

Incident ID	nAB1811529351
District RP	2RP-4710
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: 05/02/2023  
email: Chase\_Settle@eogresources.com Telephone: 575-703-6537

**OCD Only**

Received by: Robert Hamlet Date: 9/15/2023

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: 9/15/2023  
Printed Name: Robert Hamlet Title: Environmental Specialist - Advanced



April 25, 2023

Vertex Project #: 22E-00716-02

**Spill Closure Report:** Irish Hills Pipeline  
Unit D, Section 7, Township 19 South, Range 25 East  
API: 30-015-23326  
County: Eddy  
Incident ID: nAB1811529351 (2RP-4710)

**Prepared For:** EOG Resources, Inc  
104 S 4<sup>th</sup> Street  
Artesia, New Mexico 88210

**New Mexico Oil Conservation Division - District 2 - Artesia**

811 S. 1<sup>st</sup> Street  
Artesia, New Mexico 88210

EOG Resources, Inc. (EOG) retained Vertex Resource Services Inc. (Vertex) to conduct a spill assessment and remediation for a release at the pipeline for Irish Hills Yeso NM Federal #1, API 30-015-23326 (hereafter referred to as "Irish Hills"). EOG submitted a C-141 Release Notification (Attachment 1) to New Mexico Oil Conservation Division (NMOCD) District 2 on March 15, 2018. Incident ID number nAB1811529351 was assigned to this incident.

This letter provides a description of the remediation activities and demonstrates that closure criteria established in Table I of 19.15.29.12 *New Mexico Administrative Code* (NMAC; New Mexico Oil Conservation Division, 2018) are being met and all applicable regulations are being followed. This document is intended to serve as a final report to obtain approval from NMOCD for the closure of this release, with the understanding that remediation of the site was conducted in a manner to achieve the requirements of 19.15.29.13.

## Incident Description

Surface impacts were brought to the attention of EOG by the private surface owner after pipelines were exposed due to flooding activities from torrential rainfall. The date, time, and volume of the release are unknown.

## Site Characterization

The site is located at 32.682897° N, 104.522946° W approximately 8.5 miles northwest of Seven Rivers, New Mexico (Google Inc., 2023). The legal location for the site is Section 7, Township 19 South, Range 25 East in Eddy County, New Mexico. The impacted area is located on private property. An aerial photograph and site schematics are included in Attachment 2. This location is within the Permian Basin in southeast New Mexico and was historically used for oil and gas exploration and production, and rangeland.

Irish Hills was typical of historical oil and gas exploration and production sites on the western portion of the Permian Basin and was used for oil and gas production transport. The following sections specifically describe the release area in

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the pastureland (Attachment 2 – Figure 1).

The surrounding landscape occurs on ridges and fans with elevations ranging between 1,100 and 4,400 feet. The climate is semiarid with average annual precipitation ranging between 7 and 15 inches. Using information obtained from the United States Department of Agriculture, the dominant vegetation was determined to be primarily black grama with creosote bush, mesquite, and catclaw mimosa as the common shrubs (United States Department of Agriculture, Natural Resources Conservation Service, 2023).

*The Geological Map of New Mexico* (New Mexico Bureau of Geology and Mineral Resources, 2023) indicates the site's surface geology is comprised primarily of Qp - Piedmont alluvial deposits (Holocene to lower Pleistocene). The predominant soil texture on the site is Loamy. The Natural Resources Conservation Service *Web Soil Survey* characterizes the predominant soil texture at Irish Hills as Reagan-Upton association and Upton gravelly loam. It tends to be well drained with high to low runoff and very low to moderate available moisture levels in the soil profile (United States Department of Agriculture, Natural Resources Conservation Service, 2023).

There is no surface water located at Irish Hills. The nearest significant watercourse, as defined in Subsection P of 19.15.17.7 NMAC (New Mexico Oil Conservation Division, 2018), is the Pecos River located approximately 9.34 miles southeast of the site (Google Inc., 2023). There are no continuous flowing watercourses or significant watercourses, lakebeds, sinkholes, playa lakes, or other critical water or community features as outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC.

The nearest depth to groundwater information to Irish Hills is a monitoring well located approximately 0.41 miles north of the site (New Mexico Office of the State Engineer, New Mexico Water Rights Reporting System, 2023). Data from the New Mexico Office of the State Engineer indicates that the well was dry at 105 feet below ground surface (bgs). Information pertaining to groundwater determination is included in Attachment 4.

## Closure Criteria Determination

Using site characterization information and the NMOCD-approved Remediation Plan (Attachment 1), a closure criteria determination worksheet (Attachment 4) 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. The nearest groundwater data is less than 25 years old and located less than 0.5 miles from the release site; therefore, the depth to groundwater can accurately be determined. The closure criteria for the site is determined to be associated with the following constituent concentration limits (Table 1).

<b>Table 1. Closure Criteria for Soils to Remediation &amp; Reclamation Standards</b>		
	<b>Constituent</b>	<b>Limit</b>
0-4 feet bgs (19.15.29.13)	Chloride	600 mg/kg
	TPH (GRO+DRO+MRO)	100 mg/kg
DTGW > 100 feet (19.15.29.12)	Chloride	20,000 mg/kg
	TPH (GRO+DRO+MRO)	2,500 mg/kg
	GRO+DRO	1,000 mg/kg
	BTEX	50 mg/kg
	Benzene	10 mg/kg

DTGW – Depth to groundwater

TPH - Total petroleum hydrocarbons = gasoline range organics (GRO) + diesel range organics (DRO) + motor oil range organics (MRO)

BTEX - Benzene, toluene, ethylbenzene, and xylenes

## Remedial Actions

Remediation efforts began on January 30, 2023, and were completed on April 30, 2023. Three areas were excavated where impacts had been identified by the SMA drafted Remediation Plan, approved by NMOCD on May 2, 2018. Horizontal delineation of the impacted areas was completed during remediation; the top 4 feet were assessed against NMOCD's strictest closure criteria.

Vertex personnel supervised the excavation of impacted soils. Field screening was utilized and consisted of analysis using a photoionization detector (volatile hydrocarbons), Dextsil Petroflag using EPA SW-846 Method 9074 (extractable hydrocarbons) and electric conductivity (chlorides). Field screening results were used to identify areas requiring further remediation from those areas showing concentrations below determined closure criteria levels. Soils were removed to a depth of 4 feet bgs. Impacted soil was transported by a licensed waste hauler and disposed of at an approved waste management facility. Field screening results are included in Attachment 3, as well as in the Daily Field Report in Attachment 5.

Notifications that confirmatory samples were being collected were provided to the NMOCD before every sampling event and are included in Attachment 6. Confirmatory composite samples were collected from the base and walls of the excavation in 200-square-foot increments. A total of 105 five-point confirmatory samples were collected for laboratory analysis following NMOCD soil sampling procedures.

Samples were submitted to Hall Environmental Analysis Laboratory under chain-of-custody protocols and analyzed for BTEX (EPA Method 8021B), total petroleum hydrocarbons (GRO, DRO, MRO – EPA Method 8015D) and total chlorides (EPA Method 300.0). Laboratory results are presented in Attachment 3 – Table 3 and the laboratory data reports are included in Attachment 7. All confirmatory samples collected and analyzed were below the closure criteria for the site.

## Closure Request

Vertex recommends no additional remediation action to address the release at Irish Hills. Laboratory analyses of confirmation samples collected at Irish Hills show final confirmatory values below NMOCD remediation closure criteria for areas where depth to groundwater is greater than 100 feet, with the top 4 feet meeting reclamation requirements

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of NMAC 19.15.29.13. Laboratory analysis and field screening results are included in Table 3 (Attachment 3). There are no anticipated risks to human, ecological, or hydrological receptors at this release site.

The excavation has been lined with a geosynthetic clay liner and backfilled with non-waste-containing, uncontaminated, earthen material that was sourced locally and placed to meet the site's existing grade to prevent water ponding and erosion. Documentation with photos of the geosynthetic liner laid across the bottom of the excavations is included in Attachment 5.

