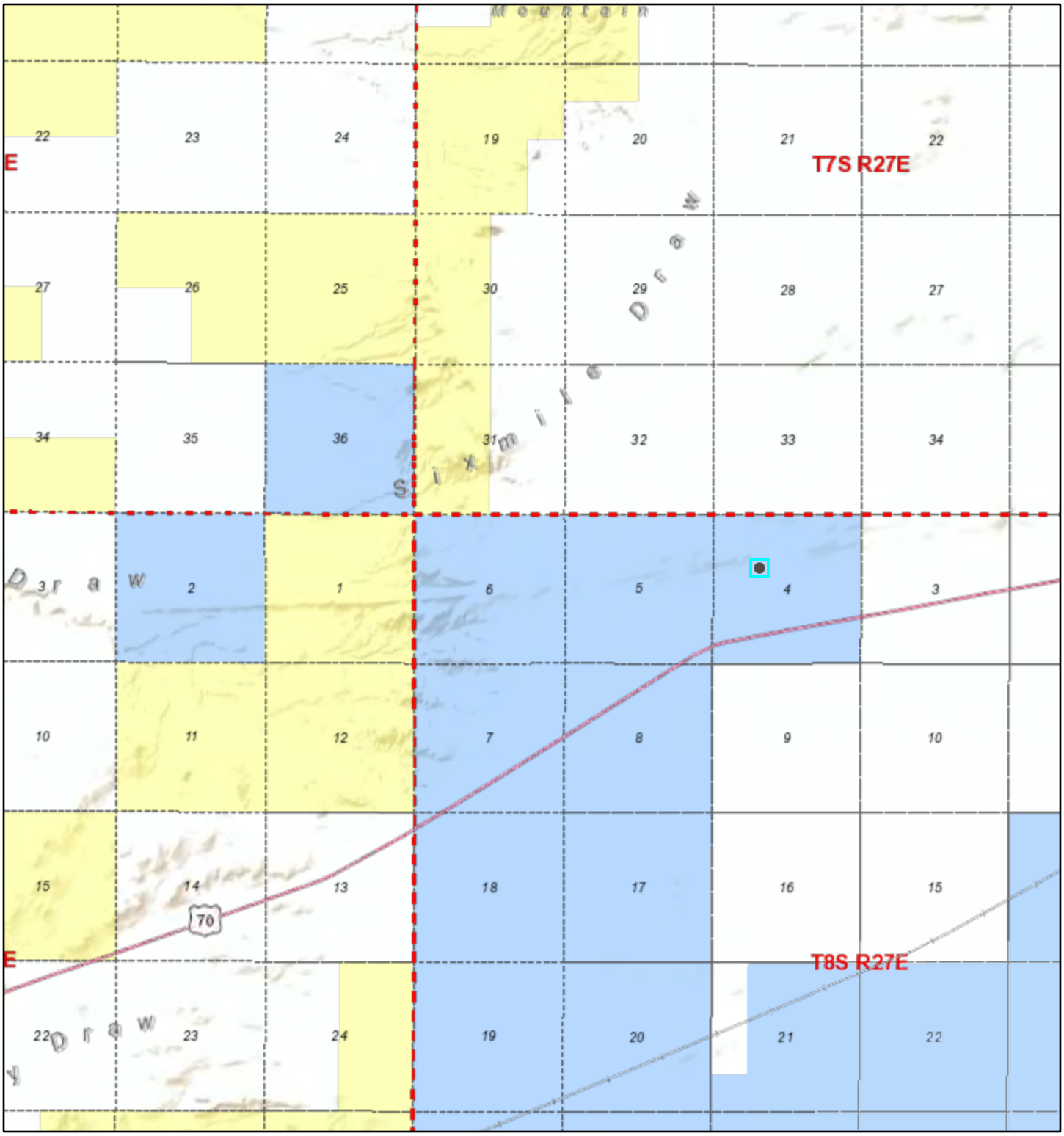
Wetlands

- 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

Active Mines in New Mexico



2/3/2022, 4:18:43 PM

1:72,224

0 0.5 1 2 mi

0 0.75 1.5 3 km

Township / Range

Sections

Land Ownership

Bureau of Land Management

Bureau of Reclamation

Department of Agriculture

Department of Defense

Department of Energy

National Park Service

Private Land

State Game and Fish

State Land

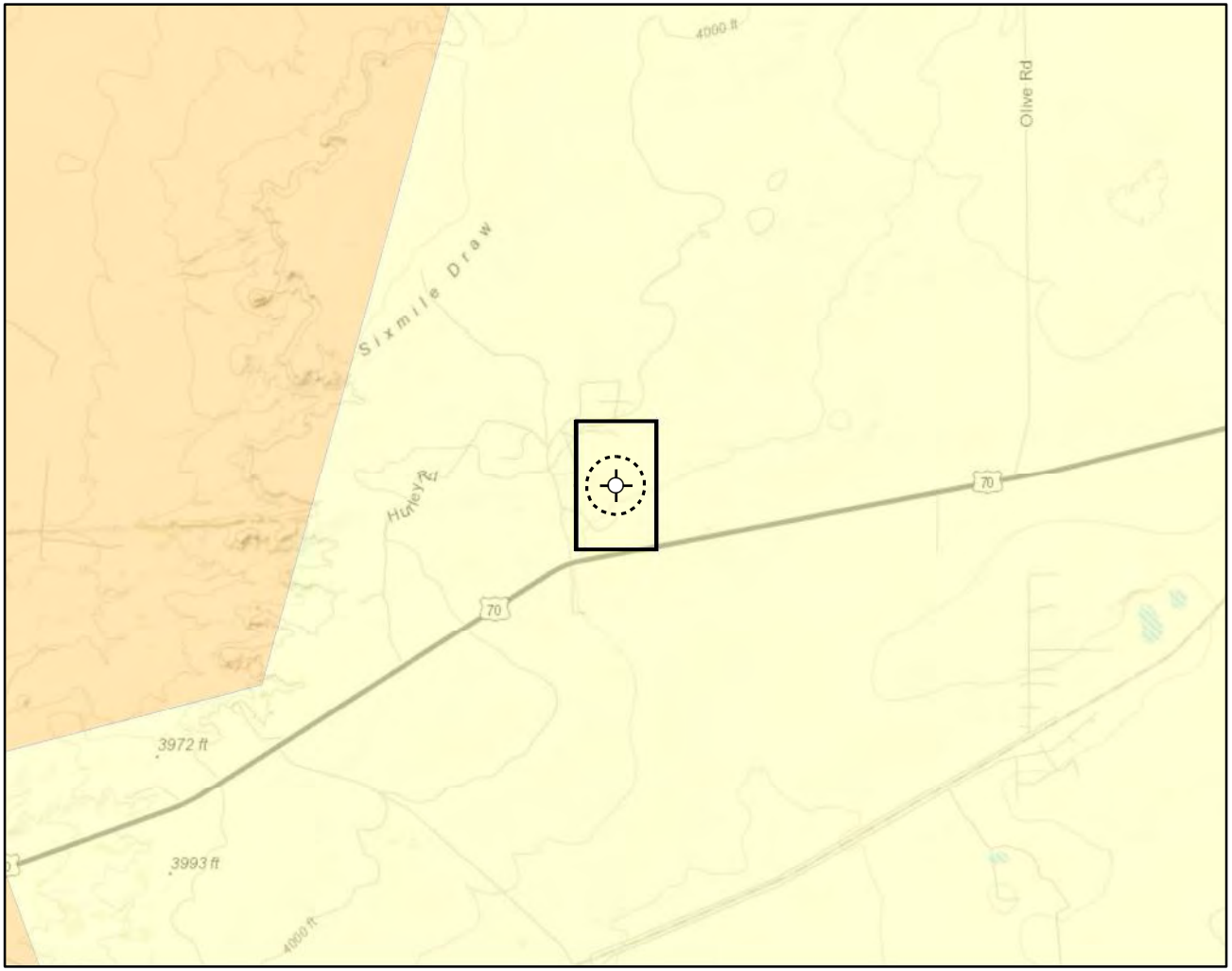
State Parks

Tribal

U.S. Bureau of Land Management - New Mexico State Office, Sources: Esri, USGS, NOAA, Sources: Esri, Garmin, USGS, NPS

EMNRD MMD GIS Coordinator

New Mexico 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 ft.)

Overview Map

0 0.25 0.5 1 mi

Detail Map

0 150 300 600 ft.

VERTEX

Map Center:
Lat/Long: 33.650980, -104.200870

NAD 1983 UTM Zone 13N
Date: Feb 23/22

N

Karst Potential Map
Avalanche Journal State #1

FIGURE:
X

eog resources

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 20XX; 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: G:\1-Projects_US PROJECT S\EOG Resources Inc\22E-00345\Avalanche Journal State #1\Figure X Karst Potential Map (Avalanche Journal State 1).mxd

National Flood Hazard Layer FIRMette

FEMA

104°12'22"W 33°39'19"N

104°11'44"W 33°38'49"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 2/3/2022 at 6:26 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.

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 Chaves County, New Mexico, Northern Part

February 3, 2022

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.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

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 1:24,000.

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: Chaves County, New Mexico, Northern Part
Survey Area Data: Version 17, Sep 12, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Nov 20, 2017—Dec 9, 2017

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
RBA	Ratliff-Redona association, gently undulating	1.7	100.0%
Totals for Area of Interest		**1.7**	**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.

Chaves County, New Mexico, Northern Part

RBA—Ratliff-Redona association, gently undulating

Map Unit Setting

National map unit symbol: dm1g
Elevation: 2,500 to 5,300 feet
Mean annual precipitation: 10 to 17 inches
Mean annual air temperature: 55 to 72 degrees F
Frost-free period: 180 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Ratliff and similar soils: 45 percent
Redona and similar soils: 35 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ratliff

Setting

Landform: Terraces
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Calcareous alluvium

Typical profile

H1 - 0 to 6 inches: fine sandy loam
H2 - 6 to 25 inches: sandy clay loam
H3 - 25 to 60 inches: clay loam

Properties and qualities

Slope: 0 to 2 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: 50 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.2 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: R070BY670TX - Sandy Loam 12-18" PZ
Hydric soil rating: No

Description of Redona

Setting

Landform: Terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Calcareous alluvium

Typical profile

H1 - 0 to 12 inches: fine sandy loam
H2 - 12 to 29 inches: sandy clay loam
H3 - 29 to 60 inches: sandy clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Negligible
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: 30 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: R070BY670TX - Sandy Loam 12-18" PZ
Hydric soil rating: No

Minor Components

Blakeney

Percent of map unit: 7 percent
Ecological site: R070BY062NM - Shallow
Hydric soil rating: No

Canez

Percent of map unit: 6 percent
Ecological site: R070BY670TX - Sandy Loam 12-18" PZ
Hydric soil rating: No

Tucumcari

Percent of map unit: 6 percent
Ecological site: R070BY662TX - Clayey 12-18" PZ
Hydric soil rating: No

Playa

Percent of map unit: 1 percent

Landform: Playas
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R077CY027TX - Playa 16-21" PZ
Hydric soil rating: Yes

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 R070BY670TX
Sandy Loam 12-18" PZ

Accessed: 02/03/2022

General information

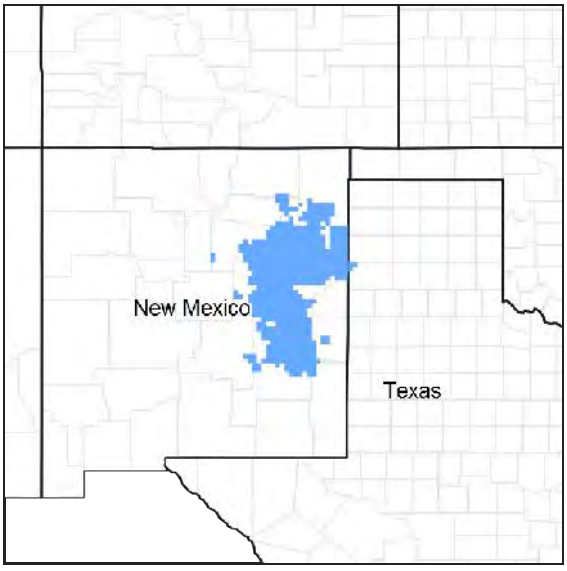


Figure 1. Mapped extent

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.

MLRA notes

Major Land Resource Area (MLRA): 070B–Upper Pecos River Valley

MLRA 70B is characterized by broad, rolling piedmonts, plains, and tablelands broken by drainageways and tributaries of the Pecos River. Native vegetation is mid- to short-grass prairie species in the lowlands, with pinyon and juniper in the higher elevations and on steeper north-facing slopes. Current land use is predominantly livestock grazing. The soils formed in material weathered from sedimentary rocks of Cretaceous age.

Classification relationships

This site was formerly known as Sandy Loam R070XB054NM in New Mexico.

Associated sites

R070BY662TX	**Clayey 12-18" PZ** Clayey soils with tobosagrass and cholla.
R070BY663TX	**Clay Loam 12-18" PZ** Loamy soils with shortgrasses dominating the site.

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified

Herbaceous	Not specified

Physiographic features

The Sandy Loam site occurs on alluvial/colluvial fan terraces and hillslopes. Land surfaces vary from slightly convex to slightly concave. Due to the nature of this site these fans and footslopes generate runoff received by lower positioned sites. This generally depends on the amount of vegetative cover and intensity of precipitation events. Grazing accessibility for livestock and wildlife is good.

Table 2. Representative physiographic features

Landforms	(1) Hill (2) Plain (3) Terrace
Flooding frequency	None
Ponding frequency	None
Elevation	3,400–4,500 ft
Slope	0–10%
Water table depth	60 in
Aspect	Aspect is not a significant factor

Climatic features

The climate of this area can be classified as “semi-arid continental”. Summers are hot with winters being generally mild with numerous cold fronts that drop temperatures into the single digits for 24 to 48 hours. Temperature extremes are the rule rather than the exception. Humidity is generally low and evaporation high. Wind speeds are highest in the spring and are generally southwesterly. Canadian and Pacific cold fronts come through the region in fall, winter and spring with predictability and temperature changes can be rapid.

Total annual precipitation averages 12 to 18 inches. Most of the precipitation comes in the form of rain during the period from May through October. Snowfall averages around 15 inches but may be as little as 8 inches or as much as 36 inches. Rainfall in the growing season often comes as intense showers of relatively short duration. Long term droughts occur on the average of once every 20 years and may last as long as five to six years (during these drought years moisture during the growing season is from 50 to 60 % of the mean). Based on long term records, approximately 60% of years are below the mean rainfall and approximately 40% are above the mean. May, June and July are the main growth months for perennial warm season grasses. Forbs make their growth somewhat earlier. Air temperatures vary from a monthly mean of 22 degrees F in January to 64 degrees F in July. Daily high temperatures average in the 80’s and low 90’s during the summer months. Winter low temperatures fall below the freezing mark much of the time from November through March. Dates of the last killing frost may vary from April 15 to April 25 , and the first killing frost from October 18 to October 25. Wind velocities for the area average 10 to 12 miles per hour and prevail from the south and southwest. Generally, March is the windiest month. Strong winds during the spring cause rapid drying of the soil surface.

Table 3. Representative climatic features

Frost-free period (average)	200 days
Freeze-free period (average)	205 days
Precipitation total (average)	18 in

Influencing water features

None.

Soil features

These are deep to very deep fine sandy loam soils that are derived from the red bed formation of the late Triassic age sandstone and shale. Parent material is calcareous alluvial and eolian sediments. Slopes dominantly range from 0 to 10 percent. Some of these soils have argillic horizons of sandy clay loam texture. They are moderate in fertility, have a low to moderate water storage capacity, have a moderate infiltration rate, and exhibit negligible to low runoff depending on slope and vegetative cover. These soils yield water to plants readily and are subject to wind erosion without good cover. If cover is poor and runoff is excessive, significant water erosion can also occur. Plant roots easily penetrate the soil.

Major Soil Taxonomic Units correlated to this site include: Ima fine sandy loam and Redona fine sandy loam.

Table 4. Representative soil features

Parent material	(1) Alluvium–sandstone and shale
Surface texture	(1) Fine sandy loam (2) Sandy loam
Family particle size	(1) Loamy
Drainage class	Well drained
Permeability class	Moderate
Surface fragment cover <=3"	0–10%
Surface fragment cover >3"	0%
Available water capacity (0-40in)	3–7 in
Calcium carbonate equivalent (0-40in)	0–5%
Electrical conductivity (0-40in)	0–1 mmhos/cm
Sodium adsorption ratio (0-40in)	0–1
Soil reaction (1:1 water) (0-40in)	7.4–8.4
Subsurface fragment volume <=3" (Depth not specified)	0–15%
Subsurface fragment volume >3" (Depth not specified)	0%

Ecological dynamics

This is an upland grassland site occurring on nearly level to moderately sloping topography. The Historic Climax Plant Community (HCPC) is best characterized as warm-season midgrasses with somewhat lesser amounts of shortgrass species and scattered short shrubs. Tallgrasses occur but are somewhat infrequent, and are found in micro environments that receive extra runoff. Perennial and annual forbs make up from 5 to 10% of total annual production, depending upon precipitation. Shrubs account for approximately 5 to 8% of total annual production, with some variation in species often occurring from one locality to another. Production levels are moderate to moderately high and accessibility for grazing and browsing animals is good. Bunch grasses are most prevalent with lesser amounts of sod forming species. Inherent fertility is moderate and the site is favored by domestic livestock. Diversity is high in historic climax but will decrease with long-term grazing pressure. This site is fairly extensive within the MLRA and may encompass both large and small acreages depending on location.

The HCPC grassland community consists predominantly of sideoats grama (*Bouteloua curtipendula*), blue grama (*Bouteloua gracilis*), and black grama (*Bouteloua eriopoda*), with smaller amounts of vine mesquite (*Panicum obtusum*), wolftail (*Lycurus phleoides*), galleta (*Pleuraphis jamesii*), fall witchgrass (*Digitaria cognata*), sand dropseed (*Sporobolus cryptandrus*), halls panicum (*Panicum hallii*), plains bristlegrass (*Setaria leucopila*), perennial

threeawn (Aristida spp.), hairy grama (*Bouteloua hirsuta*), gummy lovegrass (Eragrostis curtipendicellata) and sand muhly (*Muhlenbergia arenicola*). A few cool-season species such as needle and thread (*Hesperostipa comata*), Canada wildrye (*Elymus canadensis*), and bottlebrush squirreltail (Sitanion hystrix) will be found and are most prevalent in years when winter moisture is above normal. Small amounts of little bluestem (*Schizachyrium scoparium*) occur in inclusions of shallow sandy loams or in areas where slightly sandier textures occur. Sand bluestem (*Andropogon hallii*) and Indiangrass (*Sorghastrum nutans*) will be found in micro environments within the site where moisture is more favorable. Tallgrasses generally do not make up more than 5 to 10 % of the total plant community. Some of the more prevalent forb species are: scarlet globemallow (*Sphaeralcea coccinea*), rushpea (Hoffmannseggia jamesii), catclaw sensitivebriar (*Mimosa roemeriana*), dotted gayfeather (*Liatris punctata*), sand lily (*Mentzelia nuda*), western ragweed (*Ambrosia psilostachya*), trailing ratany (Krameria sp.), lyreleaf greeneyes (Berlandiera larata), plains zinnia (*Zinnia grandiflora*), wild alfalfa (*Psoralidium tenuiflorum*), scarlet gaura (*Gaura coccinea*), and croton (Croton spp.). Forb production tends to be very moisture dependent and can vary considerably from year to year. The suffrutescent halfshrub broom snakeweed (*Gutierrezia sarothrae*) is found in small amounts and can sometimes increase with abusive grazing. Woody short shrub species most commonly found are sand sagebrush (*Artemisia filifolia*), yucca (*Yucca glauca*), Mormon's tea (*Ephedra antisyphilitica*), and winterfat (*Krascheninnikovia lanata*). Mesquite (*Prosopis glandulosa*), cholla (*Cylindropuntia imbricata*), and pricklypear (*Opuntia macrorhiza*) are found in small amounts. Shrubs tend to be scattered in HCPC, but yucca, mesquite and sand sagebrush can increase with abusive grazing practices and no natural fire.

General observations would suggest that blue grama, black grama and lesser amounts of other short grass species are now dominating many of the sandy loam sites in this MLRA. In many cases, there are only small amounts of sideoats grama present - and that species was almost certainly present in greater amounts in HCPC, especially on the sandy loams that have a coarse loamy classification. The tighter sandy loams (fine loamy classification) tend to produce somewhat more blue grama and less sideoats grama. Continuous moderate grazing will usually result in an increase in blue and black grama over time, and a decrease in sideoats grama. Prolonged abusive grazing practices will nearly always result in a significant increase in perennial threeawn, sand dropseed, hairy grama, sand muhly, gummy lovegrass, and annual forbs. Sand sagebrush and yucca are both increasers on this site. Yucca can sometimes increase to a moderate plant population (greater than 1000 crowns per acre), but the sand sagebrush does not usually form a dense canopy. If a seed source is available, mesquite can also invade the site. The sandy loam ecological site appears to be somewhat less resistant to grazing induced changes in plant community than the associated clay loam or loamy sites. The plant community can shift to a short grass dominated site with very few mid grasses if heavy grazing pressure is applied over several years. The shorter grass species such as blue grama, buffalograss (*Bouteloua dactyloides*) and even black grama are more resistant to grazing pressure. After many years of continuous heavy grazing, sideoats grama will still be found in the community, but will retreat to the protection of clumps of yucca, sand sagebrush or other short shrubs. With good grazing management practices, selective brush management, and growing season rest, the balance between mid and shortgrasses can often be restored, but it will usually take a few years to do so. The more dominant the shortgrass species become, the more difficult it is to restore the community balance. Some above average precipitation in conjunction with prescribed grazing speeds this process a great deal. Careful grazing management techniques are essential to maintain the diversity and productivity of the HCPC.

All the sites in this MLRA were historically grazed/ browsed by bison, elk, pronghorn, and mule deer (along with numerous small herbivores such as prairie dogs, rabbits, ground squirrels, etc.) in pre settlement times. The habits of the larger herbivores were semi migratory and after grazing an area they moved on to other localities where grazing resources were more attractive. Grazed areas received rest naturally and generally the recovery periods following grazing were adequate for vegetation to regain vigor and replenish reserves. The same locations might not have been grazed again for several months, and perhaps even years, depending on rainfall patterns and animals movements. When grazing occurred, it was likely quite intense, and in some cases, the physical animal impact may have been significant; but the recovery period allowed for plant and soil resources to heal prior to being impacted again. This MLRA has always had fewer water resources than vegetative regions to the east may have had some influence on the magnitude of the large herd effect of bison on grazing resources. The huge seasonal migrations of bison required dependable water sources that could supply sufficient water for large numbers of animals and be reached within a day or two. The dryer western parts of the plains in which this MLRA resides do not have nearly as many water sources as do the Texas Rolling Plains located to the east of the Llano Estacado. However, the grasslands in this MLRA did develop under an ecology that included native grazing animals as an integral part of the processes. With settlement of the area, the development of the ranching industry, and especially the advent of barbed wire, the confinement of domestic livestock on smaller areas has had great effect on plant communities. Free ranging animals that moved at will depending on locally available forage provided a graze/rest cycle that

allowed the natural recovery of native plants, whereas the system of more continuous grazing employed post settlement, usually does not meet the overall needs of native vegetation unless careful management practices are implemented. Also, there is considerable evidence that overstocking of the range occurred in the late 1800's and early 1900's, and, unfortunately, it still does today in some places. Much of the rangeland abuse that occurred was due to lack of knowledge of the capability of the resources.

Natural fire has also had an impact on these grasslands historically. It is accepted that natural fires occurred on the plains fairly frequently – at least every 8 to 10 years, with some areas burning even more frequently. The sites most likely to be burned were those where grass fuel was most abundant. The sandy loam site has historically produced moderate amounts of fine fuel, and its physiographic features would suggest that fire may have occurred with some regularity. The type of adjacent sites and the general topographic and vegetative attributes of those sites also had a major effect on the frequency of fire. In this MLRA, there are sites that exhibit large amounts of bare soil and rocky terrain with sparse plant cover, as well as sites that have physical barriers such as gullies, streambeds, etc. that could have limited fire movement and continuity. It is possible to say that where fire occurred with regularity, it had a major impact on maintaining grasslands and retarded the encroachment of woody shrubs and cacti in many areas. Fire also influenced the grazing habits of herbivores as they were attracted to the fresh and succulent vegetation that often resulted after a natural fire. Community diversity, especially an increase in forb species most likely resulted from a natural fire. Prescribed fire can be utilized on certain sites under proper conditions as a management tool. It can, in some instances be used to retard the proliferation of certain woody species, and can be used on coarse grasses such as alkali sacaton (*Sporobolus airoides*), giant sacaton (*Sporobolus wrightii*) or tobosagrass (*Pleuraphis mutica*) to increase palatability. It should be noted that fire followed by a series of below average rainfall years can definitely have an adverse effect on some perennial grass species. Extreme care and attention to environmental factors should always be exercised when using fire as a tool, and becomes even more important in arid and semi arid land regions.

When the ecological principles affecting plant communities are understood and when proper rangeland management practices such as prescribed grazing (rotational grazing systems based on proper rate of stocking), and selective control of invasive species are implemented, the native range can often approach the diversity and productive capacity of the historic climax plant community. Even abused ranges can recovery with time and good management.

NOTE: Rangeland Health Reference Worksheets have been posted for this site on the Texas NRCS website (www.tx.nrcs.usda.gov) in Section II of the eFOTG under (F) Ecological Site Descriptions.

STATE AND TRANSITIONAL PATHWAYS: (DIAGRAM)

Narrative:
The following diagram suggests some pathways that the vegetation on this site might take. There may be other states not shown on the diagram. This information is intended to show what might happen in a given set of circumstances; it does not mean that this would happen the same way in every instance. Local professional guidance should always be sought before pursuing a treatment scenario.

State and transition model

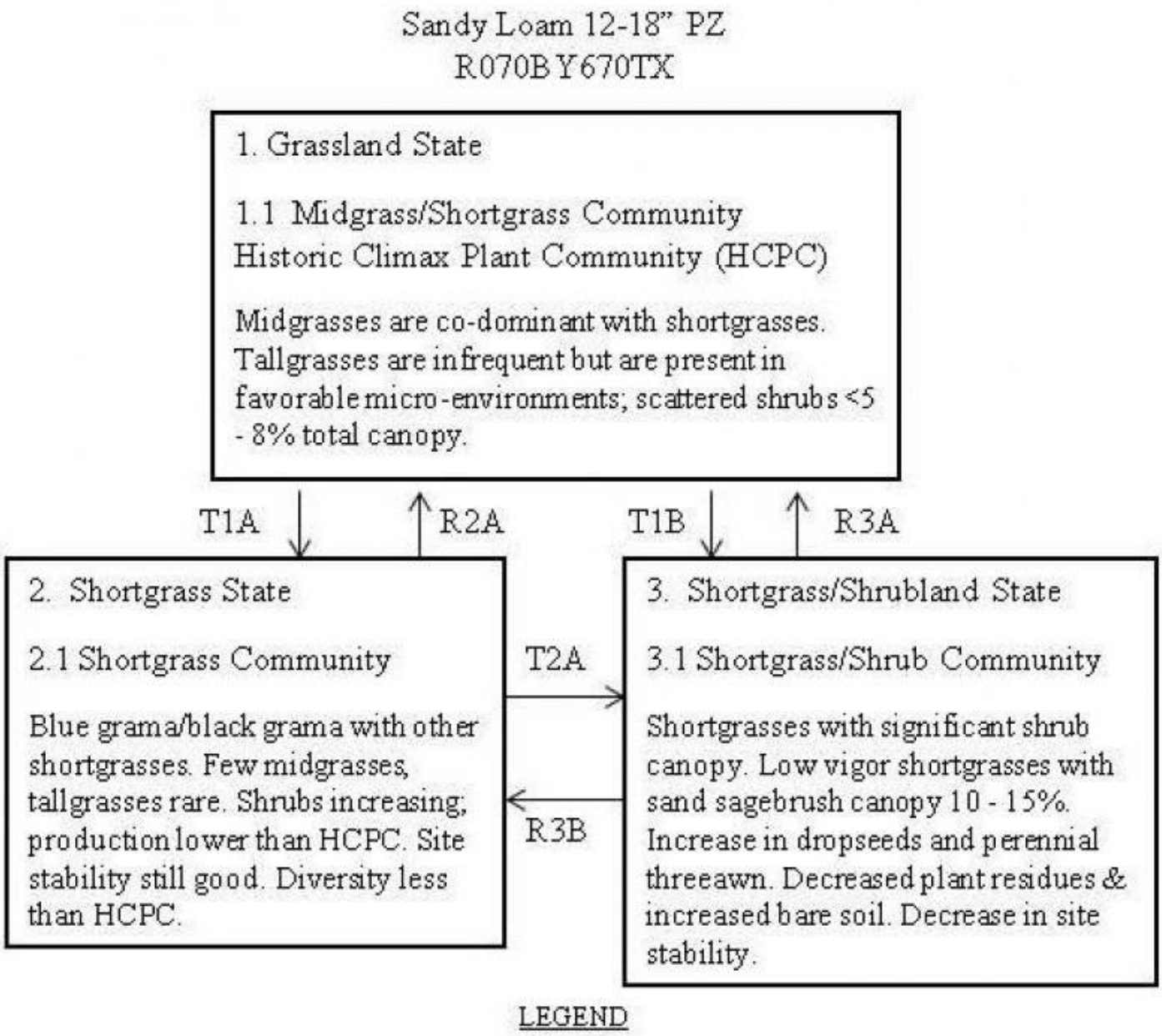


Figure 4.

State 1
Grassland State

The Grassland State is best characterized as warm-season midgrasses with somewhat lesser amounts of

shortgrass species and scattered short shrubs. Tallgrasses occur but are somewhat infrequent, and are found in micro environments that receive extra runoff. Perennial and annual forbs make up from 5 to 10% of total annual production. Shrubs account for approximately 5 to 8% of total annual production, with some variation in species often occurring from one locality to another. Bunch grasses are most prevalent with lesser amounts of sod forming species. Annual production reaches 1750 pounds.

Community 1.1
Midgrass/Shortgrass Community

Figure 5. 1.1 Midgrass/Shortgrass Community

The Midgrass/Shortgrass Community (1.1) is the interpretive plant community for the Sandy Loam Ecological Site. Sideoats grama makes up approximately 15 to 25% of the total production and blue grama and black grama makes up approximately 30 to 45%. Other short and midgrasses account for approximately 20-25% while forbs make up approximately 8-10%. Shrubs make up from 5 to 10% of total production. Production is moderately high compared to other sites in the MLRA, and in general averages from 1000 to 1500 lbs. per acre dry weight. The production shown in this photo is probably on the upper end of the range for this site.

With no natural fire and long-term grazing pressure, this site will move toward a shortgrass dominated community with an increase in shrubs such as yucca, sand sage or mesquite. This photo depicts the presence of scattered amounts of yucca and only occasional mesquite. In presettlement times shrubs were probably even less than this photo shows, however, this example is very close to what HCPC was according to the best information obtainable. Yucca seems to be a strong increaser on this site. Periodic fire probably suppressed yucca as well as other woody plants in HCPC. This site is not as resistant to grazing induced changes as the Hardland sites are. Blue grama will definitely increase with long-term grazing pressure, diversity will decrease and production will be lowered.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	870	1195	1520
Forb	70	100	130
Shrub/Vine	50	75	85
Microbiotic Crusts	10	15	15
Tree	0	0	1
Total	**1000**	**1385**	**1751**

Figure 7. Plant community growth curve (percent production by month). TX0256, Midgrass/Shortgrass Community. Warm-season mid and shortgrasses with scattered shrubs..

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	2	5	9	21	26	8	5	10	8	4	1

State 2
Shortgrass State

There has been a decrease in midgrasses, an increase in both blue and black grama production and some minor increases in the shrub component (mainly mesquite and sand sagebrush). The amount of perennial forbs has decreased somewhat from the HCPC but that may be due to moisture fluctuations more than grazing management. The production level is less than the HCPC which approaches 1445 pounds.

Community 2.1
Shortgrass Community

Figure 8. 2.1 Shortgrass Community

The Shortgrass Community (2.1) shows some noticeable differences from the HCPC. There has been a decrease in midgrasses, an increase in both blue and black grama production and some minor increases in the shrub component (mainly mesquite and sand sagebrush). Site stability is intact and the basic plant community functions have not been dramatically affected. The amount of perennial forbs has decreased somewhat from the HCPC but that may be due to moisture fluctuations more than grazing management. The production level is less than the HCPC. Sideoats grama is present in this community, but is somewhat infrequent while short grasses dominate. With careful grazing management, this community may be moved towards HCPC. At this point, the shrub component is not a major concern, although mesquite can increase on this site even with good management. Some individual plant treatment may be in order soon, provided the objective is to maintain the site in a grassland state.

Table 6. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	550	1000	1300
Shrub/Vine	50	60	80
Forb	30	50	60
Microbiotic Crusts	5	5	5
Tree	0	0	1
Total	**635**	**1115**	**1446**

Figure 10. Plant community growth curve (percent production by month). TX0251, Shortgrass Community with few shrubs. Warm-season shortgrass dominant community with few shrubs and forbs..

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	2	5	10	22	25	10	5	9	8	2	1

State 3
Shortgrass/Shrubland State

There are only small amounts of midgrasses present. Shortgrasses dominate with a significant increase in sand sagebrush and more open turf. There has also been an increase in broom snakeweed, perennial threeawn and dropseeds. There has also been an increase in bare ground. Blue grama is the dominant shortgrass species. Vigor of the blue grama is low and some increase in annual forbs is visible.

Community 3.1
Shortgrass/Shrub Community

Figure 11. 3.1 Degraded Shortgrass Community

This community exhibits considerable departure from the HCPC. There are only small amounts of midgrasses present. Shortgrasses dominate with a significant increase in sand sagebrush and more open turf. There has also been an increase in broom snakeweed, perennial threeawn and dropseeds. There has also been an increase in bare ground. Blue grama is the dominant shortgrass species. Vigor of the blue grama is low and some increase in annual forbs is visible. The plant community shows the result of long-term continuous grazing pressure and no control of woody shrubs. Once shortgrasses have dominated the site for several years, it is difficult to completely recover the balance between mid and shortgrass species that exist in the HCPC. However, as long as a reasonable seed source for the midgrass species exists, good grazing management and brush management can usually shift the plant community back toward HCPC over time. In order to initiate a significant shift in this plant community, a prescribed grazing management plan that includes some growing season rest periods for 4 to 5 years would be necessary, along with some selected control of the more dense stands of sand sagebrush and other shrubby and weedy forbs. Of course, some favorable years of precipitation would speed up the recovery process a great deal. Stocking rate adjustments will be needed and careful monitoring done.

Table 7. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	460	850	1000
Shrub/Vine	50	120	140
Forb	40	80	120
Microbiotic Crusts	5	5	5
Tree	0	0	1
Total	**555**	**1055**	**1266**

Figure 13. Plant community growth curve (percent production by month). TX0257, Degraded Shortgrass Community. Warm-season shortgrasses having low production, forbs and shrubs..

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	4	8	10	23	23	10	5	8	4	3	1

Transition T1A

State 1 to 2

With heavy continuous grazing and no fires (over a ten to twenty year period), the Grassland State will transition into the Shortgrass State.

Transition T1B
State 1 to 3

With heavy continuous grazing, long-term droughts, brush invasion, no brush management practices, the Grassland State will transition into the Shortgrass/Shrubland State.

Restoration pathway R2A
State 2 to 1

With conservation practices implemented such as Prescribed Grazing (which also includes growing season rest), Pest Management, and selective Brush Management (i.e. Individual Plant Treatments) over less than a five year timeframe.

Conservation practices

Brush Management
Prescribed Grazing
Integrated Pest Management (IPM)

Transition T2A
State 2 to 3

With continuation of heavy continuous grazing pressure, no fires, brush invasion, long-term drought conditions, no brush management, no pest management, and no desirable rest periods for plant growth has allowed the Shortgrass State to transition to the Shortgrass/Shrubland State.

Restoration pathway R3A
State 3 to 1

With conservation practices such as Prescribed Grazing, growing season rests, selective Brush and Pest Management over a five to seven year period, the Shortgrass/Shrubland State can be restored to the Grassland State.

Conservation practices

Brush Management
Prescribed Grazing
Integrated Pest Management (IPM)

Restoration pathway R3B
State 3 to 2

With conservation practices such as Prescribed Grazing, Brush and Pest Management over a three to four year period, the Shortgrass/Shrubland State can be restored to the Shortgrass State.