Vertex and EOG request that this incident (nAB1811529351) be closed as all requirements set forth in the Remediation Plan approved by NMOCD as well as in Subsection E of 19.15.29.12 NMAC have been met. EOG certifies that all information in this report and the attachments are correct and that they have complied with the applicable closure requirements and conditions specified in Division rules and directives to meet NMOCD requirements to obtain closure of this release.

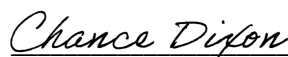
Should you have any questions or concerns, please do not hesitate to contact the undersigned at 575.988.1472 or [cdixon@vertex.ca](mailto:cdixon@vertex.ca).



Sally Carttar, BA  
INT. ENVIRONMENTAL TECHNOLOGIST, REPORTING

5/1/2023

Date



Chance Dixon, B.Sc.  
PROJECT MANAGER, REPORT REVIEW

5/1/2023

Date

## Attachments

- Attachment 1. NMOCD C-141 Report
- Attachment 2. Figures
- Attachment 3. Tables
- Attachment 4. Closure Criteria for Soils Impacted by a Release Research Determination Documentation
- Attachment 5. Daily Field Reports with Photographs
- Attachment 6. Required 48-Hour Notification of Confirmatory Sampling to Regulatory Agencies
- Attachment 7. Laboratory Data Reports and Chain of Custody Forms

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## References

- Google Inc. (2023). *Google Earth Pro (Version 7.3.3)* [Software]. Retrieved from <https://earth.google.com>
- New Mexico Bureau of Geology and Mineral Resources. (2023). *Interactive Geologic Map*. Retrieved from <http://geoinfo.nmt.edu>
- New Mexico Office of the State Engineer, New Mexico Water Rights Reporting System. (2023). *Well Log/Meter Information Report*. Retrieved from <http://nmwrrs.ose.state.nm.us/nmwrrs/meterReport.html>
- New Mexico Oil Conservation Division. (2018). *New Mexico Administrative Code – Natural Resources and Wildlife Oil and Gas Releases*. Santa Fe, New Mexico.
- New Mexico Water Rights Reporting System. (2023a). *Water Column/Average Depth to Water Report*. Retrieved from <http://nmwrrs.ose.state.nm.us/nmwrrs/waterColumn.html>
- New Mexico Water Rights Reporting System. (2023b). *Point of Diversion Location Report*. Retrieved from <http://nmwrrs.ose.state.nm.us/nmwrrs/wellSurfaceDiversion.html>
- United States Department of Agriculture, Natural Resources Conservation Service. (2023). *Web Soil Survey, New Mexico*. Retrieved from [http://www.wipp.energy.gov/library/Information\\_Repository\\_A/Supplemental\\_Information/Chugg%20et%20al%201971%20w-map.pdf](http://www.wipp.energy.gov/library/Information_Repository_A/Supplemental_Information/Chugg%20et%20al%201971%20w-map.pdf)
- United States Department of Homeland Security, FEMA Flood Map Service Center. (2010). *Flood Map Number 35015C1875D*. Retrieved from <https://msc.fema.gov/portal/search?AddressQuery=malaga%20new%20mexico#searchresultsanchor>
- United States Department of the Interior, Bureau of Land Management. (2018). *New Mexico Cave/Karsts*. Retrieved from <https://www.blm.gov/programs/recreation/recreation-programs/caves/new-mexico>
- United States Fish and Wildlife Service. (2023). *National Wetland Inventory Surface Waters and Wetland*. Retrieved from <https://www.fws.gov/wetlands/data/mapper.html>

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## 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

MAR 15 2018

Form C-141  
Revised April 3, 2017

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Submit Copy to appropriate District Office in accordance with 19.15.29 NMAC.

## Release Notification and Corrective Action

## OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: EOG Y Resources, Inc. <b>25575</b>	Contact: Chase Settle
Address: 104 S. 4 <sup>th</sup> Street Artesia NM 88210	Telephone No.: 575-748-1471
Facility Name: Irish Hills <b>Yeso NM Fed. #1</b>	Facility Type: ROW/Pipeline

Surface Owner: Private

Mineral Owner: Federal

API No. 30-015-23326

## LOCATION OF RELEASE

API provided is for tracking purposes only since it is a plugged well.

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
C	7	19S	25E					Eddy

Latitude 32°40'56.12"N Longitude 104°31'29.44"W

## NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: Unknown	Volume Recovered: 0 BBL
Source of Release: Pipeline	Date and Hour of Occurrence: Unknown	Date and Hour of Discovery: 3/18/2015
Was Immediate Notice Given? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*

An unknown amount of produced water was released from a buried pipeline, which was later exposed due to flooding. The pipeline has since been repaired.

Describe Area Affected and Cleanup Action Taken.\*

The impacted area was approximately 20 feet by 600 feet in the pasture. With approval from area utilities owners via 811 and NMOCD, vertical and horizontal delineation samples will be taken, and analysis ran for TPH & BTEX (chlorides for documentation). If initial analytical results for TPH & BTEX are under RRAL's (site ranking is 0) a Final Report, C-141 will be submitted to the OCD requesting closure. If the analytical results are above the RRAL's, a work plan will be submitted to the OCD.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: <i>Chase Settle</i>	OIL CONSERVATION DIVISION Signed By: <i>Mike Brunson</i> Approved by Environmental Specialist.	
Printed Name: Chase Settle		
Title: Rep Safety & Environmental II	Approval Date: 4/19/18	Expiration Date: N/A
E-mail Address: chase_settle@eogresources.com	Conditions of Approval: <i>See attached</i>	Attached: <i>2RP-4710</i>
Date: March 14, 2018	Phone: 575-748-4171	

\* Attach Additional Sheets If Necessary

4/19/18 AB

LATE Entry by OCD  
*WAB*

**From:** [Bratcher, Mike, EMNRD](#)  
**To:** [Melodie Sanjari](#); [Weaver, Crystal, EMNRD](#)  
**Cc:** [Tucker, Shelly](#); [Heather Patterson](#); [Chase Settle](#); [Austin Weyant](#)  
**Subject:** RE: Irish Hills Work Plan & Initial C141  
**Date:** Wednesday, May 2, 2018 1:22:05 PM  
**Attachments:** [image001.png](#)

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**\*\* External email. Use caution.\*\***

RE: EOG Y \* Irish Hills Yeso NM Fed 1 (Pipeline ROW) \* **2RP-4710** \* Discovery date: 3/18/15

Greetings,

Your proposal for remediation of the above referenced release site is approved with the following:

- Lateral/horizontal definition for chloride impact will be determined during excavation operations, and prior to liner installation.
- All material exhibiting chloride value above 600 mg/kg in the upper four feet of the impacted area is to be removed.
- Notify the OCD District office once remedial activities have been scheduled.

Thank you,

Mike Bratcher  
NMOCD District 2  
811 South First Street  
Artesia, NM 88210  
575-748-1283 Ext 108

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

---

**From:** Melodie Sanjari <melodie.sanjari@soudermiller.com>  
**Sent:** Thursday, March 15, 2018 11:52 AM  
**To:** Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Weaver, Crystal, EMNRD <Crystal.Weaver@state.nm.us>  
**Cc:** Tucker, Shelly <stucker@blm.gov>; Heather Patterson <heather.patterson@soudermiller.com>; Chase Settle <Chase\_Settle@eogresources.com>; Austin Weyant <austin.weyant@soudermiller.com>  
**Subject:** Irish Hills Work Plan & Initial C141

Good Afternoon All,

Please find the attached soil remediation work plan for the incidents at the Irish Hills Pipeline on private land and federal mineral. The initial C141 has been attached separately as well as in the work

plan.

Thank you all for your time

**Melodie Sanjari**  
*Staff Scientist*



**Souder, Miller & Associates**

Engineering ♦ Environmental ♦ Surveying

201 S Halagueno Street

Carlsbad, NM 88220

[www.soudermiller.com](http://www.soudermiller.com)

(574) 370-9782 (cell)

Incident ID	nAB1811529351
District RP	2RP-4710
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**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
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- ☒ 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: 05/02/2023

email: Chase\_Settle@eogresources.com Telephone: 575-703-6537

**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.

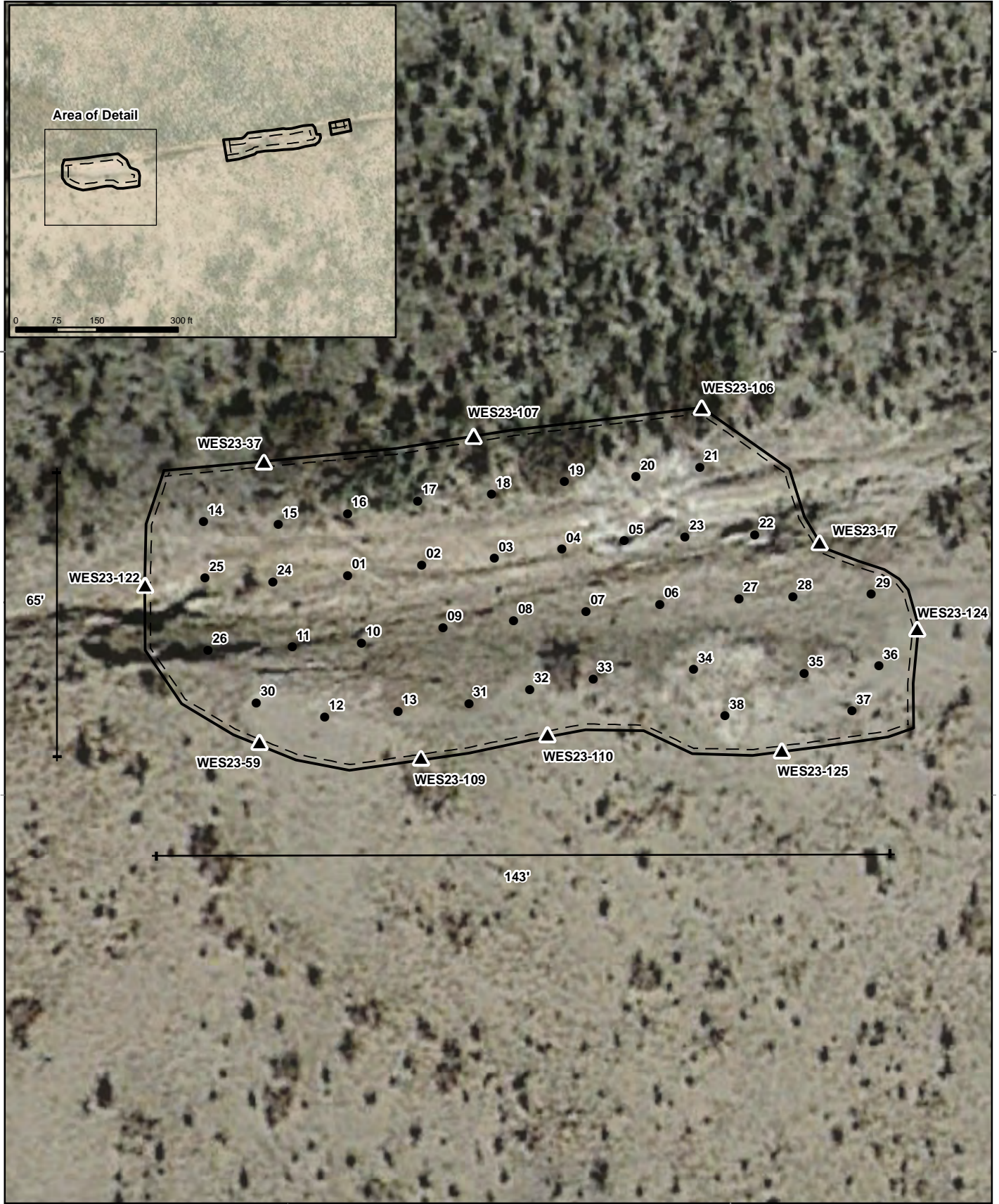
Closure Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name: \_\_\_\_\_ Title: \_\_\_\_\_



## ATTACHMENT 2

Document Path: G:\I-Projects\US PROJECTS\EOG Resources Inc\22E-00716 (Howell Ranch Redamation Projects)\002 - Irish Hills Pipeline\Figure 3 West Excavation Confirmation (Irish Hills Pipeline).mxd



- Base Sample (Excavated; Prefixed by "BES23")
- ▲ Wall Sample (Excavated)
- 4' Excavation (~7,462 sq.ft.)



0 5 10 20 ft  
NAD 1983 UTM Zone 13N  
Date: Apr 04/23



### West Excavation Confirmation Schematic Irish Hills Pipeline

FIGURE:  
**1**



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

Note: Background imagery from Google Earth Pro, (2023). Features from GPS. Vertex Professional Services Ltd., 2023.

VERSATILITY. EXPERTISE.



Document Path: G:\I-Projects\US PROJECTS\NEOG Resources Inc\22E-00716 (Howell Ranch Reclamation Projects)\002 - Irish Hills Pipeline\Figure 4 Middle Excavation Confirmation Schematic (Irish Hills Pipeline).mxd  
 3/6/2020


● Base Sample (Excavated; Prefixed by "BES23")      ▲ Wall Sample (Excavated)      [ ] 4' Excavation (~6,607 sq.ft.)



0 5 10 20 ft  
 NAD 1983 UTM Zone 13N  
 Date: Apr 04/23



### Middle Excavation Confirmation Schematic Irish Hills Pipeline

FIGURE:

2



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

Note: Background imagery from Google Earth Pro, (2023). Features from GPS, Vertex Professional Services Ltd., 2023.

VERSATILITY. EXPERTISE.



Document Path: G:\I-Projects\US PROJECTS\EOG Resources Inc\22E-00716 (Howell Ranch Redemation Projects)\002 - Irish Hills Pipeline\Figure 5 East Excavation Confirmation Schematic (Irish Hills Pipeline).mxd



- Base Sample (Excavated)    ▲ Wall Sample (Excavated)    4' Excavation (~796 sq.ft.)



0 2 4 8 ft  
NAD 1983 UTM Zone 13N  
Date: Mar 28/23



### East Excavation Confirmation Schematic Irish Hills Pipeline

FIGURE:

3



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

Note: Background imagery from Google Earth Pro, (2023). Features from GPS, Vertex Professional Services Ltd., 2023.

VERSATILITY. EXPERTISE.

## ATTACHMENT 3

Client Name: EOG Resources, Inc.

Site Name: Irish Hills Pipeline

NMOCD Tracking #: nAB1811529351, 2RP-4710

Project #: 22E-00716-02

Lab Report(sX): 2302139, 2302195, 2302260, 2302850, 2302814, 2302814, 2302A02, 2302A65, 2302B04, 2302B51, 2302086, 2303176, 2303379, 230384, 230