Conservation practices

Brush Management
Prescribed Grazing
Integrated Pest Management (IPM)

Additional community tables

Table 8. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
Grass/Grasslike					
1	**Midgrasses**			200–370	
	sideoats grama	BOCU	*Bouteloua curtipendula*	200–350	–
	little bluestem	SCSCS	*Schizachyrium scoparium var. scoparium*	0–20	–
2	**Mid/Shortgrasses**			260–390	
	buffalograss	BODA2	*Bouteloua dactyloides*	20–30	–
	hairy grama	BOHIH	*Bouteloua hirsuta var. hirsuta*	20–30	–
	silver beardgrass	BOLAT	*Bothriochloa laguroides ssp. torreyana*	20–30	–
	Arizona cottontop	DICA8	*Digitaria californica*	20–30	–
	fall witchgrass	DICO6	*Digitaria cognata*	20–30	–
	needle and thread	HECOC8	*Hesperostipa comata ssp. comata*	20–30	–
	common wolfstail	LYPH	*Lycurus phleoides*	20–30	–
	ear muhly	MUAR	*Muhlenbergia arenacea*	20–30	–
	Hall's panicgrass	PAHA	*Panicum hallii*	20–30	–
	vine mesquite	PAOB	*Panicum obtusum*	20–30	–
	James' galleta	PLJA	*Pleuraphis jamesii*	20–30	–
	plains bristlegrass	SEVU2	*Setaria vulpiseta*	20–30	–
	sand dropseed	SPCR	*Sporobolus cryptandrus*	20–30	–
3	**Shortgrasses**			400–700	
	blue grama	BOGR2	*Bouteloua gracilis*	275–400	–
	black grama	BOER4	*Bouteloua eriopoda*	125–300	–
4	**Tallgrasses**			10–60	
	sand bluestem	ANHA	*Andropogon hallii*	5–20	–
	Canada wildrye	ELCA4	*Elymus canadensis*	0–20	–
	Indiangrass	SONU2	*Sorghastrum nutans*	5–20	–
Forb					
5	**Forbs**			70–130	
	Forb, annual	2FA	*Forb, annual*	0–50	–
	Cuman ragweed	AMPS	*Ambrosia psilostachya*	0–50	–
	lyreleaf greeneyes	BELY	*Berlandiera lyrata*	0–50	–
	yellow sundrops	CASE12	*Calylophus serrulatus*	0–50	–
	eastern daisy fleabane	ERAN	*Erigeron annuus*	0–50	–
	red dome blanketflower	GAPI	*Gaillardia pinnatifida*	0–50	–
	beeblossom	GAURA	*Gaura*	0–50	–
	broom snakeweed	GUSA2	*Gutierrezia sarothrae*	0–50	–
	collegeflower	HYFL	*Hymenopappus flavescens*	0–50	–
	trailing krameria	KRLA	*Krameria lanceolata*	0–50	–
	dotted blazing star	LIPU	*Liatris punctata*	0–50	–

	bractless blazingstar	MENU	*Mentzelia nuda*	0–50	–
	Roemer's mimosa	MIRO6	*Mimosa roemeriana*	0–50	–
	James' holdback	POJA5	*Pomaria jamesii*	0–50	–
	slimflower scurfpea	PSTE5	*Psoralidium tenuiflorum*	0–50	–
	silverleaf nightshade	SOEL	*Solanum elaeagnifolium*	0–50	–
	scarlet globemallow	SPCO	*Sphaeralcea coccinea*	0–50	–
	Rocky Mountain zinnia	ZIGR	*Zinnia grandiflora*	0–50	–
Shrub/Vine					
6	**Shrubs/Vines**			50–85	
	sand sagebrush	ARFI2	*Artemisia filifolia*	0–50	–
	tree cholla	CYIMI	*Cylindropuntia imbricata var. imbricata*	0–50	–
	vine jointfir	EPPE	*Ephedra pedunculata*	0–50	–
	winterfat	KRLA2	*Krascheninnikovia lanata*	0–50	–
	plains pricklypear	OPPO	*Opuntia polyacantha*	0–50	–
	honey mesquite	PRGL2	*Prosopis glandulosa*	0–50	–
	soapweed yucca	YUGL	*Yucca glauca*	0–50	–
Tree					
7	**Trees**			0–1	
	netleaf hackberry	CELAR	*Celtis laevigata var. reticulata*	0–1	–
	western soapberry	SASAD	*Sapindus saponaria var. drummondii*	0–1	–

Animal community

Mule deer and pronghorn are the principal large herbivores utilizing the community. In addition, rabbits, prairie dogs, ground squirrels, mice and voles, and predators such as coyotes, bobcats, badgers, and raptors utilize the site. In pre settlement times elk and bison were present. Scaled quail can be seen frequently. The site does not have much woody cover, therefore, mainly grassland species are found.

Plant preference by animal kind:
This rating system provides general guidance as to animal preference for plant species. It also indicates possible competition between kinds of herbivores for various plants. Grazing preference changes from time to time, especially between seasons, and between animal kinds and classes. Grazing preference does not necessarily reflect the ecological status of the plant within the plant community. For wildlife, plant preferences for food and plant suitability for cover are rated.

Animal Preference:
Preferred (P) – Percentage of plant in animal diet is greater than it occurs on the land
Desirable (D) – Percentage of plant in animal diet is similar to the percentage composition on the land
Undesirable (U) – Percentage of plant in animal diet is less than it occurs on the land
Not Consumed (N) – Plant would not be eaten under normal conditions. It is only consumed when other forages not available.
Toxic (T) – Rare occurrence in diet and, if consumed in any tangible amounts results in death or severe illness in animal

Hydrological functions

The site's usual position on the landscape is such that it can contribute runoff to lower lying drainages. If good vegetative cover is not maintained, water erosion and siltation can occur. If a good plant community is maintained runoff is very limited and little surface erosion is visible.

Recreational uses

Hunting, Camping, Hiking, Bird watching, Photography, Horseback Riding

Wood products

None.

Other products

None.

Other information

None.

Inventory data references

NRCS FOTG – Section II of the FOTG Range Site Descriptions and numerous historical accounts of vegetative conditions at the time of early settlement in the area were used in the development of this site description. Vegetative inventories were made at several site locations for support documentation.

Inventory Data References (documents):

NRCS FOTG – Section II - Range Site Descriptions
NRCS Clipping Data summaries over a 20 year period

Other references

Natural Resources Conservation Service - Range Site Descriptions
USDA-Natural Resources Conservation Service - Soil Surveys & Website soil database
Rathjen, Frederick W., The Texas Panhandle Frontier, Rev. 1998, Univ. of Texas Press
Hatch, Brown and Ghandi, Vascular Plants of Texas (An Ecological Checklist)
Texas A&M Exp. Station, College Station, Texas
Texas Tech University – Range, Wildlife & Fisheries Dept.
Wester, David; The Southern High Plains; A History of Vegetation 1540 to Present; USDA Forest Service, RMRS, 2007

Reviewers:

Clint Rollins, RMS, NRCS, Amarillo, Texas
Kelley Attebury, RSS, NRCS, Lubbock, Texas

Contributors

J.R. Bell

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)	Stan Bradbury, Zone RMS, NRCS, Lubbock, Texas

Contact for lead author	806-791-0581
Date	02/28/2008
Approved by	Mark Moseley, RMS, NRCS, San Antonio, Texas
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** None to slight.

2. **Presence of water flow patterns:** None to slight.

3. **Number and height of erosional pedestals or terracettes:** None to slight.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** 20-25%.

5. **Number of gullies and erosion associated with gullies:** None to slight.

6. **Extent of wind scoured, blowouts and/or depositional areas:** None to slight.

7. **Amount of litter movement (describe size and distance expected to travel):** None to slight.

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Resistant to surface erosion.

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Fine sandy loam, friable surface, and medium SOM.

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Basal cover and density with small interspaces should make rainfall impact minimal. This site has moderate permeability, runoff is slow and available water holding capacity is high.

11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** None.

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: Warm-season midgrasses = Warm-season shortgrasses >

    Sub-dominant: Warm-season tallgrasses = Cool-season shortgrasses >

    Other: Forbs = Shrubs/Vines

    Additional:

---

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Minimal mortality and decadence.

---

14. **Average percent litter cover (%) and depth (in):** Litter is dominately herbaceous.

---

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 1,000 - 1,750 pounds per acre.

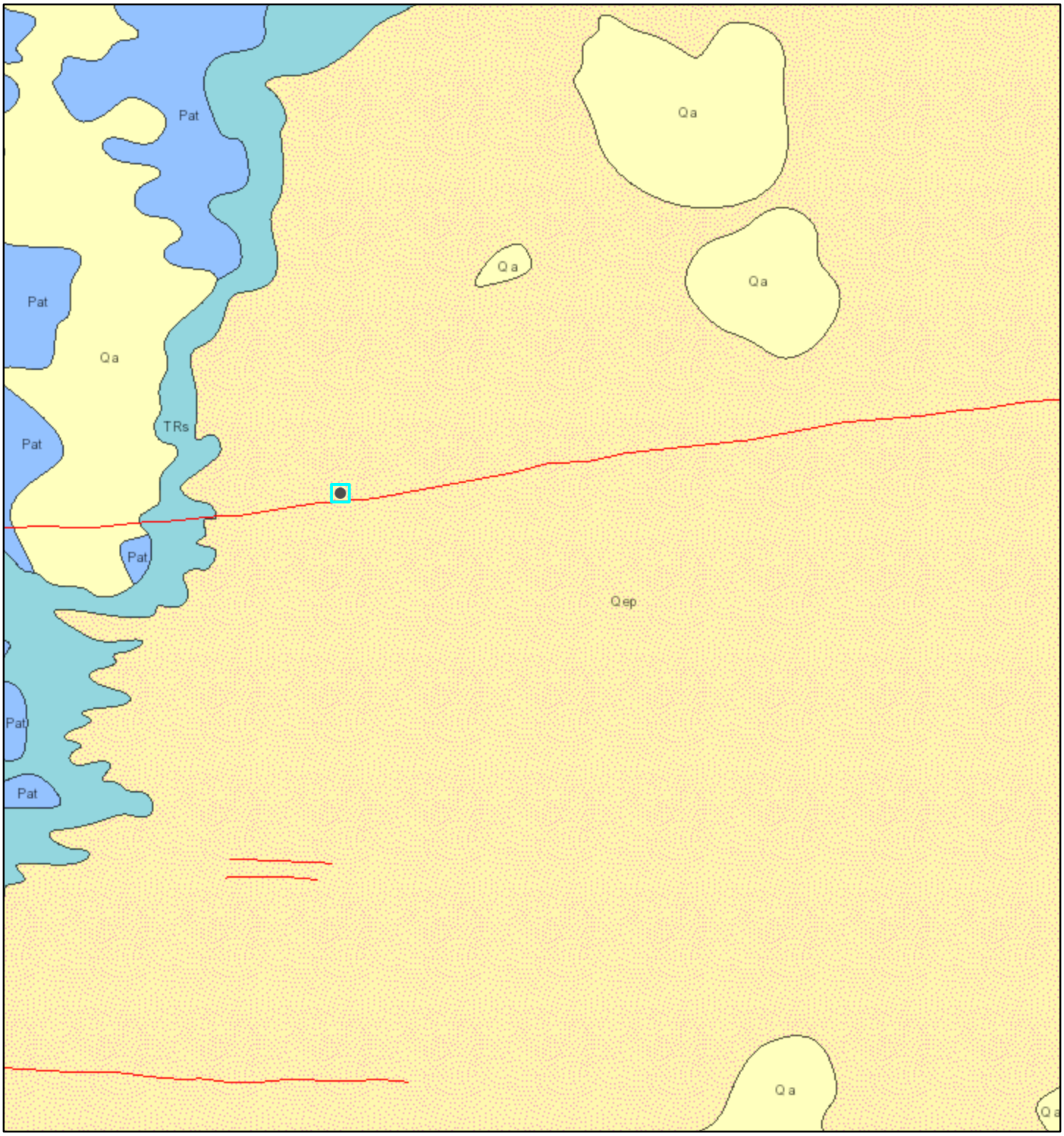
---

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:** Sand sagebrush, Yucca, Mesquite.

---

17. **Perennial plant reproductive capability:** All plants should be capable of reproduction.

ArcGIS Web Map



2/3/2022, 4:51:14 PM

1:144,448

0 1 2 4 mi

0 1.5 3 6 km

Lithologic Contacts
- Contact, Exposed
- Contact, Gradational
- Nomenclature change
- Map Boundary

Faults
- Fault, Exposed
- Fault, Intermittent
- Fault, Concealed
- Shere Zone

Dikes
- <all other values>
- Dike
- Dike intruding fault
- Volcanic Vents

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 data; USFS Road Data; Natural Earth Data; U.S.

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

ATTACHMENT 4

Daily Site Visit Report

Client:	EOG Resources Inc.	Inspection Date:	3/5/2022
Site Location Name:	Avalanche Journal State #1	Report Run Date:	3/6/2022 1:00 AM
Client Contact Name:	Chase Settle	API #:	
Client Contact Phone #:	575-703-6537		
Unique Project ID	-Avalanche Journal State #1	Project Owner:	Chase Settle
Project Reference #	22E-00345	Project Manager:	Michael Moffitt

Summary of Times

Arrived at Site	3/5/2022 9:00 AM
Departed Site	3/5/2022 2:52 PM

Field Notes

14:45 Began delineation on spill South of pad

Next Steps & Recommendations

1 Continue delineation

Daily Site Visit Report

Site Photos

Viewing Direction: East

Spill area.
What seems like asphalt.
Western most area.

Viewing Direction: Northeast

Toe of spill that splits Northeast of mane area

Viewing Direction: Southeast

Main area of spill leading Southeast

Viewing Direction: West

Southeast toe of spill looking back West

Daily Site Visit Report

Viewing Direction: Northwest	**Viewing Direction**: Southwest
	
BH22-01 in Southeast corner	BH22-02 at Northeast corner
Viewing Direction: North	**Viewing Direction**: East
	
BH22-03 middle of spill area on South side	BH22-04 on far West side of spill area

Daily Site Visit Report

Viewing Direction: North

Hard asphalt material

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Austin Harris

Signature: 
Signature

Daily Site Visit Report

Client:	EOG Resources Inc.	Inspection Date:	3/6/2022
Site Location Name:	Avalanche Journal State #001	Report Run Date:	3/6/2022 9:15 PM
Client Contact Name:	Chase Settle	API #:	
Client Contact Phone #:	575-703-6537		
Unique Project ID	22E-00498-Avalanche Journal State #001	Project Owner:	Bob Asher
Project Reference #		Project Manager:	Michael Moffitt

Summary of Times

Arrived at Site	3/6/2022 9:00 AM
Departed Site	3/6/2022 11:33 AM

Field Notes

11:32 Obtained middle of spill samples to delineate vertical extent.

11:32 Hit refusal layer of caliche but numbers still very high .

Next Steps & Recommendations

1 Determine remediation plan

Daily Site Visit Report

Site Photos

Viewing Direction: East	**Viewing Direction**: East
	
BH22-05	BH22-06

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Austin Harris

Signature: 
Signature

Daily Site Visit Report

Client:	EOG Resources Inc.	Inspection Date:	3/31/2022
Site Location Name:	Avalanche Journal State #1	Report Run Date:	4/1/2022 12:08 AM
Client Contact Name:	Chase Settle	API #:	
Client Contact Phone #:	575-703-6537		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	3/31/2022 8:00 AM
Departed Site	3/31/2022 3:00 PM

Field Notes

13:57 Obtained BH22-07, 08, 09, and 10 at depths Zero, 2’ and 4’.

13:58 See USA collector for sample points locations

13:58 Caliche layer at approximately 2’ makes sampling difficult to obtain.

13:59 Highly recommend a background sample as most all chloride numbers are around 1100-1400ppm. Background may provide proof of natural chloride in ground.

Next Steps & Recommendations

1 Continue borehole sampling

Daily Site Visit Report

Site Photos

Viewing Direction: Southwest	**Viewing Direction**: North
	
Excavated spill area of approximately 0.5’	Field screen form
Viewing Direction: South	**Viewing Direction**: West
	
Excavated spill area of approximately 0.5’	Far west excavated spill area of approximately 0.5’

Daily Site Visit Report

Viewing Direction: East	**Viewing Direction**: Southeast
	
Middle excavated spill area of approximately 0.5’	Southeast toe of excavated spill area of approximately 0.5’
Viewing Direction: West	**Viewing Direction**: Southeast
	
BH22-07 in middle of excavated area	BH22-08 near Western toe of excavated area, on outside boundary of spill.

Daily Site Visit Report

Viewing Direction: South	**Viewing Direction**: Northeast
	
BH22-09 on far West toe of excavated area	BH22-10 near far Southwest toe of excavated area

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Austin Harris

Signature: 

Signature

Daily Site Visit Report

Client:	EOG Resources Inc.	Inspection Date:	4/9/2022
Site Location Name:	Avalanche Journal State #1	Report Run Date:	4/9/2022 9:52 PM
Client Contact Name:	Chase Settle	API #:	
Client Contact Phone #:	575-703-6537		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	4/9/2022 8:00 AM
Departed Site	4/9/2022 1:30 PM

Field Notes

12:51 Finished obtaining proposed boreholes BH22-11, 12, 13, 14

12:51 BH22-13 hit refusal at 3’

Next Steps & Recommendations

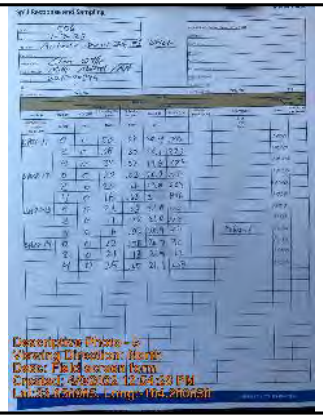
1 Send samples to lab and determine further work plan

Daily Site Visit Report

Site Photos

Viewing Direction: Northwest	**Viewing Direction**: Southeast
	
BH22-11 on South side of spill area	BH22-12 on north side of spill
Viewing Direction: Southwest	**Viewing Direction**: West
	
BH22-13 in northeast corner middle of spill area	BH22-14 towards southeast toe of spill area in middle of spill

Daily Site Visit Report

Viewing Direction: North

Field screen form

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Austin Harris

Signature: 

Signature

Daily Site Visit Report

Client:	EOG Resources Inc.	Inspection Date:	5/6/2022
Site Location Name:	Avalanche Journal State #001	Report Run Date:	5/8/2022 8:13 AM
Client Contact Name:	Chase Settle	API #:	
Client Contact Phone #:	575-703-6537		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	5/6/2022 8:00 AM
Departed Site	

Field Notes

10:42 Arrived on site. Excavated BH22-15 down to 8’ and began backfilling Avalanche journal #1 pit

10:44 Began horizontal delineation of release site.

Next Steps & Recommendations

1

Daily Site Visit Report

Site Photos

Viewing Direction: East	**Viewing Direction**: North
	
Excavation site during backfilling	Backfilling avalanche journal 1 pit.
Viewing Direction: West	**Viewing Direction**: South
	
Excavation site during backfilling	Site during backfilling

Daily Site Visit Report

Daily Site Visit Signature

Inspector: McKitric Wier

Signature: 

Daily Site Visit Report

Client:	EOG Resources Inc.	Inspection Date:	5/9/2022
Site Location Name:	Avalanche Journal State #001	Report Run Date:	5/9/2022 7:33 PM
Client Contact Name:	Chase Settle	API #:	
Client Contact Phone #:	575-703-6537		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	5/9/2022 8:05 AM
Departed Site	5/9/2022 1:25 PM

Field Notes

8:31 Completed safety paperwork at office.

12:56 Collected soil samples at BH22-16, BH22-17, BH22-18, and BH22-19 to complete horizontal delineation for east, north, west, and south edges of release, respectively.

12:57 Sample field screening results were below strictest requirements for chloride, VOC, and TPH. Samples packaged for laboratory analysis.

Next Steps & Recommendations

1 Map excavation area based on laboratory results.

Daily Site Visit Report

Site Photos

Viewing Direction: West

East of remediation area facing west. Collected BH22-16 east of work area.

Viewing Direction: South

North of remediation area facing south. Collected BH22-17 north of work area.

Viewing Direction: East

West of remediation area facing south. Collected BH22-17 west of work area.

Viewing Direction: North

South of remediation area facing north. Collected BH22-19 south of work area.

Daily Site Visit Report

Viewing Direction: East	**Viewing Direction**: North
	
West edge of release area facing east.	South edge of release area facing north.
Viewing Direction: Northwest	**Viewing Direction**: Southwest
	
Southeast corner of release area facing northwest.	Northeast edge of release area facing southwest.

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Lakin Pullman

Signature: 

Daily Site Visit Report

Client:	EOG Resources Inc.	Inspection Date:	5/12/2022
Site Location Name:	Avalanche Journal State #001	Report Run Date:	5/12/2022 6:26 PM
Client Contact Name:	Chase Settle	API #:	
Client Contact Phone #:	575-703-6537		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	5/12/2022 7:57 AM
Departed Site	5/12/2022 11:24 AM

Field Notes

8:10 Completed safety paperwork on arrival.

9:46 Used field screening and available laboratory data to mark horizontal boundaries of excavation area. Current excavation area is approximately 5800 square feet.

9:49 Preliminary excavation plan is to remove material to 5 feet bgs on edges of release and extend to 12 feet in the center of the release area. Internal sidewalls will be sloped, not stepped.

10:07 Updated proposed excavation area in collector. Will update map and flags as needed pending laboratory results.

11:23 Discussed preliminary excavation plan with operator, and will start once waste material is removed from neighboring battery site.

Next Steps & Recommendations

1 Confirm laboratory results when available and change excavation plan as needed.

Daily Site Visit Report

Site Photos

Viewing Direction: Southwest	**Viewing Direction**: Northeast
	
Northwest of proposed excavation area facing southeast. Marked preliminary horizontal edges of 5- foot excavation with flags.	Southwest of proposed excavation area facing northeast. Marked preliminary horizontal edges of 5- foot excavation with flags.

Daily Site Visit Report

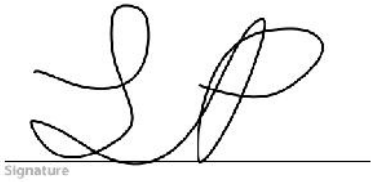
Viewing Direction: North	**Viewing Direction**: West
	
South of proposed excavation area facing north . Marked preliminary horizontal edges of 5- foot excavation with flags.	East of proposed excavation area facing west. Marked preliminary horizontal edges of 5- foot excavation with flags.
Viewing Direction: South	**Viewing Direction**: Southwest
	
North of proposed excavation area facing south. Marked preliminary horizontal edges of 5- foot excavation with flags.	North of proposed excavation area facing southwest. Marked preliminary horizontal edges of 5- foot excavation with flags.

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Lakin Pullman

Signature:



Daily Site Visit Report

Client:	EOG Resources Inc.	Inspection Date:	5/13/2022
Site Location Name:	Avalanche Journal State #001	Report Run Date:	5/14/2022 12:39 AM
Client Contact Name:	Chase Settle	API #:	
Client Contact Phone #:	575-703-6537		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	5/13/2022 11:00 AM
Departed Site	5/13/2022 4:29 PM

Field Notes

11:10 Completed safety paperwork at neighboring site. Started excavation of off-pad release.

15:33 Excavated to 6 feet bgs on east edge and sloped to 7 feet bgs. Field screening results of wall samples and base samples for excavated area were below NMOCD strictest criteria.

16:20 Hauled 144 yards of waste material for disposal.

16:21 Installed orange fence around excavation.

Next Steps & Recommendations

1

Daily Site Visit Report

Site Photos

Viewing Direction: South	**Viewing Direction**: Northeast
	
North edge of excavation at end of day facing south.	West edge of excavation at end of day facing northeast.
Viewing Direction: Southeast	**Viewing Direction**: Northwest
	
West edge of excavation at end of day facing southeast.	Southeast edge of excavation at end of day facing northwest.

Daily Site Visit Report

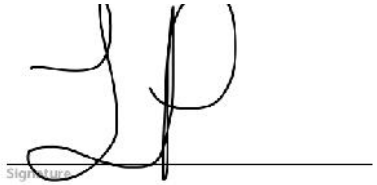
Viewing Direction: Southeast

Northwest of excavation facing southeast.
Excavation at end of day.

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Lakin Pullman

Signature: 

Daily Site Visit Report

Client:	EOG Resources Inc.	Inspection Date:	5/16/2022
Site Location Name:	Avalanche Journal State #001	Report Run Date:	5/17/2022 12:35 AM
Client Contact Name:	Chase Settle	API #:	
Client Contact Phone #:	575-703-6537		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	5/16/2022 11:07 AM
Departed Site	5/16/2022 4:34 PM

Field Notes

12:40 Completed safety paperwork on arrival. Continued guidance of excavation with field screening.

15:19 As excavation extended east the depth was increased to 8 feet bgs to remove hydrocarbon staining.

16:28 At end of day the middle of east end of excavation exceeded TPH threshold. Will excavate to 10 feet.

Next Steps & Recommendations

1 Continue excavation.

Daily Site Visit Report

Site Photos

Viewing Direction: Northeast

Southwest of existing excavation facing northeast. Continued excavation.

Viewing Direction: Southeast

Northwest of existing excavation facing southeast. Continued excavation.

Viewing Direction: Southwest

Northeast of current excavation facing southeast. End of day.

Viewing Direction: Northwest

Southeast of current excavation facing northwest. End of day.

Daily Site Visit Report

Viewing Direction: East

West of current excavation facing east. End of day. Hydrocarbon staining visible.

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Lakin Pullman

Signature: 

Daily Site Visit Report

Client:	EOG Resources Inc.	Inspection Date:	5/17/2022
Site Location Name:	Avalanche Journal State #001	Report Run Date:	5/18/2022 1:01 AM
Client Contact Name:	Chase Settle	API #:	
Client Contact Phone #:	575-703-6537		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	5/17/2022 7:53 AM
Departed Site	5/17/2022 5:01 PM

Field Notes

8:21 Completed safety paperwork on arrival. Objective is to continue excavation.

8:36 Hauled 216 yards of material away yesterday.

12:54 Continued west end of excavation. Excavated to 12 feet in the center to remove hydrocarbon staining and expose clean soil. Started sloping back up to the east. Also started sloping the inside of the excavation up towards the walls to reduce wall height. Field screening governed final excavation depth.

16:50 Hauled 144 yards of material for disposal.

18:50 Excavated south central portion to 5 feet bgs.

Next Steps & Recommendations

1

Daily Site Visit Report

Site Photos

Viewing Direction: Southeast	**Viewing Direction**: South
	
Northwest of current excavation facing east. Beginning of day.	North of current excavation facing south. Beginning of day.
Viewing Direction: East	**Viewing Direction**: North
	
Southwest of current excavation facing northeast. Beginning of day.	Soy of current excavation facing north. Beginning of day.

Daily Site Visit Report

Viewing Direction: Southeast	**Viewing Direction**: Northeast
	
North of excavation facing southeast. Sloped west excavation back up to follow dark staining.	South of excavation facing northeast. Sloped west excavation back up to follow dark staining.
Viewing Direction: West	**Viewing Direction**: South
	
On pit facing west. Spoil pile on liner is increasing in size.	North of excavation facing south. End of day.

Daily Site Visit Report

Viewing Direction: Northwest

Southeast of excavation facing northwest. End of day.

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Lakin Pullman

Signature:

Daily Site Visit Report

Client:	EOG Resources Inc.	Inspection Date:	5/18/2022
Site Location Name:	Avalanche Journal State #001	Report Run Date:	5/19/2022 1:15 AM
Client Contact Name:	Chase Settle	API #:	
Client Contact Phone #:	575-703-6537		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	5/18/2022 7:56 AM
Departed Site	5/18/2022 2:22 PM

Field Notes

8:15 Completed safety paperwork at office. Objective of the day is to continue excavation eastward, guiding with field screening results.

13:21 Removed material to 10 feet bgs in approximate center of release area to collect soil samples with chloride concentrations less than NMOCD threshold.

13:26 Started excavation of southeast “arm” of release area to 5 feet bgs. Removed potential asphaltene staining prior to sample collection.

13:28 Pile of contaminated material is increasing in size by day. Hauling will continue after excavation is completed.

14:14 144 yards of material hauled by end of day.

Next Steps & Recommendations

1

Daily Site Visit Report

Site Photos

Viewing Direction: Southeast

Northwest corner of current excavation facing southeast. Beginning of day.

Viewing Direction: North

South of approximate center of release area facing north. Excavated approximate center to 10 feet bgs due to chloride concentrations.

Viewing Direction: East

West edge of excavation facing east.

Viewing Direction: Southeast

Northwest corner of excavation facing southeast.

Daily Site Visit Report

Viewing Direction: South

North of approximate center of release area facing south. Excavated approximate center to 10 feet bgs due to chloride concentrations.

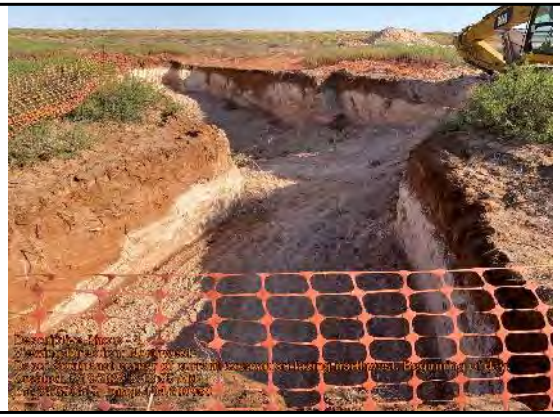
Viewing Direction: East

West edge of current excavation facing east. Beginning of day.

Viewing Direction: Northeast

Southwest corner of current excavation facing northeast . Beginning of day.

Viewing Direction: Northwest



Southeast corner of current excavation facing northwest. Beginning of day.

Daily Site Visit Report

Viewing Direction: West	**Viewing Direction**: West
	
East edge of current excavation facing west. Beginning of day.	On pit area facing west. Pile of contaminated material.
Viewing Direction: Northwest	**Viewing Direction**: Southwest
	
East edge of release area facing northwest. Started excavation of southeast portion.	North of east excavation facing southwest. Started excavation of southeast portion.

Daily Site Visit Report

Viewing Direction: Northeast

South of east excavation facing northeast. Started excavation of southeast portion.

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Lakin Pullman

Signature: 

Signature

Daily Site Visit Report

Client:	EOG Resources Inc.	Inspection Date:	5/19/2022
Site Location Name:	Avalanche Journal State #001	Report Run Date:	5/20/2022 12:34 AM
Client Contact Name:	Chase Settle	API #:	
Client Contact Phone #:	575-703-6537		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	5/19/2022 7:48 AM
Departed Site	5/19/2022 4:14 PM

Field Notes

7:49 Completed safety paperwork on arrival.

15:51 Continued excavation as material was hauled. Excavator is running out of room to store material.

15:52 Collected confirmation excavation base samples BES22-27 through 32 and packaged for laboratory analysis.

15:52 Collected confirmation excavation wall samples WES22-01 through 33 and packaged for laboratory analysis.

16:06 Excavated east and west excavations closer to connecting. East excavation is 5 feet bgs so far. North side of west excavation is still 8 feet bgs due to chloride concentrations.

16:07 Hauled 144 yards of material to disposal today.

Next Steps & Recommendations

1 Collect outstanding confirmation excavation base samples tomorrow.

2 Continue excavation.

Daily Site Visit Report

Site Photos

Viewing Direction: Southwest

North of dry hole marker facing southwest. Spoil pile cannot get larger without more liner material.

Viewing Direction: East

West end of west excavation facing east at end of day.

Viewing Direction: Northeast

South of west excavation facing northeast. End of day.

Viewing Direction: Southeast

North of west excavation facing southeast. End of day.

Daily Site Visit Report

Viewing Direction: East	**Viewing Direction**: West
	
Between excavations facing east. End of day.	East of east excavation facing west. End of day.

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Lakin Pullman

Signature: 

Daily Site Visit Report

Client:	EOG Resources Inc.	Inspection Date:	5/20/2022
Site Location Name:	Avalanche Journal State #001	Report Run Date:	5/21/2022 1:17 AM
Client Contact Name:	Chase Settle	API #:	
Client Contact Phone #:	575-703-6537		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	5/20/2022 7:57 AM
Departed Site	5/20/2022 5:00 PM

Field Notes

8:04 Completed safety paperwork on arrival.

19:11 Connected east and west excavations at 5 feet bgs.

19:12 Hauled 288 yards of material for disposal.

19:12 Remaining area to be excavated is northeast “arm” of release area.

19:14 Collected remaining excavation base and wall confirmation samples for excavated area. Each sample was a five-point composite representative of no more than 200 square feet.

Next Steps & Recommendations

1 Complete excavation.

2 Collect confirmation samples from area to be excavated.

Daily Site Visit Report

Site Photos

Viewing Direction: East	**Viewing Direction**: Northwest
	
Northwest corner of excavation facing east. Beginning of day.	South edge of excavation facing northwest. End of day.
Viewing Direction: East	**Viewing Direction**: Southeast
	
West edge of excavation facing east. End of day.	Northwest corner of excavation facing southeast. End of day.

Daily Site Visit Report

Viewing Direction: Southwest	**Viewing Direction**: South
	
North edge of excavation facing southwest. End of day.	North edge of excavation facing south. End of day.
Viewing Direction: Southeast	**Viewing Direction**: West
	
North edge of excavation facing southeast. End of day.	Between excavations facing west. Beginning of day.

Daily Site Visit Report

Viewing Direction: Southeast	**Viewing Direction**: West
	
Between excavations facing southeast. Beginning of day.	East edge of excavation facing west. End of day.
Viewing Direction: Northwest	**Viewing Direction**: North
	
Southeast edge of excavation facing northwest. End of day.	South edge of excavation facing north. End of day.

Daily Site Visit Report

Viewing Direction: West

South edge of excavation facing west. End of day.

Viewing Direction: North

South edge of excavation facing north. End of day.

Viewing Direction: Northeast

South edge of excavation facing northeast. End of day.

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Lakin Pullman

Signature: 

Daily Site Visit Report

Client:	EOG Resources Inc.	Inspection Date:	5/25/2022
Site Location Name:	Avalanche Journal State #1	Report Run Date:	5/25/2022 11:21 PM
Client Contact Name:	Chase Settle	API #:	
Client Contact Phone #:	575-703-6537		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	5/25/2022 8:00 AM
Departed Site	5/25/2022 3:00 PM

Field Notes

14:34 Excavated into Northeast corner of spill area.
Testing base and walls.

14:35 Obtained BES22-42, 43, 44, 45.
Obtained WES22-42, 43, 44, 45.
All field screened cleaned and jarred.

Next Steps & Recommendations

1 Continue excavation

Daily Site Visit Report

Site Photos

Viewing Direction: Northeast

North wall of Northeast area

Viewing Direction: Northeast

Northeast corner

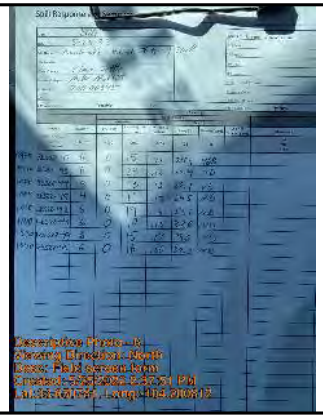
Viewing Direction: East

Northeast corner

Viewing Direction: Southwest

Northeast area looking back to center of excavation

Daily Site Visit Report

Viewing Direction: East	**Viewing Direction**: North
	
Looking into northeast corner from above excavation	Field screen form

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Austin Harris

Signature: 
Signature

Daily Site Visit Report

Client:	EOG Resources Inc.	Inspection Date:	5/26/2022
Site Location Name:	Avalanche Journal State #1	Report Run Date:	5/26/2022 11:15 PM
Client Contact Name:	Chase Settle	API #:	
Client Contact Phone #:	575-703-6537		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	5/26/2022 8:00 AM
Departed Site	5/26/2022 3:00 PM

Field Notes

13:55 Completed excavation and field screening.

13:56 Obtained BES22-46, 47, 48.
Obtained WES22-46.
All samples field screened clean and jarred.

Next Steps & Recommendations

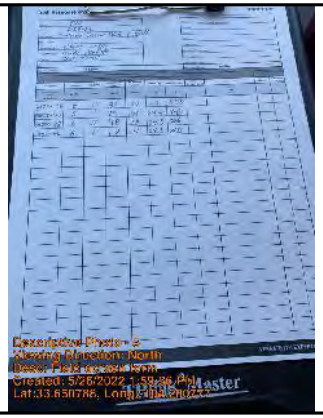
1 Send all samples to lab

Daily Site Visit Report

Site Photos

Viewing Direction: East	**Viewing Direction**: East
	
Took North wall of Northeast area approximately 3’ out to test clean. The fall in material is a ramp made by excavator to walk down into pit.	Northeast most corner
Viewing Direction: West	**Viewing Direction**: Southwest
	
Center area where Northeast corner juts out	Center of excavation

Daily Site Visit Report

Viewing Direction: North

Field screen form

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Austin Harris

Signature: 

Signature

Daily Soil Sampling

Client: Client: EOG Resources Inc.