Table 3. Confirmatory Sample Field Screen and Laboratory Results - Depth to Groundwater >100 Feet BGS (Reclamation)													
Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFlag)	Chloride Concentration	Volatile		Extractable					
						Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	
			(ppm)	(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	
BES23-01	4'	03/31/2023	-	-	-	ND	ND	ND	ND	ND	ND	ND	4600
BES23-02	4'	03/31/2023	-	-	-	ND	ND	ND	ND	ND	ND	ND	2300
BES23-03	4'	03/31/2023	-	-	-	ND	ND	ND	ND	ND	ND	ND	2200
BES23-04	4'	03/31/2023	-	-	-	ND	ND	ND	ND	ND	ND	ND	12000
BES23-05	4'	03/31/2023	-	-	-	ND	ND	ND	ND	ND	ND	ND	11000
BES23-06	4'	02/16/2023	-	25	3,195	ND	ND	ND	ND	ND	ND	ND	2000
BES23-07	4'	02/16/2023	-	27	2,781	ND	ND	ND	ND	ND	ND	ND	2100
BES23-08	4'	02/16/2023	-	35	4,270	ND	ND	ND	ND	ND	ND	ND	3000
BES23-09	4'	02/17/2023	-	31	3,987	ND	ND	ND	ND	ND	ND	ND	3200
BES23-10	4'	02/17/2023	-	27	4,498	ND	ND	ND	ND	ND	ND	ND	4500
BES23-11	4'	02/17/2023	-	40	4,179	ND	ND	ND	10	ND	10	10	2300
BES23-12	4'	02/17/2023	-	41	4,251	ND	ND	ND	ND	ND	ND	ND	4100
BES23-13	4'	02/17/2023	-	32	4,871	ND	ND	ND	ND	ND	ND	ND	4400
BES23-14	4'	02/18/2023	-	52	2,427	ND	ND	ND	ND	ND	ND	ND	1900
BES23-15	4'	02/18/2023	-	38	2,648	ND	ND	ND	ND	ND	ND	ND	2100
BES23-16	4'	02/18/2023	-	46	4,042	ND	ND	ND	ND	ND	ND	ND	2800
BES23-17	4'	02/18/2023	-	29	3,960	ND	ND	ND	ND	ND	ND	ND	3100
BES23-18	4'	02/23/2023	-	36	2,408	ND	ND	ND	ND	ND	ND	ND	1700
BES23-19	4'	02/23/2023	-	34	2807	ND	ND	ND	ND	ND	ND	ND	1800
BES23-20	4'	02/23/2023	-	29	4088	ND	ND	ND	ND	ND	ND	ND	2700
BES23-21	4'	02/23/2023	-	41	1781	ND	ND	ND	ND	ND	ND	ND	2000
BES23-22	4'	02/23/2023	-	41	3036	ND	ND	ND	ND	ND	ND	ND	2300
BES23-23	4'	02/23/2023	-	40	5561	ND	ND	ND	ND	ND	ND	ND	4800
BES23-24	4'	02/23/2023	-	37	6,027	ND	ND	ND	ND	ND	ND	ND	4600
BES23-25	4'	02/23/2023	-	23	3,982	ND	ND	ND	ND	ND	ND	ND	3900
BES23-26	4'	02/23/2023	-	30	3,667	ND	ND	ND	ND	ND	ND	ND	3400
BES23-27	4'	02/23/2023	-	31	2,222	ND	ND	ND	13	ND	13	13	2200
BES23-28	4'	02/23/2023	-	35	3,321	ND	ND	ND	15	ND	15	15	4300
BES23-29	4'	02/23/2023	-	22	4,039	ND	ND	ND	ND	ND	ND	ND	4200
BES23-30	4'	02/23/2023	-	22	4,039	ND	ND	ND	ND	ND	ND	ND	4500
BES23-31	4'	02/23/2023	-	22	8,718	ND	ND	ND	ND	ND	ND	ND	7100
BES23-32	4'	02/23/2023	-	41	6,718	ND	ND	ND	ND	ND	ND	ND	7300
BES23-33	4'	02/23/2023	-	39	6,349	ND	ND	ND	ND	ND	ND	ND	4800
BES23-34	4'	02/23/2023	-	35	2,492	ND	ND	ND	ND	ND	ND	ND	2200
BES23-35	4'	02/23/2023	-	34	1,746	ND	ND	ND	ND	ND	ND	ND	1300
BES23-36	4'	02/23/2023	-	29	5,383	ND	ND	ND	ND	ND	ND	ND	2500
BES23-37	4'	02/23/2023	-	30	5,650	ND	ND	ND	ND	ND	ND	ND	4700
BES23-38	4'	02/23/2023	-	38	3,348	ND	ND	ND	ND	ND	ND	ND	2300
BES23-39	4'	03/01/2023	0	44	277	ND	ND	ND	ND	ND	ND	ND	170
BES23-40	4'	02/28/2023	0	56	1,013	ND	ND	ND	ND	ND	ND	ND	1900
BES23-41	4'	02/28/2023	0	52	1713	ND	ND	ND	ND	ND	ND	ND	2500
BES23-42	4'	02/28/2023	0	61	1265	ND	ND	ND	ND	ND	ND	ND	1500
BES23-43	4'	02/28/2023	0	54	645	ND	ND	ND	ND	ND	ND	ND	910
BES23-44	4'	02/28/2023	0	63	575	ND	ND	ND	ND	ND	ND	ND	870
BES23-45	4'	02/28/2023	0	37	512	ND	ND	ND	ND	ND	ND	ND	460
BES23-46	4'	02/28/2023	0	61	978	ND	ND	ND	ND	ND	ND	ND	1000
BES23-47	4'	03/01/2023	0	37	857	ND	ND	ND	ND	ND	ND	ND	470
BES23-48	4'	03/01/2023	0	35	749	ND	ND	ND	ND	ND	ND	ND	700
BES23-49	4'	03/01/2023	0	59	1,154	ND	ND	ND	ND	ND	ND	ND	2200
BES23-50	4'	03/01/2023	0	53	1,122	ND	ND	ND	ND	ND	ND	ND	1500
BES23-51	4'	03/01/2023	0	46	379	ND	ND	ND	ND	ND	ND	ND	370
BES23-52	4'	03/01/2023	0	63	1,857	ND	ND	ND	ND	ND	ND	ND	2200
BES23-53	4'	03/01/2023	0	58	922	ND	ND	ND	ND	ND	ND	ND	1200
BES23-54	4'	03/01/2023	0	59	997	ND	ND	ND	ND	ND	ND	ND	2400
BES23-55	4'	03/01/2023	0	59	1,304	ND	ND	ND	ND	ND	ND	ND	1700

Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFlag)	Chloride Concentration	Volatile		Extractable					
						Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	
BES23-56	4'	03/01/2023	0	59	1,304	ND	ND	ND	ND	ND	ND	ND	1500
BES23-57	4'	03/03/2023	0	84	1,959	ND	ND	ND	ND	ND	ND	ND	2000
BES23-58	4'	03/03/2023	0	81	1,589	ND	ND	ND	ND	ND	ND	ND	1700
BES23-59	4'	03/03/2023	0	76	1,560	ND	ND	ND	ND	ND	ND	ND	2200
BES23-60	4'	03/03/2023	0	79	1,179	ND	ND	ND	ND	ND	ND	ND	2200
BES23-61	4'	03/03/2023	0	78	2,434	ND	ND	ND	ND	ND	ND	ND	2500
BES23-62	4'	03/03/2023	0	74	1,827	ND	ND	ND	ND	ND	ND	ND	2100
BES23-63	4'	03/03/2023	0	71	1,018	ND	ND	ND	ND	ND	ND	ND	980
BES23-64	4'	03/03/2023	0	80	2,068	ND	ND	ND	ND	ND	ND	ND	2300
BES23-65	4'	03/03/2023	0	73	1,558	ND	ND	ND	ND	ND	ND	ND	2200
BES23-66	4'	03/03/2023	0	56	889	ND	ND	ND	ND	ND	ND	ND	930
BES23-67	4'	03/03/2023	0	45	884	ND	ND	ND	ND	ND	ND	ND	1800
BES23-68	4'	03/03/2023	0	52	783	ND	ND	ND	ND	ND	ND	ND	1200
BES23-69	4'	03/03/2023	0	48	759	ND	ND	ND	ND	ND	ND	ND	910
BES23-70	4'	03/03/2023	0	50	1,023	ND	ND	ND	ND	ND	ND	ND	2400
BES23-71	4'	03/14/2023	-	27	206	ND	ND	ND	ND	ND	ND	ND	ND
BES23-72	4'	03/14/2023	-	3	2,287	ND	ND	ND	ND	ND	ND	ND	2600
BES23-73	4'	03/14/2023	-	36	3,204	ND	ND	ND	ND	ND	ND	ND	2500
BES23-74	4'	03/15/2023	-	26	2,910	ND	ND	ND	ND	ND	ND	ND	2800
BES23-75	4'	03/15/2023	-	19	1,835	ND	ND	ND	ND	ND	ND	ND	2600
BES23-76	4'	03/31/2023	-	-	-	ND	ND	ND	ND	ND	ND	ND	7800
WES23-17	4'	02/01/2023	0	29	822	ND	ND	ND	ND	ND	ND	ND	530
WES23-37	0-4'	02/02/2023	0	28	307	ND	ND	ND	ND	ND	ND	ND	310
WES23-59	0-4'	02/03/2023	0	35	421	ND	ND	ND	ND	ND	ND	ND	460
WES23-106	0-4'	02/08/2023	0	25	111	ND	ND	ND	ND	ND	ND	ND	ND
WES23-107	0-4'	02/08/2023	0	22	53	ND	ND	ND	ND	ND	ND	ND	ND
WES23-109	0-4'	02/08/2023	0	28	482	ND	ND	ND	ND	ND	ND	ND	320
WES23-110	0-4'	02/08/2023	0	37	365	ND	ND	ND	ND	ND	ND	ND	140
WES23-122	0-4'	02/10/2023	-	0	543	ND	ND	ND	ND	ND	ND	ND	240
WES23-124	0-4'	02/09/2023	-	0	687	ND	ND	ND	ND	ND	ND	ND	380
WES23-125	0-4'	02/09/2023	-	0	681	ND	ND	ND	ND	ND	ND	ND	89
WES23-131	0-4'	02/15/2023	-	30	103	ND	ND	ND	ND	ND	ND	ND	ND
WES23-144	0-4'	02/17/2023	-	24	679	ND	ND	ND	ND	ND	ND	ND	570
WES23-152	0-4'	02/17/2023	-	33	197	ND	ND	ND	ND	ND	ND	ND	61
WES23-157	0-4'	02/18/2023	-	22	0	ND	ND	ND	ND	ND	ND	ND	ND
WES23-173	0-4'	02/22/2023	-	26	161	ND	ND	ND	ND	ND	ND	ND	ND
WES23-179	0-4'	02/24/2023	-	29	419	ND	ND	ND	ND	ND	ND	ND	330
WES23-184	0-4'	02/28/2023	0	62	303	ND	ND	ND	ND	ND	ND	ND	81
WES23-186	0-4'	02/28/2023	0	27	193	ND	ND	ND	ND	ND	ND	ND	130
WES23-194	0-4'	03/31/2023	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
WES23-195	0-4'	03/03/2023	0	64	164	ND	ND	ND	ND	ND	ND	ND	220
WES23-197	0-4'	03/03/2023	0	56	688	ND	ND	ND	ND	ND	ND	ND	260
WES23-200	0-4'	03/14/2023	-	28	278	ND	ND	ND	ND	ND	ND	ND	64
WES23-204	0-4'	03/14/2023	-	22	461	ND	ND	ND	ND	ND	ND	ND	ND
WES23-205	0-4'	03/14/2023	-	22	584	ND	ND	ND	ND	ND	ND	ND	530
WES23-206	0-4'	03/14/2023	-	-	685	ND	ND	ND	ND	ND	ND	ND	360
WES23-212	0-4'	03/15/2023	-	34	115	ND	ND	ND	ND	ND	ND	ND	ND

"ND" Not Detected at the Reporting Limit

"-." indicates not analyzed/assessed

## ATTACHMENT 4



Closure Criteria Worksheet			
Site Name: Irish Hills Pipeline			
Spill Coordinates:		X: 32.682897	Y: -104.522946
Site Specific Conditions		Value	Unit
1	Depth to Groundwater	105	feet
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	49,315	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	4,733	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	9,412	feet
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, <b>or</b>		feet
	ii) Within 1000 feet of any fresh water well or spring	2,191	feet
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)
7	Within 300 feet of a wetland	4,114	feet
8	Within the area overlying a subsurface mine	No	(Y/N)
9	Within an unstable area (Karst Map)	Medium	Critical High Medium Low
10	Within a 100-year Floodplain	>500	year
11	Soil Type	Reagan	
12	Ecological Classification	Reagan-Upton Association	
13	Geology	Qp	
NMAC 19.15.29.12 E (Table 1) Closure Criteria		>100'	<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	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
<a href="#">RA 13243 POD 1</a>	RA	ED		4	3	3	06	19S	25E	544060	3616318	668	105		
<a href="#">RA 03959</a>	RA	ED			2	4	12	19S	24E	543589	3615225*	1518	545	265	280
<a href="#">RA 05331</a>	RA	ED		1	1	4	05	19S	25E	546308	3616955*	1740	460	305	155
<a href="#">RA 06436</a>	RA	ED		3	1	4	12	19S	24E	543083	3615122*	1981		300	
<a href="#">RA 06418</a>	RA	ED		1	2	3	17	19S	25E	545925	3613710*	2795	120	72	48
<a href="#">RA 04426</a>	RA	CH			4	3	18	19S	25E	544412	3613201*	3049	715		
<a href="#">RA 04335</a>	RA	CH			1	1	32	18S	25E	545580	3619275*	3159	400	300	100
<a href="#">RA 13230 POD 1</a>	RA	ED		4	2	2	14	19S	24E	542086	3614287	3277	105		
<a href="#">RA 08148</a>	RA	ED		3	3	1	36	18S	24E	542252	3618748*	3525	508		
<a href="#">RA 05333</a>	RA	ED			2	2	09	19S	25E	548430	3616046*	3711	315	260	55
<a href="#">RA 11654 POD1</a>	RA	ED			3	2	19	19S	25E	544959	3612514	3727	500		
<a href="#">RA 11061 POD1</a>	RA	ED			4	2	35	18S	24E	541949	3618852*	3814	450	364	86
<a href="#">RA 04726</a>	RA	ED			3	2	19	19S	25E	544825	3612390*	3845	390	310	80
<a href="#">RA 05900</a>	RA	ED			2	2	16	19S	25E	548442	3614424*	4135	185	95	90
<a href="#">RA 13117 POD1</a>	RA	ED		3	4	1	24	19S	24E	542743	3612369	4342		102	
<a href="#">RA 13117 POD2</a>	RA	ED		3	4	1	24	19S	24E	542730	3612364	4353		102	
<a href="#">RA 03960</a>	RA	ED			2	2	10	19S	24E	540341	3616025*	4387	440	335	105
<a href="#">RA 08146</a>	RA	ED		4	4	3	28	18S	25E	547693	3619576*	4470	400		
<a href="#">RA 13122 POD1</a>	RA	ED		1	3	2	21	19S	25E	547935	3612424	4983			

Average Depth to Water: **234 feet**

Minimum Depth: **72 feet**

Maximum Depth: **364 feet**

Record Count: 19

UTMNAD83 Radius Search (in meters):

**Easting (X):** 544723.35

**Northing (Y):** 3616234.31

**Radius:** 5000

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

1/31/23 11:43 AM

Page 1 of 1


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	Tws	Rng	X	Y
NA	RA 13243 POD 1	4	3	3	06	19S	25E	544060	3616318 

**Driller License:** 1670 **Driller Company:** HARRISON & COOPER, INC. (WD-1670)

**Driller Name:** KENNY COOPER

**Drill Start Date:** 09/26/2022

**Drill Finish Date:** 09/26/2022

**Plug Date:**

**Log File Date:** 12/09/2022

**PCW Rcv Date:**

**Source:**

**Pump Type:**

**Pipe Discharge Size:**

**Estimated Yield:**

**Casing Size:**

**Depth Well:** 105 feet

**Depth Water:**

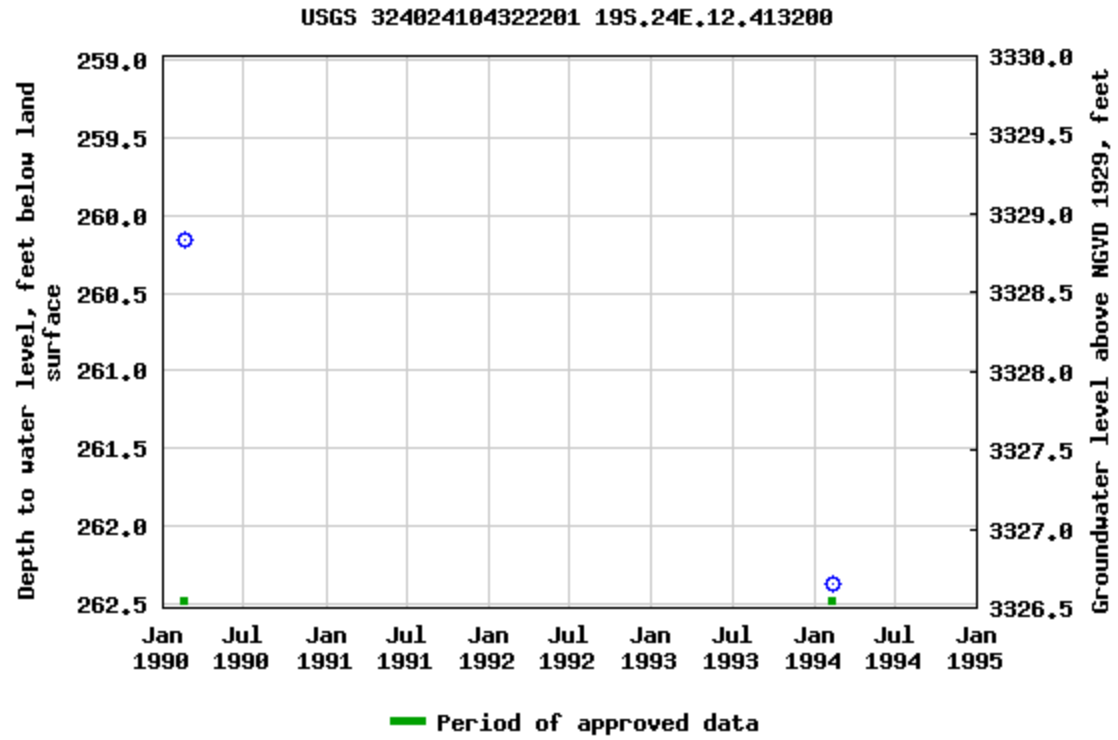
Casing Perforations:	Top	Bottom
	95	105

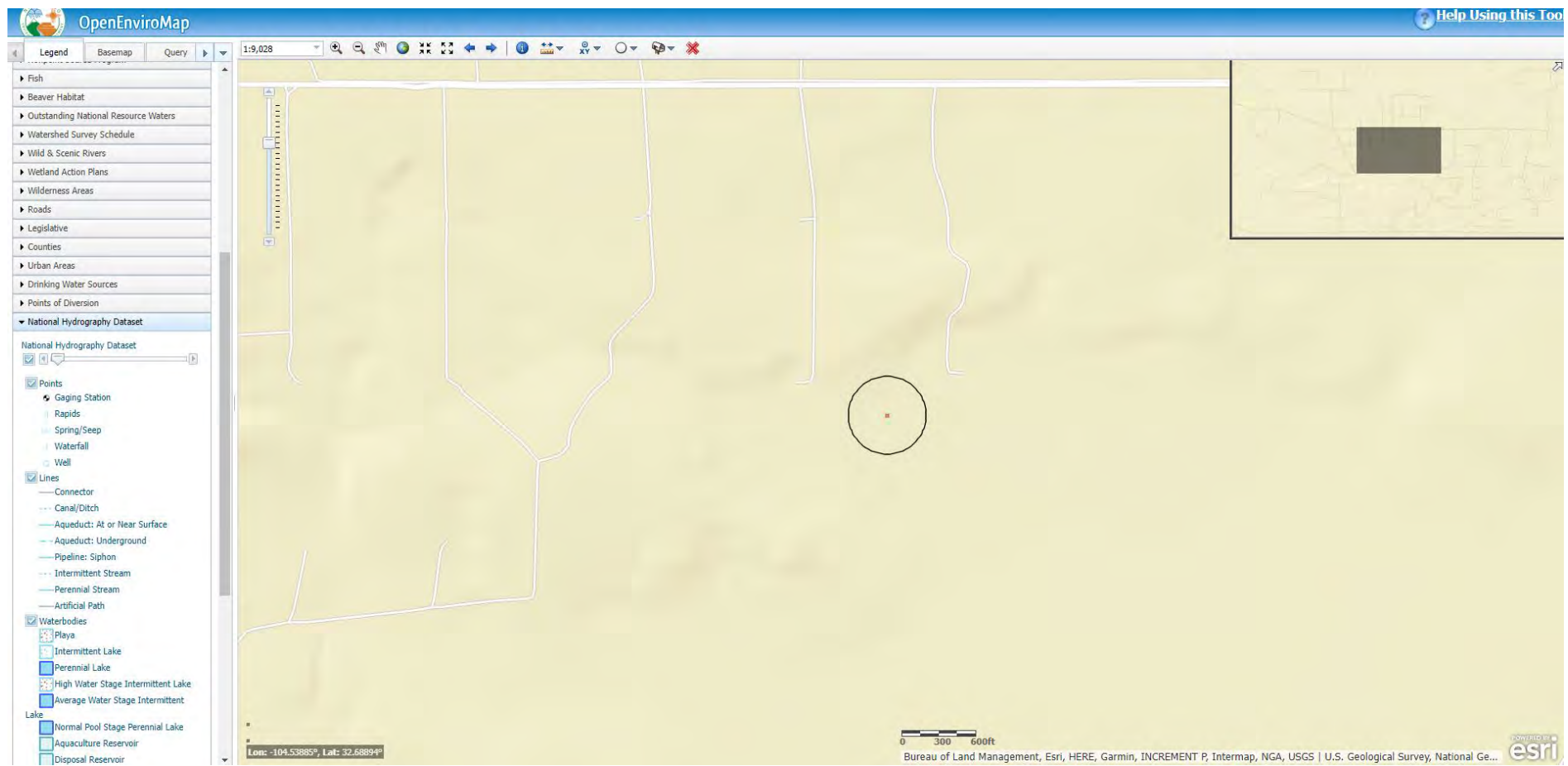
The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

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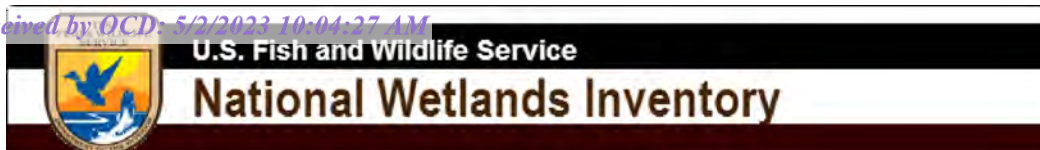
Page 1 of 1