Location: Site: Avalanche Journal State #1

Date: (SD: 4/9/22)

Sampling											
		Field Screening							Data Collection		
		Hydrocarbon		Chloride							
Sample ID	Depth (ft)	VOC (PID)	TPH (ppm)	EC Reading (mS/cm)	Temp (°C)	EC Chloride (ppm)	Chloride Titration (ppm)	Lab Analysis	Photo Taken	Marked on Sketch	Refusal Depth (ft)
BH22-11	0.0	0	50	0.02	20.4	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√		
BH22-11	2.0	0	38	0.30	20.1	373		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√		
BH22-11	4.0	0	39	0.57	19.8	776		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√		
BH22-12	0.0	0	20	0.03	20	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√		
BH22-12	2.0	0	20	0.26	19.8	329		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√		
BH22-12	4.0	0	16	0.63	21.1	806		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√		
BH22-13	0.0	0	23	0.03	21	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√		
BH22-13	2.0	0	11	0.05	21	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√		
BH22-13	3.0	0	16	0.06	20.9	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√		

Daily Soil Sampling

BH22-14	0.0	0	22	0.08	20.7	30		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√		
BH22-14	2.0	0	21	0.18	21.9	122		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√		
BH22-14	4.0	0	25	0.25	21.1	258		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√		

Daily Soil Sampling

Client: Client: EOG Resources Inc.

Location: Site: Avalanche Journal State #1

Date: (SD: 3/5/22)

Sampling											
		Field Screening							Data Collection		
		Hydrocarbon		Chloride							
Sample ID	Depth (ft)	VOC (PID)	TPH (ppm)	EC Reading (mS/cm)	Temp (°C)	EC Chloride (ppm)	Chloride Titration (ppm)	Lab Analysis	Photo Taken	Marked on Sketch	Refusal Depth (ft)
BH22-01	0.0	0	18	0.07	22.5	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH22-01	2.0	0	34	0.68	23.7	766		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH22-01	4.0	0	29	0.66	23.8	733		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH22-02	0.0	0	36	0.07	23.1	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH22-02	0.0	0	26	0.05	23.4	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH22-02	4.0	0	19	0.32	23	277		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH22-03	0.0	0	18	0.02	22.7	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH22-03	2.0	0	24	0.87	23.2	1062		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	2.00
BH22-04	0.0	0	20	0.09	23.4	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	

Daily Soil Sampling

BH22-04	2.0	0	31	1.10	23.4	1385		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH22-04	4.0	0	27	0.96	23.4	1183		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	

Daily Soil Sampling

Client: Client: EOG Resources Inc.

Location: Site: Avalanche Journal State #001

Date: (SD: 3/6/22)

Sampling											
		Field Screening							Data Collection		
		Hydrocarbon		Chloride							
Sample ID	Depth (ft)	VOC (PID)	TPH (ppm)	EC Reading (mS/cm)	Temp (°C)	EC Chloride (ppm)	Chloride Titration (ppm)	Lab Analysis	Photo Taken	Marked on Sketch	Refusal Depth (ft)
BH22-05	0.0	0	11600	0.37	19.8	487		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH22-05	2.0	0	8960	0.45	20.4	577		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	2.00
BH22-06	0.0	0	8520	0.08	20.7	30		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH22-06	2.0	0	10140	0.04	20.9	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	2.00

Daily Soil Sampling

Client: Client: EOG Resources Inc.

Location: Site: Avalanche Journal State #001

Date: (SD: 5/13/22)

Sampling											
		Field Screening							Data Collection		
		Hydrocarbon		Chloride							
Sample ID	Depth (ft)	VOC (PID)	TPH (ppm)	EC Reading (mS/cm)	Temp (°C)	EC Chloride (ppm)	Chloride Titration (ppm)	Lab Analysis	Photo Taken	Marked on Sketch	Refusal Depth (ft)
BES22-01	5.0	1		1.43	35.5	1337		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-01	6.0	2	63	0.98	42.2	398			√	√	
BES22-02	5.0	1		1.50	35.5	1438		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-02	6.0	2	51	0.84	42.6	178			√	√	
BES22-03	5.0	2		1.78	35.4	1847		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-03	6.0	2	67	1.10	42.4	562			√	√	
BES22-04	7.0	3	47	0.96	42.7	347			√	√	
BES22-05	7.0	3	51	0.85	38.4	375			√	√	
WES22-01	5.0	2	36	0.34	30.2	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
WES22-02	5.0	3	35	0.18	30.8	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
WES22-03	5.0	2	33	0.12	30.8	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
WES22-04	5.0	2	197	0.52	30.8	228		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	

Daily Soil Sampling

WES22-05	5.0	3		0.78	30.3	624		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
WES22-06	7.0	1	30	0.44	40.8	0			✓	✓	
WES22-07	7.0	0	36	0.37	40.8	0			✓	✓	

Daily Soil Sampling

Client: Client: EOG Resources Inc.

Location: Site: Avalanche Journal State #1

Date: (SD: 3/31/22)

Sampling											
		Field Screening							Data Collection		
		Hydrocarbon		Chloride							
Sample ID	Depth (ft)	VOC (PID)	TPH (ppm)	EC Reading (mS/cm)	Temp (°C)	EC Chloride (ppm)	Chloride Titration (ppm)	Lab Analysis	Photo Taken	Marked on Sketch	Refusal Depth (ft)
BH22-07	0.0	1	60	1.07	26.1	1225		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH22-07	2.0	2	30	1.57	24.6	2011		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH22-07	4.0	1	36	1.91	23.7	2541		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH22-08	0.0	0	14	0.11	23.5	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH22-08	2.0	1	19	0.81	23.2	975		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH22-08	4.0	0	20	0.91	23.2	1119		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH22-09	0.0	1	31	0.94	23.6	1145		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH22-09	2.0	0	23	1.10	22.9	1407		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH22-09	4.0	0	20	1.26	22.7	1646		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	

Daily Soil Sampling

BH22-10	0.0	0	35	1.00	22.6	1275		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH22-10	2.0	0	32	0.92	22.1	1182		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH22-10	4.0	0	17	1.05	22.5	1352		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	

Daily Soil Sampling

Client: Client: EOG Resources Inc.

Location: Site: Avalanche Journal State #001

Date: (SD: 5/9/22)

Sampling											
		Field Screening							Data Collection		
		Hydrocarbon		Chloride							
Sample ID	Depth (ft)	VOC (PID)	TPH (ppm)	EC Reading (mS/cm)	Temp (°C)	EC Chloride (ppm)	Chloride Titration (ppm)	Lab Analysis	Photo Taken	Marked on Sketch	Refusal Depth (ft)
BH22-16	0.0	1	41	0.04	26.6	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BH22-16	2.0	2	40	0.06	27.2	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BH22-17	0.0	1	62	0.05	27.5	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BH22-17	2.0	2	35	0.06	26.9	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BH22-18	0.0	1	23	0.05	28.3	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BH22-18	2.0	2	37	0.29	27.6	34		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BH22-19	0.0	1	31	0.03	28.9	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BH22-19	2.0	1	88	0.09	28	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	

Daily Soil Sampling

Client: Client: EOG Resources Inc.

Location: Site: Avalanche Journal State #001

Date: (SD: 5/16/22)

Sampling											
		Field Screening							Data Collection		
		Hydrocarbon		Chloride							
Sample ID	Depth (ft)	VOC (PID)	TPH (ppm)	EC Reading (mS/cm)	Temp (°C)	EC Chloride (ppm)	Chloride Titration (ppm)	Lab Analysis	Photo Taken	Marked on Sketch	Refusal Depth (ft)
BES22-06	7.0	1	39	0.45	29.7	174			✓	✓	
BES22-07	7.0	0	24	0.61	29.2	427			✓	✓	
BES22-08	7.0	1	31	0.25	28.9	0			✓	✓	
BES22-09	7.0	0	48	0.67	29.2	513			✓	✓	
BES22-10	7.0	0	32	0.53	29.6	294			✓	✓	
BES22-11	8.0	1	33	0.74	32.7	463			✓	✓	
BES22-12	8.0	0	91	0.78	33	508			✓	✓	
BES22-13	8.0	0	39	0.64	30.9	396			✓	✓	
BES22-14	8.0	0	31	0.64	27.9	526			✓	✓	
BES22-15	8.0	3	897	0.77	27.9	714			✓	✓	
BES22-16	8.0	1	20	0.60	26.7	521			✓	✓	
WES22-08	7.0	1	12	0.44	29.8	155			✓	✓	
WES22-09	7.0	1		1.54	29.5	1756			✓	✓	
WES22-10	7.0	0	25	0.48	31.7	131			✓	✓	
WES22-11	8.0	0	30	0.60	33.3	235			✓	✓	
WES22-12	8.0	0	22	0.44	33.1	12			✓	✓	
WES22-13	8.0	0	32	0.39	28.4	144			✓	✓	
WES22-14	8.0	0	24	0.51	28.1	330			✓	✓	

Daily Soil Sampling

Client: Client: EOG Resources Inc.

Location: Site: Avalanche Journal State #001

Date: (SD: 5/18/22)

Sampling											
		Field Screening							Data Collection		
		Hydrocarbon		Chloride							
Sample ID	Depth (ft)	VOC (PID)	TPH (ppm)	EC Reading (mS/cm)	Temp (°C)	EC Chloride (ppm)	Chloride Titration (ppm)	Lab Analysis	Photo Taken	Marked on Sketch	Refusal Depth (ft)
BES22-23	7.0	0	47	1.55	27.9	1840			✓	✓	
BES22-23	10.0	0	43	0.79	32.5	544			✓	✓	
BES22-24	8.0	0	38	1.43	27.8	1671			✓	✓	
BES22-24	10.0	0	40	0.83	33.2	571			✓	✓	
BES22-25	5.0	1	52	0.77	33.4	476			✓	✓	
BES22-26	5.0	1	28	0.72	35.3	321			✓	✓	
WES22-24	8.0	0	67	1.05	28	1114			✓	✓	
WES22-25	10.0	0	51	0.71	33.2	398			✓	✓	
WES22-26	5.0	0	54	0.36	34.2	0			✓	✓	
WES22-27	5.0	0	29	0.20	33.6	0			✓	✓	
WES22-28	5.0	1	37	0.31	33.2	0			✓	✓	

Daily Soil Sampling

Client: Client: EOG Resources Inc.

Location: Site: Avalanche Journal State #001

Date: (SD: 5/19/22)

Sampling											
		Field Screening							Data Collection		
		Hydrocarbon		Chloride							
Sample ID	Depth (ft)	VOC (PID)	TPH (ppm)	EC Reading (mS/cm)	Temp (°C)	EC Chloride (ppm)	Chloride Titration (ppm)	Lab Analysis	Photo Taken	Marked on Sketch	Refusal Depth (ft)
BES22-27	5.0	0	57	0.46	32.4	72		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-28	5.0	0	31	0.46	32.5	67		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-29	5.0	0	36	0.75	38.6	222		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-30	5.0	0	60	0.61	38.5	24		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-31	5.0	0		1.19	38.9	844			✓	✓	
BES22-31	6.0	0	51	0.98	40.8	458		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-32	5.0	0		1.52	38.1	1355			✓	✓	
BES22-32	8.0	0	58	1.01	39.8	545		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
WES22-01	5.0	0	29	0.08	25.6	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
WES22-02	5.0	0	32	0.06	25.4	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	

Daily Soil Sampling

WES22-03	5.0	0	44	0.06	25.4	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
WES22-06	6.0	0	37	0.07	25.3	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
WES22-07	6.0	0	23	0.09	25.8	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
WES22-08	7.0	0	31	0.14	25.7	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
WES22-11	8.0	0	47	0.11	25.6	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
WES22-12	8.0	0	33	0.09	25.6	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
WES22-13	8.0	0	41	0.18	30.2	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
WES22-17	8.0	0	44	0.20	30.1	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
WES22-19	5.0	0	22	0.17	30.2	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
WES22-20	5.0	0	19	0.23	30	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
WES22-21	5.0	0	31	0.34	30.7	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
WES22-22	5.0	0	12	0.35	30.7	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	

Daily Soil Sampling

WES22-23	5.0	0	32	0.31	30.7	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
WES22-25	10.0	0	22	0.39	30.8	40		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
WES22-26	5.0	0	38	0.38	31.7	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
WES22-27	5.0	0	27	0.25	31.4	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
WES22-28	5.0	0	28	0.29	31.5	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
WES22-29	5.0	0	46	0.35	33.6	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
WES22-30	5.0	0	42	0.19	33.4	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
WES22-31	5.0	0	57	0.36	40.8	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
WES22-32	5.0	0	48	0.80	40	233		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
WES22-33	5.0	0	52	0.57	40.2	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	

Daily Soil Sampling

Client: Client: EOG Resources Inc.

Location: Site: Avalanche Journal State #001

Date: (SD: 5/20/22)

Sampling											
		Field Screening							Data Collection		
		Hydrocarbon		Chloride							
Sample ID	Depth (ft)	VOC (PID)	TPH (ppm)	EC Reading (mS/cm)	Temp (°C)	EC Chloride (ppm)	Chloride Titration (ppm)	Lab Analysis	Photo Taken	Marked on Sketch	Refusal Depth (ft)
BES22-01	6.0	0	28	0.12	26.6	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-02	6.0	0	35	0.23	27.2	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-03	6.0	0	33	0.20	27.2	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-04	7.0	0	44	0.31	27.5	67		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-05	7.0	0	37	0.26	26.9	21		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-06	7.0	0	50	0.29	26.9	64		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-07	8.0	0	19	0.33	28.3	62		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-08	7.0	0	31	0.23	27.6	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-09	8.0	0	34	0.35	27.4	129		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	

Daily Soil Sampling

BES22-10	9.0	0	41	0.30	28.9	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-11	9.0	0	28	0.27	28	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-12	10.0	0	23	0.31	27.7	59		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-13	9.0	0	27	0.37	28.6	106		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-14	10.0	0	30	0.49	29.2	253		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-15	12.0	0	27	0.44	29.3	177		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-16	16.0	1	44	0.39	29.5	96		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-17	8.0	0	47	0.29	29.5	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-18	10.0	0	35	0.41	28.9	151		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-19	10.0	0	43	0.51	30.3	235		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-20	5.0	0	29	0.29	29.6	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-21	5.0	0	48	0.25	29.4	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	

Daily Soil Sampling

BES22-22	6.0	0	46	0.43	30.3	119		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-23	8.0	0	51	0.46	30.6	150		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-24	10.0	0	47	0.39	31.2	23		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-25	5.0	0	45	0.34	31.4	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-26	5.0	0	48	0.29	30.8	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-33	5.0	0	70	0.58	36	89		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-34	5.0	0	60	0.61	35.9	137		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-35	5.0	0	51	0.41	35.8	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-36	5.0	0	38	0.48	33.4	57		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-37	5.0	0	37	0.49	35.4	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-38	5.0	0	51	0.56	34.9	108		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-39	5.0	0	22	0.14	35	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	

Daily Soil Sampling

BES22-40	5.0	0	32	0.35	35.5	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
BES22-41	5.0	0	40	0.22	35.4	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
WES22-34	5.0	0	477	0.80	37.1	359			✓	✓	
WES22-35	5.0	0	31	0.32	39.8	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
WES22-36	5.0	0	24	0.32	37.3	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
WES22-37	5.0	0	27	0.29	35.4	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
WES22-38	12.0	0	44	0.20	34.9	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
WES22-39	10.0	0	23	0.31	35.2	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
WES22-40	8.0	0	25	0.33	35.1	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	
WES22-41	8.0	0	49	0.35	35.2	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	√	√	

Daily Soil Sampling

Client: Client: EOG Resources Inc.

Location: Site: Avalanche Journal State #1

Date: (SD: 5/25/22)

Sampling											
		Field Screening							Data Collection		
		Hydrocarbon		Chloride							
Sample ID	Depth (ft)	VOC (PID)	TPH (ppm)	EC Reading (mS/cm)	Temp (°C)	EC Chloride (ppm)	Chloride Titration (ppm)	Lab Analysis	Photo Taken	Marked on Sketch	Refusal Depth (ft)
BES22-42	6.0	0	15	0.51	24.9	469		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		√	
BES22-43	6.0	0	23	0.12	25.4	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		√	
BES22-44	5.0	0	13	0.13	25.1	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		√	
BES22-45	4.0	0	11	0.17	24.5	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		√	
WES22-42	6.0	0	19	0.16	24.1	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		√	
WES22-43	6.0	0	10	0.13	27.6	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		√	
WES22-44	6.0	0	15	0.17	29.5	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		√	
WES22-45	6.0	0	16	0.06	30.3	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		√	

Daily Soil Sampling

Client: Client: EOG Resources Inc.

Location: Site: Avalanche Journal State #1

Date: (SD: 5/26/22)

Sampling											
		Field Screening							Data Collection		
		Hydrocarbon		Chloride							
Sample ID	Depth (ft)	VOC (PID)	TPH (ppm)	EC Reading (mS/cm)	Temp (°C)	EC Chloride (ppm)	Chloride Titration (ppm)	Lab Analysis	Photo Taken	Marked on Sketch	Refusal Depth (ft)
BES22-46	6.0	0	31	0.57	25	551		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		√	
BES22-47	6.0	1	29	0.46	24.4	418		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		√	
BES22-47	6.0	0	48	0.38	24.3	307		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		√	
WES22-46	6.0	1	17	0.11	24.3	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		√	

ATTACHMENT 5

Client Name: EOG Resources, Inc.
Site Name: Avalanche Journal State #1
NM OCD Tracking #: nAPP2209639601
Project #: 22E-00345
Lab Reports: 2203502, 2204116, 2204562, 2205482

Table 2. Characterization Sample Field Screen and Laboratory Results - Depth to Groundwater <50 feet bgs

Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
						Volatile		Extractable					
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFlag)	Chloride (calculated from electroconductivity)	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)
BH22-01	0	March 5, 2022	0	18	0	-	-	-	-	-	-	-	-
	2	March 5, 2022	0	34	766	-	-	-	-	-	-	-	-
	4	March 5, 2022	0	29	733	-	-	-	-	-	-	-	-
BH22-02	0	March 5, 2022	0	36	0	ND	ND	ND	ND	ND	ND	ND	ND
	2	March 5, 2022	0	26	0	ND	ND	ND	ND	ND	ND	ND	ND
	4	March 5, 2022	0	19	277	-	-	-	-	-	-	-	-
BH22-03	0	March 5, 2022	0	18	0	ND	ND	ND	ND	ND	ND	ND	ND
	2	March 5, 2022	0	24	1,062	ND	ND	ND	ND	ND	ND	ND	**1100**
BH22-04	0	March 5, 2022	0	20	0	ND	ND	ND	ND	ND	ND	ND	ND
	2	March 5, 2022	0	31	1,385	ND	ND	ND	ND	ND	ND	ND	**900**
	4	March 5, 2022	0	27	1,183								
BH22-05	0	March 6, 2022	0	11,600	487	-	-	-	-	-	-	-	-
	2	March 6, 2022	0	8,960	577	-	-	-	-	-	-	-	-
BH22-06	0	March 6, 2022	0	8,520	30	-	-	-	-	-	-	-	-
	2	March 6, 2022	0	10,140	0	-	-	-	-	-	-	-	-
BH22-07	0	March 31, 2022	0.8	60	1,225	ND	ND	ND	11	ND	11	11	**810**
	2	March 31, 2022	1.6	30	2,011	ND	ND	ND	ND	ND	ND	ND	**1700**
	4	March 31, 2022	1.3	36	2,541	ND	ND	ND	ND	ND	ND	ND	**2200**
BH22-08	0	March 31, 2022	0.1	14	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2	March 31, 2022	0.6	19	975	ND	ND	ND	ND	ND	ND	ND	**830**
	4	March 31, 2022	0	20	1,119	ND	ND	ND	ND	ND	ND	ND	**1000**
BH22-09	0	March 31, 2022	1.4	31	1,145	ND	ND	ND	ND	ND	ND	ND	**850**
	2	March 31, 2022	0.4	23	1,407	ND	ND	ND	ND	ND	ND	ND	**1300**
	4	March 31, 2022	0.4	20	1,646	ND	ND	ND	ND	ND	ND	ND	**1500**
BH22-10	0	March 31, 2022	0	35	1,275	ND	ND	ND	ND	ND	ND	ND	470
	2	March 31, 2022	0	32	1,182	ND	ND	ND	11	ND	11	11	**670**
	4	March 31, 2022	0.2	17	1,352	ND	ND	ND	13	ND	13	13	**680**
BH22-11	0	April 9, 2022	0	50	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2	April 9, 2022	0	38	373	ND	ND	ND	ND	ND	ND	ND	290
	4	April 9, 2022	0	39	776	ND	ND	ND	ND	ND	ND	ND	**720**
BH22-12	0	April 9, 2022	0	20	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2	April 9, 2022	0	20	329	ND	ND	ND	ND	ND	ND	ND	320
	4	April 9, 2022	0	16	806	ND	ND	ND	11	ND	11	11	430
BH22-13	0	April 9, 2022	0	23	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2	April 9, 2022	0	11	ND	ND	ND	ND	ND	ND	ND	ND	ND
	4	April 9, 2022	0	16	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH22-14	0	April 9, 2022	0	22	30	ND	ND	ND	ND	ND	ND	ND	ND
	2	April 9, 2022	0	21	122	ND	ND	ND	ND	ND	ND	ND	140
	4	April 9, 2022	0	25	258	ND	ND	ND	ND	ND	ND	ND	210
BH22-15	0	May 6, 2022	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
	2	May 6, 2022	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
	4	May 6, 2022	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
	6	May 6, 2022	-	-	852	ND	ND	ND	ND	ND	ND	ND	140
	8	May 6, 2022	-	-	711	ND	ND	ND	ND	ND	ND	ND	420
BH22-16	0	May 9, 2022	0.8	41	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2	May 9, 2022	1.9	40	ND	ND	ND	ND	ND	ND	ND	ND	ND
	4	May 9, 2022	2.1	-	ND	-	-	-	-	-	-	-	-

Client Name: EOG Resources, Inc.
Site Name: Avalanche Journal State #1
NM OCD Tracking #: nAPP2209639601
Project #: 22E-00345
Lab Reports: 2203502, 2204116, 2204562, 2205482

Table 2. Characterization Sample Field Screen and Laboratory Results - Depth to Groundwater <50 feet bgs

Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
						Volatile		Extractable					
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFlag)	Chloride (calculated from electroconductivity)	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)
BH22-17	0	May 9, 2022	0.7	62	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2	May 9, 2022	1.6	35	ND	ND	ND	ND	ND	ND	ND	ND	ND
	4	May 9, 2022	1.4	-	ND	-	-	-	-	-	-	-	-
BH22-18	0	May 9, 2022	1.2	23	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2	May 9, 2022	1.9	37	34	ND	ND	ND	ND	ND	ND	ND	190
	4	May 9, 2022	2.8	-	86	-	-	-	-	-	-	-	-
BH22-19	0	May 9, 2022	1.3	31	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2	May 9, 2022	1.4	88	ND	ND	ND	ND	ND	ND	ND	ND	ND
	4	May 9, 2022	1.7	-	ND	-	-	-	-	-	-	-	-

"ND" Not Detected at the Reporting Limit
"-" indicates not analyzed/assessed
Bold and green shaded indicates exceedance outside of NMOCD Reclamation Criteria (off-pad)

VERTEX

Client Name: EOG Resources, Inc.
Site Name: Avalanche Journal State #1
NM OCD Tracking #: nAPP2209639601
Project #: 22E-00345
Lab Report: 2205987, 2205A93, 2205C49, 2205D05

Table 3. Confirmatory Sample Field Screen and Laboratory Results - Depth to Groundwater <50 feet bgs

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)
WES22-01	0-5	May 19, 2022	0.3	29	ND	ND	ND	ND	ND	ND	ND	ND	170
WES22-02	0-5	May 19, 2022	0.2	32	ND	ND	ND	ND	ND	ND	ND	ND	180
WES22-03	0-5	May 19, 2022	0.2	44	ND	ND	ND	ND	ND	ND	ND	ND	180
WES22-06	0-6	May 19, 2022	0.2	37	ND	ND	ND	ND	ND	ND	ND	ND	180
WES22-07	0-6	May 19, 2022	0.3	23	ND	ND	ND	ND	ND	ND	ND	ND	150
WES22-08	0-7	May 19, 2022	0.4	31	ND	ND	ND	ND	ND	ND	ND	ND	160
WES22-11	0-8	May 19, 2022	0.2	47	ND	ND	ND	ND	ND	ND	ND	ND	ND
WES22-12	0-8	May 19, 2022	0.2	33	ND	ND	ND	ND	ND	ND	ND	ND	140
WES22-13	0-8	May 19, 2022	0.3	41	ND	ND	ND	ND	ND	ND	ND	ND	160
WES22-17	0-8	May 19, 2022	0.2	44	ND	ND	ND	ND	ND	ND	ND	ND	ND
WES22-19	0-5	May 19, 2022	0.1	22	ND	ND	ND	ND	ND	ND	ND	ND	ND
WES22-20	0-5	May 19, 2022	0.1	19	ND	ND	ND	ND	ND	ND	ND	ND	94
WES22-21	0-5	May 19, 2022	0.2	31	ND	ND	ND	ND	ND	ND	ND	ND	ND
WES22-22	0-5	May 19, 2022	0.3	12	ND	ND	ND	ND	ND	ND	ND	ND	ND
WES22-23	0-5	May 19, 2022	0.3	32	ND	ND	ND	ND	ND	ND	ND	ND	ND
WES22-25	0-10	May 19, 2022	0.2	22	40	ND	ND	ND	ND	ND	ND	ND	ND
WES22-26	0-5	May 19, 2022	0.2	38	ND	ND	ND	ND	ND	ND	ND	ND	130
WES22-27	0-5	May 19, 2022	0.1	27	ND	ND	ND	ND	ND	ND	ND	ND	ND
WES22-28	0-5	May 19, 2022	0.1	28	ND	ND	ND	ND	ND	ND	ND	ND	62
WES22-29	0-5	May 19, 2022	0.4	46	ND	ND	ND	ND	ND	ND	ND	ND	120
WES22-30	0-5	May 19, 2022	0.3	42	ND	ND	ND	ND	ND	ND	ND	ND	ND
WES22-31	0-5	May 19, 2022	0.4	57	ND	ND	ND	ND	ND	ND	ND	ND	140
WES22-32	0-5	May 19, 2022	0.1	48	233	ND	ND	ND	ND	ND	ND	ND	150
WES22-33	0-5	May 19, 2022	0.5	52	ND	ND	ND	ND	ND	ND	ND	ND	240
WES22-35	0-5	May 20, 2022	0.1	31	ND	ND	ND	ND	ND	ND	ND	ND	120
WES22-36	0-5	May 20, 2022	0.4	24	ND	ND	ND	ND	ND	ND	ND	ND	75
WES22-37	0-5	May 20, 2022	0.3	27	ND	ND	ND	ND	ND	ND	ND	ND	ND
WES22-38	10-12	May 20, 2022	0.1	44	ND	ND	ND	ND	ND	ND	ND	ND	110
WES22-39	8-10	May 20, 2022	0.4	23	ND	ND	ND	ND	ND	ND	ND	ND	84
WES22-40	5-8	May 20, 2022	0.1	25	ND	ND	ND	ND	ND	ND	ND	ND	90
WES22-41	5-8	May 20, 2022	0.2	49	ND	ND	ND	ND	ND	ND	ND	ND	82
WES22-42	6	May 25, 2022	0.0	19	ND	ND	ND	ND	ND	ND	ND	ND	120
WES22-43	6	May 25, 2022	0.0	10	ND	ND	ND	ND	ND	ND	ND	ND	150
WES22-44	6	May 25, 2022	0.0	15	ND	ND	ND	ND	ND	ND	ND	ND	91
WES22-45	6	May 25, 2022	0.0	16	ND	ND	ND	ND	ND	ND	ND	ND	ND
WES22-46	6	May 26, 2022	1.0	17	ND	ND	ND	ND	ND	ND	ND	ND	110
BES22-01	6	May 20, 2022	0.1	28	ND	ND	ND	ND	ND	ND	ND	ND	64
BES22-02	6	May 20, 2022	0.1	35	ND	ND	ND	ND	ND	ND	ND	ND	67
BES22-03	6	May 20, 2022	0.4	33	ND	ND	ND	ND	ND	ND	ND	ND	71
BES22-04	7	May 20, 2022	0.3	44	67	ND	ND	ND	ND	ND	ND	ND	72
BES22-05	7	May 20, 2022	0.4	37	21	ND	ND	ND	ND	ND	ND	ND	76
BES22-06	7	May 20, 2022	0.2	50	64	ND	ND	ND	ND	ND	ND	ND	67
BES22-07	8	May 20, 2022	0.1	19	62	ND	ND	ND	ND	ND	ND	ND	ND
BES22-08	7	May 20, 2022	0.2	31	ND	ND	ND	ND	ND	ND	ND	ND	81
BES22-09	8	May 20, 2022	0.2	34	129	ND	ND	ND	ND	ND	ND	ND	82
BES22-10	9	May 20, 2022	0.5	41	ND	ND	ND	ND	ND	ND	ND	ND	75
BES22-11	9	May 20, 2022	0.2	28	ND	ND	ND	ND	ND	ND	ND	ND	64
BES22-12	10	May 20, 2022	0.4	23	59	ND	ND	ND	ND	ND	ND	ND	85
BES22-13	9	May 20, 2022	0.3	27	106	ND	ND	ND	ND	ND	ND	ND	83

VERTEX

Client Name: EOG Resources, Inc.
Site Name: Avalanche Journal State #1
NM OCD Tracking #: nAPP2209639601
Project #: 22E-00345
Lab Report: 2205987, 2205A93, 2205C49, 2205D05

Table 3. Confirmatory Sample Field Screen and Laboratory Results - Depth to Groundwater <50 feet bgs

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)
BES22-14	10	May 20, 2022	0.3	30	253	ND	ND	ND	ND	ND	ND	ND	82
BES22-15	12	May 20, 2022	0.4	27	177	ND	ND	ND	ND	ND	ND	ND	83
BES22-16	10	May 20, 2022	0.7	44	96	ND	ND	ND	ND	ND	ND	ND	76
BES22-17	8	May 20, 2022	0.3	47	ND	ND	ND	ND	ND	ND	ND	ND	78
BES22-18	10	May 20, 2022	0.3	35	151	ND	ND	ND	ND	ND	ND	ND	86
BES22-19	10	May 20, 2022	0.4	43	235	ND	ND	ND	ND	ND	ND	ND	76
BES22-20	5	May 20, 2022	0.5	29	ND	ND	ND	ND	ND	ND	ND	ND	89
BES22-21	5	May 20, 2022	0.5	48	ND	ND	ND	ND	ND	ND	ND	ND	100
BES22-22	6	May 20, 2022	0.4	46	119	ND	ND	ND	ND	ND	ND	ND	96
BES22-23	8	May 20, 2022	0.3	51	150	ND	ND	ND	ND	ND	ND	ND	88
BES22-24	10	May 20, 2022	0.4	47	23	ND	ND	ND	ND	ND	ND	ND	84
BES22-25	5	May 20, 2022	0.2	45	ND	ND	ND	ND	ND	ND	ND	ND	93
BES22-26	5	May 20, 2022	0.3	48	ND	ND	ND	ND	ND	ND	ND	ND	94
BES22-27	5	May 19, 2022	0.5	57	72	ND	ND	ND	ND	ND	ND	ND	74
BES22-28	5	May 19, 2022	0.3	31	67	ND	ND	ND	ND	ND	ND	ND	99
BES22-29	5	May 19, 2022	0.1	36	222	ND	ND	ND	ND	ND	ND	ND	94
BES22-30	5	May 19, 2022	0.4	60	24	ND	ND	ND	ND	ND	ND	ND	100
BES22-31	6	May 19, 2022	0.5	51	458	ND	ND	ND	ND	ND	ND	ND	79
BES22-32	8	May 19, 2022	0.2	58	545	ND	ND	ND	ND	ND	ND	ND	96
BES22-33	5	May 20, 2022	0.3	70	89	ND	ND	ND	ND	ND	ND	ND	87
BES22-34	5	May 20, 2022	0.1	60	137	ND	ND	ND	ND	ND	ND	ND	96
BES22-35	5	May 20, 2022	0.4	51	ND	ND	ND	ND	ND	ND	ND	ND	93
BES22-36	5	May 20, 2022	0.3	34	57	ND	ND	ND	ND	ND	ND	ND	95
BES22-37	5	May 20, 2022	0.1	37	ND	ND	ND	ND	ND	ND	ND	ND	90
BES22-38	5	May 20, 2022	0.1	51	108	ND	ND	ND	ND	ND	ND	ND	ND
BES22-39	5	May 20, 2022	0.5	22	ND	ND	ND	ND	ND	ND	ND	ND	ND
BES22-40	5	May 20, 2022	0.1	32	ND	ND	ND	ND	ND	ND	ND	ND	84
BES22-41	5	May 20, 2022	0.2	40	ND	ND	ND	ND	ND	ND	ND	ND	100
BES22-42	6	May 25, 2022	0.0	15	469	ND	ND	ND	ND	ND	ND	ND	480
BES22-43	6	May 25, 2022	0.0	23	ND	ND	ND	ND	ND	ND	ND	ND	97
BES22-44	5	May 25, 2022	0.0	13	ND	ND	ND	ND	ND	ND	ND	ND	ND
BES22-45	4	May 25, 2022	0.0	11	ND	ND	ND	ND	ND	ND	ND	ND	ND
BES22-46	6	May 26, 2022	0.0	31	551	ND	ND	ND	ND	ND	ND	ND	210
BES22-47	6	May 26, 2022	1.0	29	418	ND	ND	ND	ND	ND	ND	ND	200
BES22-48	6	May 26, 2022	0.0	48	307	ND	ND	ND	ND	ND	ND	ND	390

"ND" Not Detected at the Reporting Limit

Bold and green shaded indicates exceedance outside of NMOCD Reclamation Criteria (off-pad)

VERTEX

ATTACHMENT 6

Lakin Pullman

From: Chase Settle <Chase_Settle@eogresources.com>
Sent: May 12, 2022 10:19 AM
To: Michael Moffitt; Monica Peppin
Subject: FW: Avalanche Journal State #1 (nAPP2209639601) Sampling Notification

---

From: Miriam Morales <Miriam_Morales@eogresources.com>
Sent: Thursday, May 12, 2022 10:12 AM
To: Robert.Hamlet@state.nm.us; rmann@slo.state.nm.us; mnaranjo@slo.state.nm.us
Cc: Artesia Regulatory <Artesia_Regulatory@eogresources.com>; Artesia S&E Spill Remediation <Artesia_S&E_Spill_Remediation@eogresources.com>
Subject: Avalanche Journal State #1 (nAPP2209639601) Sampling Notification

Good morning,

EOG Resources, Inc. respectfully submits notification of sampling to be conducted at the below location.

Avalanche Journal State #1
F-4-8S-27E; Chavez, NM
nAPP2209639601

Sampling will begin at 08:00 a.m. on Thursday, May 19,2022 and will continue through Friday, May 20, 2022.

Thank you,

Miriam Morales

Lakin Pullman

From: Michael Moffitt
Sent: June 18, 2022 10:32 AM
To: Lakin Pullman
Subject: Fwd: Avalanche Journal State 1 (nAPP2209639601) Sampling Notification

Found it!

Get Outlook for Android

From: Chase Settle <Chase_Settle@eogresources.com>
Sent: Thursday, May 19, 2022 8:52:38 AM
To: Michael Moffitt <MMoffitt@vertex.ca>; Monica Peppin <mpeppin@vertex.ca>
Subject: FW: Avalanche Journal State 1 (nAPP2209639601) Sampling Notification

---

From: Tina Huerta <Tina_Huerta@eogresources.com>
Sent: Thursday, May 19, 2022 8:23 AM
To: Robert.Hamlet@state.nm.us; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Jennifer.Nobui@state.nm.us; Harimon, Jocelyn, EMNRD <Jocelyn.Harimon@state.nm.us>; rmann@slo.state.nm.us; mnaranjo@slo.state.nm.us
Cc: Artesia S&E Spill Remediation <Artesia_S&E_Spill_Remediation@eogresources.com>; Artesia Regulatory <Artesia_Regulatory@eogresources.com>
Subject: Avalanche Journal State 1 (nAPP2209639601) Sampling Notification

Good Morning,

EOG Resources, Inc. respectfully submits notification of sampling to be conducted at the below location.

Avalanche Journal State 1
F-4-8S-27E
Chaves County, NM
nAPP2209639601

Sampling will begin at 8:00 a.m. on Monday, May 23, 2022 and will be continuous through Friday, May 27, 2022.

Thank you,

Tina Huerta
Regulatory Specialist
Direct: 575.748.4168
Cell: 575.703.3121
Email: tina_huerta@eogresources.com

eog resources

Artesia Division

ATTACHMENT 7

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

March 21, 2022

Michael Moffitt

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

RE: Avalanche Journal State 001 OrderNo.: 2203502

Dear Michael Moffitt:

Hall Environmental Analysis Laboratory received 6 sample(s) on 3/9/2022 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 **2203502**
Date Reported: **3/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH22-02 0.0'
Project: Avalanche Journal State 001
Collection Date: 3/5/2022 10:00:00 AM
Lab ID: 2203502-001 **Matrix:** SOIL
Received Date: 3/9/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	3/14/2022 1:47:03 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/14/2022 1:47:03 PM
Surr: DNOP	70.2	51.1-141		%Rec	1	3/14/2022 1:47:03 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/12/2022 1:24:00 AM
Surr: BFB	98.4	70-130		%Rec	1	3/12/2022 1:24:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.025		mg/Kg	1	3/12/2022 1:24:00 AM
Toluene	ND	0.049		mg/Kg	1	3/12/2022 1:24:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	3/12/2022 1:24:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	3/12/2022 1:24:00 AM
Surr: 4-Bromofluorobenzene	86.3	70-130		%Rec	1	3/12/2022 1:24:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Chloride	ND	61		mg/Kg	20	3/15/2022 4:56:47 PM

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

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2203502**
Date Reported: **3/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH22-02 2.0'
Project: Avalanche Journal State 001
Collection Date: 3/5/2022 10:10:00 AM
Lab ID: 2203502-002 **Matrix:** SOIL
Received Date: 3/9/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	3/14/2022 2:01:33 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/14/2022 2:01:33 PM
Surr: DNOP	69.4	51.1-141		%Rec	1	3/14/2022 2:01:33 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/12/2022 1:43:00 AM
Surr: BFB	102	70-130		%Rec	1	3/12/2022 1:43:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.024		mg/Kg	1	3/12/2022 1:43:00 AM
Toluene	ND	0.048		mg/Kg	1	3/12/2022 1:43:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	3/12/2022 1:43:00 AM
Xylenes, Total	ND	0.095		mg/Kg	1	3/12/2022 1:43:00 AM
Surr: 4-Bromofluorobenzene	87.2	70-130		%Rec	1	3/12/2022 1:43:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Chloride	ND	60		mg/Kg	20	3/15/2022 5:34:01 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2203502**
Date Reported: **3/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH22-03 0.0'
Project: Avalanche Journal State 001
Collection Date: 3/5/2022 10:30:00 AM
Lab ID: 2203502-003 **Matrix:** SOIL
Received Date: 3/9/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	3/14/2022 3:15:21 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/14/2022 3:15:21 PM
Surr: DNOP	78.9	51.1-141		%Rec	1	3/14/2022 3:15:21 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/12/2022 2:03:00 AM
Surr: BFB	100	70-130		%Rec	1	3/12/2022 2:03:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.024		mg/Kg	1	3/12/2022 2:03:00 AM
Toluene	ND	0.048		mg/Kg	1	3/12/2022 2:03:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	3/12/2022 2:03:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	3/12/2022 2:03:00 AM
Surr: 4-Bromofluorobenzene	87.7	70-130		%Rec	1	3/12/2022 2:03:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Chloride	ND	60		mg/Kg	20	3/15/2022 5:46:26 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	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 range due to dilution or matrix interference

Analytical Report
Lab Order **2203502**
Date Reported: **3/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH22-03 2.0'
Project: Avalanche Journal State 001
Collection Date: 3/5/2022 10:40:00 AM
Lab ID: 2203502-004 **Matrix:** SOIL
Received Date: 3/9/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	3/14/2022 3:30:14 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/14/2022 3:30:14 PM
Surr: DNOP	73.2	51.1-141		%Rec	1	3/14/2022 3:30:14 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/12/2022 3:02:00 AM
Surr: BFB	100	70-130		%Rec	1	3/12/2022 3:02:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.024		mg/Kg	1	3/12/2022 3:02:00 AM
Toluene	ND	0.049		mg/Kg	1	3/12/2022 3:02:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	3/12/2022 3:02:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	3/12/2022 3:02:00 AM
Surr: 4-Bromofluorobenzene	89.0	70-130		%Rec	1	3/12/2022 3:02:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Chloride	1100	60		mg/Kg	20	3/15/2022 6:23:40 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2203502**
Date Reported: **3/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH22-04 0.0'
Project: Avalanche Journal State 001
Collection Date: 3/5/2022 11:00:00 AM
Lab ID: 2203502-005 **Matrix:** SOIL
Received Date: 3/9/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	3/14/2022 3:45:19 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/14/2022 3:45:19 PM
Surr: DNOP	68.6	51.1-141		%Rec	1	3/14/2022 3:45:19 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/12/2022 3:21:00 AM
Surr: BFB	102	70-130		%Rec	1	3/12/2022 3:21:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.024		mg/Kg	1	3/12/2022 3:21:00 AM
Toluene	ND	0.048		mg/Kg	1	3/12/2022 3:21:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	3/12/2022 3:21:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	3/12/2022 3:21:00 AM
Surr: 4-Bromofluorobenzene	88.7	70-130		%Rec	1	3/12/2022 3:21:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Chloride	ND	61		mg/Kg	20	3/15/2022 6:36:05 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2203502**
Date Reported: **3/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH22-04 2.0'
Project: Avalanche Journal State 001
Collection Date: 3/5/2022 11:10:00 AM
Lab ID: 2203502-006 **Matrix:** SOIL
Received Date: 3/9/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	3/14/2022 4:00:32 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/14/2022 4:00:32 PM
Surr: DNOP	65.6	51.1-141		%Rec	1	3/14/2022 4:00:32 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/12/2022 3:41:00 AM
Surr: BFB	104	70-130		%Rec	1	3/12/2022 3:41:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.024		mg/Kg	1	3/12/2022 3:41:00 AM
Toluene	ND	0.047		mg/Kg	1	3/12/2022 3:41:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	3/12/2022 3:41:00 AM
Xylenes, Total	ND	0.094		mg/Kg	1	3/12/2022 3:41:00 AM
Surr: 4-Bromofluorobenzene	89.1	70-130		%Rec	1	3/12/2022 3:41:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Chloride	900	59		mg/Kg	20	3/15/2022 6:48:29 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2203502**

21-Mar-22

Client: Vertex Resources Services, Inc.

Project: Avalanche Journal State 001

Sample ID: **MB-66173**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **66173**	RunNo: **86503**							
Prep Date: **3/15/2022**	Analysis Date: **3/15/2022**	SeqNo: **3052468**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-66173**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **66173**	RunNo: **86503**							
Prep Date: **3/15/2022**	Analysis Date: **3/15/2022**	SeqNo: **3052469**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.9	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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2203502**

21-Mar-22

Client: Vertex Resources Services, Inc.

Project: Avalanche Journal State 001

Sample ID: **MB-66115**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **66115**	RunNo: **86435**
Prep Date: **3/11/2022**	Analysis Date: **3/14/2022**	SeqNo: **3049507** 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	8.1		10.00		80.6	51.1	141			

Sample ID: **LCS-66115**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **66115**	RunNo: **86435**
Prep Date: **3/11/2022**	Analysis Date: **3/14/2022**	SeqNo: **3049508** 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	85.3	68.9	135			
Surr: DNOP	3.9		5.000		77.5	51.1	141			

Sample ID: **2203315-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BatchQC**	Batch ID: **66115**	RunNo: **86435**
Prep Date: **3/11/2022**	Analysis Date: **3/14/2022**	SeqNo: **3049511** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	9.2	46.00	0	87.5	36.1	154			
Surr: DNOP	3.8		4.600		81.9	51.1	141			

Sample ID: **2203315-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BatchQC**	Batch ID: **66115**	RunNo: **86435**
Prep Date: **3/11/2022**	Analysis Date: **3/14/2022**	SeqNo: **3049512** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	9.9	49.60	0	93.5	36.1	154	14.1	33.9	
Surr: DNOP	4.1		4.960		82.7	51.1	141	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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2203502**

21-Mar-22

Client: Vertex Resources Services, Inc.

Project: Avalanche Journal State 001

Sample ID: **lcs-66062** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **LCSS** Batch ID: **66062** RunNo: **86409**

Prep Date: **3/9/2022** Analysis Date: **3/11/2022** SeqNo: **3049016** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	29	5.0	25.00	0	118	78.6	131			
Surr: BFB	2300		1000		231	70	130			S

Sample ID: **mb-66062** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **PBS** Batch ID: **66062** RunNo: **86409**

Prep Date: **3/9/2022** Analysis Date: **3/11/2022** SeqNo: **3049017** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		101	70	130			

Sample ID: **2203498-018ams** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **BatchQC** Batch ID: **66062** RunNo: **86409**

Prep Date: **3/9/2022** Analysis Date: **3/11/2022** SeqNo: **3049019** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	4.6	23.23	0	112	70	130			
Surr: BFB	2200		929.4		232	70	130			S

Sample ID: **2203498-018amsd** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **BatchQC** Batch ID: **66062** RunNo: **86409**

Prep Date: **3/9/2022** Analysis Date: **3/11/2022** SeqNo: **3049020** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	4.6	23.17	0	115	70	130	1.88	20	
Surr: BFB	2100		926.8		225	70	130	0	0	S

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2203502**

21-Mar-22

Client: Vertex Resources Services, Inc.

Project: Avalanche Journal State 001

Sample ID: **lcs-66062**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **66062**	RunNo: **86409**
Prep Date: **3/9/2022**	Analysis Date: **3/11/2022**	SeqNo: **3049056** 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	92.4	80	120			
Toluene	0.95	0.050	1.000	0	95.0	80	120			
Ethylbenzene	0.96	0.050	1.000	0	96.3	80	120			
Xylenes, Total	2.9	0.10	3.000	0	96.1	80	120			
Surr: 4-Bromofluorobenzene	0.89		1.000		89.2	70	130			

Sample ID: **mb-66062**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **66062**	RunNo: **86409**
Prep Date: **3/9/2022**	Analysis Date: **3/11/2022**	SeqNo: **3049057** 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		89.0	70	130			

Sample ID: **2203498-019ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BatchQC**	Batch ID: **66062**	RunNo: **86409**
Prep Date: **3/9/2022**	Analysis Date: **3/11/2022**	SeqNo: **3049060** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.87	0.024	0.9634	0	90.5	68.8	120			
Toluene	0.90	0.048	0.9634	0	93.5	73.6	124			
Ethylbenzene	0.92	0.048	0.9634	0	95.0	72.7	129			
Xylenes, Total	2.7	0.096	2.890	0	94.9	75.7	126			
Surr: 4-Bromofluorobenzene	0.86		0.9634		89.3	70	130			

Sample ID: **2203498-019amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BatchQC**	Batch ID: **66062**	RunNo: **86409**
Prep Date: **3/9/2022**	Analysis Date: **3/11/2022**	SeqNo: **3049061** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.024	0.9699	0	91.4	68.8	120	1.64	20	
Toluene	0.92	0.048	0.9699	0	95.1	73.6	124	2.34	20	
Ethylbenzene	0.94	0.048	0.9699	0	96.6	72.7	129	2.33	20	
Xylenes, Total	2.8	0.097	2.910	0	96.5	75.7	126	2.26	20	
Surr: 4-Bromofluorobenzene	0.85		0.9699		88.1	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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: Vertex Resources Services, Inc.

Work Order Number: 2203502

RcptNo: 1

Received By: Sean Livingston 3/9/2022 8:00:00 AM Sean Livingston

Completed By: Sean Livingston 3/9/2022 8:50:22 AM Sean Livingston

Reviewed By: CM 3/9/22

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: JR 3/9/22

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	0.5	Good				
2	2.9	Good				

Chain-of-Custody Record

Client: Vertex

Mailing Address:

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other
☐ EDD (Type)

Turn-Around Time: 5-DAY
☑ Standard ☑ Rush

Project Name: Avalanche Journal State 001

Project #: 22E-00345

Project Manager: Mike Moffitt

Sampler:

On Ice: ☑ Yes ☐ No

# of Coolers: 2

Cooler Temp(including CF): 0.5 ±0-0.5 (°C)
2.9 ±0-2.9°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. 2203502	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)
3-5-22	1000	Soil	BH22-02 0.0'	6 Glass Jar	ICE	001										
	1010		BH22-02 2.0'			002										
	1030		BH22-03 0.0'			003										
	1040		BH22-03 2.0'			004										
	1100		BH22-04 0.0'			005										
	1110		BH22-04 2.0'			006										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
			Adriana		3/8/22	1045
Date: 3/8/22	Time: 1900	Relinquished by:	Received by:	Via:	Date	Time
			See carrier		3/9/22	8:00

Remarks:

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

April 25, 2022

Mike Moffitt

EOG
105 South Fourth Street
Artesia, NM 88210
TEL:
FAX:

RE: Avalanche Journal State 1 OrderNo.: 2204562

Dear Mike Moffitt:

Hall Environmental Analysis Laboratory received 12 sample(s) on 4/13/2022 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 **2204562**
Date Reported: **4/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-11 0.0'
Project: Avalanche Journal State 1
Collection Date: 4/9/2022 10:00:00 AM
Lab ID: 2204562-001 **Matrix:** SOIL **Received Date:** 4/13/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	4/19/2022 8:59:43 PM	66935
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	4/15/2022 12:05:31 AM	66831
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/15/2022 12:05:31 AM	66831
Surr: DNOP	68.8	51.1-141		%Rec	1	4/15/2022 12:05:31 AM	66831
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/14/2022 10:53:00 PM	66828
Surr: BFB	97.5	37.7-212		%Rec	1	4/14/2022 10:53:00 PM	66828
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**	
Benzene	ND	0.024		mg/Kg	1	4/14/2022 10:53:00 PM	66828
Toluene	ND	0.048		mg/Kg	1	4/14/2022 10:53:00 PM	66828
Ethylbenzene	ND	0.048		mg/Kg	1	4/14/2022 10:53:00 PM	66828
Xylenes, Total	ND	0.096		mg/Kg	1	4/14/2022 10:53:00 PM	66828
Surr: 4-Bromofluorobenzene	80.7	70-130		%Rec	1	4/14/2022 10:53:00 PM	66828

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2204562**
Date Reported: **4/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-11 2.0'
Project: Avalanche Journal State 1
Collection Date: 4/9/2022 10:10:00 AM
Lab ID: 2204562-002 **Matrix:** SOIL
Received Date: 4/13/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	290	60		mg/Kg	20	4/19/2022 9:12:08 PM	66935
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	4/15/2022 12:39:25 PM	66831
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/15/2022 12:39:25 PM	66831
Surr: DNOP	84.6	51.1-141		%Rec	1	4/15/2022 12:39:25 PM	66831
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/14/2022 11:12:00 PM	66828
Surr: BFB	101	37.7-212		%Rec	1	4/14/2022 11:12:00 PM	66828
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**	
Benzene	ND	0.024		mg/Kg	1	4/14/2022 11:12:00 PM	66828
Toluene	ND	0.048		mg/Kg	1	4/14/2022 11:12:00 PM	66828
Ethylbenzene	ND	0.048		mg/Kg	1	4/14/2022 11:12:00 PM	66828
Xylenes, Total	ND	0.095		mg/Kg	1	4/14/2022 11:12:00 PM	66828
Surr: 4-Bromofluorobenzene	81.5	70-130		%Rec	1	4/14/2022 11:12:00 PM	66828

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2204562**
Date Reported: **4/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-11 4.0'
Project: Avalanche Journal State 1
Collection Date: 4/9/2022 10:20:00 AM
Lab ID: 2204562-003 **Matrix:** SOIL
Received Date: 4/13/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	720	60		mg/Kg	20	4/19/2022 9:24:32 PM	66935
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	4/15/2022 10:32:51 AM	66857
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/15/2022 10:32:51 AM	66857
Surr: DNOP	76.5	51.1-141		%Rec	1	4/15/2022 10:32:51 AM	66857
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/14/2022 11:32:00 PM	66828
Surr: BFB	99.9	37.7-212		%Rec	1	4/14/2022 11:32:00 PM	66828
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**	
Benzene	ND	0.024		mg/Kg	1	4/14/2022 11:32:00 PM	66828
Toluene	ND	0.047		mg/Kg	1	4/14/2022 11:32:00 PM	66828
Ethylbenzene	ND	0.047		mg/Kg	1	4/14/2022 11:32:00 PM	66828
Xylenes, Total	ND	0.095		mg/Kg	1	4/14/2022 11:32:00 PM	66828
Surr: 4-Bromofluorobenzene	81.4	70-130		%Rec	1	4/14/2022 11:32:00 PM	66828

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2204562**
Date Reported: **4/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-12 0.0'
Project: Avalanche Journal State 1
Collection Date: 4/9/2022 10:30:00 AM
Lab ID: 2204562-004 **Matrix:** SOIL
Received Date: 4/13/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	4/19/2022 9:36:56 PM	66935
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	4/15/2022 10:43:23 AM	66857
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/15/2022 10:43:23 AM	66857
Surr: DNOP	126	51.1-141		%Rec	1	4/15/2022 10:43:23 AM	66857
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/14/2022 11:52:00 PM	66828
Surr: BFB	103	37.7-212		%Rec	1	4/14/2022 11:52:00 PM	66828
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**	
Benzene	ND	0.024		mg/Kg	1	4/14/2022 11:52:00 PM	66828
Toluene	ND	0.049		mg/Kg	1	4/14/2022 11:52:00 PM	66828
Ethylbenzene	ND	0.049		mg/Kg	1	4/14/2022 11:52:00 PM	66828
Xylenes, Total	ND	0.097		mg/Kg	1	4/14/2022 11:52:00 PM	66828
Surr: 4-Bromofluorobenzene	82.8	70-130		%Rec	1	4/14/2022 11:52:00 PM	66828

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2204562**
Date Reported: **4/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-12 2.0'
Project: Avalanche Journal State 1
Collection Date: 4/9/2022 10:40:00 AM
Lab ID: 2204562-005 **Matrix:** SOIL
Received Date: 4/13/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	320	60		mg/Kg	20	4/19/2022 9:49:21 PM	66935
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	4/15/2022 10:53:57 AM	66857
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/15/2022 10:53:57 AM	66857
Surr: DNOP	72.4	51.1-141		%Rec	1	4/15/2022 10:53:57 AM	66857
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/15/2022 12:11:00 AM	66828
Surr: BFB	101	37.7-212		%Rec	1	4/15/2022 12:11:00 AM	66828
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**	
Benzene	ND	0.024		mg/Kg	1	4/15/2022 12:11:00 AM	66828
Toluene	ND	0.048		mg/Kg	1	4/15/2022 12:11:00 AM	66828
Ethylbenzene	ND	0.048		mg/Kg	1	4/15/2022 12:11:00 AM	66828
Xylenes, Total	ND	0.097		mg/Kg	1	4/15/2022 12:11:00 AM	66828
Surr: 4-Bromofluorobenzene	82.7	70-130		%Rec	1	4/15/2022 12:11:00 AM	66828

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2204562**
Date Reported: **4/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-12 4.0'
Project: Avalanche Journal State 1
Collection Date: 4/9/2022 10:50:00 AM
Lab ID: 2204562-006 **Matrix:** SOIL **Received Date:** 4/13/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	430	60		mg/Kg	20	4/19/2022 10:01:46 PM	66935
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	11	9.4		mg/Kg	1	4/15/2022 11:04:33 AM	66857
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/15/2022 11:04:33 AM	66857
Surr: DNOP	93.6	51.1-141		%Rec	1	4/15/2022 11:04:33 AM	66857
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/15/2022 12:31:00 AM	66828
Surr: BFB	97.2	37.7-212		%Rec	1	4/15/2022 12:31:00 AM	66828
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**	
Benzene	ND	0.025		mg/Kg	1	4/15/2022 12:31:00 AM	66828
Toluene	ND	0.050		mg/Kg	1	4/15/2022 12:31:00 AM	66828
Ethylbenzene	ND	0.050		mg/Kg	1	4/15/2022 12:31:00 AM	66828
Xylenes, Total	ND	0.099		mg/Kg	1	4/15/2022 12:31:00 AM	66828
Surr: 4-Bromofluorobenzene	79.1	70-130		%Rec	1	4/15/2022 12:31:00 AM	66828

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2204562**
Date Reported: **4/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-13 0.0'
Project: Avalanche Journal State 1
Collection Date: 4/9/2022 11:00:00 AM
Lab ID: 2204562-007 **Matrix:** SOIL
Received Date: 4/13/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	4/19/2022 10:14:10 PM	66935
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	4/15/2022 11:15:11 AM	66857
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/15/2022 11:15:11 AM	66857
Surr: DNOP	121	51.1-141		%Rec	1	4/15/2022 11:15:11 AM	66857
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/15/2022 6:36:27 PM	66851
Surr: BFB	103	37.7-212		%Rec	1	4/15/2022 6:36:27 PM	66851
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	4/15/2022 6:36:27 PM	66851
Toluene	ND	0.049		mg/Kg	1	4/15/2022 6:36:27 PM	66851
Ethylbenzene	ND	0.049		mg/Kg	1	4/15/2022 6:36:27 PM	66851
Xylenes, Total	ND	0.098		mg/Kg	1	4/15/2022 6:36:27 PM	66851
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	4/15/2022 6:36:27 PM	66851

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2204562**
Date Reported: **4/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-13 2.0'
Project: Avalanche Journal State 1
Collection Date: 4/9/2022 11:10:00 AM
Lab ID: 2204562-008 **Matrix:** SOIL
Received Date: 4/13/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	4/19/2022 10:26:35 PM	66935
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	4/15/2022 11:25:48 AM	66857
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/15/2022 11:25:48 AM	66857
Surr: DNOP	96.9	51.1-141		%Rec	1	4/15/2022 11:25:48 AM	66857
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/15/2022 7:46:36 PM	66851
Surr: BFB	99.7	37.7-212		%Rec	1	4/15/2022 7:46:36 PM	66851
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	4/15/2022 7:46:36 PM	66851
Toluene	ND	0.048		mg/Kg	1	4/15/2022 7:46:36 PM	66851
Ethylbenzene	ND	0.048		mg/Kg	1	4/15/2022 7:46:36 PM	66851
Xylenes, Total	ND	0.097		mg/Kg	1	4/15/2022 7:46:36 PM	66851
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	4/15/2022 7:46:36 PM	66851

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2204562**
Date Reported: **4/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-13 3.0'
Project: Avalanche Journal State 1
Collection Date: 4/9/2022 11:20:00 AM
Lab ID: 2204562-009 **Matrix:** SOIL **Received Date:** 4/13/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	4/19/2022 10:39:00 PM	66935
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	4/15/2022 11:36:24 AM	66857
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/15/2022 11:36:24 AM	66857
Surr: DNOP	106	51.1-141		%Rec	1	4/15/2022 11:36:24 AM	66857
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/15/2022 8:57:01 PM	66851
Surr: BFB	99.6	37.7-212		%Rec	1	4/15/2022 8:57:01 PM	66851
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	4/15/2022 8:57:01 PM	66851
Toluene	ND	0.049		mg/Kg	1	4/15/2022 8:57:01 PM	66851
Ethylbenzene	ND	0.049		mg/Kg	1	4/15/2022 8:57:01 PM	66851
Xylenes, Total	ND	0.099		mg/Kg	1	4/15/2022 8:57:01 PM	66851
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	4/15/2022 8:57:01 PM	66851

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2204562**
Date Reported: **4/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-14 0.0'
Project: Avalanche Journal State 1
Collection Date: 4/9/2022 11:30:00 AM
Lab ID: 2204562-010 **Matrix:** SOIL
Received Date: 4/13/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	4/19/2022 10:51:25 PM	66935
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	4/15/2022 11:47:05 AM	66857
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/15/2022 11:47:05 AM	66857
Surr: DNOP	132	51.1-141		%Rec	1	4/15/2022 11:47:05 AM	66857
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/15/2022 9:20:43 PM	66851
Surr: BFB	99.1	37.7-212		%Rec	1	4/15/2022 9:20:43 PM	66851
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	4/15/2022 9:20:43 PM	66851
Toluene	ND	0.048		mg/Kg	1	4/15/2022 9:20:43 PM	66851
Ethylbenzene	ND	0.048		mg/Kg	1	4/15/2022 9:20:43 PM	66851
Xylenes, Total	ND	0.097		mg/Kg	1	4/15/2022 9:20:43 PM	66851
Surr: 4-Bromofluorobenzene	99.6	70-130		%Rec	1	4/15/2022 9:20:43 PM	66851

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2204562**
Date Reported: **4/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-14 2.0'
Project: Avalanche Journal State 1
Collection Date: 4/9/2022 11:40:00 AM
Lab ID: 2204562-011 **Matrix:** SOIL
Received Date: 4/13/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	140	61		mg/Kg	20	4/19/2022 11:28:39 PM	66935
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	4/15/2022 11:57:41 AM	66857
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/15/2022 11:57:41 AM	66857
Surr: DNOP	128	51.1-141		%Rec	1	4/15/2022 11:57:41 AM	66857
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/15/2022 9:44:21 PM	66851
Surr: BFB	100	37.7-212		%Rec	1	4/15/2022 9:44:21 PM	66851
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	4/15/2022 9:44:21 PM	66851
Toluene	ND	0.049		mg/Kg	1	4/15/2022 9:44:21 PM	66851
Ethylbenzene	ND	0.049		mg/Kg	1	4/15/2022 9:44:21 PM	66851
Xylenes, Total	ND	0.098		mg/Kg	1	4/15/2022 9:44:21 PM	66851
Surr: 4-Bromofluorobenzene	99.9	70-130		%Rec	1	4/15/2022 9:44:21 PM	66851

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2204562**
Date Reported: **4/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-14 4.0'
Project: Avalanche Journal State 1
Collection Date: 4/9/2022 11:50:00 AM
Lab ID: 2204562-012 **Matrix:** SOIL
Received Date: 4/13/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	210	61		mg/Kg	20	4/19/2022 11:41:04 PM	66935
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	4/15/2022 12:08:22 PM	66857
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/15/2022 12:08:22 PM	66857
Surr: DNOP	100	51.1-141		%Rec	1	4/15/2022 12:08:22 PM	66857
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/15/2022 10:54:40 PM	66851
Surr: BFB	99.9	37.7-212		%Rec	1	4/15/2022 10:54:40 PM	66851
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	4/15/2022 10:54:40 PM	66851
Toluene	ND	0.048		mg/Kg	1	4/15/2022 10:54:40 PM	66851
Ethylbenzene	ND	0.048		mg/Kg	1	4/15/2022 10:54:40 PM	66851
Xylenes, Total	ND	0.097		mg/Kg	1	4/15/2022 10:54:40 PM	66851
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	4/15/2022 10:54:40 PM	66851

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	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 range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2204562**

25-Apr-22

Client: EOG

Project: Avalanche Journal State 1

Sample ID: **MB-66935**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **66935**	RunNo: **87374**
Prep Date: **4/19/2022**	Analysis Date: **4/19/2022**	SeqNo: **3091065** Units: **mg/Kg**

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

Sample ID: **LCS-66935**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **66935**	RunNo: **87374**
Prep Date: **4/19/2022**	Analysis Date: **4/19/2022**	SeqNo: **3091066** 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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2204562**

25-Apr-22

Client: EOG

Project: Avalanche Journal State 1

Sample ID: **MB-66831**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **66831**	RunNo: **87242**
Prep Date: **4/13/2022**	Analysis Date: **4/14/2022**	SeqNo: **3086050** 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		99.5	51.1	141			

Sample ID: **LCS-66857**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **66857**	RunNo: **87285**
Prep Date: **4/14/2022**	Analysis Date: **4/15/2022**	SeqNo: **3086642** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	56	10	50.00	0	112	68.9	135			
Surr: DNOP	5.6		5.000		112	51.1	141			

Sample ID: **MB-66857**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **66857**	RunNo: **87285**
Prep Date: **4/14/2022**	Analysis Date: **4/15/2022**	SeqNo: **3086644** 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	15		10.00		151	51.1	141			S

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2204562**

25-Apr-22

Client: EOG

Project: Avalanche Journal State 1

Sample ID: **mb-66828**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **66828**	RunNo: **87255**
Prep Date: **4/13/2022**	Analysis Date: **4/14/2022**	SeqNo: **3085381** 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	1100		1000		105	37.7	212			

Sample ID: **lcs-66828**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **66828**	RunNo: **87255**
Prep Date: **4/13/2022**	Analysis Date: **4/14/2022**	SeqNo: **3085382** 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	72.3	137			
Surr: BFB	2100		1000		214	37.7	212			S

Sample ID: **mb-66851**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **66851**	RunNo: **87295**
Prep Date: **4/14/2022**	Analysis Date: **4/15/2022**	SeqNo: **3086896** 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: **lcs-66851**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **66851**	RunNo: **87295**
Prep Date: **4/14/2022**	Analysis Date: **4/15/2022**	SeqNo: **3086897** 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	98.4	72.3	137			
Surr: BFB	2100		1000		210	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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2204562**

25-Apr-22

Client: EOG

Project: Avalanche Journal State 1

Sample ID: **mb-66828**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **66828**	RunNo: **87255**
Prep Date: **4/13/2022**	Analysis Date: **4/14/2022**	SeqNo: **3085423** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		104	70	130			

Sample ID: **LCS-66828**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **66828**	RunNo: **87255**
Prep Date: **4/13/2022**	Analysis Date: **4/14/2022**	SeqNo: **3085424** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.85	0.025	1.000	0	85.2	80	120			
Toluene	0.88	0.050	1.000	0	87.7	80	120			
Ethylbenzene	0.89	0.050	1.000	0	88.8	80	120			
Xylenes, Total	2.7	0.10	3.000	0	89.5	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		105	70	130			

Sample ID: **mb-66851**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **66851**	RunNo: **87295**
Prep Date: **4/14/2022**	Analysis Date: **4/15/2022**	SeqNo: **3086943** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		103	70	130			

Sample ID: **LCS-66851**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **66851**	RunNo: **87295**
Prep Date: **4/14/2022**	Analysis Date: **4/15/2022**	SeqNo: **3086944** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.025	1.000	0	89.2	80	120			
Toluene	0.92	0.050	1.000	0	92.4	80	120			
Ethylbenzene	0.93	0.050	1.000	0	93.2	80	120			
Xylenes, Total	2.8	0.10	3.000	0	94.0	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		104	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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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: EOG | Work Order Number: 2204562 | RcptNo: 1

Received By: Cheyenne Cason 4/13/2022 7:30:00 AM

Completed By: Desiree Dominguez 4/13/2022 8:10:33 AM

Reviewed By: DD 4/13/22

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 ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
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 ☐	Checked by: JM 4/13/22

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	5.0	Good	Not Present			

Chain-of-Custody Record

Client: EOG / Chase Settle

Mailing Address:

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other
☐ EDD (Type)

Turn-Around Time: 5-DAY
☑ Standard ☐ Rush

Project Name: Avalanche Journal State #1

Project #: 22E-0845

Project Manager: Mike Moffitt

Sampler: AH

On Ice: ☑ Yes ☐ No

# of Coolers: 1

Cooler Temp (including CF): 5.1 - 0.1 = 5.0 (°C) CF 4/13/22

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. 2204562	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)
4/9/22	1000	Soil	BH22-11	0.0'	4 oz	ICE	-001	✓	✓					✓			
↓	1010		BH22-11	2.0'			-002										
	1020		BH22-11	4.0'			-003										
	1030		BH22-12	0.0'			-004										
	1040		BH22-12	2.0'			-005										
	1050		BH22-12	4.0'			-006										
	1100		BH22-13	0.0'			-007										
	1110		BH22-13	2.0'			-008										
	1120		BH22-13	3.0'			-009										
	1130		BH22-14	0.0'			-010										
	1140	✓	BH22-14	2.0'	✓	✓	-011										
↓	1150		BH22-14	4.0'			-012	✓	✓					✓			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
			ACummings		4/12/22	1000
Date: 4/12/22	Time: 1900	Relinquished by: ACummings	Received by: CH courier	Via:	Date 4/13/22	Time 0730

Remarks: CC: Michael Moffitt

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

May 18, 2022

Michael Moffitt

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

RE: Avalanche Journal State 1 OrderNo.: 2205482

Dear Michael Moffitt:

Hall Environmental Analysis Laboratory received 17 sample(s) on 5/11/2022 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 **2205482**
Date Reported: **5/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH22-16 0'
Project: Avalanche Journal State 1
Collection Date: 5/9/2022 8:40:00 AM
Lab ID: 2205482-001 **Matrix:** SOIL **Received Date:** 5/11/2022 7:15:00 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	5/11/2022 5:11:12 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/11/2022 5:11:12 PM
Surr: DNOP	79.6	51.1-141		%Rec	1	5/11/2022 5:11:12 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	3.4		mg/Kg	1	5/11/2022 5:16:00 PM
Surr: BFB	104	37.7-212		%Rec	1	5/11/2022 5:16:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.017		mg/Kg	1	5/11/2022 5:16:00 PM
Toluene	ND	0.034		mg/Kg	1	5/11/2022 5:16:00 PM
Ethylbenzene	ND	0.034		mg/Kg	1	5/11/2022 5:16:00 PM
Xylenes, Total	ND	0.068		mg/Kg	1	5/11/2022 5:16:00 PM
Surr: 4-Bromofluorobenzene	82.5	70-130		%Rec	1	5/11/2022 5:16:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Chloride	ND	60		mg/Kg	20	5/11/2022 11:13:42 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	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 range due to dilution or matrix interference

Analytical Report
Lab Order **2205482**
Date Reported: **5/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH22-16 2'
Project: Avalanche Journal State 1
Collection Date: 5/9/2022 8:40:00 AM
Lab ID: 2205482-002 **Matrix:** SOIL **Received Date:** 5/11/2022 7:15:00 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	5/11/2022 5:35:24 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/11/2022 5:35:24 PM
Surr: DNOP	88.9	51.1-141		%Rec	1	5/11/2022 5:35:24 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	3.2		mg/Kg	1	5/11/2022 5:36:00 PM
Surr: BFB	98.5	37.7-212		%Rec	1	5/11/2022 5:36:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.016		mg/Kg	1	5/11/2022 5:36:00 PM
Toluene	ND	0.032		mg/Kg	1	5/11/2022 5:36:00 PM
Ethylbenzene	ND	0.032		mg/Kg	1	5/11/2022 5:36:00 PM
Xylenes, Total	ND	0.064		mg/Kg	1	5/11/2022 5:36:00 PM
Surr: 4-Bromofluorobenzene	81.8	70-130		%Rec	1	5/11/2022 5:36:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Chloride	ND	59		mg/Kg	20	5/11/2022 11:26:01 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	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 range due to dilution or matrix interference

Analytical Report
Lab Order **2205482**
Date Reported: **5/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH22-17 0'
Project: Avalanche Journal State 1 **Collection Date:** 5/9/2022 9:00:00 AM
Lab ID: 2205482-003 **Matrix:** SOIL **Received Date:** 5/11/2022 7:15:00 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	5/11/2022 5:59:46 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/11/2022 5:59:46 PM
Surr: DNOP	80.9	51.1-141		%Rec	1	5/11/2022 5:59:46 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	5/11/2022 5:56:00 PM
Surr: BFB	96.8	37.7-212		%Rec	1	5/11/2022 5:56:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.018		mg/Kg	1	5/11/2022 5:56:00 PM
Toluene	ND	0.035		mg/Kg	1	5/11/2022 5:56:00 PM
Ethylbenzene	ND	0.035		mg/Kg	1	5/11/2022 5:56:00 PM
Xylenes, Total	ND	0.071		mg/Kg	1	5/11/2022 5:56:00 PM
Surr: 4-Bromofluorobenzene	79.5	70-130		%Rec	1	5/11/2022 5:56:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Chloride	ND	60		mg/Kg	20	5/11/2022 11:38:22 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205482**
Date Reported: **5/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH22-17 2'
Project: Avalanche Journal State 1
Collection Date: 5/9/2022 9:00:00 AM
Lab ID: 2205482-004 **Matrix:** SOIL **Received Date:** 5/11/2022 7:15:00 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	5/11/2022 6:24:01 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/11/2022 6:24:01 PM
Surr: DNOP	93.9	51.1-141		%Rec	1	5/11/2022 6:24:01 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	3.4		mg/Kg	1	5/11/2022 6:16:00 PM
Surr: BFB	99.0	37.7-212		%Rec	1	5/11/2022 6:16:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.017		mg/Kg	1	5/11/2022 6:16:00 PM
Toluene	ND	0.034		mg/Kg	1	5/11/2022 6:16:00 PM
Ethylbenzene	ND	0.034		mg/Kg	1	5/11/2022 6:16:00 PM
Xylenes, Total	ND	0.068		mg/Kg	1	5/11/2022 6:16:00 PM
Surr: 4-Bromofluorobenzene	79.9	70-130		%Rec	1	5/11/2022 6:16:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Chloride	ND	60		mg/Kg	20	5/11/2022 11:50:43 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	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 range due to dilution or matrix interference