POD SUMMARY - RA 13243 POD 1

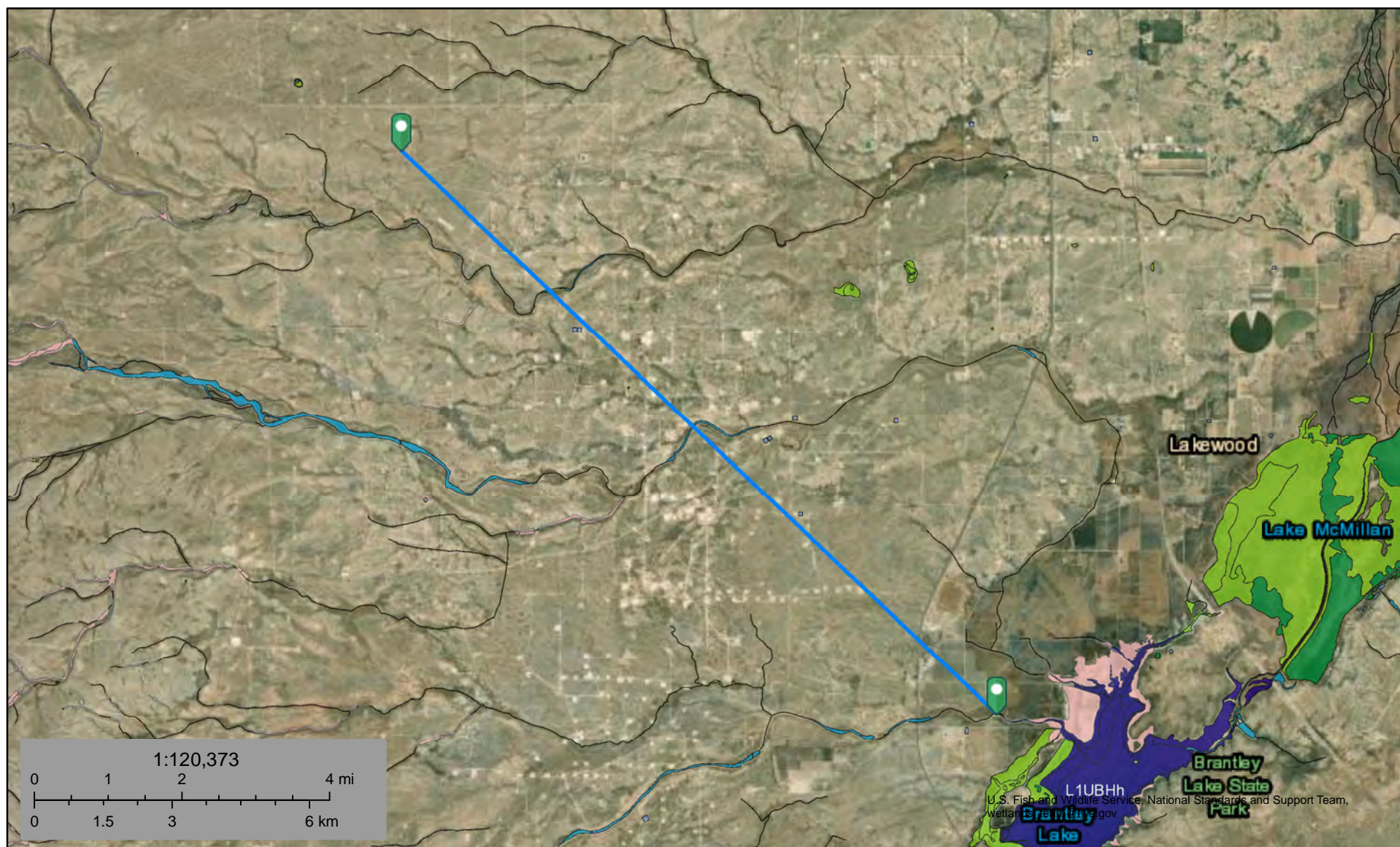








## Irish Hills watercourse 9.34 miles



January 31, 2023

**Wetlands**

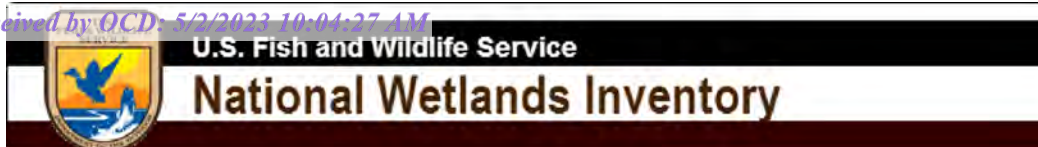
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

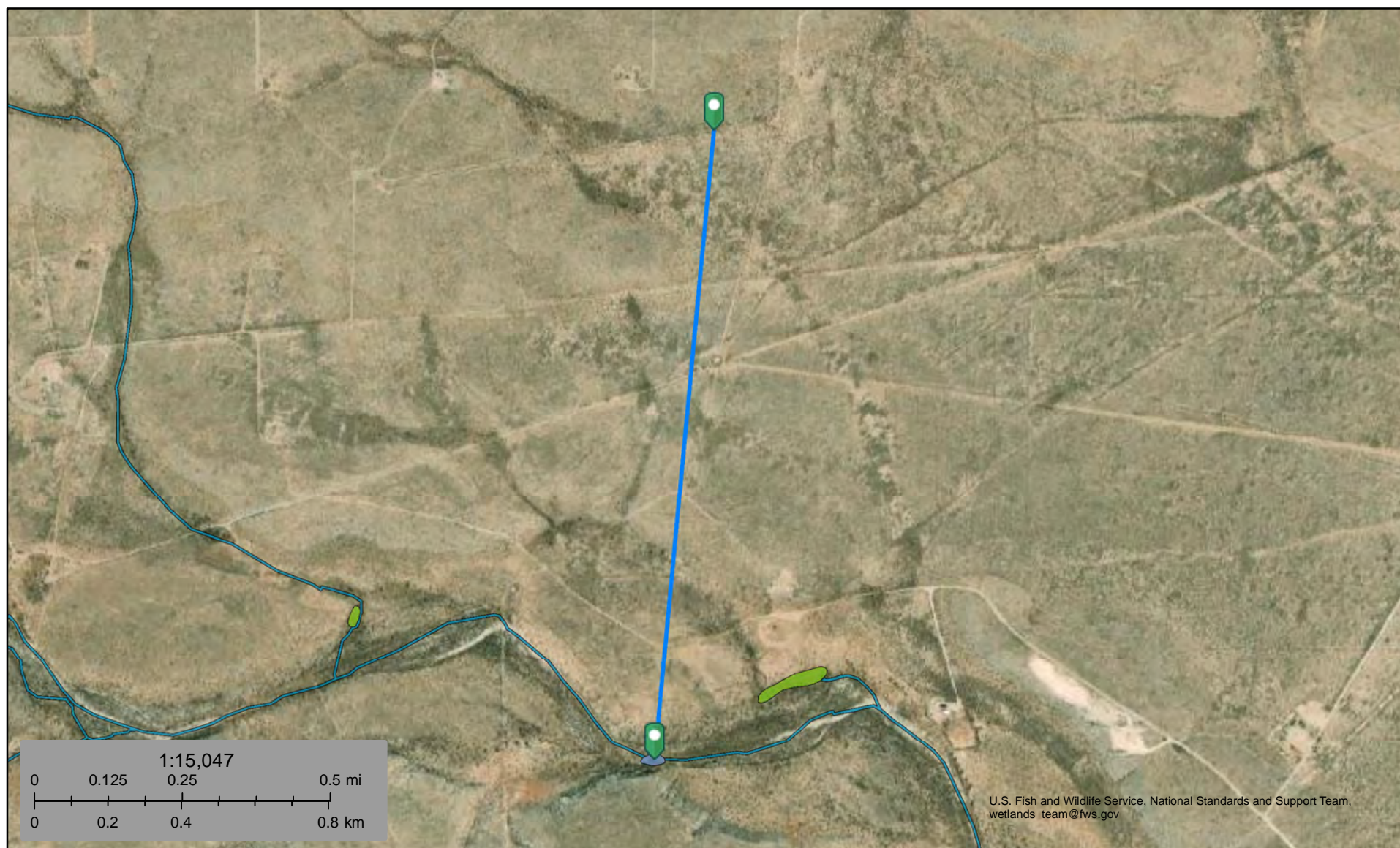
- Lake
- Other
- Riverine

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





## Irish Hills pond 4,733 ft.



January 31, 2023

**Wetlands**

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

- Lake
- Other
- Riverine




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



# Irish Hills

Nearest Residence:  
9,412 ft.