Analytical Report
Lab Order **2205482**
Date Reported: **5/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH22-18 0'
Project: Avalanche Journal State 1 **Collection Date:** 5/9/2022 9:20:00 AM
Lab ID: 2205482-005 **Matrix:** SOIL **Received Date:** 5/11/2022 7:15:00 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	5/11/2022 6:48:16 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/11/2022 6:48:16 PM
Surr: DNOP	91.4	51.1-141		%Rec	1	5/11/2022 6:48:16 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	3.4		mg/Kg	1	5/11/2022 7:34:00 PM
Surr: BFB	94.9	37.7-212		%Rec	1	5/11/2022 7:34:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.017		mg/Kg	1	5/11/2022 7:34:00 PM
Toluene	ND	0.034		mg/Kg	1	5/11/2022 7:34:00 PM
Ethylbenzene	ND	0.034		mg/Kg	1	5/11/2022 7:34:00 PM
Xylenes, Total	ND	0.067		mg/Kg	1	5/11/2022 7:34:00 PM
Surr: 4-Bromofluorobenzene	76.6	70-130		%Rec	1	5/11/2022 7:34:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Chloride	ND	60		mg/Kg	20	5/12/2022 12:03:04 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	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 range due to dilution or matrix interference

Analytical Report
Lab Order **2205482**
Date Reported: **5/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH22-18 2'
Project: Avalanche Journal State 1
Collection Date: 5/9/2022 9:20:00 AM
Lab ID: 2205482-006 **Matrix:** SOIL **Received Date:** 5/11/2022 7:15:00 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	5/11/2022 7:12:27 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/11/2022 7:12:27 PM
Surr: DNOP	87.7	51.1-141		%Rec	1	5/11/2022 7:12:27 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	5/11/2022 7:54:00 PM
Surr: BFB	94.4	37.7-212		%Rec	1	5/11/2022 7:54:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.017		mg/Kg	1	5/11/2022 7:54:00 PM
Toluene	ND	0.035		mg/Kg	1	5/11/2022 7:54:00 PM
Ethylbenzene	ND	0.035		mg/Kg	1	5/11/2022 7:54:00 PM
Xylenes, Total	ND	0.070		mg/Kg	1	5/11/2022 7:54:00 PM
Surr: 4-Bromofluorobenzene	77.6	70-130		%Rec	1	5/11/2022 7:54:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Chloride	190	60		mg/Kg	20	5/12/2022 12:40:06 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	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 range due to dilution or matrix interference

Analytical Report
Lab Order **2205482**
Date Reported: **5/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH22-19 0'
Project: Avalanche Journal State 1
Collection Date: 5/9/2022 9:40:00 AM
Lab ID: 2205482-007 **Matrix:** SOIL **Received Date:** 5/11/2022 7:15:00 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	5/11/2022 7:36:48 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/11/2022 7:36:48 PM
Surr: DNOP	77.6	51.1-141		%Rec	1	5/11/2022 7:36:48 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	3.3		mg/Kg	1	5/11/2022 8:14:00 PM
Surr: BFB	96.1	37.7-212		%Rec	1	5/11/2022 8:14:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.017		mg/Kg	1	5/11/2022 8:14:00 PM
Toluene	ND	0.033		mg/Kg	1	5/11/2022 8:14:00 PM
Ethylbenzene	ND	0.033		mg/Kg	1	5/11/2022 8:14:00 PM
Xylenes, Total	ND	0.067		mg/Kg	1	5/11/2022 8:14:00 PM
Surr: 4-Bromofluorobenzene	76.6	70-130		%Rec	1	5/11/2022 8:14:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Chloride	ND	60		mg/Kg	20	5/12/2022 12:52:27 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	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 range due to dilution or matrix interference

Analytical Report
Lab Order **2205482**
Date Reported: **5/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH22-19 2'
Project: Avalanche Journal State 1 **Collection Date:** 5/9/2022 9:40:00 AM
Lab ID: 2205482-008 **Matrix:** SOIL **Received Date:** 5/11/2022 7:15:00 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	5/11/2022 8:00:55 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/11/2022 8:00:55 PM
Surr: DNOP	81.3	51.1-141		%Rec	1	5/11/2022 8:00:55 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	5/11/2022 8:34:00 PM
Surr: BFB	96.5	37.7-212		%Rec	1	5/11/2022 8:34:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.018		mg/Kg	1	5/11/2022 8:34:00 PM
Toluene	ND	0.036		mg/Kg	1	5/11/2022 8:34:00 PM
Ethylbenzene	ND	0.036		mg/Kg	1	5/11/2022 8:34:00 PM
Xylenes, Total	ND	0.073		mg/Kg	1	5/11/2022 8:34:00 PM
Surr: 4-Bromofluorobenzene	77.4	70-130		%Rec	1	5/11/2022 8:34:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Chloride	ND	60		mg/Kg	20	5/12/2022 1:04:48 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205482**
Date Reported: **5/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH22-15 0'
Project: Avalanche Journal State 1
Collection Date: 5/6/2022 10:45:00 AM
Lab ID: 2205482-013 **Matrix:** SOIL **Received Date:** 5/11/2022 7:15:00 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	5/11/2022 8:25:07 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/11/2022 8:25:07 PM
Surr: DNOP	83.0	51.1-141		%Rec	1	5/11/2022 8:25:07 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	5/11/2022 8:53:00 PM
Surr: BFB	94.4	37.7-212		%Rec	1	5/11/2022 8:53:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.018		mg/Kg	1	5/11/2022 8:53:00 PM
Toluene	ND	0.036		mg/Kg	1	5/11/2022 8:53:00 PM
Ethylbenzene	ND	0.036		mg/Kg	1	5/11/2022 8:53:00 PM
Xylenes, Total	ND	0.071		mg/Kg	1	5/11/2022 8:53:00 PM
Surr: 4-Bromofluorobenzene	76.4	70-130		%Rec	1	5/11/2022 8:53:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Chloride	ND	60		mg/Kg	20	5/12/2022 1:17:09 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	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 range due to dilution or matrix interference

Analytical Report
Lab Order **2205482**
Date Reported: **5/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH22-15 2'
Project: Avalanche Journal State 1
Collection Date: 5/6/2022 10:55:00 AM
Lab ID: 2205482-014 **Matrix:** SOIL **Received Date:** 5/11/2022 7:15:00 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	5/11/2022 8:49:26 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/11/2022 8:49:26 PM
Surr: DNOP	84.4	51.1-141		%Rec	1	5/11/2022 8:49:26 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.0		mg/Kg	1	5/11/2022 8:12:32 PM
Surr: BFB	99.1	37.7-212		%Rec	1	5/11/2022 8:12:32 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.020		mg/Kg	1	5/11/2022 8:12:32 PM
Toluene	ND	0.040		mg/Kg	1	5/11/2022 8:12:32 PM
Ethylbenzene	ND	0.040		mg/Kg	1	5/11/2022 8:12:32 PM
Xylenes, Total	ND	0.080		mg/Kg	1	5/11/2022 8:12:32 PM
Surr: 4-Bromofluorobenzene	96.4	70-130		%Rec	1	5/11/2022 8:12:32 PM
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Chloride	ND	60		mg/Kg	20	5/12/2022 11:54:12 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	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 range due to dilution or matrix interference

Analytical Report
Lab Order **2205482**
Date Reported: **5/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH22-15 4'
Project: Avalanche Journal State 1
Collection Date: 5/6/2022 11:05:00 AM
Lab ID: 2205482-015 **Matrix:** SOIL **Received Date:** 5/11/2022 7:15:00 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	5/11/2022 9:13:48 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/11/2022 9:13:48 PM
Surr: DNOP	88.2	51.1-141		%Rec	1	5/11/2022 9:13:48 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	5/11/2022 9:22:52 PM
Surr: BFB	93.4	37.7-212		%Rec	1	5/11/2022 9:22:52 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.019		mg/Kg	1	5/11/2022 9:22:52 PM
Toluene	ND	0.038		mg/Kg	1	5/11/2022 9:22:52 PM
Ethylbenzene	ND	0.038		mg/Kg	1	5/11/2022 9:22:52 PM
Xylenes, Total	ND	0.076		mg/Kg	1	5/11/2022 9:22:52 PM
Surr: 4-Bromofluorobenzene	93.8	70-130		%Rec	1	5/11/2022 9:22:52 PM
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Chloride	ND	60		mg/Kg	20	5/12/2022 12:06:33 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	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 range due to dilution or matrix interference

Analytical Report
Lab Order **2205482**
Date Reported: **5/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH22-15 6'
Project: Avalanche Journal State 1
Collection Date: 5/6/2022 11:10:00 AM
Lab ID: 2205482-016 **Matrix:** SOIL **Received Date:** 5/11/2022 7:15:00 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	5/11/2022 9:38:06 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/11/2022 9:38:06 PM
Surr: DNOP	89.6	51.1-141		%Rec	1	5/11/2022 9:38:06 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	3.4		mg/Kg	1	5/11/2022 10:33:16 PM
Surr: BFB	96.3	37.7-212		%Rec	1	5/11/2022 10:33:16 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.017		mg/Kg	1	5/11/2022 10:33:16 PM
Toluene	ND	0.034		mg/Kg	1	5/11/2022 10:33:16 PM
Ethylbenzene	ND	0.034		mg/Kg	1	5/11/2022 10:33:16 PM
Xylenes, Total	ND	0.069		mg/Kg	1	5/11/2022 10:33:16 PM
Surr: 4-Bromofluorobenzene	96.2	70-130		%Rec	1	5/11/2022 10:33:16 PM
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Chloride	140	60		mg/Kg	20	5/12/2022 12:18:54 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	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 range due to dilution or matrix interference

Analytical Report
Lab Order **2205482**
Date Reported: **5/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH22-15 8'
Project: Avalanche Journal State 1
Collection Date: 5/6/2022 11:20:00 AM
Lab ID: 2205482-017 **Matrix:** SOIL **Received Date:** 5/11/2022 7:15:00 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	5/11/2022 10:02:33 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/11/2022 10:02:33 PM
Surr: DNOP	96.7	51.1-141		%Rec	1	5/11/2022 10:02:33 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	5/11/2022 10:56:41 PM
Surr: BFB	95.7	37.7-212		%Rec	1	5/11/2022 10:56:41 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.017		mg/Kg	1	5/11/2022 10:56:41 PM
Toluene	ND	0.035		mg/Kg	1	5/11/2022 10:56:41 PM
Ethylbenzene	ND	0.035		mg/Kg	1	5/11/2022 10:56:41 PM
Xylenes, Total	ND	0.070		mg/Kg	1	5/11/2022 10:56:41 PM
Surr: 4-Bromofluorobenzene	90.9	70-130		%Rec	1	5/11/2022 10:56:41 PM
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Chloride	420	60		mg/Kg	20	5/12/2022 12:31:15 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	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 range due to dilution or matrix interference

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2205482**

18-May-22

Client: Vertex Resources Services, Inc.

Project: Avalanche Journal State 1

Sample ID: **MB-67422**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **67422**	RunNo: **87928**							
Prep Date: **5/11/2022**	Analysis Date: **5/12/2022**	SeqNo: **3116938**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-67422**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **67422**	RunNo: **87928**							
Prep Date: **5/11/2022**	Analysis Date: **5/12/2022**	SeqNo: **3116939**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.4	90	110			

Sample ID: **LCS-67428**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **67428**	RunNo: **87935**							
Prep Date: **5/12/2022**	Analysis Date: **5/12/2022**	SeqNo: **3118246**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.7	90	110			

Sample ID: **MB-67428**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **67428**	RunNo: **87935**							
Prep Date: **5/12/2022**	Analysis Date: **5/12/2022**	SeqNo: **3118247**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	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 range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2205482**

18-May-22

Client: Vertex Resources Services, Inc.

Project: Avalanche Journal State 1

Sample ID: **MB-67396** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **67396** RunNo: **87938**

Prep Date: **5/11/2022** Analysis Date: **5/11/2022** SeqNo: **3117275** 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	8.9		10.00		89.4	51.1	141			

Sample ID: **LCS-67396** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **67396** RunNo: **87938**

Prep Date: **5/11/2022** Analysis Date: **5/11/2022** SeqNo: **3117276** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	90.2	68.9	135			
Surr: DNOP	4.5		5.000		90.4	51.1	141			

Sample ID: **2205481-001AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **BatchQC** Batch ID: **67396** RunNo: **87938**

Prep Date: **5/11/2022** Analysis Date: **5/11/2022** SeqNo: **3117280** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	9.9	49.60	0	97.0	36.1	154			
Surr: DNOP	4.7		4.960		95.4	51.1	141			

Sample ID: **2205481-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **BatchQC** Batch ID: **67396** RunNo: **87938**

Prep Date: **5/11/2022** Analysis Date: **5/11/2022** SeqNo: **3117281** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	9.6	47.85	0	96.9	36.1	154	3.69	33.9	
Surr: DNOP	4.6		4.785		96.4	51.1	141	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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2205482**

18-May-22

Client: Vertex Resources Services, Inc.

Project: Avalanche Journal State 1

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **A87906**	RunNo: **87906**
Prep Date:	Analysis Date: **5/11/2022**	SeqNo: **3115826** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	103	72.3	137			
Surr: BFB	2200		1000		219	37.7	212			S

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **A87906**	RunNo: **87906**
Prep Date:	Analysis Date: **5/11/2022**	SeqNo: **3115827** 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	1100		1000		106	37.7	212			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **G87896**	RunNo: **87896**
Prep Date:	Analysis Date: **5/11/2022**	SeqNo: **3116402** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		101	37.7	212			

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **G87896**	RunNo: **87896**
Prep Date:	Analysis Date: **5/11/2022**	SeqNo: **3116403** 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	100	72.3	137			
Surr: BFB	2200		1000		221	37.7	212			S

Sample ID: **2205482-014ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH22-15 2'**	Batch ID: **G87896**	RunNo: **87896**
Prep Date:	Analysis Date: **5/11/2022**	SeqNo: **3116414** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	19	4.0	19.94	0	95.8	70	130			
Surr: BFB	1600		797.4		203	37.7	212			

Sample ID: **2205482-014amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH22-15 2'**	Batch ID: **G87896**	RunNo: **87896**
Prep Date:	Analysis Date: **5/11/2022**	SeqNo: **3116415** 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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2205482**

18-May-22

Client: Vertex Resources Services, Inc.

Project: Avalanche Journal State 1

Sample ID: **2205482-014amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH22-15 2'**	Batch ID: **G87896**	RunNo: **87896**
Prep Date:	Analysis Date: **5/11/2022**	SeqNo: **3116415** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	19	4.0	19.94	0	96.7	70	130	0.998	20	
Surr: BFB	1700		797.4		211	37.7	212	0	0	

Sample ID: **2205480-001ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BatchQC**	Batch ID: **A87906**	RunNo: **87906**
Prep Date:	Analysis Date: **5/11/2022**	SeqNo: **3116491** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	87	18	89.74	0	96.7	70	130			
Surr: BFB	7800		3590		217	37.7	212			S

Sample ID: **2205480-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BatchQC**	Batch ID: **A87906**	RunNo: **87906**
Prep Date:	Analysis Date: **5/11/2022**	SeqNo: **3116492** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	89	18	89.74	0	99.3	70	130	2.65	20	
Surr: BFB	7500		3590		210	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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2205482**

18-May-22

Client: Vertex Resources Services, Inc.

Project: Avalanche Journal State 1

Sample ID: **100ng btex lcs**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **B87906**	RunNo: **87906**
Prep Date:	Analysis Date: **5/11/2022**	SeqNo: **3115839** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.85	0.025	1.000	0	84.8	80	120			
Toluene	0.87	0.050	1.000	0	86.7	80	120			
Ethylbenzene	0.86	0.050	1.000	0	86.5	80	120			
Xylenes, Total	2.6	0.10	3.000	0	86.7	80	120			
Surr: 4-Bromofluorobenzene	0.86		1.000		85.8	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **B87906**	RunNo: **87906**
Prep Date:	Analysis Date: **5/11/2022**	SeqNo: **3115840** 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	0.85		1.000		84.7	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **B87896**	RunNo: **87896**
Prep Date:	Analysis Date: **5/11/2022**	SeqNo: **3116443** 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	0.98		1.000		98.3	70	130			

Sample ID: **100ng btex lcs**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **B87896**	RunNo: **87896**
Prep Date:	Analysis Date: **5/11/2022**	SeqNo: **3116444** 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	90.2	80	120			
Toluene	0.95	0.050	1.000	0	95.0	80	120			
Ethylbenzene	0.95	0.050	1.000	0	94.8	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.2	80	120			
Surr: 4-Bromofluorobenzene	0.99		1.000		99.2	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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2205482**

18-May-22

Client: Vertex Resources Services, Inc.

Project: Avalanche Journal State 1

Sample ID: **2205482-015ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH22-15 4'**	Batch ID: **B87896**	RunNo: **87896**
Prep Date:	Analysis Date: **5/11/2022**	SeqNo: **3116467** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.67	0.019	0.7639	0	87.8	68.8	120			
Toluene	0.70	0.038	0.7639	0	91.7	73.6	124			
Ethylbenzene	0.70	0.038	0.7639	0	91.8	72.7	129			
Xylenes, Total	2.1	0.076	2.292	0	91.9	75.7	126			
Surr: 4-Bromofluorobenzene	0.75		0.7639		98.1	70	130			

Sample ID: **2205482-015amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH22-15 4'**	Batch ID: **B87896**	RunNo: **87896**
Prep Date:	Analysis Date: **5/11/2022**	SeqNo: **3116468** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.67	0.019	0.7639	0	87.4	68.8	120	0.514	20	
Toluene	0.69	0.038	0.7639	0	90.6	73.6	124	1.18	20	
Ethylbenzene	0.70	0.038	0.7639	0	91.0	72.7	129	0.843	20	
Xylenes, Total	2.1	0.076	2.292	0	91.1	75.7	126	0.780	20	
Surr: 4-Bromofluorobenzene	0.77		0.7639		101	70	130	0	0	

Sample ID: **2205480-002ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BatchQC**	Batch ID: **B87906**	RunNo: **87906**
Prep Date:	Analysis Date: **5/11/2022**	SeqNo: **3116507** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	2.8	0.084	3.340	0	85.1	68.8	120			
Toluene	2.9	0.17	3.340	0	86.8	73.6	124			
Ethylbenzene	2.9	0.17	3.340	0	87.3	72.7	129			
Xylenes, Total	8.8	0.33	10.02	0	87.8	75.7	126			
Surr: 4-Bromofluorobenzene	2.8		3.340		82.9	70	130			

Sample ID: **2205480-002amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BatchQC**	Batch ID: **B87906**	RunNo: **87906**
Prep Date:	Analysis Date: **5/11/2022**	SeqNo: **3116508** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	2.7	0.084	3.340	0	80.3	68.8	120	5.72	20	
Toluene	2.7	0.17	3.340	0	82.1	73.6	124	5.64	20	
Ethylbenzene	2.8	0.17	3.340	0	82.6	72.7	129	5.55	20	
Xylenes, Total	8.4	0.33	10.02	0	83.6	75.7	126	4.91	20	
Surr: 4-Bromofluorobenzene	2.7		3.340		80.0	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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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: 2205482

RcptNo: 1

Received By: Juan Rojas 5/11/2022 7:15:00 AM

Completed By: Tracy Casarrubias 5/11/2022 7:58:46 AM

Reviewed By: CM 5/11/22

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 ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
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 ☐	Checked by: JN 5/11/22

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

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

Chain-of-Custody Record

Client: Vertex
(EOG, Chase Settle)

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 24 hour

Project Name: Avalanche Journal State #1

Project #: 22E-00345

Project Manager: Michael Moffitt

Sampler: L. Pullman

On Ice: ☑ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 1.4-0=1.4 (°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. 2205482	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)
5-9-22	08:40	Soil	BH22-16 0'	1 Jar		001	X	X					X			
5-9-22	08:40	Soil	BH22-16 2'	1 Jar		002	X	X					X			
5-9-22	09:00	Soil	BH22-17 0'	1 Jar		003	X	X					X			
5-9-22	09:00		~~BH22-17~~ BH22-17 2'			004	X	X					X			
5-9-22	09:20		BH22-18 0'			005	X	X					X			
5-9-22	09:20		BH22-18 2'			006	X	X					X			
5-9-22	09:40		BH22-19 0'			007	X	X					X			
5-9-22	09:40		BH22-19 2'			008	X	X					X			
	08:40		BH22-16 4' - hold			009										
	09:00		BH22-17 4' - Hold			010										
	09:20		BH22-18 4' - Hold			011										
	09:40		BH22-19 4' - Hold			012										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
5-10-22	07:00	Jake Pullman			5/10/22	700
5/10/22	1900		courier		5/11/22	7:15

Remarks: Hold the four 4' samples

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 EOG

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 24 Hr

Project Name: Avalanche Journal State #1

Project #: 22E-00345

Project Manager: M. Moffit

Sampler: M. Wier

On Ice: ☑ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 1.4-0=1.4 (°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. 2205482	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)
5-6-22	10:45	Soil	BH22-15 0'	1 Jar		013	✓	✓					✓			
5-6-22	10:55	Soil	BH22-15 2'	1 Jar		014	X	X					X			
5-6-22	11:05	Soil	BH22-15 4'	1 Jar		015	X	X					X			
5-6-22	11:10	Soil	BH22-15 6'	1 Jar		016	X	X					X			
5-6-22	11:20	Soil	BH22-15 8'	1 Jar		017	X	X					X			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
		M. Wier			5/10/22	930
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
				Courier	5/11/22	7:15

Remarks:

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

June 02, 2022

Michael Moffitt

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

RE: Avalanche Journal State 1 OrderNo.: 2205987

Dear Michael Moffitt:

Hall Environmental Analysis Laboratory received 30 sample(s) on 5/21/2022 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 **2205987**
Date Reported: **6/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WES22-01 0-5'
Project: Avalanche Journal State 1
Collection Date: 5/19/2022 8:10:00 AM
Lab ID: 2205987-001 **Matrix:** SOIL
Received Date: 5/21/2022 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	8.5		mg/Kg	1	5/26/2022 5:27:46 PM
Motor Oil Range Organics (MRO)	ND	42		mg/Kg	1	5/26/2022 5:27:46 PM
Surr: DNOP	94.0	51.1-141		%Rec	1	5/26/2022 5:27:46 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/24/2022 10:26:31 PM
Surr: BFB	93.4	37.7-212		%Rec	1	5/24/2022 10:26:31 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	5/24/2022 10:26:31 PM
Toluene	ND	0.047		mg/Kg	1	5/24/2022 10:26:31 PM
Ethylbenzene	ND	0.047		mg/Kg	1	5/24/2022 10:26:31 PM
Xylenes, Total	ND	0.094		mg/Kg	1	5/24/2022 10:26:31 PM
Surr: 4-Bromofluorobenzene	97.4	70-130		%Rec	1	5/24/2022 10:26:31 PM
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Chloride	170	59		mg/Kg	20	5/26/2022 4:31:40 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205987**
Date Reported: **6/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WES22-02 0-5'
Project: Avalanche Journal State 1
Collection Date: 5/19/2022 8:10:00 AM
Lab ID: 2205987-002 **Matrix:** SOIL
Received Date: 5/21/2022 9:45:00 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	5/26/2022 5:41:42 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/26/2022 5:41:42 PM
Surr: DNOP	95.8	51.1-141		%Rec	1	5/26/2022 5:41:42 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/24/2022 10:50:10 PM
Surr: BFB	92.9	37.7-212		%Rec	1	5/24/2022 10:50:10 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.025		mg/Kg	1	5/24/2022 10:50:10 PM
Toluene	ND	0.049		mg/Kg	1	5/24/2022 10:50:10 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/24/2022 10:50:10 PM
Xylenes, Total	ND	0.099		mg/Kg	1	5/24/2022 10:50:10 PM
Surr: 4-Bromofluorobenzene	98.1	70-130		%Rec	1	5/24/2022 10:50:10 PM
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Chloride	180	60		mg/Kg	20	5/26/2022 4:44:04 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205987**
Date Reported: **6/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WES22-03 0-5'
Project: Avalanche Journal State 1
Collection Date: 5/19/2022 8:10:00 AM
Lab ID: 2205987-003 **Matrix:** SOIL **Received Date:** 5/21/2022 9:45:00 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	5/26/2022 5:55:49 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/26/2022 5:55:49 PM
Surr: DNOP	92.5	51.1-141		%Rec	1	5/26/2022 5:55:49 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/24/2022 11:13:47 PM
Surr: BFB	91.8	37.7-212		%Rec	1	5/24/2022 11:13:47 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	5/24/2022 11:13:47 PM
Toluene	ND	0.048		mg/Kg	1	5/24/2022 11:13:47 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/24/2022 11:13:47 PM
Xylenes, Total	ND	0.096		mg/Kg	1	5/24/2022 11:13:47 PM
Surr: 4-Bromofluorobenzene	95.4	70-130		%Rec	1	5/24/2022 11:13:47 PM
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Chloride	180	60		mg/Kg	20	5/26/2022 4:56:28 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205987**
Date Reported: **6/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** WES22-06 0-6'
Project: Avalanche Journal State 1 **Collection Date:** 5/19/2022 8:15:00 AM
Lab ID: 2205987-004 **Matrix:** SOIL **Received Date:** 5/21/2022 9:45:00 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	5/26/2022 6:09:26 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/26/2022 6:09:26 PM
Surr: DNOP	92.6	51.1-141		%Rec	1	5/26/2022 6:09:26 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/24/2022 11:37:27 PM
Surr: BFB	93.2	37.7-212		%Rec	1	5/24/2022 11:37:27 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	5/24/2022 11:37:27 PM
Toluene	ND	0.048		mg/Kg	1	5/24/2022 11:37:27 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/24/2022 11:37:27 PM
Xylenes, Total	ND	0.096		mg/Kg	1	5/24/2022 11:37:27 PM
Surr: 4-Bromofluorobenzene	97.3	70-130		%Rec	1	5/24/2022 11:37:27 PM
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Chloride	180	60		mg/Kg	20	5/26/2022 5:08:53 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205987**
Date Reported: **6/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WES22-07 0-6'
Project: Avalanche Journal State 1
Collection Date: 5/19/2022 8:15:00 AM
Lab ID: 2205987-005 **Matrix:** SOIL
Received Date: 5/21/2022 9:45:00 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	5/26/2022 6:23:20 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/26/2022 6:23:20 PM
Surr: DNOP	98.3	51.1-141		%Rec	1	5/26/2022 6:23:20 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/25/2022 12:01:01 AM
Surr: BFB	94.8	37.7-212		%Rec	1	5/25/2022 12:01:01 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	5/25/2022 12:01:01 AM
Toluene	ND	0.049		mg/Kg	1	5/25/2022 12:01:01 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/25/2022 12:01:01 AM
Xylenes, Total	ND	0.097		mg/Kg	1	5/25/2022 12:01:01 AM
Surr: 4-Bromofluorobenzene	97.3	70-130		%Rec	1	5/25/2022 12:01:01 AM
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Chloride	150	60		mg/Kg	20	5/26/2022 5:21:17 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205987**
Date Reported: **6/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WES22-08 0-7'
Project: Avalanche Journal State 1
Collection Date: 5/19/2022 8:15:00 AM
Lab ID: 2205987-006 **Matrix:** SOIL
Received Date: 5/21/2022 9:45:00 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	5/26/2022 6:36:54 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/26/2022 6:36:54 PM
Surr: DNOP	85.7	51.1-141		%Rec	1	5/26/2022 6:36:54 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/25/2022 12:24:32 AM
Surr: BFB	97.2	37.7-212		%Rec	1	5/25/2022 12:24:32 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	5/25/2022 12:24:32 AM
Toluene	ND	0.048		mg/Kg	1	5/25/2022 12:24:32 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/25/2022 12:24:32 AM
Xylenes, Total	ND	0.096		mg/Kg	1	5/25/2022 12:24:32 AM
Surr: 4-Bromofluorobenzene	99.1	70-130		%Rec	1	5/25/2022 12:24:32 AM
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Chloride	160	60		mg/Kg	20	5/26/2022 5:33:42 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205987**
Date Reported: **6/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WES22-11 0-8'
Project: Avalanche Journal State 1
Collection Date: 5/19/2022 8:20:00 AM
Lab ID: 2205987-007 **Matrix:** SOIL **Received Date:** 5/21/2022 9:45:00 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	5/26/2022 6:50:35 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/26/2022 6:50:35 PM
Surr: DNOP	84.8	51.1-141		%Rec	1	5/26/2022 6:50:35 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/25/2022 1:35:19 AM
Surr: BFB	96.1	37.7-212		%Rec	1	5/25/2022 1:35:19 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	5/25/2022 1:35:19 AM
Toluene	ND	0.047		mg/Kg	1	5/25/2022 1:35:19 AM
Ethylbenzene	ND	0.047		mg/Kg	1	5/25/2022 1:35:19 AM
Xylenes, Total	ND	0.094		mg/Kg	1	5/25/2022 1:35:19 AM
Surr: 4-Bromofluorobenzene	99.7	70-130		%Rec	1	5/25/2022 1:35:19 AM
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Chloride	ND	59		mg/Kg	20	5/26/2022 5:46:07 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205987**
Date Reported: **6/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WES22-12 0-8'
Project: Avalanche Journal State 1
Collection Date: 5/19/2022 8:20:00 AM
Lab ID: 2205987-008 **Matrix:** SOIL
Received Date: 5/21/2022 9:45:00 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	5/26/2022 7:04:24 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/26/2022 7:04:24 PM
Surr: DNOP	93.5	51.1-141		%Rec	1	5/26/2022 7:04:24 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/25/2022 1:58:55 AM
Surr: BFB	103	37.7-212		%Rec	1	5/25/2022 1:58:55 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.025		mg/Kg	1	5/25/2022 1:58:55 AM
Toluene	ND	0.050		mg/Kg	1	5/25/2022 1:58:55 AM
Ethylbenzene	ND	0.050		mg/Kg	1	5/25/2022 1:58:55 AM
Xylenes, Total	ND	0.099		mg/Kg	1	5/25/2022 1:58:55 AM
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	5/25/2022 1:58:55 AM
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Chloride	140	60		mg/Kg	20	5/26/2022 5:58:31 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205987**
Date Reported: **6/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WES22-13 0-8'
Project: Avalanche Journal State 1
Collection Date: 5/19/2022 8:20:00 AM
Lab ID: 2205987-009 **Matrix:** SOIL **Received Date:** 5/21/2022 9:45:00 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	5/26/2022 7:17:51 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/26/2022 7:17:51 PM
Surr: DNOP	89.6	51.1-141		%Rec	1	5/26/2022 7:17:51 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/25/2022 2:22:34 AM
Surr: BFB	94.6	37.7-212		%Rec	1	5/25/2022 2:22:34 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.025		mg/Kg	1	5/25/2022 2:22:34 AM
Toluene	ND	0.049		mg/Kg	1	5/25/2022 2:22:34 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/25/2022 2:22:34 AM
Xylenes, Total	ND	0.098		mg/Kg	1	5/25/2022 2:22:34 AM
Surr: 4-Bromofluorobenzene	99.9	70-130		%Rec	1	5/25/2022 2:22:34 AM
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Chloride	160	59		mg/Kg	20	5/26/2022 6:10:55 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205987**
Date Reported: **6/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WES22-17 0-8'
Project: Avalanche Journal State 1
Collection Date: 5/19/2022 8:25:00 AM
Lab ID: 2205987-010 **Matrix:** SOIL
Received Date: 5/21/2022 9:45:00 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	5/26/2022 7:31:40 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/26/2022 7:31:40 PM
Surr: DNOP	118	51.1-141		%Rec	1	5/26/2022 7:31:40 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/25/2022 2:46:08 AM
Surr: BFB	94.3	37.7-212		%Rec	1	5/25/2022 2:46:08 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	5/25/2022 2:46:08 AM
Toluene	ND	0.047		mg/Kg	1	5/25/2022 2:46:08 AM
Ethylbenzene	ND	0.047		mg/Kg	1	5/25/2022 2:46:08 AM
Xylenes, Total	ND	0.094		mg/Kg	1	5/25/2022 2:46:08 AM
Surr: 4-Bromofluorobenzene	97.6	70-130		%Rec	1	5/25/2022 2:46:08 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	60		mg/Kg	20	5/26/2022 11:26:00 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205987**
Date Reported: **6/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WES22-19 0-5'
Project: Avalanche Journal State 1
Collection Date: 5/19/2022 8:30:00 AM
Lab ID: 2205987-011 **Matrix:** SOIL
Received Date: 5/21/2022 9:45:00 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	5/26/2022 7:45:30 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	5/26/2022 7:45:30 PM
Surr: DNOP	85.9	51.1-141		%Rec	1	5/26/2022 7:45:30 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/25/2022 3:09:40 AM
Surr: BFB	94.8	37.7-212		%Rec	1	5/25/2022 3:09:40 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	5/25/2022 3:09:40 AM
Toluene	ND	0.048		mg/Kg	1	5/25/2022 3:09:40 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/25/2022 3:09:40 AM
Xylenes, Total	ND	0.095		mg/Kg	1	5/25/2022 3:09:40 AM
Surr: 4-Bromofluorobenzene	98.2	70-130		%Rec	1	5/25/2022 3:09:40 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	60		mg/Kg	20	5/26/2022 11:38:21 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205987**
Date Reported: **6/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WES22-20 0-5'
Project: Avalanche Journal State 1
Collection Date: 5/19/2022 8:30:00 AM
Lab ID: 2205987-012 **Matrix:** SOIL
Received Date: 5/21/2022 9:45:00 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	5/26/2022 7:59:22 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/26/2022 7:59:22 PM
Surr: DNOP	106	51.1-141		%Rec	1	5/26/2022 7:59:22 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/25/2022 3:33:11 AM
Surr: BFB	91.8	37.7-212		%Rec	1	5/25/2022 3:33:11 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	5/25/2022 3:33:11 AM
Toluene	ND	0.049		mg/Kg	1	5/25/2022 3:33:11 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/25/2022 3:33:11 AM
Xylenes, Total	ND	0.097		mg/Kg	1	5/25/2022 3:33:11 AM
Surr: 4-Bromofluorobenzene	96.5	70-130		%Rec	1	5/25/2022 3:33:11 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	94	59		mg/Kg	20	5/26/2022 11:50:42 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205987**
Date Reported: **6/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WES22-21 0-5'
Project: Avalanche Journal State 1
Collection Date: 5/19/2022 8:30:00 AM
Lab ID: 2205987-013 **Matrix:** SOIL
Received Date: 5/21/2022 9:45:00 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	5/26/2022 8:13:20 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/26/2022 8:13:20 PM
Surr: DNOP	90.8	51.1-141		%Rec	1	5/26/2022 8:13:20 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/25/2022 3:56:48 AM
Surr: BFB	96.6	37.7-212		%Rec	1	5/25/2022 3:56:48 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	5/25/2022 3:56:48 AM
Toluene	ND	0.048		mg/Kg	1	5/25/2022 3:56:48 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/25/2022 3:56:48 AM
Xylenes, Total	ND	0.096		mg/Kg	1	5/25/2022 3:56:48 AM
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	5/25/2022 3:56:48 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	61		mg/Kg	20	5/26/2022 12:03:03 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205987**
Date Reported: **6/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** WES22-22 0-5'
Project: Avalanche Journal State 1 **Collection Date:** 5/19/2022 8:35:00 AM
Lab ID: 2205987-014 **Matrix:** SOIL **Received Date:** 5/21/2022 9:45:00 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	5/26/2022 8:27:16 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/26/2022 8:27:16 PM
Surr: DNOP	91.6	51.1-141		%Rec	1	5/26/2022 8:27:16 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/25/2022 4:20:26 AM
Surr: BFB	94.5	37.7-212		%Rec	1	5/25/2022 4:20:26 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	5/25/2022 4:20:26 AM
Toluene	ND	0.047		mg/Kg	1	5/25/2022 4:20:26 AM
Ethylbenzene	ND	0.047		mg/Kg	1	5/25/2022 4:20:26 AM
Xylenes, Total	ND	0.095		mg/Kg	1	5/25/2022 4:20:26 AM
Surr: 4-Bromofluorobenzene	96.0	70-130		%Rec	1	5/25/2022 4:20:26 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	60		mg/Kg	20	5/26/2022 12:15:24 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205987**
Date Reported: **6/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WES22-23 0-5'
Project: Avalanche Journal State 1
Collection Date: 5/19/2022 8:35:00 AM
Lab ID: 2205987-015 **Matrix:** SOIL
Received Date: 5/21/2022 9:45:00 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	5/26/2022 8:41:05 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/26/2022 8:41:05 PM
Surr: DNOP	92.5	51.1-141		%Rec	1	5/26/2022 8:41:05 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/25/2022 4:44:00 AM
Surr: BFB	95.2	37.7-212		%Rec	1	5/25/2022 4:44:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.025		mg/Kg	1	5/25/2022 4:44:00 AM
Toluene	ND	0.050		mg/Kg	1	5/25/2022 4:44:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	5/25/2022 4:44:00 AM
Xylenes, Total	ND	0.10		mg/Kg	1	5/25/2022 4:44:00 AM
Surr: 4-Bromofluorobenzene	95.9	70-130		%Rec	1	5/25/2022 4:44:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	59		mg/Kg	20	5/26/2022 12:52:28 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205987**
Date Reported: **6/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WES22-25 0-10'
Project: Avalanche Journal State 1
Collection Date: 5/19/2022 8:40:00 AM
Lab ID: 2205987-016 **Matrix:** SOIL
Received Date: 5/21/2022 9:45:00 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	5/26/2022 8:54:54 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/26/2022 8:54:54 PM
Surr: DNOP	81.7	51.1-141		%Rec	1	5/26/2022 8:54:54 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/25/2022 4:36:00 AM
Surr: BFB	85.8	37.7-212		%Rec	1	5/25/2022 4:36:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.024		mg/Kg	1	5/25/2022 4:36:00 AM
Toluene	ND	0.049		mg/Kg	1	5/25/2022 4:36:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/25/2022 4:36:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	5/25/2022 4:36:00 AM
Surr: 4-Bromofluorobenzene	88.0	70-130		%Rec	1	5/25/2022 4:36:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	60		mg/Kg	20	5/26/2022 1:29:30 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205987**
Date Reported: **6/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WES22-26 0-5'
Project: Avalanche Journal State 1
Collection Date: 5/19/2022 8:45:00 AM
Lab ID: 2205987-017 **Matrix:** SOIL
Received Date: 5/21/2022 9:45:00 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	5/26/2022 9:08:31 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/26/2022 9:08:31 PM
Surr: DNOP	83.9	51.1-141		%Rec	1	5/26/2022 9:08:31 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/25/2022 4:55:00 AM
Surr: BFB	87.5	37.7-212		%Rec	1	5/25/2022 4:55:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.024		mg/Kg	1	5/25/2022 4:55:00 AM
Toluene	ND	0.048		mg/Kg	1	5/25/2022 4:55:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/25/2022 4:55:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	5/25/2022 4:55:00 AM
Surr: 4-Bromofluorobenzene	88.8	70-130		%Rec	1	5/25/2022 4:55:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	130	60		mg/Kg	20	5/26/2022 1:41:52 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205987**
Date Reported: **6/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WES22-27 0-5'
Project: Avalanche Journal State 1
Collection Date: 5/19/2022 8:45:00 AM
Lab ID: 2205987-018 **Matrix:** SOIL
Received Date: 5/21/2022 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	5/26/2022 8:02:46 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/26/2022 8:02:46 PM
Surr: DNOP	93.5	51.1-141		%Rec	1	5/26/2022 8:02:46 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/25/2022 5:15:00 AM
Surr: BFB	91.4	37.7-212		%Rec	1	5/25/2022 5:15:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.025		mg/Kg	1	5/25/2022 5:15:00 AM
Toluene	ND	0.049		mg/Kg	1	5/25/2022 5:15:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/25/2022 5:15:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	5/25/2022 5:15:00 AM
Surr: 4-Bromofluorobenzene	92.9	70-130		%Rec	1	5/25/2022 5:15:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	60		mg/Kg	20	5/26/2022 1:54:12 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205987**
Date Reported: **6/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WES22-28 0-5'
Project: Avalanche Journal State 1
Collection Date: 5/19/2022 8:45:00 AM
Lab ID: 2205987-019 **Matrix:** SOIL
Received Date: 5/21/2022 9:45:00 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	5/27/2022 2:08:50 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/27/2022 2:08:50 PM
Surr: DNOP	85.3	51.1-141		%Rec	1	5/27/2022 2:08:50 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/24/2022 7:44:00 PM
Surr: BFB	93.2	37.7-212		%Rec	1	5/24/2022 7:44:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.025		mg/Kg	1	5/24/2022 7:44:00 PM
Toluene	ND	0.049		mg/Kg	1	5/24/2022 7:44:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/24/2022 7:44:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	5/24/2022 7:44:00 PM
Surr: 4-Bromofluorobenzene	96.8	70-130		%Rec	1	5/24/2022 7:44:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	62	60		mg/Kg	20	5/26/2022 2:06:34 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205987**
Date Reported: **6/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WES22-29 0-5'
Project: Avalanche Journal State 1
Collection Date: 5/19/2022 9:50:00 AM
Lab ID: 2205987-020 **Matrix:** SOIL
Received Date: 5/21/2022 9:45:00 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	5/26/2022 6:47:10 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/26/2022 6:47:10 PM
Surr: DNOP	57.3	51.1-141		%Rec	1	5/26/2022 6:47:10 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/24/2022 8:43:00 PM
Surr: BFB	97.8	37.7-212		%Rec	1	5/24/2022 8:43:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.025		mg/Kg	1	5/24/2022 8:43:00 PM
Toluene	ND	0.049		mg/Kg	1	5/24/2022 8:43:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/24/2022 8:43:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	5/24/2022 8:43:00 PM
Surr: 4-Bromofluorobenzene	99.2	70-130		%Rec	1	5/24/2022 8:43:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	120	59		mg/Kg	20	5/26/2022 2:43:37 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205987**
Date Reported: **6/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WES22-30 0-5'
Project: Avalanche Journal State 1
Collection Date: 5/19/2022 9:50:00 AM
Lab ID: 2205987-021 **Matrix:** SOIL **Received Date:** 5/21/2022 9:45:00 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	5/26/2022 7:10:53 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/26/2022 7:10:53 PM
Surr: DNOP	67.9	51.1-141		%Rec	1	5/26/2022 7:10:53 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/24/2022 9:42:00 PM
Surr: BFB	93.6	37.7-212		%Rec	1	5/24/2022 9:42:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.024		mg/Kg	1	5/24/2022 9:42:00 PM
Toluene	ND	0.048		mg/Kg	1	5/24/2022 9:42:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/24/2022 9:42:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	5/24/2022 9:42:00 PM
Surr: 4-Bromofluorobenzene	96.2	70-130		%Rec	1	5/24/2022 9:42:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	60		mg/Kg	20	5/26/2022 3:20:40 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205987**
Date Reported: **6/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WES22-31 0-5'
Project: Avalanche Journal State 1
Collection Date: 5/19/2022 10:55:00 AM
Lab ID: 2205987-022 **Matrix:** SOIL
Received Date: 5/21/2022 9:45:00 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	5/26/2022 7:34:42 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/26/2022 7:34:42 PM
Surr: DNOP	70.2	51.1-141		%Rec	1	5/26/2022 7:34:42 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/24/2022 10:02:00 PM
Surr: BFB	93.1	37.7-212		%Rec	1	5/24/2022 10:02:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.025		mg/Kg	1	5/24/2022 10:02:00 PM
Toluene	ND	0.049		mg/Kg	1	5/24/2022 10:02:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/24/2022 10:02:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	5/24/2022 10:02:00 PM
Surr: 4-Bromofluorobenzene	95.4	70-130		%Rec	1	5/24/2022 10:02:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	140	60		mg/Kg	20	5/26/2022 3:33:00 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	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 range due to dilution or matrix interference

Analytical Report
Lab Order **2205987**
Date Reported: **6/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WES22-32 0-5'
Project: Avalanche Journal State 1
Collection Date: 5/19/2022 10:55:00 AM
Lab ID: 2205987-023 **Matrix:** SOIL
Received Date: 5/21/2022 9:45:00 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	5/26/2022 7:58:26 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/26/2022 7:58:26 PM
Surr: DNOP	61.4	51.1-141		%Rec	1	5/26/2022 7:58:26 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/24/2022 10:21:00 PM
Surr: BFB	93.7	37.7-212		%Rec	1	5/24/2022 10:21:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.024		mg/Kg	1	5/24/2022 10:21:00 PM
Toluene	ND	0.048		mg/Kg	1	5/24/2022 10:21:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/24/2022 10:21:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	5/24/2022 10:21:00 PM
Surr: 4-Bromofluorobenzene	95.7	70-130		%Rec	1	5/24/2022 10:21:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	150	60		mg/Kg	20	5/26/2022 3:45:22 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205987**
Date Reported: **6/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-27 5'
Project: Avalanche Journal State 1
Collection Date: 5/19/2022 9:55:00 AM
Lab ID: 2205987-024 **Matrix:** SOIL
Received Date: 5/21/2022 9:45:00 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	5/26/2022 8:22:12 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/26/2022 8:22:12 PM
Surr: DNOP	70.8	51.1-141		%Rec	1	5/26/2022 8:22:12 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	5/24/2022 10:41:00 PM
Surr: BFB	100	37.7-212		%Rec	1	5/24/2022 10:41:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.023		mg/Kg	1	5/24/2022 10:41:00 PM
Toluene	ND	0.046		mg/Kg	1	5/24/2022 10:41:00 PM
Ethylbenzene	ND	0.046		mg/Kg	1	5/24/2022 10:41:00 PM
Xylenes, Total	ND	0.092		mg/Kg	1	5/24/2022 10:41:00 PM
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	5/24/2022 10:41:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	74	60		mg/Kg	20	5/26/2022 3:57:42 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205987**
Date Reported: **6/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-28 5'
Project: Avalanche Journal State 1
Collection Date: 5/19/2022 9:55:00 AM
Lab ID: 2205987-025 **Matrix:** SOIL
Received Date: 5/21/2022 9:45:00 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	5/26/2022 8:46:07 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/26/2022 8:46:07 PM
Surr: DNOP	62.8	51.1-141		%Rec	1	5/26/2022 8:46:07 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/24/2022 11:01:00 PM
Surr: BFB	97.5	37.7-212		%Rec	1	5/24/2022 11:01:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.024		mg/Kg	1	5/24/2022 11:01:00 PM
Toluene	ND	0.048		mg/Kg	1	5/24/2022 11:01:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/24/2022 11:01:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	5/24/2022 11:01:00 PM
Surr: 4-Bromofluorobenzene	99.1	70-130		%Rec	1	5/24/2022 11:01:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	99	60		mg/Kg	20	5/26/2022 4:10:03 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205987**
Date Reported: **6/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-29 5'
Project: Avalanche Journal State 1
Collection Date: 5/19/2022 11:00:00 AM
Lab ID: 2205987-026 **Matrix:** SOIL
Received Date: 5/21/2022 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	5/26/2022 9:09:59 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	5/26/2022 9:09:59 PM
Surr: DNOP	72.0	51.1-141		%Rec	1	5/26/2022 9:09:59 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/24/2022 11:21:00 PM
Surr: BFB	97.2	37.7-212		%Rec	1	5/24/2022 11:21:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.024		mg/Kg	1	5/24/2022 11:21:00 PM
Toluene	ND	0.048		mg/Kg	1	5/24/2022 11:21:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/24/2022 11:21:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	5/24/2022 11:21:00 PM
Surr: 4-Bromofluorobenzene	98.7	70-130		%Rec	1	5/24/2022 11:21:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	94	60		mg/Kg	20	5/26/2022 4:22:23 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205987**
Date Reported: **6/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-30 5'
Project: Avalanche Journal State 1
Collection Date: 5/19/2022 11:00:00 AM
Lab ID: 2205987-027 **Matrix:** SOIL
Received Date: 5/21/2022 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**
Diesel Range Organics (DRO)	ND	8.7		mg/Kg	1	5/26/2022 9:33:35 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	5/26/2022 9:33:35 PM
Surr: DNOP	74.2	51.1-141		%Rec	1	5/26/2022 9:33:35 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/24/2022 11:40:00 PM
Surr: BFB	96.1	37.7-212		%Rec	1	5/24/2022 11:40:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.024		mg/Kg	1	5/24/2022 11:40:00 PM
Toluene	ND	0.049		mg/Kg	1	5/24/2022 11:40:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/24/2022 11:40:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	5/24/2022 11:40:00 PM
Surr: 4-Bromofluorobenzene	97.9	70-130		%Rec	1	5/24/2022 11:40:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	100	60		mg/Kg	20	5/26/2022 4:34:44 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205987**
Date Reported: **6/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-31 6'
Project: Avalanche Journal State 1
Collection Date: 5/19/2022 2:25:00 PM
Lab ID: 2205987-028 **Matrix:** SOIL **Received Date:** 5/21/2022 9:45:00 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	5/26/2022 9:57:14 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/26/2022 9:57:14 PM
Surr: DNOP	73.2	51.1-141		%Rec	1	5/26/2022 9:57:14 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/25/2022 12:20:00 AM
Surr: BFB	93.0	37.7-212		%Rec	1	5/25/2022 12:20:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.024		mg/Kg	1	5/25/2022 12:20:00 AM
Toluene	ND	0.048		mg/Kg	1	5/25/2022 12:20:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/25/2022 12:20:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	5/25/2022 12:20:00 AM
Surr: 4-Bromofluorobenzene	91.9	70-130		%Rec	1	5/25/2022 12:20:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	79	60		mg/Kg	20	5/26/2022 4:47:05 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205987**
Date Reported: **6/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BES22-32 8'
Project: Avalanche Journal State 1 **Collection Date:** 5/19/2022 2:25:00 PM
Lab ID: 2205987-029 **Matrix:** SOIL **Received Date:** 5/21/2022 9:45:00 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	5/26/2022 10:20:45 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/26/2022 10:20:45 PM
Surr: DNOP	77.1	51.1-141		%Rec	1	5/26/2022 10:20:45 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	5/25/2022 12:39:00 AM
Surr: BFB	89.9	37.7-212		%Rec	1	5/25/2022 12:39:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.023		mg/Kg	1	5/25/2022 12:39:00 AM
Toluene	ND	0.046		mg/Kg	1	5/25/2022 12:39:00 AM
Ethylbenzene	ND	0.046		mg/Kg	1	5/25/2022 12:39:00 AM
Xylenes, Total	ND	0.092		mg/Kg	1	5/25/2022 12:39:00 AM
Surr: 4-Bromofluorobenzene	90.8	70-130		%Rec	1	5/25/2022 12:39:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	96	60		mg/Kg	20	5/26/2022 4:59:26 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205987**
Date Reported: **6/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WES22-33 0-5'
Project: Avalanche Journal State 1
Collection Date: 5/19/2022 2:00:00 PM
Lab ID: 2205987-030 **Matrix:** SOIL
Received Date: 5/21/2022 9:45:00 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	5/26/2022 10:44:12 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/26/2022 10:44:12 PM
Surr: DNOP	85.3	51.1-141		%Rec	1	5/26/2022 10:44:12 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	5/25/2022 12:59:00 AM
Surr: BFB	90.3	37.7-212		%Rec	1	5/25/2022 12:59:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.023		mg/Kg	1	5/25/2022 12:59:00 AM
Toluene	ND	0.046		mg/Kg	1	5/25/2022 12:59:00 AM
Ethylbenzene	ND	0.046		mg/Kg	1	5/25/2022 12:59:00 AM
Xylenes, Total	ND	0.093		mg/Kg	1	5/25/2022 12:59:00 AM
Surr: 4-Bromofluorobenzene	92.0	70-130		%Rec	1	5/25/2022 12:59:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	240	60		mg/Kg	20	5/27/2022 11:27:58 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	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 range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2205987**
02-Jun-22

Client: Vertex Resources Services, Inc.
Project: Avalanche Journal State 1

Sample ID: **MB-67707** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **67707** RunNo: **88280**
Prep Date: **5/25/2022** Analysis Date: **5/26/2022** SeqNo: **3130762** Units: **mg/Kg**

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

Sample ID: **LCS-67707** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **67707** RunNo: **88280**
Prep Date: **5/25/2022** Analysis Date: **5/26/2022** SeqNo: **3130763** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.1	90	110			

Sample ID: **MB-67719** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **67719** RunNo: **88302**
Prep Date: **5/26/2022** Analysis Date: **5/26/2022** SeqNo: **3132747** Units: **mg/Kg**

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

Sample ID: **LCS-67719** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **67719** RunNo: **88302**
Prep Date: **5/26/2022** Analysis Date: **5/26/2022** SeqNo: **3132748** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.1	90	110			

Sample ID: **MB-67722** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **67722** RunNo: **88373**
Prep Date: **5/26/2022** Analysis Date: **5/27/2022** SeqNo: **3134711** Units: **mg/Kg**

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

Sample ID: **LCS-67722** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **67722** RunNo: **88373**
Prep Date: **5/26/2022** Analysis Date: **5/27/2022** SeqNo: **3134712** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.2	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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2205987**
02-Jun-22

Client: Vertex Resources Services, Inc.
Project: Avalanche Journal State 1

Sample ID: **MB-67666**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **67666**	RunNo: **88263**							
Prep Date: **5/24/2022**	Analysis Date: **5/26/2022**	SeqNo: **3131422**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	10		10.00		101	51.1	141			

Sample ID: **LCS-67666**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **LCSS**	Batch ID: **67666**	RunNo: **88263**							
Prep Date: **5/24/2022**	Analysis Date: **5/26/2022**	SeqNo: **3131423**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.4		5.000		108	51.1	141			

Sample ID: **MB-67677**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **67677**	RunNo: **88283**							
Prep Date: **5/25/2022**	Analysis Date: **5/26/2022**	SeqNo: **3131761**	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		78.8	51.1	141			

Sample ID: **MB-67680**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **67680**	RunNo: **88246**							
Prep Date: **5/25/2022**	Analysis Date: **5/26/2022**	SeqNo: **3132682**	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	9.3		10.00		93.1	51.1	141			

Sample ID: **LCS-67680**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **LCSS**	Batch ID: **67680**	RunNo: **88246**							
Prep Date: **5/25/2022**	Analysis Date: **5/26/2022**	SeqNo: **3132685**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	101	64.4	127			
Surr: DNOP	4.7		5.000		93.1	51.1	141			

Sample ID: **2205987-019AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **WES22-28 0-5'**	Batch ID: **67680**	RunNo: **88246**							
Prep Date: **5/25/2022**	Analysis Date: **5/26/2022**	SeqNo: **3132692**	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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2205987**
02-Jun-22

Client: Vertex Resources Services, Inc.
Project: Avalanche Journal State 1

Sample ID: **2205987-019AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **WES22-28 0-5'** Batch ID: **67680** RunNo: **88246**
Prep Date: **5/25/2022** Analysis Date: **5/26/2022** SeqNo: **3132692** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	9.7	48.64	0	96.9	36.1	154			
Surr: DNOP	2.6		4.864		52.8	51.1	141			

Sample ID: **2205987-019AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **WES22-28 0-5'** Batch ID: **67680** RunNo: **88246**
Prep Date: **5/25/2022** Analysis Date: **5/26/2022** SeqNo: **3132693** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	9.9	49.50	0	93.2	36.1	154	2.04	33.9	
Surr: DNOP	2.7		4.950		54.6	51.1	141	0	0	

Sample ID: **LCS-67677** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **67677** RunNo: **88246**
Prep Date: **5/25/2022** Analysis Date: **5/27/2022** SeqNo: **3132733** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	93.5	64.4	127			
Surr: DNOP	4.2		5.000		84.6	51.1	141			

Sample ID: **MB-67662** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **67662** RunNo: **88263**
Prep Date: **5/24/2022** Analysis Date: **5/26/2022** SeqNo: **3132846** 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	7.6		10.00		76.0	51.1	141			

Sample ID: **LCS-67662** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **67662** RunNo: **88263**
Prep Date: **5/24/2022** Analysis Date: **5/26/2022** SeqNo: **3132847** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	10	50.00	0	109	64.4	127			
Surr: DNOP	4.6		5.000		92.3	51.1	141			

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2205987**
02-Jun-22

Client: Vertex Resources Services, Inc.
Project: Avalanche Journal State 1

Sample ID: **mb-67636** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS** Batch ID: **67636** RunNo: **88235**
Prep Date: **5/23/2022** Analysis Date: **5/25/2022** SeqNo: **3128729** 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	960		1000		95.7	37.7	212			

Sample ID: **lcs-67636** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS** Batch ID: **67636** RunNo: **88235**
Prep Date: **5/23/2022** Analysis Date: **5/24/2022** SeqNo: **3128730** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	106	72.3	137			
Surr: BFB	2100		1000		213	37.7	212			S

Sample ID: **lcs-67637** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS** Batch ID: **67637** RunNo: **88236**
Prep Date: **5/23/2022** Analysis Date: **5/24/2022** SeqNo: **3128820** 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	99.1	72.3	137			
Surr: BFB	2000		1000		202	37.7	212			

Sample ID: **mb-67637** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS** Batch ID: **67637** RunNo: **88236**
Prep Date: **5/23/2022** Analysis Date: **5/24/2022** SeqNo: **3128821** 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	930		1000		93.2	37.7	212			

Sample ID: **2205987-019ams** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **WES22-28 0-5'** Batch ID: **67637** RunNo: **88236**
Prep Date: **5/23/2022** Analysis Date: **5/24/2022** SeqNo: **3128824** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	4.9	24.46	0	112	70	130			
Surr: BFB	2200		978.5		223	37.7	212			S

Sample ID: **2205987-019amsd** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **WES22-28 0-5'** Batch ID: **67637** RunNo: **88236**
Prep Date: **5/23/2022** Analysis Date: **5/24/2022** SeqNo: **3128825** 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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2205987**
02-Jun-22

Client: Vertex Resources Services, Inc.
Project: Avalanche Journal State 1

Sample ID: **2205987-019amsd** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **WES22-28 0-5'** Batch ID: **67637** RunNo: **88236**
Prep Date: **5/23/2022** Analysis Date: **5/24/2022** SeqNo: **3128825** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	4.9	24.44	0	112	70	130	0.223	20	
Surr: BFB	2200		977.5		229	37.7	212	0	0	S

Sample ID: **mb-67661** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS** Batch ID: **67661** RunNo: **88270**
Prep Date: **5/24/2022** Analysis Date: **5/26/2022** SeqNo: **3130075** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	900		1000		90.3	37.7	212			

Sample ID: **lcs-67661** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS** Batch ID: **67661** RunNo: **88270**
Prep Date: **5/24/2022** Analysis Date: **5/25/2022** SeqNo: **3130076** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	2100		1000		205	37.7	212			

Sample ID: **lcs-67640** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS** Batch ID: **67640** RunNo: **88271**
Prep Date: **5/23/2022** Analysis Date: **5/25/2022** SeqNo: **3130151** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1900		1000		190	37.7	212			

Sample ID: **mb-67640** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS** Batch ID: **67640** RunNo: **88271**
Prep Date: **5/23/2022** Analysis Date: **5/25/2022** SeqNo: **3130152** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	870		1000		87.4	37.7	212			

Sample ID: **lcs-67656** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS** Batch ID: **67656** RunNo: **88271**
Prep Date: **5/24/2022** Analysis Date: **5/25/2022** SeqNo: **3130175** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1900		1000		192	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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2205987**
02-Jun-22

Client: Vertex Resources Services, Inc.
Project: Avalanche Journal State 1

Sample ID: **mb-67656** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS** Batch ID: **67656** RunNo: **88271**
Prep Date: **5/24/2022** Analysis Date: **5/25/2022** SeqNo: **3130176** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	920		1000		92.1	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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2205987**
02-Jun-22

Client: Vertex Resources Services, Inc.
Project: Avalanche Journal State 1

Sample ID: **mb-67636** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **67636** RunNo: **88235**
Prep Date: **5/23/2022** Analysis Date: **5/25/2022** SeqNo: **3128769** 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	0.98		1.000		98.4	70	130			

Sample ID: **LCS-67636** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **67636** RunNo: **88235**
Prep Date: **5/23/2022** Analysis Date: **5/24/2022** SeqNo: **3128770** 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	90.3	80	120			
Toluene	0.94	0.050	1.000	0	93.8	80	120			
Ethylbenzene	0.94	0.050	1.000	0	93.8	80	120			
Xylenes, Total	2.8	0.10	3.000	0	94.6	80	120			
Surr: 4-Bromofluorobenzene	0.99		1.000		99.2	70	130			

Sample ID: **lcs-67637** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **67637** RunNo: **88236**
Prep Date: **5/23/2022** Analysis Date: **5/24/2022** SeqNo: **3128876** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.025	1.000	0	97.4	80	120			
Toluene	1.0	0.050	1.000	0	99.9	80	120			
Ethylbenzene	1.0	0.050	1.000	0	101	80	120			
Xylenes, Total	3.0	0.10	3.000	0	100	80	120			
Surr: 4-Bromofluorobenzene	0.94		1.000		94.0	70	130			

Sample ID: **mb-67637** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **67637** RunNo: **88236**
Prep Date: **5/23/2022** Analysis Date: **5/24/2022** SeqNo: **3128877** 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	0.94		1.000		94.5	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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2205987**
02-Jun-22

Client: Vertex Resources Services, Inc.
Project: Avalanche Journal State 1

Sample ID: **2205987-020ams** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **WES22-29 0-5'** Batch ID: **67637** RunNo: **88236**
Prep Date: **5/23/2022** Analysis Date: **5/24/2022** SeqNo: **3128881** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	0.9881	0	113	68.8	120			
Toluene	1.2	0.049	0.9881	0	117	73.6	124			
Ethylbenzene	1.2	0.049	0.9881	0	119	72.7	129			
Xylenes, Total	3.5	0.099	2.964	0	120	75.7	126			
Surr: 4-Bromofluorobenzene	0.98		0.9881		99.0	70	130			

Sample ID: **2205987-020amsd** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **WES22-29 0-5'** Batch ID: **67637** RunNo: **88236**
Prep Date: **5/23/2022** Analysis Date: **5/24/2022** SeqNo: **3128882** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	0.9852	0	110	68.8	120	2.73	20	
Toluene	1.1	0.049	0.9852	0	114	73.6	124	2.68	20	
Ethylbenzene	1.1	0.049	0.9852	0	115	72.7	129	3.62	20	
Xylenes, Total	3.4	0.099	2.956	0	115	75.7	126	3.74	20	
Surr: 4-Bromofluorobenzene	0.95		0.9852		96.5	70	130	0	0	

Sample ID: **mb-67661** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **67661** RunNo: **88270**
Prep Date: **5/24/2022** Analysis Date: **5/26/2022** SeqNo: **3130123** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.96		1.000		96.4	70	130			

Sample ID: **LCS-67661** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **67661** RunNo: **88270**
Prep Date: **5/24/2022** Analysis Date: **5/25/2022** SeqNo: **3130124** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.98		1.000		98.3	70	130			

Sample ID: **lcs-67640** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **67640** RunNo: **88271**
Prep Date: **5/23/2022** Analysis Date: **5/25/2022** SeqNo: **3130202** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.90		1.000		90.0	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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2205987**

02-Jun-22

Client: Vertex Resources Services, Inc.

Project: Avalanche Journal State 1

Sample ID: **mb-67640** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **67640** RunNo: **88271**

Prep Date: **5/23/2022** Analysis Date: **5/25/2022** SeqNo: **3130203** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.88		1.000		88.4	70	130			

Sample ID: **lcs-67656** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSS** Batch ID: **67656** RunNo: **88271**

Prep Date: **5/24/2022** Analysis Date: **5/25/2022** SeqNo: **3130224** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.92		1.000		92.4	70	130			

Sample ID: **mb-67656** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **67656** RunNo: **88271**

Prep Date: **5/24/2022** Analysis Date: **5/25/2022** SeqNo: **3130225** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.93		1.000		92.9	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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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: 2205987

RcptNo: 1

Received By: Tracy Casarrubias 5/21/2022 9:45:00 AM

Completed By: Tracy Casarrubias 5/21/2022 1:55:55 PM

Reviewed By: JR 5/23/22

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 CMC 5/23/22

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	3.3	Good	Not Present			
2	0.3	Good	Not Present			
3	5.6	Good	Not Present			

Chain-of-Custody Record

Client: Vertex (EOG, Chase Settle)

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: Avalanche Journal State #1

Project #: 22E-00345

Project Manager: Michael Moffitt

Sampler: L. Fullman

On Ice: ☒ Yes ☐ No

# of Coolers: 3

Cooler Temp(including CF): See Checklist (°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. 2205987	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)
5-19-22	08:10	Soil	WES22-01 0-5'	1 Jar		001	X	X					X			
5-19-22	08:10	Soil	WES22-02 0-5'	1 Jar		002	X	X					X			
5-19-22	08:10	Soil	WES22-03 0-5'	1 Jar		003	X	X					X			
5-19-22	08:15	Soil	WES22-06 0-6'	1 Jar		004	X	X					X			
	08:15		WES22-07 0-6'			005										
	08:15		WES22-08 0-7'			006										
	08:20		WES22-11 0-8'			007										
	08:20		WES22-12 0-8'			008										
	08:30		WES22-13 0-8'			009										
	08:25		WES22-17 0-8'			010										
	08:30		WES22-19 0-5'			011										
	08:30		WES22-20 0-5'			012										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
5-20-22	0700	Lakyn Fullman				
5/20/22	1900				5/21/22	9:45

Remarks:

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: ~~XTO~~ Vertex (EOG, Chase Settle)

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: Avalanche Journal State #1

Project #: 226-00345

Project Manager: Michael Moffitt

Sampler: L. Pullman

On Ice: ☒ Yes ☐ No

# of Coolers: 3

Cooler Temp(including CF): See Checklist (°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. 2205987	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)
5-19-22	08:30	Soil	WES22-21 0-5'	1 Jar		013	X	X					X			
5-19-22	08:35	Soil	WES22-22 0-5'	1 Jar		014	X	X					X			
5-19-22	08:25	Soil	WES22-23 0-5'	1 Jar		015	X	X					X			
5-19-22	08:40	Soil	WES22-25 0-10'	1 Jar		016	X	X					X			
"	08:45	"	WES22-26 0-5'	"		~~00~~ 017	"	"					"			
	08:45		WES22-27 0-5'			018										
	08:45		WES22-28 0-5'			019										
	09:50		WES22-29 0-5'			020										
	09:50		WES22-30 0-5'			021										
	10:55		WES22-31 0-5'			022										
	10:55		WES22-32 0-5'			023										
↓	09:55	↓	BES22-27 5'	↓		024	↓	↓					↓			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
5-20-22	07:00	Luke Pullman			5/20/22	700
5/20/22	1900			Courier	5/21/22	9:45

Remarks:

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 (EOG, Chase Settle)

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: Avalanche Journal State #1

Project #: 22E-00349

Project Manager: Michael Moffitt

Sampler: L. Pullman

On Ice: ☒ Yes ☐ No

# of Coolers: 3

Cooler Temp(including CF): See Checklist (°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. 2205987	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)
5-19-22	09:55	Soil	BES22-28 5'	1 Jar		025	X	X					X			
5-19-22	11:00	Soil	BES22-29 5'	1 Jar		026	X	X					X			
5-19-22	11:00	Soil	BES22-30 5'	1 Jar		027	X	X					X			
	14:25		BES22-31 6'			028										
	14:25		BES22-32 8'			029										
	14:00		WES22-33 0.5'			030										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
5-20-22	0700	Zak Pullman			5/20/22	700
5/20/22	1900			cam	5/21/22	9:45

Remarks:

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

June 06, 2022

Michael Moffitt

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

RE: Avalanche Journal State 1 OrderNo.: 2205A93

Dear Michael Moffitt:

Hall Environmental Analysis Laboratory received 42 sample(s) on 5/25/2022 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 **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-01 6'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 8:15:00 AM
Lab ID: 2205A93-001 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 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	5/27/2022 6:40:52 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/27/2022 6:40:52 PM
Surr: DNOP	76.5	51.1-141		%Rec	1	5/27/2022 6:40:52 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	64	60		mg/Kg	20	5/31/2022 1:56:49 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JR**
Benzene	ND	0.024		mg/Kg	1	5/27/2022 4:26:23 AM
Toluene	ND	0.049		mg/Kg	1	5/27/2022 4:26:23 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/27/2022 4:26:23 AM
Xylenes, Total	ND	0.098		mg/Kg	1	5/27/2022 4:26:23 AM
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	5/27/2022 4:26:23 AM
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	5/27/2022 4:26:23 AM
Surr: Dibromofluoromethane	109	70-130		%Rec	1	5/27/2022 4:26:23 AM
Surr: Toluene-d8	100	70-130		%Rec	1	5/27/2022 4:26:23 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JR**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/27/2022 4:26:23 AM
Surr: BFB	110	70-130		%Rec	1	5/27/2022 4:26:23 AM

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

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-02 6'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 8:15:00 AM
Lab ID: 2205A93-002 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**
Diesel Range Organics (DRO)	ND	8.8		mg/Kg	1	5/27/2022 6:51:50 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	5/27/2022 6:51:50 PM
Surr: DNOP	75.2	51.1-141		%Rec	1	5/27/2022 6:51:50 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	67	60		mg/Kg	20	5/31/2022 2:34:02 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JR**
Benzene	ND	0.024		mg/Kg	1	5/27/2022 4:54:54 AM
Toluene	ND	0.048		mg/Kg	1	5/27/2022 4:54:54 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/27/2022 4:54:54 AM
Xylenes, Total	ND	0.097		mg/Kg	1	5/27/2022 4:54:54 AM
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	5/27/2022 4:54:54 AM
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	1	5/27/2022 4:54:54 AM
Surr: Dibromofluoromethane	117	70-130		%Rec	1	5/27/2022 4:54:54 AM
Surr: Toluene-d8	102	70-130		%Rec	1	5/27/2022 4:54:54 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JR**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/27/2022 4:54:54 AM
Surr: BFB	110	70-130		%Rec	1	5/27/2022 4:54:54 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-03 6'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 8:15:00 AM
Lab ID: 2205A93-003 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 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	5/27/2022 7:02:44 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/27/2022 7:02:44 PM
Surr: DNOP	87.5	51.1-141		%Rec	1	5/27/2022 7:02:44 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	71	60		mg/Kg	20	5/31/2022 2:46:27 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JR**
Benzene	ND	0.025		mg/Kg	1	5/27/2022 5:23:31 AM
Toluene	ND	0.049		mg/Kg	1	5/27/2022 5:23:31 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/27/2022 5:23:31 AM
Xylenes, Total	ND	0.098		mg/Kg	1	5/27/2022 5:23:31 AM
Surr: 1,2-Dichloroethane-d4	102	70-130		%Rec	1	5/27/2022 5:23:31 AM
Surr: 4-Bromofluorobenzene	97.9	70-130		%Rec	1	5/27/2022 5:23:31 AM
Surr: Dibromofluoromethane	111	70-130		%Rec	1	5/27/2022 5:23:31 AM
Surr: Toluene-d8	98.9	70-130		%Rec	1	5/27/2022 5:23:31 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JR**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/27/2022 5:23:31 AM
Surr: BFB	109	70-130		%Rec	1	5/27/2022 5:23:31 AM

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

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-04 7'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 8:20:00 AM
Lab ID: 2205A93-004 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**
Diesel Range Organics (DRO)	ND	8.8		mg/Kg	1	5/27/2022 7:13:39 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	5/27/2022 7:13:39 PM
Surr: DNOP	103	51.1-141		%Rec	1	5/27/2022 7:13:39 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	72	59		mg/Kg	20	5/31/2022 3:23:40 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JR**
Benzene	ND	0.025		mg/Kg	1	5/27/2022 5:51:53 AM
Toluene	ND	0.050		mg/Kg	1	5/27/2022 5:51:53 AM
Ethylbenzene	ND	0.050		mg/Kg	1	5/27/2022 5:51:53 AM
Xylenes, Total	ND	0.10		mg/Kg	1	5/27/2022 5:51:53 AM
Surr: 1,2-Dichloroethane-d4	104	70-130		%Rec	1	5/27/2022 5:51:53 AM
Surr: 4-Bromofluorobenzene	98.3	70-130		%Rec	1	5/27/2022 5:51:53 AM
Surr: Dibromofluoromethane	114	70-130		%Rec	1	5/27/2022 5:51:53 AM
Surr: Toluene-d8	101	70-130		%Rec	1	5/27/2022 5:51:53 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JR**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/27/2022 5:51:53 AM
Surr: BFB	108	70-130		%Rec	1	5/27/2022 5:51:53 AM

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

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-05 7'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 8:20:00 AM
Lab ID: 2205A93-005 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 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	5/27/2022 7:24:35 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/27/2022 7:24:35 PM
Surr: DNOP	93.5	51.1-141		%Rec	1	5/27/2022 7:24:35 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	76	60		mg/Kg	20	5/31/2022 3:36:05 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JR**
Benzene	ND	0.025		mg/Kg	1	5/27/2022 6:20:26 AM
Toluene	ND	0.050		mg/Kg	1	5/27/2022 6:20:26 AM
Ethylbenzene	ND	0.050		mg/Kg	1	5/27/2022 6:20:26 AM
Xylenes, Total	ND	0.10		mg/Kg	1	5/27/2022 6:20:26 AM
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	5/27/2022 6:20:26 AM
Surr: 4-Bromofluorobenzene	98.5	70-130		%Rec	1	5/27/2022 6:20:26 AM
Surr: Dibromofluoromethane	113	70-130		%Rec	1	5/27/2022 6:20:26 AM
Surr: Toluene-d8	97.5	70-130		%Rec	1	5/27/2022 6:20:26 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JR**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/27/2022 6:20:26 AM
Surr: BFB	107	70-130		%Rec	1	5/27/2022 6:20:26 AM

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

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-06 7'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 8:25:00 AM
Lab ID: 2205A93-006 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 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	5/27/2022 7:35:27 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/27/2022 7:35:27 PM
Surr: DNOP	117	51.1-141		%Rec	1	5/27/2022 7:35:27 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	67	60		mg/Kg	20	5/31/2022 3:48:31 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JR**
Benzene	ND	0.024		mg/Kg	1	5/27/2022 6:49:02 AM
Toluene	ND	0.048		mg/Kg	1	5/27/2022 6:49:02 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/27/2022 6:49:02 AM
Xylenes, Total	ND	0.097		mg/Kg	1	5/27/2022 6:49:02 AM
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	1	5/27/2022 6:49:02 AM
Surr: 4-Bromofluorobenzene	96.7	70-130		%Rec	1	5/27/2022 6:49:02 AM
Surr: Dibromofluoromethane	113	70-130		%Rec	1	5/27/2022 6:49:02 AM
Surr: Toluene-d8	98.2	70-130		%Rec	1	5/27/2022 6:49:02 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JR**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/27/2022 6:49:02 AM
Surr: BFB	110	70-130		%Rec	1	5/27/2022 6:49:02 AM

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

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-07 8'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 8:25:00 AM
Lab ID: 2205A93-007 **Matrix:** SOIL **Received Date:** 5/25/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/27/2022 8:41:33 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/27/2022 8:41:33 AM
Surr: DNOP	88.7	51.1-141		%Rec	1	5/27/2022 8:41:33 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/27/2022 9:56:00 AM
Surr: BFB	89.7	37.7-212		%Rec	1	5/27/2022 9:56:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.024		mg/Kg	1	5/27/2022 9:56:00 AM
Toluene	ND	0.047		mg/Kg	1	5/27/2022 9:56:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	5/27/2022 9:56:00 AM
Xylenes, Total	ND	0.094		mg/Kg	1	5/27/2022 9:56:00 AM
Surr: 4-Bromofluorobenzene	90.6	70-130		%Rec	1	5/27/2022 9:56:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	5/31/2022 4:00:56 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-08 7'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 8:30:00 AM
Lab ID: 2205A93-008 **Matrix:** SOIL **Received Date:** 5/25/2022 7:15:00 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	5/27/2022 9:13:31 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/27/2022 9:13:31 AM
Surr: DNOP	89.8	51.1-141		%Rec	1	5/27/2022 9:13:31 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/27/2022 10:55:00 AM
Surr: BFB	86.6	37.7-212		%Rec	1	5/27/2022 10:55:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.023		mg/Kg	1	5/27/2022 10:55:00 AM
Toluene	ND	0.047		mg/Kg	1	5/27/2022 10:55:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	5/27/2022 10:55:00 AM
Xylenes, Total	ND	0.093		mg/Kg	1	5/27/2022 10:55:00 AM
Surr: 4-Bromofluorobenzene	88.5	70-130		%Rec	1	5/27/2022 10:55:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	81	60		mg/Kg	20	5/31/2022 4:13:21 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-09 8'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 8:30:00 AM
Lab ID: 2205A93-009 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/27/2022 9:24:11 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/27/2022 9:24:11 AM
Surr: DNOP	91.3	51.1-141		%Rec	1	5/27/2022 9:24:11 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/27/2022 11:54:00 AM
Surr: BFB	86.7	37.7-212		%Rec	1	5/27/2022 11:54:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.024		mg/Kg	1	5/27/2022 11:54:00 AM
Toluene	ND	0.049		mg/Kg	1	5/27/2022 11:54:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/27/2022 11:54:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	5/27/2022 11:54:00 AM
Surr: 4-Bromofluorobenzene	85.7	70-130		%Rec	1	5/27/2022 11:54:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	82	60		mg/Kg	20	5/31/2022 4:25:45 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-10 9'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 8:30:00 AM
Lab ID: 2205A93-010 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 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	5/27/2022 11:04:11 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/27/2022 11:04:11 AM
Surr: DNOP	87.4	51.1-141		%Rec	1	5/27/2022 11:04:11 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/27/2022 12:13:00 PM
Surr: BFB	88.3	37.7-212		%Rec	1	5/27/2022 12:13:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.024		mg/Kg	1	5/27/2022 12:13:00 PM
Toluene	ND	0.047		mg/Kg	1	5/27/2022 12:13:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	5/27/2022 12:13:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	5/27/2022 12:13:00 PM
Surr: 4-Bromofluorobenzene	89.1	70-130		%Rec	1	5/27/2022 12:13:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	75	60		mg/Kg	20	5/31/2022 4:38:10 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-11 9'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 8:35:00 AM
Lab ID: 2205A93-011 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 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	5/27/2022 11:14:46 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/27/2022 11:14:46 AM
Surr: DNOP	115	51.1-141		%Rec	1	5/27/2022 11:14:46 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/27/2022 12:33:00 PM
Surr: BFB	86.9	37.7-212		%Rec	1	5/27/2022 12:33:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.024		mg/Kg	1	5/27/2022 12:33:00 PM
Toluene	ND	0.049		mg/Kg	1	5/27/2022 12:33:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/27/2022 12:33:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	5/27/2022 12:33:00 PM
Surr: 4-Bromofluorobenzene	88.5	70-130		%Rec	1	5/27/2022 12:33:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	64	60		mg/Kg	20	5/31/2022 4:50:34 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-12 10'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 8:35:00 AM
Lab ID: 2205A93-012 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/27/2022 11:25:24 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/27/2022 11:25:24 AM
Surr: DNOP	92.7	51.1-141		%Rec	1	5/27/2022 11:25:24 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/27/2022 12:53:00 PM
Surr: BFB	85.9	37.7-212		%Rec	1	5/27/2022 12:53:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.024		mg/Kg	1	5/27/2022 12:53:00 PM
Toluene	ND	0.048		mg/Kg	1	5/27/2022 12:53:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/27/2022 12:53:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	5/27/2022 12:53:00 PM
Surr: 4-Bromofluorobenzene	88.6	70-130		%Rec	1	5/27/2022 12:53:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	85	60		mg/Kg	20	5/31/2022 5:02:59 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-13 9'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 8:35:00 AM
Lab ID: 2205A93-013 **Matrix:** SOIL **Received Date:** 5/25/2022 7:15:00 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	5/27/2022 11:36:08 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/27/2022 11:36:08 AM
Surr: DNOP	91.0	51.1-141		%Rec	1	5/27/2022 11:36:08 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/27/2022 1:13:00 PM
Surr: BFB	92.5	37.7-212		%Rec	1	5/27/2022 1:13:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.024		mg/Kg	1	5/27/2022 1:13:00 PM
Toluene	ND	0.049		mg/Kg	1	5/27/2022 1:13:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/27/2022 1:13:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	5/27/2022 1:13:00 PM
Surr: 4-Bromofluorobenzene	93.7	70-130		%Rec	1	5/27/2022 1:13:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	83	60		mg/Kg	20	5/31/2022 5:15:23 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-14 10'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 8:40:00 AM
Lab ID: 2205A93-014 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/27/2022 11:46:51 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/27/2022 11:46:51 AM
Surr: DNOP	100	51.1-141		%Rec	1	5/27/2022 11:46:51 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/27/2022 1:32:00 PM
Surr: BFB	88.3	37.7-212		%Rec	1	5/27/2022 1:32:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.024		mg/Kg	1	5/27/2022 1:32:00 PM
Toluene	ND	0.048		mg/Kg	1	5/27/2022 1:32:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/27/2022 1:32:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	5/27/2022 1:32:00 PM
Surr: 4-Bromofluorobenzene	91.1	70-130		%Rec	1	5/27/2022 1:32:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	82	60		mg/Kg	20	5/31/2022 5:52:37 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-15 12'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 8:40:00 AM
Lab ID: 2205A93-015 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/27/2022 11:57:34 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/27/2022 11:57:34 AM
Surr: DNOP	114	51.1-141		%Rec	1	5/27/2022 11:57:34 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/27/2022 1:52:00 PM
Surr: BFB	88.1	37.7-212		%Rec	1	5/27/2022 1:52:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.024		mg/Kg	1	5/27/2022 1:52:00 PM
Toluene	ND	0.048		mg/Kg	1	5/27/2022 1:52:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/27/2022 1:52:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	5/27/2022 1:52:00 PM
Surr: 4-Bromofluorobenzene	91.0	70-130		%Rec	1	5/27/2022 1:52:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	83	60		mg/Kg	20	5/31/2022 6:05:01 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-16 10'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 8:40:00 AM
Lab ID: 2205A93-016 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 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	5/27/2022 12:08:20 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	5/27/2022 12:08:20 PM
Surr: DNOP	89.5	51.1-141		%Rec	1	5/27/2022 12:08:20 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/27/2022 2:12:00 PM
Surr: BFB	88.1	37.7-212		%Rec	1	5/27/2022 2:12:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.024		mg/Kg	1	5/27/2022 2:12:00 PM
Toluene	ND	0.048		mg/Kg	1	5/27/2022 2:12:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/27/2022 2:12:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	5/27/2022 2:12:00 PM
Surr: 4-Bromofluorobenzene	89.4	70-130		%Rec	1	5/27/2022 2:12:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	76	60		mg/Kg	20	5/31/2022 6:17:26 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-17 8'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 8:45:00 AM
Lab ID: 2205A93-017 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	5/27/2022 12:19:05 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/27/2022 12:19:05 PM
Surr: DNOP	94.1	51.1-141		%Rec	1	5/27/2022 12:19:05 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/27/2022 2:51:00 PM
Surr: BFB	95.4	37.7-212		%Rec	1	5/27/2022 2:51:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.024		mg/Kg	1	5/27/2022 2:51:00 PM
Toluene	ND	0.049		mg/Kg	1	5/27/2022 2:51:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/27/2022 2:51:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	5/27/2022 2:51:00 PM
Surr: 4-Bromofluorobenzene	94.5	70-130		%Rec	1	5/27/2022 2:51:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	78	60		mg/Kg	20	5/31/2022 6:29:51 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-18 10'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 8:45:00 AM
Lab ID: 2205A93-018 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**
Diesel Range Organics (DRO)	ND	8.7		mg/Kg	1	5/27/2022 12:29:52 PM
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	5/27/2022 12:29:52 PM
Surr: DNOP	88.0	51.1-141		%Rec	1	5/27/2022 12:29:52 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/27/2022 3:11:00 PM
Surr: BFB	91.1	37.7-212		%Rec	1	5/27/2022 3:11:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.024		mg/Kg	1	5/27/2022 3:11:00 PM
Toluene	ND	0.048		mg/Kg	1	5/27/2022 3:11:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/27/2022 3:11:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	5/27/2022 3:11:00 PM
Surr: 4-Bromofluorobenzene	93.1	70-130		%Rec	1	5/27/2022 3:11:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	86	60		mg/Kg	20	5/31/2022 6:42:15 PM

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

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-19 10'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 8:45:00 AM
Lab ID: 2205A93-019 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/27/2022 12:40:39 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/27/2022 12:40:39 PM
Surr: DNOP	101	51.1-141		%Rec	1	5/27/2022 12:40:39 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/27/2022 3:31:00 PM
Surr: BFB	87.0	37.7-212		%Rec	1	5/27/2022 3:31:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.024		mg/Kg	1	5/27/2022 3:31:00 PM
Toluene	ND	0.048		mg/Kg	1	5/27/2022 3:31:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/27/2022 3:31:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	5/27/2022 3:31:00 PM
Surr: 4-Bromofluorobenzene	89.5	70-130		%Rec	1	5/27/2022 3:31:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	76	60		mg/Kg	20	5/31/2022 6:54:40 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-20 5'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 8:50:00 AM
Lab ID: 2205A93-020 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 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	5/27/2022 12:51:28 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/27/2022 12:51:28 PM
Surr: DNOP	95.3	51.1-141		%Rec	1	5/27/2022 12:51:28 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/27/2022 3:51:00 PM
Surr: BFB	87.7	37.7-212		%Rec	1	5/27/2022 3:51:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.024		mg/Kg	1	5/27/2022 3:51:00 PM
Toluene	ND	0.049		mg/Kg	1	5/27/2022 3:51:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/27/2022 3:51:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	5/27/2022 3:51:00 PM
Surr: 4-Bromofluorobenzene	89.4	70-130		%Rec	1	5/27/2022 3:51:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	89	60		mg/Kg	20	6/2/2022 5:10:27 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	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 range due to dilution or matrix interference

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-21 5'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 8:50:00 AM
Lab ID: 2205A93-021 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 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	5/27/2022 1:02:18 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/27/2022 1:02:18 PM
Surr: DNOP	94.1	51.1-141		%Rec	1	5/27/2022 1:02:18 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/27/2022 4:11:00 PM
Surr: BFB	87.8	37.7-212		%Rec	1	5/27/2022 4:11:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.024		mg/Kg	1	5/27/2022 4:11:00 PM
Toluene	ND	0.049		mg/Kg	1	5/27/2022 4:11:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/27/2022 4:11:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	5/27/2022 4:11:00 PM
Surr: 4-Bromofluorobenzene	89.9	70-130		%Rec	1	5/27/2022 4:11:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	100	60		mg/Kg	20	5/31/2022 5:51:43 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-22 6'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 8:50:00 AM
Lab ID: 2205A93-022 **Matrix:** SOIL **Received Date:** 5/25/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/27/2022 1:13:19 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/27/2022 1:13:19 PM
Surr: DNOP	94.2	51.1-141		%Rec	1	5/27/2022 1:13:19 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/27/2022 4:31:00 PM
Surr: BFB	90.9	37.7-212		%Rec	1	5/27/2022 4:31:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.024		mg/Kg	1	5/27/2022 4:31:00 PM
Toluene	ND	0.049		mg/Kg	1	5/27/2022 4:31:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/27/2022 4:31:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	5/27/2022 4:31:00 PM
Surr: 4-Bromofluorobenzene	89.9	70-130		%Rec	1	5/27/2022 4:31:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	96	60		mg/Kg	20	5/31/2022 6:28:44 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-23 8'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 8:55:00 AM
Lab ID: 2205A93-023 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	5/27/2022 1:24:18 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/27/2022 1:24:18 PM
Surr: DNOP	81.9	51.1-141		%Rec	1	5/27/2022 1:24:18 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/27/2022 4:51:00 PM
Surr: BFB	92.9	37.7-212		%Rec	1	5/27/2022 4:51:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.025		mg/Kg	1	5/27/2022 4:51:00 PM
Toluene	ND	0.049		mg/Kg	1	5/27/2022 4:51:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/27/2022 4:51:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	5/27/2022 4:51:00 PM
Surr: 4-Bromofluorobenzene	92.1	70-130		%Rec	1	5/27/2022 4:51:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	88	60		mg/Kg	20	5/31/2022 6:41:05 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-24 10'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 8:55:00 AM
Lab ID: 2205A93-024 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/27/2022 1:35:15 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/27/2022 1:35:15 PM
Surr: DNOP	85.0	51.1-141		%Rec	1	5/27/2022 1:35:15 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/27/2022 5:11:00 PM
Surr: BFB	92.5	37.7-212		%Rec	1	5/27/2022 5:11:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.024		mg/Kg	1	5/27/2022 5:11:00 PM
Toluene	ND	0.049		mg/Kg	1	5/27/2022 5:11:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/27/2022 5:11:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	5/27/2022 5:11:00 PM
Surr: 4-Bromofluorobenzene	90.5	70-130		%Rec	1	5/27/2022 5:11:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	84	59		mg/Kg	20	5/31/2022 7:18:08 PM

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

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-25 5'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 9:00:00 AM
Lab ID: 2205A93-025 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/27/2022 1:46:14 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/27/2022 1:46:14 PM
Surr: DNOP	85.3	51.1-141		%Rec	1	5/27/2022 1:46:14 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/27/2022 5:31:00 PM
Surr: BFB	85.9	37.7-212		%Rec	1	5/27/2022 5:31:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.024		mg/Kg	1	5/27/2022 5:31:00 PM
Toluene	ND	0.048		mg/Kg	1	5/27/2022 5:31:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/27/2022 5:31:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	5/27/2022 5:31:00 PM
Surr: 4-Bromofluorobenzene	85.7	70-130		%Rec	1	5/27/2022 5:31:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	93	60		mg/Kg	20	5/31/2022 7:30:29 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	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 range due to dilution or matrix interference

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-26 5'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 9:00:00 AM
Lab ID: 2205A93-026 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	5/27/2022 1:57:11 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/27/2022 1:57:11 PM
Surr: DNOP	81.3	51.1-141		%Rec	1	5/27/2022 1:57:11 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/27/2022 5:50:00 PM
Surr: BFB	88.3	37.7-212		%Rec	1	5/27/2022 5:50:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.023		mg/Kg	1	5/27/2022 5:50:00 PM
Toluene	ND	0.047		mg/Kg	1	5/27/2022 5:50:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	5/27/2022 5:50:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	5/27/2022 5:50:00 PM
Surr: 4-Bromofluorobenzene	87.2	70-130		%Rec	1	5/27/2022 5:50:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	94	60		mg/Kg	20	5/31/2022 7:42:50 PM

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

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-33 5'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 10:50:00 AM
Lab ID: 2205A93-027 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 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	5/27/2022 8:30:20 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/27/2022 8:30:20 PM
Surr: DNOP	100	51.1-141		%Rec	1	5/27/2022 8:30:20 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/27/2022 9:03:35 AM
Surr: BFB	93.6	37.7-212		%Rec	1	5/27/2022 9:03:35 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	5/27/2022 9:03:35 AM
Toluene	ND	0.047		mg/Kg	1	5/27/2022 9:03:35 AM
Ethylbenzene	ND	0.047		mg/Kg	1	5/27/2022 9:03:35 AM
Xylenes, Total	ND	0.094		mg/Kg	1	5/27/2022 9:03:35 AM
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	5/27/2022 9:03:35 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	87	60		mg/Kg	20	5/31/2022 7:55:10 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-34 5'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 10:50:00 AM
Lab ID: 2205A93-028 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 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	5/27/2022 8:44:02 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/27/2022 8:44:02 PM
Surr: DNOP	104	51.1-141		%Rec	1	5/27/2022 8:44:02 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/27/2022 10:14:20 AM
Surr: BFB	94.6	37.7-212		%Rec	1	5/27/2022 10:14:20 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.025		mg/Kg	1	5/27/2022 10:14:20 AM
Toluene	ND	0.049		mg/Kg	1	5/27/2022 10:14:20 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/27/2022 10:14:20 AM
Xylenes, Total	ND	0.098		mg/Kg	1	5/27/2022 10:14:20 AM
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	5/27/2022 10:14:20 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	96	60		mg/Kg	20	5/31/2022 8:07:31 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-35 5'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 10:55:00 AM
Lab ID: 2205A93-029 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 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	5/27/2022 8:57:54 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/27/2022 8:57:54 PM
Surr: DNOP	110	51.1-141		%Rec	1	5/27/2022 8:57:54 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/27/2022 11:24:58 AM
Surr: BFB	96.0	37.7-212		%Rec	1	5/27/2022 11:24:58 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	5/27/2022 11:24:58 AM
Toluene	ND	0.048		mg/Kg	1	5/27/2022 11:24:58 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/27/2022 11:24:58 AM
Xylenes, Total	ND	0.096		mg/Kg	1	5/27/2022 11:24:58 AM
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	5/27/2022 11:24:58 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	93	60		mg/Kg	20	5/31/2022 8:19:52 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	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 range due to dilution or matrix interference

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-36 5'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 10:55:00 AM
Lab ID: 2205A93-030 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 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	5/27/2022 9:11:31 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/27/2022 9:11:31 PM
Surr: DNOP	81.3	51.1-141		%Rec	1	5/27/2022 9:11:31 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/27/2022 11:48:26 AM
Surr: BFB	101	37.7-212		%Rec	1	5/27/2022 11:48:26 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	5/27/2022 11:48:26 AM
Toluene	ND	0.048		mg/Kg	1	5/27/2022 11:48:26 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/27/2022 11:48:26 AM
Xylenes, Total	ND	0.097		mg/Kg	1	5/27/2022 11:48:26 AM
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	5/27/2022 11:48:26 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	95	60		mg/Kg	20	5/31/2022 8:32:13 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-37 5'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 2:05:00 PM
Lab ID: 2205A93-031 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 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	5/27/2022 9:25:15 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/27/2022 9:25:15 PM
Surr: DNOP	99.9	51.1-141		%Rec	1	5/27/2022 9:25:15 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/27/2022 12:12:01 PM
Surr: BFB	96.3	37.7-212		%Rec	1	5/27/2022 12:12:01 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	5/27/2022 12:12:01 PM
Toluene	ND	0.049		mg/Kg	1	5/27/2022 12:12:01 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/27/2022 12:12:01 PM
Xylenes, Total	ND	0.097		mg/Kg	1	5/27/2022 12:12:01 PM
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	5/27/2022 12:12:01 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	90	59		mg/Kg	20	5/31/2022 8:44:34 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-38 5'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 2:05:00 PM
Lab ID: 2205A93-032 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 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	5/27/2022 9:38:55 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/27/2022 9:38:55 PM
Surr: DNOP	107	51.1-141		%Rec	1	5/27/2022 9:38:55 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/27/2022 12:35:36 PM
Surr: BFB	96.9	37.7-212		%Rec	1	5/27/2022 12:35:36 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	5/27/2022 12:35:36 PM
Toluene	ND	0.049		mg/Kg	1	5/27/2022 12:35:36 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/27/2022 12:35:36 PM
Xylenes, Total	ND	0.098		mg/Kg	1	5/27/2022 12:35:36 PM
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	5/27/2022 12:35:36 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	5/31/2022 8:56:55 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	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 range due to dilution or matrix interference

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-39 5'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 2:05:00 PM
Lab ID: 2205A93-033 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 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	5/27/2022 9:52:30 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/27/2022 9:52:30 PM
Surr: DNOP	100	51.1-141		%Rec	1	5/27/2022 9:52:30 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/27/2022 12:59:13 PM
Surr: BFB	99.9	37.7-212		%Rec	1	5/27/2022 12:59:13 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	5/27/2022 12:59:13 PM
Toluene	ND	0.048		mg/Kg	1	5/27/2022 12:59:13 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/27/2022 12:59:13 PM
Xylenes, Total	ND	0.097		mg/Kg	1	5/27/2022 12:59:13 PM
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	5/27/2022 12:59:13 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	5/31/2022 9:09:16 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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-40 5'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 3:00:00 PM
Lab ID: 2205A93-034 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 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	5/27/2022 10:06:26 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/27/2022 10:06:26 PM
Surr: DNOP	115	51.1-141		%Rec	1	5/27/2022 10:06:26 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/27/2022 1:22:52 PM
Surr: BFB	98.7	37.7-212		%Rec	1	5/27/2022 1:22:52 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	5/27/2022 1:22:52 PM
Toluene	ND	0.048		mg/Kg	1	5/27/2022 1:22:52 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/27/2022 1:22:52 PM
Xylenes, Total	ND	0.096		mg/Kg	1	5/27/2022 1:22:52 PM
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	5/27/2022 1:22:52 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	84	60		mg/Kg	20	5/31/2022 9:46:19 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BES22-41 5'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 3:00:00 PM
Lab ID: 2205A93-035 **Matrix:** SOIL **Received Date:** 5/25/2022 7:15:00 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	5/27/2022 10:20:24 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/27/2022 10:20:24 PM
Surr: DNOP	90.5	51.1-141		%Rec	1	5/27/2022 10:20:24 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/27/2022 1:46:32 PM
Surr: BFB	99.8	37.7-212		%Rec	1	5/27/2022 1:46:32 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.023		mg/Kg	1	5/27/2022 1:46:32 PM
Toluene	ND	0.047		mg/Kg	1	5/27/2022 1:46:32 PM
Ethylbenzene	ND	0.047		mg/Kg	1	5/27/2022 1:46:32 PM
Xylenes, Total	ND	0.093		mg/Kg	1	5/27/2022 1:46:32 PM
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	5/27/2022 1:46:32 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	100	59		mg/Kg	20	5/31/2022 9:58:39 PM

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

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WES22-35 0-5'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 12:00:00 PM
Lab ID: 2205A93-036 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 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	5/27/2022 10:34:05 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	5/27/2022 10:34:05 PM
Surr: DNOP	102	51.1-141		%Rec	1	5/27/2022 10:34:05 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/27/2022 2:10:15 PM
Surr: BFB	95.2	37.7-212		%Rec	1	5/27/2022 2:10:15 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	5/27/2022 2:10:15 PM
Toluene	ND	0.048		mg/Kg	1	5/27/2022 2:10:15 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/27/2022 2:10:15 PM
Xylenes, Total	ND	0.096		mg/Kg	1	5/27/2022 2:10:15 PM
Surr: 4-Bromofluorobenzene	97.0	70-130		%Rec	1	5/27/2022 2:10:15 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	120	60		mg/Kg	20	5/31/2022 10:11:01 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WES22-36 0-5'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 2:00:00 PM
Lab ID: 2205A93-037 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 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	5/27/2022 10:47:48 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/27/2022 10:47:48 PM
Surr: DNOP	104	51.1-141		%Rec	1	5/27/2022 10:47:48 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/27/2022 3:21:37 PM
Surr: BFB	101	37.7-212		%Rec	1	5/27/2022 3:21:37 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	5/27/2022 3:21:37 PM
Toluene	ND	0.048		mg/Kg	1	5/27/2022 3:21:37 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/27/2022 3:21:37 PM
Xylenes, Total	ND	0.095		mg/Kg	1	5/27/2022 3:21:37 PM
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	5/27/2022 3:21:37 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	75	60		mg/Kg	20	5/31/2022 10:23:22 PM

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

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WES22-37 0-5'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 3:00:00 PM
Lab ID: 2205A93-038 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 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	5/27/2022 11:01:22 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/27/2022 11:01:22 PM
Surr: DNOP	101	51.1-141		%Rec	1	5/27/2022 11:01:22 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/27/2022 3:45:23 PM
Surr: BFB	98.0	37.7-212		%Rec	1	5/27/2022 3:45:23 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	5/27/2022 3:45:23 PM
Toluene	ND	0.047		mg/Kg	1	5/27/2022 3:45:23 PM
Ethylbenzene	ND	0.047		mg/Kg	1	5/27/2022 3:45:23 PM
Xylenes, Total	ND	0.095		mg/Kg	1	5/27/2022 3:45:23 PM
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	5/27/2022 3:45:23 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	5/31/2022 10:35:43 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	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 range due to dilution or matrix interference

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WES22-38 10-12'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 4:00:00 PM
Lab ID: 2205A93-039 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 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	5/27/2022 11:15:09 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/27/2022 11:15:09 PM
Surr: DNOP	88.4	51.1-141		%Rec	1	5/27/2022 11:15:09 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/27/2022 4:09:12 PM
Surr: BFB	102	37.7-212		%Rec	1	5/27/2022 4:09:12 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	5/27/2022 4:09:12 PM
Toluene	ND	0.048		mg/Kg	1	5/27/2022 4:09:12 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/27/2022 4:09:12 PM
Xylenes, Total	ND	0.097		mg/Kg	1	5/27/2022 4:09:12 PM
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	5/27/2022 4:09:12 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	110	60		mg/Kg	20	5/31/2022 10:48:04 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WES22-39 8-10'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 4:00:00 PM
Lab ID: 2205A93-040 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 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	5/27/2022 11:28:43 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/27/2022 11:28:43 PM
Surr: DNOP	93.9	51.1-141		%Rec	1	5/27/2022 11:28:43 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/27/2022 4:33:04 PM
Surr: BFB	97.3	37.7-212		%Rec	1	5/27/2022 4:33:04 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	5/27/2022 4:33:04 PM
Toluene	ND	0.049		mg/Kg	1	5/27/2022 4:33:04 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/27/2022 4:33:04 PM
Xylenes, Total	ND	0.097		mg/Kg	1	5/27/2022 4:33:04 PM
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	5/27/2022 4:33:04 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	84	60		mg/Kg	20	6/1/2022 12:15:11 AM

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

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WES22-40 5-8'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 4:05:00 PM
Lab ID: 2205A93-041 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 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	5/27/2022 11:42:26 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	5/27/2022 11:42:26 PM
Surr: DNOP	101	51.1-141		%Rec	1	5/27/2022 11:42:26 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/27/2022 4:56:54 PM
Surr: BFB	102	37.7-212		%Rec	1	5/27/2022 4:56:54 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	5/27/2022 4:56:54 PM
Toluene	ND	0.048		mg/Kg	1	5/27/2022 4:56:54 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/27/2022 4:56:54 PM
Xylenes, Total	ND	0.096		mg/Kg	1	5/27/2022 4:56:54 PM
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	5/27/2022 4:56:54 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	90	60		mg/Kg	20	6/1/2022 12:27:36 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2205A93**
Date Reported: **6/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WES22-41 5-8'
Project: Avalanche Journal State 1
Collection Date: 5/20/2022 4:05:00 PM
Lab ID: 2205A93-042 **Matrix:** SOIL
Received Date: 5/25/2022 7:15:00 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	5/27/2022 11:56:07 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/27/2022 11:56:07 PM
Surr: DNOP	99.6	51.1-141		%Rec	1	5/27/2022 11:56:07 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/27/2022 5:20:37 PM
Surr: BFB	99.1	37.7-212		%Rec	1	5/27/2022 5:20:37 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.023		mg/Kg	1	5/27/2022 5:20:37 PM
Toluene	ND	0.047		mg/Kg	1	5/27/2022 5:20:37 PM
Ethylbenzene	ND	0.047		mg/Kg	1	5/27/2022 5:20:37 PM
Xylenes, Total	ND	0.093		mg/Kg	1	5/27/2022 5:20:37 PM
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	5/27/2022 5:20:37 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	82	60		mg/Kg	20	6/1/2022 12:40:00 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	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 range due to dilution or matrix interference

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2205A93**

06-Jun-22

Client: Vertex Resources Services, Inc.

Project: Avalanche Journal State 1

Sample ID: **MB-67796** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **67796** RunNo: **88375**
Prep Date: **5/31/2022** Analysis Date: **5/31/2022** SeqNo: **3135693** Units: **mg/Kg**

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

Sample ID: **LCS-67796** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **67796** RunNo: **88375**
Prep Date: **5/31/2022** Analysis Date: **6/1/2022** SeqNo: **3135694** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.8	90	110			

Sample ID: **MB-67792** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **67792** RunNo: **88387**
Prep Date: **5/31/2022** Analysis Date: **5/31/2022** SeqNo: **3135739** Units: **mg/Kg**

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

Sample ID: **LCS-67792** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **67792** RunNo: **88387**
Prep Date: **5/31/2022** Analysis Date: **5/31/2022** SeqNo: **3135740** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.7	90	110			

Sample ID: **MB-67795** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **67795** RunNo: **88386**
Prep Date: **5/31/2022** Analysis Date: **5/31/2022** SeqNo: **3135990** Units: **mg/Kg**

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

Sample ID: **LCS-67795** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **67795** RunNo: **88386**
Prep Date: **5/31/2022** Analysis Date: **5/31/2022** SeqNo: **3135991** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.8	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	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 range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2205A93**

06-Jun-22

Client: Vertex Resources Services, Inc.

Project: Avalanche Journal State 1

Sample ID: **MB-67720** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **67720** RunNo: **88321**
Prep Date: **5/26/2022** Analysis Date: **5/27/2022** SeqNo: **3132399** 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		115	51.1	141			

Sample ID: **LCS-67720** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **67720** RunNo: **88321**
Prep Date: **5/26/2022** Analysis Date: **5/27/2022** SeqNo: **3132401** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	94.3	64.4	127			
Surr: DNOP	3.8		5.000		76.0	51.1	141			

Sample ID: **2205A93-007AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BES22-07 8'** Batch ID: **67720** RunNo: **88321**
Prep Date: **5/26/2022** Analysis Date: **5/27/2022** SeqNo: **3132410** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	55	9.6	48.22	5.398	102	36.1	154			
Surr: DNOP	4.1		4.822		84.4	51.1	141			

Sample ID: **2205A93-007AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BES22-07 8'** Batch ID: **67720** RunNo: **88321**
Prep Date: **5/26/2022** Analysis Date: **5/27/2022** SeqNo: **3132411** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	9.3	46.73	5.398	80.2	36.1	154	24.0	33.9	
Surr: DNOP	3.4		4.673		72.3	51.1	141	0	0	

Sample ID: **MB-67713** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **67713** RunNo: **88321**
Prep Date: **5/26/2022** Analysis Date: **5/27/2022** SeqNo: **3133778** 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	9.2		10.00		92.2	51.1	141			

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2205A93**

06-Jun-22

Client: Vertex Resources Services, Inc.

Project: Avalanche Journal State 1

Sample ID: **LCS-67713** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **67713** RunNo: **88321**
Prep Date: **5/26/2022** Analysis Date: **5/27/2022** SeqNo: **3133779** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	10	50.00	0	99.1	64.4	127			
Surr: DNOP	4.1		5.000		82.4	51.1	141			

Sample ID: **MB-67735** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **67735** RunNo: **88333**
Prep Date: **5/26/2022** Analysis Date: **5/27/2022** SeqNo: **3134442** 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	9.9		10.00		98.7	51.1	141			

Sample ID: **LCS-67735** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **67735** RunNo: **88333**
Prep Date: **5/26/2022** Analysis Date: **5/27/2022** SeqNo: **3134443** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.00	0	97.2	64.4	127			
Surr: DNOP	4.6		5.000		92.0	51.1	141			

Sample ID: **2205A93-027AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BES22-33 5'** Batch ID: **67735** RunNo: **88333**
Prep Date: **5/26/2022** Analysis Date: **5/28/2022** SeqNo: **3134464** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	9.3	46.73	0	102	36.1	154			
Surr: DNOP	4.3		4.673		92.8	51.1	141			

Sample ID: **2205A93-027AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BES22-33 5'** Batch ID: **67735** RunNo: **88333**
Prep Date: **5/26/2022** Analysis Date: **5/28/2022** SeqNo: **3134465** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	9.8	48.78	0	91.5	36.1	154	6.81	33.9	
Surr: DNOP	4.1		4.878		83.7	51.1	141	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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2205A93**

06-Jun-22

Client: Vertex Resources Services, Inc.

Project: Avalanche Journal State 1

Sample ID: **mb-67725**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **67725**	RunNo: **88348**
Prep Date: **5/26/2022**	Analysis Date: **5/27/2022**	SeqNo: **3133375** 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		99.8	37.7	212			

Sample ID: **lcs-67725**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **67725**	RunNo: **88348**
Prep Date: **5/26/2022**	Analysis Date: **5/27/2022**	SeqNo: **3133376** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	30	5.0	25.00	0	119	72.3	137			
Surr: BFB	2100		1000		210	37.7	212			

Sample ID: **2205a93-027ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BES22-33 5'**	Batch ID: **67725**	RunNo: **88348**
Prep Date: **5/26/2022**	Analysis Date: **5/27/2022**	SeqNo: **3133378** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	31	4.7	23.65	0	131	70	130			S
Surr: BFB	2200		946.1		228	37.7	212			S

Sample ID: **2205a93-027amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BES22-33 5'**	Batch ID: **67725**	RunNo: **88348**
Prep Date: **5/26/2022**	Analysis Date: **5/27/2022**	SeqNo: **3133379** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	30	4.8	23.92	0	126	70	130	2.64	20	
Surr: BFB	2100		956.9		222	37.7	212	0	0	S

Sample ID: **lcs-67718**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **67718**	RunNo: **88349**
Prep Date: **5/26/2022**	Analysis Date: **5/27/2022**	SeqNo: **3133486** 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	93.2	72.3	137			
Surr: BFB	1800		1000		178	37.7	212			

Sample ID: **mb-67718**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **67718**	RunNo: **88349**
Prep Date: **5/26/2022**	Analysis Date: **5/27/2022**	SeqNo: **3133487** 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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2205A93**

06-Jun-22

Client: Vertex Resources Services, Inc.

Project: Avalanche Journal State 1

Sample ID: **mb-67718**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **67718**	RunNo: **88349**
Prep Date: **5/26/2022**	Analysis Date: **5/27/2022**	SeqNo: **3133487** 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	850		1000		85.3	37.7	212			

Sample ID: **2205a93-007ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BES22-07 8'**	Batch ID: **67718**	RunNo: **88349**
Prep Date: **5/26/2022**	Analysis Date: **5/27/2022**	SeqNo: **3133489** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	4.9	24.58	0	104	70	130			
Surr: BFB	1900		983.3		194	37.7	212			

Sample ID: **2205a93-007amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BES22-07 8'**	Batch ID: **67718**	RunNo: **88349**
Prep Date: **5/26/2022**	Analysis Date: **5/27/2022**	SeqNo: **3133490** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	4.9	24.65	0	100	70	130	3.07	20	
Surr: BFB	1900		986.2		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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2205A93**

06-Jun-22

Client: Vertex Resources Services, Inc.

Project: Avalanche Journal State 1

Sample ID: **mb-67725**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **67725**	RunNo: **88348**
Prep Date: **5/26/2022**	Analysis Date: **5/27/2022**	SeqNo: **3133428** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		104	70	130			

Sample ID: **LCS-67725**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **67725**	RunNo: **88348**
Prep Date: **5/26/2022**	Analysis Date: **5/27/2022**	SeqNo: **3133429** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.025	1.000	0	94.8	80	120			
Toluene	0.98	0.050	1.000	0	97.7	80	120			
Ethylbenzene	0.98	0.050	1.000	0	97.9	80	120			
Xylenes, Total	3.0	0.10	3.000	0	98.7	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	70	130			

Sample ID: **2205a93-028ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BES22-34 5'**	Batch ID: **67725**	RunNo: **88348**
Prep Date: **5/26/2022**	Analysis Date: **5/27/2022**	SeqNo: **3133432** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.024	0.9662	0	98.7	68.8	120			
Toluene	1.0	0.048	0.9662	0	105	73.6	124			
Ethylbenzene	1.0	0.048	0.9662	0	106	72.7	129			
Xylenes, Total	3.1	0.097	2.899	0	106	75.7	126			
Surr: 4-Bromofluorobenzene	0.99		0.9662		102	70	130			

Sample ID: **2205a93-028amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BES22-34 5'**	Batch ID: **67725**	RunNo: **88348**
Prep Date: **5/26/2022**	Analysis Date: **5/27/2022**	SeqNo: **3133433** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.024	0.9747	0	99.5	68.8	120	1.62	20	
Toluene	1.0	0.049	0.9747	0	106	73.6	124	2.38	20	
Ethylbenzene	1.0	0.049	0.9747	0	106	72.7	129	1.46	20	
Xylenes, Total	3.2	0.097	2.924	0	108	75.7	126	2.52	20	
Surr: 4-Bromofluorobenzene	1.0		0.9747		103	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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2205A93**

06-Jun-22

Client: Vertex Resources Services, Inc.

Project: Avalanche Journal State 1

Sample ID: **lcs-67718**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **67718**	RunNo: **88349**
Prep Date: **5/26/2022**	Analysis Date: **5/27/2022**	SeqNo: **3133535** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.025	1.000	0	95.8	80	120			
Toluene	0.96	0.050	1.000	0	96.1	80	120			
Ethylbenzene	0.95	0.050	1.000	0	95.1	80	120			
Xylenes, Total	2.8	0.10	3.000	0	94.2	80	120			
Surr: 4-Bromofluorobenzene	0.91		1.000		91.0	70	130			

Sample ID: **mb-67718**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **67718**	RunNo: **88349**
Prep Date: **5/26/2022**	Analysis Date: **5/27/2022**	SeqNo: **3133536** 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		88.9	70	130			

Sample ID: **2205a93-008ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BES22-08 7'**	Batch ID: **67718**	RunNo: **88349**
Prep Date: **5/26/2022**	Analysis Date: **5/27/2022**	SeqNo: **3133539** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.024	0.9681	0	96.0	68.8	120			
Toluene	0.95	0.048	0.9681	0	98.5	73.6	124			
Ethylbenzene	0.94	0.048	0.9681	0	97.5	72.7	129			
Xylenes, Total	2.8	0.097	2.904	0	96.2	75.7	126			
Surr: 4-Bromofluorobenzene	0.85		0.9681		88.2	70	130			

Sample ID: **2205a93-008amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BES22-08 7'**	Batch ID: **67718**	RunNo: **88349**
Prep Date: **5/26/2022**	Analysis Date: **5/27/2022**	SeqNo: **3133540** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.024	0.9662	0	100	68.8	120	4.17	20	
Toluene	0.98	0.048	0.9662	0	101	73.6	124	2.69	20	
Ethylbenzene	0.96	0.048	0.9662	0	99.6	72.7	129	1.97	20	
Xylenes, Total	2.9	0.097	2.899	0	99.3	75.7	126	2.98	20	
Surr: 4-Bromofluorobenzene	0.87		0.9662		90.5	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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2205A93**

06-Jun-22

Client: Vertex Resources Services, Inc.

Project: Avalanche Journal State 1

Sample ID: **lcs-67701**	SampType: **LCS4**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **BatchQC**	Batch ID: **67701**	RunNo: **88322**
Prep Date: **5/25/2022**	Analysis Date: **5/26/2022**	SeqNo: **3132369** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.025	1.000	0	92.9	80	120			
Toluene	0.98	0.050	1.000	0	97.8	80	120			
Ethylbenzene	1.0	0.050	1.000	0	101	80	120			
Xylenes, Total	3.0	0.10	3.000	0	101	80	120			
Surr: 1,2-Dichloroethane-d4	0.52		0.5000		104	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.5000		95.1	70	130			
Surr: Dibromofluoromethane	0.56		0.5000		113	70	130			
Surr: Toluene-d8	0.49		0.5000		97.2	70	130			

Sample ID: **mb-67701**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **PBS**	Batch ID: **67701**	RunNo: **88322**
Prep Date: **5/25/2022**	Analysis Date: **5/26/2022**	SeqNo: **3132370** 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	0.52		0.5000		103	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		100	70	130			
Surr: Dibromofluoromethane	0.58		0.5000		115	70	130			
Surr: Toluene-d8	0.50		0.5000		100	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	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 range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2205A93**

06-Jun-22

Client: Vertex Resources Services, Inc.

Project: Avalanche Journal State 1

Sample ID: **lcs-67701**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **67701**	RunNo: **88322**
Prep Date: **5/25/2022**	Analysis Date: **5/26/2022**	SeqNo: **3132396** 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	95.6	70	130			
Surr: BFB	510		500.0		102	70	130			

Sample ID: **mb-67701**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **67701**	RunNo: **88322**
Prep Date: **5/25/2022**	Analysis Date: **5/26/2022**	SeqNo: **3132397** 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	550		500.0		109	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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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: **2205A93** RcptNo: **1**

Received By: **Juan Rojas** **5/25/2022 7:15:00 AM**

Completed By: **Cheyenne Cason** **5/25/2022 8:49:07 AM**

Reviewed By: TMM 5/25/22

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: KDG 5.25.22

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	3.4	Good	Not Present			

Chain-of-Custody Record

Client: **Vertex**

(EOG, Chase Settle)

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:

Avalanche Journal State #1

Project #:

22E-00345

Project Manager:

Michael Moffitt

Sampler: **L.Pullman**

On Ice: ☐ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 3.4-0=3.4

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. 2205A93	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)
5-20-22	08:15	Soil	BGS22-01 6'	1 Jar		001	X	X					X			
5-20-22	08:15	Soil	BGS22-02 6'	1 Jar		002	X	X					X			
5-20-22	08:15	Soil	BGS22-03 6'	1 Jar		003	X	X					X			
5-20-22	08:20	Soil	BGS22-04 7'	1 Jar		004	X	X					X			
5-20-22	08:20	Soil	BGS22-05 7'	1 Jar		005	X	X					X			
5-20-22	08:25	Soil	BGS22-06 7'	1 Jar		006	X	X					X			
5-20-22	08:25	Soil	BGS22-07 8'	1 Jar		007	X	X					X			
5-20-22	08:30	Soil	BGS22-08 7'	1 Jar		008	X	X					X			
5-20-22	08:30	Soil	BGS22-09 8'	1 Jar		009	X	X					X			
5-20-22	08:30	Soil	BGS22-10 9'	1 Jar		010	X	X					X			
5-20-22	08:35	Soil	BGS22-11 9'	1 Jar		011	X	X					X			
5-20-22	08:35	Soil	BGS22-12 10'	1 Jar		012	X	X					X			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
5-23-22	07:00	Zakary Pullman				
5/24/22	1900			Courier	5/25/22	7:15

Remarks: Direct Bill EOG

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

Client: **Vertex**

(EOG, Chase Settle)

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: **Avalanche Journal State #1**

Project #: **22E-00345**

Project Manager: **Michael Moffitt**

Sampler: **L.Pullman**

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 3.4-0=3.4

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. 2205A93	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)
5-20-22	08:35	Soil	BGS22-13 9'	1 Jar		013	X	X					X			
5-20-22	08:40	Soil	BGS22-14 10'	1 Jar		014	X	X					X			
5-20-22	08:40	Soil	BGS22-15 12'	1 Jar		015	X	X					X			
5-20-22	08:40	Soil	BGS22-16 10'	1 Jar		016	X	X					X			
5-20-22	08:45	Soil	BGS22-17 8'	1 Jar		017	X	X					X			
5-20-22	08:45	Soil	BGS22-18 10'	1 Jar		018	X	X					X			
5-20-22	08:45	Soil	BGS22-19 10'	1 Jar		019	X	X					X			
5-20-22	08:50	Soil	BGS22-20 5'	1 Jar		020	X	X					X			
5-20-22	08:50	Soil	BGS22-21 5'	1 Jar		021	X	X					X			
5-20-22	08:50	Soil	BGS22-22 6'	1 Jar		022	X	X					X			
5-20-22	08:55	Soil	BGS22-23 8'	1 Jar		023	X	X					X			
5-20-22	08:55	Soil	BGS22-24 10'	1 Jar		024	X	X					X			

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
5-23-22	07:00	Zakr Pullman				
5/24/22	1900			courier	5/25/22	7:15

Remarks: 2/4

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

Client: **Vertex**

(EOG, Chase Settle)

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:

Avalanche Journal State #1

Project #:

22E-00345

Project Manager:

Michael Moffitt

Sampler: **L.Pullman**

On Ice: ☑ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 3-4-0=3.4

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. 2205493	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)
5-20-22	09:00	Soil	BES22-25 5'	1 Jar		025	X	X					X			
5-20-22	09:00	Soil	BES22-26 5'	1 Jar		026	X	X					X			
5-20-22	10:50	Soil	BES22-32 5'	1 Jar		027	X	X					X			
5-20-22	10:50	Soil	BES22-34 5'	1 Jar		028	X	X					X			
5-20-22	10:55	Soil	BES22-35 5'	1 Jar		029	X	X					X			
5-20-22	10:55	Soil	BES22-36 5'	1 Jar		030	X	X					X			
5-20-22	14:05	Soil	BES22-37 5'	1 Jar		031	X	X					X			
5-20-22	14:05	Soil	BES22-38 5'	1 Jar		032	X	X					X			
5-20-22	14:05	Soil	BES22-39 5'	1 Jar		033	X	X					X			
5-20-22	15:00	Soil	BES22-40 5'	1 Jar		034	X	X					X			
5-20-22	15:00	Soil	BES22-41 5'	1 Jar		035	X	X					X			
~~5-20-22~~		~~Soil~~		~~1 Jar~~		0	~~X~~	~~X~~					~~X~~			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
5-23-22	07:00	Zakary Pullman				
5/24/22	1900				5/24/22	1030
			Courier		5/25/22	7:15

Remarks:

3/4

Direct Bill EOG Chase Settle

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**

(EOG, Chase Settle)

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:

Avalanche Journal State #1

Project #:

22E-00345

Project Manager:

Michael Moffitt

Sampler: **L.Pullman**

On Ice: ☑ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 3.4-0=3.4

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. 2205A93	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)
~~5-20-22~~		~~Soil~~	[redacted]	~~1 Jar~~			X	X					X			
5-20-22	12:00	Soil	WES22-35 0-5'	1 Jar		036	X	X					X			
5-20-22	14:00	Soil	WES22-36 0-5'	1 Jar		037	X	X					X			
5-20-22	15:00	Soil	WES22-37 0-5'	1 Jar		038	X	X					X			
~~5-20-22~~		~~Soil~~		~~1 Jar~~			X	X					X			
5-20-22	1600	Soil	WES22-38 10-12'	1 Jar		039	X	X					X			
5-20-22	16:00	Soil	WES22-39 8-10'	1 Jar		040	X	X					X			
5-20-22	16:05	Soil	WES22-40 5-8'	1 Jar		041	X	X					X			
5-20-22	16:05	Soil	WES22-41 5-8'	1 Jar		042	X	X					X			
~~5-20-22~~		~~Soil~~		~~1 Jar~~			X	X					X			
~~5-20-22~~		~~Soil~~		~~1 Jar~~			X	X					X			
~~5-20-22~~		~~Soil~~		~~1 Jar~~			X	X					X			

Date:	Time:	Relinquished by:	Received by:	Via:	Date Time
5-21-22	07:00	Zakr Tullen			
5/24/22	1900			courier	5/25/22 7:15

Remarks: 4/4

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.

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

June 08, 2022

Mike Moffitt

EOG
105 South Fourth Street
Artesia, NM 88210
TEL:
FAX:

RE: Avalanche Journal State 1 OrderNo.: 2205C49

Dear Mike Moffitt:

Hall Environmental Analysis Laboratory received 8 sample(s) on 5/27/2022 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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **2205C49**
Date Reported: **6/8/2022**

CLIENT: EOG
Project: Avalanche Journal State 1
Lab ID: 2205C49-001 **Matrix:** SOIL

Client Sample ID: BES22-42 6.0'
Collection Date: 5/25/2022 9:30:00 AM
Received Date: 5/27/2022 7:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **NAI**	
Chloride	480	60		mg/Kg	20	6/2/2022 4:02:19 PM	67861
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	6/2/2022 11:10:48 PM	67801
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	6/2/2022 11:10:48 PM	67801
Surr: DNOP	91.8	51.1-141		%Rec	1	6/2/2022 11:10:48 PM	67801
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/30/2022 8:08:00 AM	67768
Surr: BFB	88.4	37.7-212		%Rec	1	5/30/2022 8:08:00 AM	67768
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.025		mg/Kg	1	5/30/2022 8:08:00 AM	67768
Toluene	ND	0.049		mg/Kg	1	5/30/2022 8:08:00 AM	67768
Ethylbenzene	ND	0.049		mg/Kg	1	5/30/2022 8:08:00 AM	67768
Xylenes, Total	ND	0.099		mg/Kg	1	5/30/2022 8:08:00 AM	67768
Surr: 4-Bromofluorobenzene	87.1	70-130		%Rec	1	5/30/2022 8:08:00 AM	67768

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

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2205C49**
Date Reported: **6/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BES22-43 6.0'
Project: Avalanche Journal State 1
Collection Date: 5/25/2022 9:40:00 AM
Lab ID: 2205C49-002 **Matrix:** SOIL
Received Date: 5/27/2022 7:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **NAI**	
Chloride	97	60		mg/Kg	20	6/2/2022 4:14:43 PM	67861
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**	
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	6/2/2022 11:35:08 PM	67801
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	6/2/2022 11:35:08 PM	67801
Surr: DNOP	98.3	51.1-141		%Rec	1	6/2/2022 11:35:08 PM	67801
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/30/2022 8:28:00 AM	67768
Surr: BFB	86.6	37.7-212		%Rec	1	5/30/2022 8:28:00 AM	67768
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.025		mg/Kg	1	5/30/2022 8:28:00 AM	67768
Toluene	ND	0.050		mg/Kg	1	5/30/2022 8:28:00 AM	67768
Ethylbenzene	ND	0.050		mg/Kg	1	5/30/2022 8:28:00 AM	67768
Xylenes, Total	ND	0.099		mg/Kg	1	5/30/2022 8:28:00 AM	67768
Surr: 4-Bromofluorobenzene	88.4	70-130		%Rec	1	5/30/2022 8:28:00 AM	67768

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205C49**
Date Reported: **6/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BES22-44 5.0'
Project: Avalanche Journal State 1
Collection Date: 5/25/2022 9:50:00 AM
Lab ID: 2205C49-003 **Matrix:** SOIL
Received Date: 5/27/2022 7:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **NAI**	
Chloride	ND	60		mg/Kg	20	6/2/2022 4:51:56 PM	67861
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	6/2/2022 11:59:35 PM	67801
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	6/2/2022 11:59:35 PM	67801
Surr: DNOP	90.3	51.1-141		%Rec	1	6/2/2022 11:59:35 PM	67801
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/30/2022 8:48:00 AM	67768
Surr: BFB	87.0	37.7-212		%Rec	1	5/30/2022 8:48:00 AM	67768
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	5/30/2022 8:48:00 AM	67768
Toluene	ND	0.049		mg/Kg	1	5/30/2022 8:48:00 AM	67768
Ethylbenzene	ND	0.049		mg/Kg	1	5/30/2022 8:48:00 AM	67768
Xylenes, Total	ND	0.098		mg/Kg	1	5/30/2022 8:48:00 AM	67768
Surr: 4-Bromofluorobenzene	87.5	70-130		%Rec	1	5/30/2022 8:48:00 AM	67768

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205C49**
Date Reported: **6/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BES22-45 4.0'
Project: Avalanche Journal State 1
Collection Date: 5/25/2022 10:00:00 AM
Lab ID: 2205C49-004 **Matrix:** SOIL
Received Date: 5/27/2022 7:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **NAI**	
Chloride	ND	60		mg/Kg	20	6/2/2022 5:04:20 PM	67861
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	6/3/2022 12:23:56 AM	67801
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	6/3/2022 12:23:56 AM	67801
Surr: DNOP	97.7	51.1-141		%Rec	1	6/3/2022 12:23:56 AM	67801
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/30/2022 9:08:00 AM	67768
Surr: BFB	86.2	37.7-212		%Rec	1	5/30/2022 9:08:00 AM	67768
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.025		mg/Kg	1	5/30/2022 9:08:00 AM	67768
Toluene	ND	0.050		mg/Kg	1	5/30/2022 9:08:00 AM	67768
Ethylbenzene	ND	0.050		mg/Kg	1	5/30/2022 9:08:00 AM	67768
Xylenes, Total	ND	0.099		mg/Kg	1	5/30/2022 9:08:00 AM	67768
Surr: 4-Bromofluorobenzene	88.8	70-130		%Rec	1	5/30/2022 9:08:00 AM	67768

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205C49**
Date Reported: **6/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: WES22-42 6.0'
Project: Avalanche Journal State 1
Collection Date: 5/25/2022 10:10:00 AM
Lab ID: 2205C49-005 **Matrix:** SOIL
Received Date: 5/27/2022 7:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **NAI**	
Chloride	120	60		mg/Kg	20	6/2/2022 6:06:21 PM	67861
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	6/3/2022 12:48:23 AM	67801
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	6/3/2022 12:48:23 AM	67801
Surr: DNOP	117	51.1-141		%Rec	1	6/3/2022 12:48:23 AM	67801
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	5/30/2022 9:27:00 AM	67768
Surr: BFB	88.3	37.7-212		%Rec	1	5/30/2022 9:27:00 AM	67768
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.023		mg/Kg	1	5/30/2022 9:27:00 AM	67768
Toluene	ND	0.046		mg/Kg	1	5/30/2022 9:27:00 AM	67768
Ethylbenzene	ND	0.046		mg/Kg	1	5/30/2022 9:27:00 AM	67768
Xylenes, Total	ND	0.093		mg/Kg	1	5/30/2022 9:27:00 AM	67768
Surr: 4-Bromofluorobenzene	91.6	70-130		%Rec	1	5/30/2022 9:27:00 AM	67768

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205C49**
Date Reported: **6/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: WES22-43 6.0'
Project: Avalanche Journal State 1
Collection Date: 5/25/2022 11:00:00 AM
Lab ID: 2205C49-006 **Matrix:** SOIL
Received Date: 5/27/2022 7:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **NAI**	
Chloride	150	60		mg/Kg	20	6/2/2022 6:18:45 PM	67861
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	6/3/2022 1:12:46 AM	67801
Motor Oil Range Organics (MRO)	ND	51		mg/Kg	1	6/3/2022 1:12:46 AM	67801
Surr: DNOP	111	51.1-141		%Rec	1	6/3/2022 1:12:46 AM	67801
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/30/2022 10:07:00 AM	67768
Surr: BFB	88.3	37.7-212		%Rec	1	5/30/2022 10:07:00 AM	67768
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	5/30/2022 10:07:00 AM	67768
Toluene	ND	0.048		mg/Kg	1	5/30/2022 10:07:00 AM	67768
Ethylbenzene	ND	0.048		mg/Kg	1	5/30/2022 10:07:00 AM	67768
Xylenes, Total	ND	0.095		mg/Kg	1	5/30/2022 10:07:00 AM	67768
Surr: 4-Bromofluorobenzene	89.0	70-130		%Rec	1	5/30/2022 10:07:00 AM	67768

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	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 range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **2205C49**
Date Reported: **6/8/2022**

CLIENT: EOG
Client Sample ID: WES22-44 6.0'
Project: Avalanche Journal State 1
Collection Date: 5/25/2022 1:30:00 PM
Lab ID: 2205C49-007 **Matrix:** SOIL
Received Date: 5/27/2022 7:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **NAI**	
Chloride	91	61		mg/Kg	20	6/2/2022 6:31:10 PM	67861
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	6/3/2022 1:37:15 AM	67801
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	6/3/2022 1:37:15 AM	67801
Surr: DNOP	101	51.1-141		%Rec	1	6/3/2022 1:37:15 AM	67801
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/30/2022 10:27:00 AM	67768
Surr: BFB	89.9	37.7-212		%Rec	1	5/30/2022 10:27:00 AM	67768
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	5/30/2022 10:27:00 AM	67768
Toluene	ND	0.048		mg/Kg	1	5/30/2022 10:27:00 AM	67768
Ethylbenzene	ND	0.048		mg/Kg	1	5/30/2022 10:27:00 AM	67768
Xylenes, Total	ND	0.096		mg/Kg	1	5/30/2022 10:27:00 AM	67768
Surr: 4-Bromofluorobenzene	89.4	70-130		%Rec	1	5/30/2022 10:27:00 AM	67768

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205C49**
Date Reported: **6/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: WES22-45 6.0'
Project: Avalanche Journal State 1
Collection Date: 5/25/2022 1:40:00 PM
Lab ID: 2205C49-008 **Matrix:** SOIL
Received Date: 5/27/2022 7:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **NAI**	
Chloride	ND	60		mg/Kg	20	6/2/2022 6:43:34 PM	67861
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	6/3/2022 2:01:40 AM	67801
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	6/3/2022 2:01:40 AM	67801
Surr: DNOP	109	51.1-141		%Rec	1	6/3/2022 2:01:40 AM	67801
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/30/2022 10:46:00 AM	67768
Surr: BFB	88.1	37.7-212		%Rec	1	5/30/2022 10:46:00 AM	67768
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	5/30/2022 10:46:00 AM	67768
Toluene	ND	0.048		mg/Kg	1	5/30/2022 10:46:00 AM	67768
Ethylbenzene	ND	0.048		mg/Kg	1	5/30/2022 10:46:00 AM	67768
Xylenes, Total	ND	0.096		mg/Kg	1	5/30/2022 10:46:00 AM	67768
Surr: 4-Bromofluorobenzene	87.9	70-130		%Rec	1	5/30/2022 10:46:00 AM	67768

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

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2205C49**

08-Jun-22

Client: EOG

Project: Avalanche Journal State 1

Sample ID: **MB-67861**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **67861**	RunNo: **88448**
Prep Date: **6/2/2022**	Analysis Date: **6/2/2022**	SeqNo: **3137969** Units: **mg/Kg**

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

Sample ID: **LCS-67861**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **67861**	RunNo: **88448**
Prep Date: **6/2/2022**	Analysis Date: **6/2/2022**	SeqNo: **3137970** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.3	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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2205C49**

08-Jun-22

Client: EOG

Project: Avalanche Journal State 1

Sample ID: **MB-67801**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **67801**	RunNo: **88418**
Prep Date: **5/31/2022**	Analysis Date: **6/1/2022**	SeqNo: **3136937** 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	6.7		10.00		67.1	51.1	141			

Sample ID: **LCS-67801**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **67801**	RunNo: **88418**
Prep Date: **5/31/2022**	Analysis Date: **6/2/2022**	SeqNo: **3137868** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	50.00	0	107	64.4	127			
Surr: DNOP	4.8		5.000		95.3	51.1	141			

Sample ID: **MB-67821**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **67821**	RunNo: **88418**
Prep Date: **6/1/2022**	Analysis Date: **6/3/2022**	SeqNo: **3138396** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.0		10.00		90.0	51.1	141			

Sample ID: **LCS-67821**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **67821**	RunNo: **88418**
Prep Date: **6/1/2022**	Analysis Date: **6/3/2022**	SeqNo: **3138397** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	3.8		5.000		76.1	51.1	141			

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2205C49**

08-Jun-22

Client: EOG

Project: Avalanche Journal State 1

Sample ID: **lcs-67768**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **67768**	RunNo: **88358**
Prep Date: **5/27/2022**	Analysis Date: **5/30/2022**	SeqNo: **3134041** 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	93.9	72.3	137			
Surr: BFB	1900		1000		190	37.7	212			

Sample ID: **mb-67768**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **67768**	RunNo: **88358**
Prep Date: **5/27/2022**	Analysis Date: **5/30/2022**	SeqNo: **3134042** 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	870		1000		86.6	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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2205C49**

08-Jun-22

Client: EOG

Project: Avalanche Journal State 1

Sample ID: **lcs-67768**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **67768**	RunNo: **88358**
Prep Date: **5/27/2022**	Analysis Date: **5/30/2022**	SeqNo: **3134102** 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	87.0	80	120			
Ethylbenzene	0.86	0.050	1.000	0	85.9	80	120			
Xylenes, Total	2.6	0.10	3.000	0	85.1	80	120			
Surr: 4-Bromofluorobenzene	0.91		1.000		91.0	70	130			

Sample ID: **mb-67768**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **67768**	RunNo: **88358**
Prep Date: **5/27/2022**	Analysis Date: **5/30/2022**	SeqNo: **3134103** 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	0.87		1.000		86.9	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	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 range due to dilution or matrix interference		

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: **EOG** Work Order Number: **2205C49** RcptNo: **1**

Received By: **Cheyenne Cason** **5/27/2022 7:10:00 AM**

Completed By: **Cheyenne Cason** **5/27/2022 7:51:50 AM**

Reviewed By: JMS 5/27/22

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: CMC 5/27/22

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	Not Present			

Chain-of-Custody Record

Client: EOG / Chase Settle

Mailing Address:

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: 5-DAY
☑ Standard ☒ Rush

Project Name: Avalanche Journal State #1

Project #: 22E-00345

Project Manager: Mike Moffitt

Sampler: AH

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 2.1-0=2.1 (°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. 2205649	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)
5-25-22	0930	Soil	BES22-42 6.0'	402	ICE	001										
	0940		BES22-43 6.0'			002										
	0950		BES22-44 5.0'			003										
	1000		BES22-45 4.0'			004										
	1010		WES22-42 6.0'			005										
	1100		WES22-43 6.0'			006										
	1330		WES22-44 6.0'			007										
	1340		WES22-45 6.0'			008										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
			[signature]		5/26/22	0940
Date: 5/26/22	Time: 1900	Relinquished by: [signature]	Received by: [signature]	Via: Courier	Date 5/27/22	Time 0710

Remarks: CC: Mike Moffitt

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

June 03, 2022

Mike Moffitt

EOG
105 South Fourth Street
Artesia, NM 88210
TEL:
FAX:

RE: Avalanche Journal State 1 OrderNo.: 2205D05

Dear Mike Moffitt:

Hall Environmental Analysis Laboratory received 4 sample(s) on 5/28/2022 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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **2205D05**
Date Reported: **6/3/2022**

CLIENT: EOG
Client Sample ID: BES22-46 6.0'
Project: Avalanche Journal State 1
Collection Date: 5/26/2022 9:00:00 AM
Lab ID: 2205D05-001 **Matrix:** SOIL
Received Date: 5/28/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	210	60		mg/Kg	20	5/31/2022 12:03:10 PM	67789
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	5/31/2022 10:43:49 AM	67788
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/31/2022 10:43:49 AM	67788
Surr: DNOP	95.4	51.1-141		%Rec	1	5/31/2022 10:43:49 AM	67788
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/29/2022 1:07:00 PM	67776
Surr: BFB	90.7	37.7-212		%Rec	1	5/29/2022 1:07:00 PM	67776
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	5/29/2022 1:07:00 PM	67776
Toluene	ND	0.048		mg/Kg	1	5/29/2022 1:07:00 PM	67776
Ethylbenzene	ND	0.048		mg/Kg	1	5/29/2022 1:07:00 PM	67776
Xylenes, Total	ND	0.096		mg/Kg	1	5/29/2022 1:07:00 PM	67776
Surr: 4-Bromofluorobenzene	87.5	70-130		%Rec	1	5/29/2022 1:07:00 PM	67776

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	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 range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **2205D05**
Date Reported: **6/3/2022**

CLIENT: EOG
Client Sample ID: BES22-47 6.0'
Project: Avalanche Journal State 1
Collection Date: 5/26/2022 9:10:00 AM
Lab ID: 2205D05-002 **Matrix:** SOIL
Received Date: 5/28/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	200	60		mg/Kg	20	5/31/2022 12:15:35 PM	67789
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	5/31/2022 10:54:26 AM	67788
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/31/2022 10:54:26 AM	67788
Surr: DNOP	93.1	51.1-141		%Rec	1	5/31/2022 10:54:26 AM	67788
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/29/2022 2:06:00 PM	67776
Surr: BFB	85.5	37.7-212		%Rec	1	5/29/2022 2:06:00 PM	67776
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.025		mg/Kg	1	5/29/2022 2:06:00 PM	67776
Toluene	ND	0.050		mg/Kg	1	5/29/2022 2:06:00 PM	67776
Ethylbenzene	ND	0.050		mg/Kg	1	5/29/2022 2:06:00 PM	67776
Xylenes, Total	ND	0.10		mg/Kg	1	5/29/2022 2:06:00 PM	67776
Surr: 4-Bromofluorobenzene	86.0	70-130		%Rec	1	5/29/2022 2:06:00 PM	67776

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205D05**
Date Reported: **6/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BES22-48 6.0'
Project: Avalanche Journal State 1
Collection Date: 5/26/2022 9:20:00 AM
Lab ID: 2205D05-003 **Matrix:** SOIL
Received Date: 5/28/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	390	60		mg/Kg	20	5/31/2022 12:27:59 PM	67789
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/31/2022 11:05:03 AM	67788
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/31/2022 11:05:03 AM	67788
Surr: DNOP	99.7	51.1-141		%Rec	1	5/31/2022 11:05:03 AM	67788
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/29/2022 3:05:00 PM	67776
Surr: BFB	87.5	37.7-212		%Rec	1	5/29/2022 3:05:00 PM	67776
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	5/29/2022 3:05:00 PM	67776
Toluene	ND	0.048		mg/Kg	1	5/29/2022 3:05:00 PM	67776
Ethylbenzene	ND	0.048		mg/Kg	1	5/29/2022 3:05:00 PM	67776
Xylenes, Total	ND	0.097		mg/Kg	1	5/29/2022 3:05:00 PM	67776
Surr: 4-Bromofluorobenzene	87.6	70-130		%Rec	1	5/29/2022 3:05:00 PM	67776

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205D05**
Date Reported: **6/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: WES22-46 6.0'
Project: Avalanche Journal State 1
Collection Date: 5/26/2022 9:30:00 AM
Lab ID: 2205D05-004 **Matrix:** SOIL
Received Date: 5/28/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	110	60		mg/Kg	20	5/31/2022 12:40:23 PM	67789
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	5/31/2022 11:15:41 AM	67788
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/31/2022 11:15:41 AM	67788
Surr: DNOP	98.6	51.1-141		%Rec	1	5/31/2022 11:15:41 AM	67788
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/29/2022 3:25:00 PM	67776
Surr: BFB	85.7	37.7-212		%Rec	1	5/29/2022 3:25:00 PM	67776
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	5/29/2022 3:25:00 PM	67776
Toluene	ND	0.049		mg/Kg	1	5/29/2022 3:25:00 PM	67776
Ethylbenzene	ND	0.049		mg/Kg	1	5/29/2022 3:25:00 PM	67776
Xylenes, Total	ND	0.097		mg/Kg	1	5/29/2022 3:25:00 PM	67776
Surr: 4-Bromofluorobenzene	86.2	70-130		%Rec	1	5/29/2022 3:25:00 PM	67776

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	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 range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2205D05**

03-Jun-22

Client: EOG

Project: Avalanche Journal State 1

Sample ID:	**MB-67789**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**67789**	RunNo:	**88375**					
Prep Date:	**5/31/2022**	Analysis Date:	**5/31/2022**	SeqNo:	**3135630**	Units:	**mg/Kg**			

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

Sample ID:	**LCS-67789**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**67789**	RunNo:	**88375**					
Prep Date:	**5/31/2022**	Analysis Date:	**5/31/2022**	SeqNo:	**3135631**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.8	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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2205D05**

03-Jun-22

Client: EOG

Project: Avalanche Journal State 1

Sample ID: **LCS-67788**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **67788**	RunNo: **88366**
Prep Date: **5/31/2022**	Analysis Date: **5/31/2022**	SeqNo: **3134480** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	90.1	64.4	127			
Surr: DNOP	3.4		5.000		67.2	51.1	141			

Sample ID: **MB-67788**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **67788**	RunNo: **88366**
Prep Date: **5/31/2022**	Analysis Date: **5/31/2022**	SeqNo: **3134481** 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	9.8		10.00		97.7	51.1	141			

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2205D05**

03-Jun-22

Client: EOG

Project: Avalanche Journal State 1

Sample ID: **lcs-67776**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **67776**	RunNo: **88358**
Prep Date: **5/28/2022**	Analysis Date: **5/29/2022**	SeqNo: **3134003** 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	98.3	72.3	137			
Surr: BFB	1900		1000		186	37.7	212			

Sample ID: **mb-67776**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **67776**	RunNo: **88358**
Prep Date: **5/28/2022**	Analysis Date: **5/29/2022**	SeqNo: **3134004** 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	880		1000		88.3	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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2205D05**

03-Jun-22

Client: EOG

Project: Avalanche Journal State 1

Sample ID: **lcs-67776**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **67776**	RunNo: **88358**
Prep Date: **5/28/2022**	Analysis Date: **5/29/2022**	SeqNo: **3134070** 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	87.9	80	120			
Toluene	0.90	0.050	1.000	0	89.5	80	120			
Ethylbenzene	0.89	0.050	1.000	0	88.6	80	120			
Xylenes, Total	2.6	0.10	3.000	0	87.4	80	120			
Surr: 4-Bromofluorobenzene	0.89		1.000		89.2	70	130			

Sample ID: **mb-67776**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **67776**	RunNo: **88358**
Prep Date: **5/28/2022**	Analysis Date: **5/29/2022**	SeqNo: **3134071** 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	0.87		1.000		86.9	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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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: **EOG** Work Order Number: **2205D05** RcptNo: **1**

Received By: **Cheyenne Cason** **5/28/2022 8:00:00 AM**

Completed By: **Cheyenne Cason** **5/28/2022 8:32:11 AM**

Reviewed By: 5/28/22

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: CMC 5/28/22

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	4.1	Good	Not Present			

Chain-of-Custody Record

Client: EOG / Chase Settle

Mailing Address:

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other
☐ EDD (Type)

Turn-Around Time: ~~5-DAY~~ EC
☐ Standard ☒ Rush Tuesday 5/31/22

Project Name: Avalanche Journal State #1

Project #: 22E-00345

Project Manager: Mike Moffitt

Sampler: AH

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 4.1 -0 = 4.1 (°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. 2205D06
5-26-22	0900	Soil	BES22-46 6.0'	4oz	ICE	001
	0910		BES22-47 6.0'			002
	0920		BES22-48 6.0'			003
	0930		BES22-46 6.0'			004

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)

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
					5/27/22	900
5/27/22	1900		CMC courier		5/28/22	0800

Remarks: cc: Mike Moffitt
Chase Settle

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.

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 121488

CONDITIONS

Operator: EOG RESOURCES INC P.O. Box 2267 Midland, TX 79702	OGRID: 7377
	Action Number: 121488
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
rhamlet	We have received your closure report and final C-141 for Incident #NAPP2209639601 AVALANCHE JOURNAL STATE #1, thank you. This closure is approved.	11/2/2022