## Legend

-  32.682897, -104.522946
-  Irish Hills Area #2 Outline Box
-  Irish Hills Area- 2

32.682897, -104.522946



Google Earth



1 km





# 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, (quarters are 1=NW 2=NE 3=SW 4=SE) C=the file is closed) (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	q Sec	Tws	Rng	X	Y	Distance
<a href="#">RA 13243</a>	RA	EXP		0 EOG RESOURCES INC	ED	<a href="#">RA 13243 POD 1</a>	NA				4	3	3	06	19S	25E	544060	3616318	668
<a href="#">RA 05286</a>	RA	PRO		3 EOG Y RESOURCES INC	ED	<a href="#">RA 05286 (2A)</a>				Shallow				06	19S	25E	544587	3617042*	819
<a href="#">RA 03959</a>	RA	STK		3 JAMES H AND BETTY R HOWELL REVOCABLE TRUST	ED	<a href="#">RA 03959</a>					2	4	12	19S	24E		543589	3615225*	1518
<a href="#">RA 13183</a>	RA	MON		0 HARRISON & COOPER INC	ED	<a href="#">RA 13183 POD1</a>	NA				4	4	2	06	19S	25E	545284	3617757	1623
					ED	<a href="#">RA 13183 POD2</a>					4	4	1	05	19S	25E	546179	3617084	1685
<a href="#">RA 05331</a>	RA	PRO		3 JAMES H. AND BETTY R. HOWELL REVOCABLE TRUST	ED	<a href="#">RA 05331</a>				Shallow	1	1	4	05	19S	25E	546308	3616955*	1740
<a href="#">RA 13238</a>	RA	EXP		0 EOG RESOURCES INC	ED	<a href="#">RA 13238 POD1</a>	NA				2	3	2	01	19S	24E	543237	3617424	1904
<a href="#">RA 06436</a>	RA	STK		43.5 JAMES H & BETTY R HOWELL REVOCABLE TRUST	ED	<a href="#">RA 06436</a>				Shallow	3	1	4	12	19S	24E	543083	3615122*	1981
<a href="#">RA 06418</a>	RA	STK		3 JAMES H. & BETTY R. HOWELL REVOCABLE TRUST	ED	<a href="#">RA 06418</a>				Shallow	1	2	3	17	19S	25E	545925	3613710*	2795
<a href="#">RA 04426</a>	RA	OBS		0 STATE ENGINEER OF NM	CH	<a href="#">RA 04426</a>					4	3	18	19S	25E		544412	3613201*	3049
<a href="#">RA 08977</a>	RA	DOL		3 JAMES H. AND BETTY R. HOWELL REVOCABLE TRUST	ED	<a href="#">RA 08977</a>					2	4	4	18	19S	25E	545298	3613190	3097
					ED	<a href="#">RA 08977 POD2</a>					4	4	4	18	19S	25E	545298	3613190	3097
<a href="#">RA 11938</a>	RA	PRO		0 JAMES H. AND BETTY R. HOWELL REVOCABLE TRUST	ED	<a href="#">RA 08977</a>					2	4	4	18	19S	25E	545298	3613190	3097
					ED	<a href="#">RA 08977 POD2</a>					4	4	4	18	19S	25E	545298	3613190	3097
<a href="#">RA 11939</a>	RA	PRO		0 YATES PETROLEUM CORPORATION	ED	<a href="#">RA 08977</a>					2	4	4	18	19S	25E	545298	3613190	3097
					ED	<a href="#">RA 08977 POD2</a>					4	4	4	18	19S	25E	545298	3613190	3097
<a href="#">RA 11940</a>	RA	PRO		0 JAMES H. AND BETTY R. HOWELL REVOCABLE TRUST	ED	<a href="#">RA 08977</a>					2	4	4	18	19S	25E	545298	3613190	3097
					ED	<a href="#">RA 08977 POD2</a>					4	4	4	18	19S	25E	545298	3613190	3097

\*UTM location was derived from PLSS - see Help

(R=POD has been replaced  
and no longer serves this file, (quarters are 1=NW 2=NE 3=SW 4=SE)  
C=the file is closed) (quarters are smallest to largest) (NAD83 UTM in meters)

(acre ft per annum)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Well Tag	Code	Grant	Source	q 6416	q 4	q 4	Sec	Tws	Rng	X	Y	Distance	
<a href="#">RA 13269</a>	RA	MON		0 EOG RESOURCES INC	ED	<a href="#">RA 13269 POD1</a>	NA				4	1	1	16	19S	25E	547275	3614401		3142
<a href="#">RA 04335</a>	RA	STK		3 YATES RANCH PROPERTY LLP	CH	<a href="#">RA 04335</a>				Shallow	1	1	32	18S	25E	545580	3619275*		3159	
<a href="#">RA 13230</a>	RA	EXP		0 RANGER ENVIRONMENTAL SERVICES	ED	<a href="#">RA 13230 POD 1</a>	NA				4	2	2	14	19S	24E	542086	3614287		3277
<a href="#">RA 08148</a>	RA	STK		3 YATES RANCH PROPERTY LLP	ED	<a href="#">RA 08148</a>					3	3	1	36	18S	24E	542252	3618748*		3525
<a href="#">RA 05333</a>	RA	PRO		3 JAMES H. AND BETTY R. HOWELL REVOCABLE TRUST	ED	<a href="#">RA 05333</a>				Shallow	2	2	09	19S	25E	548430	3616046*		3711	
<a href="#">RA 09489</a>	RA	PRO		0 YATES PETROLEUM	ED	<a href="#">RA 09489</a>					2	2	09	19S	25E	548430	3616046*		3711	
<a href="#">RA 11654</a>	RA	STK		3 CATHY HOUGHTALING	ED	<a href="#">RA 11654 POD1</a>					3	2	19	19S	25E	544959	3612514		3727	
<a href="#">RA 11061</a>	RA	STK		3 YATES RANCH PROPERTY LLP	ED	<a href="#">RA 11061 POD1</a>					4	2	35	18S	24E	541949	3618852*		3814	
<a href="#">RA 04726</a>	RA	DOM		3 CATHY HOUGHTALING	ED	<a href="#">RA 04726</a>				Shallow	3	2	19	19S	25E	544825	3612390*		3845	
<a href="#">RA 05900</a>	RA	STK		3 JAMES H AND BETTY R HOWELL REVOCABLE TRUST	ED	<a href="#">RA 05900</a>				Shallow	2	2	16	19S	25E	548442	3614424*		4135	
<a href="#">RA 13117</a>	RA	MON		0 EOG RESOURCES INC	ED	<a href="#">RA 13117 POD1</a>	NA			Shallow	3	4	1	24	19S	24E	542742	3612369		4342
					ED	<a href="#">RA 13117 POD2</a>				Shallow	3	4	1	24	19S	24E	542729	3612364		4353
<a href="#">RA 03960</a>	RA	STK		3 JAMES H. AND BETTY R. HOWELL REVOCABLE TRUST	ED	<a href="#">RA 03960</a>					2	2	10	19S	24E	540341	3616025*		4387	
<a href="#">RA 08146</a>	RA	STK		3 YATES RANCH PROPERTY LLP	ED	<a href="#">RA 08146</a>					4	4	3	28	18S	25E	547693	3619576*		4470
<a href="#">RA 12221</a>	RA	EXP		0 RONALD DEAN HOUGHTALING	ED	<a href="#">RA 12221 POD1</a>					2	4	4	19	19S	25E	545280	3611733		4534
					ED	<a href="#">RA 12221 POD2</a>					2	4	4	19	19S	25E	545280	3611733		4534
					ED	<a href="#">RA 12221 POD3</a>					2	4	4	19	19S	25E	545280	3611733		4534
					ED	<a href="#">RA 12221 POD4</a>					2	4	4	19	19S	25E	545280	3611733		4534
					ED	<a href="#">RA 12221 POD5</a>					2	4	4	19	19S	25E	545280	3611733		4534
<a href="#">RA 13122</a>	RA	MON		0 WHITE DRILLING COMPANY INC	ED	<a href="#">RA 13122 POD1</a>	NA				1	3	2	21	19S	25E	547935	3612424		4983

\*UTM location was derived from PLSS - see Help

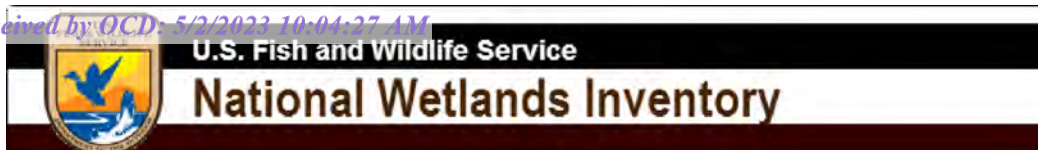
The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

**Record Count:** 38

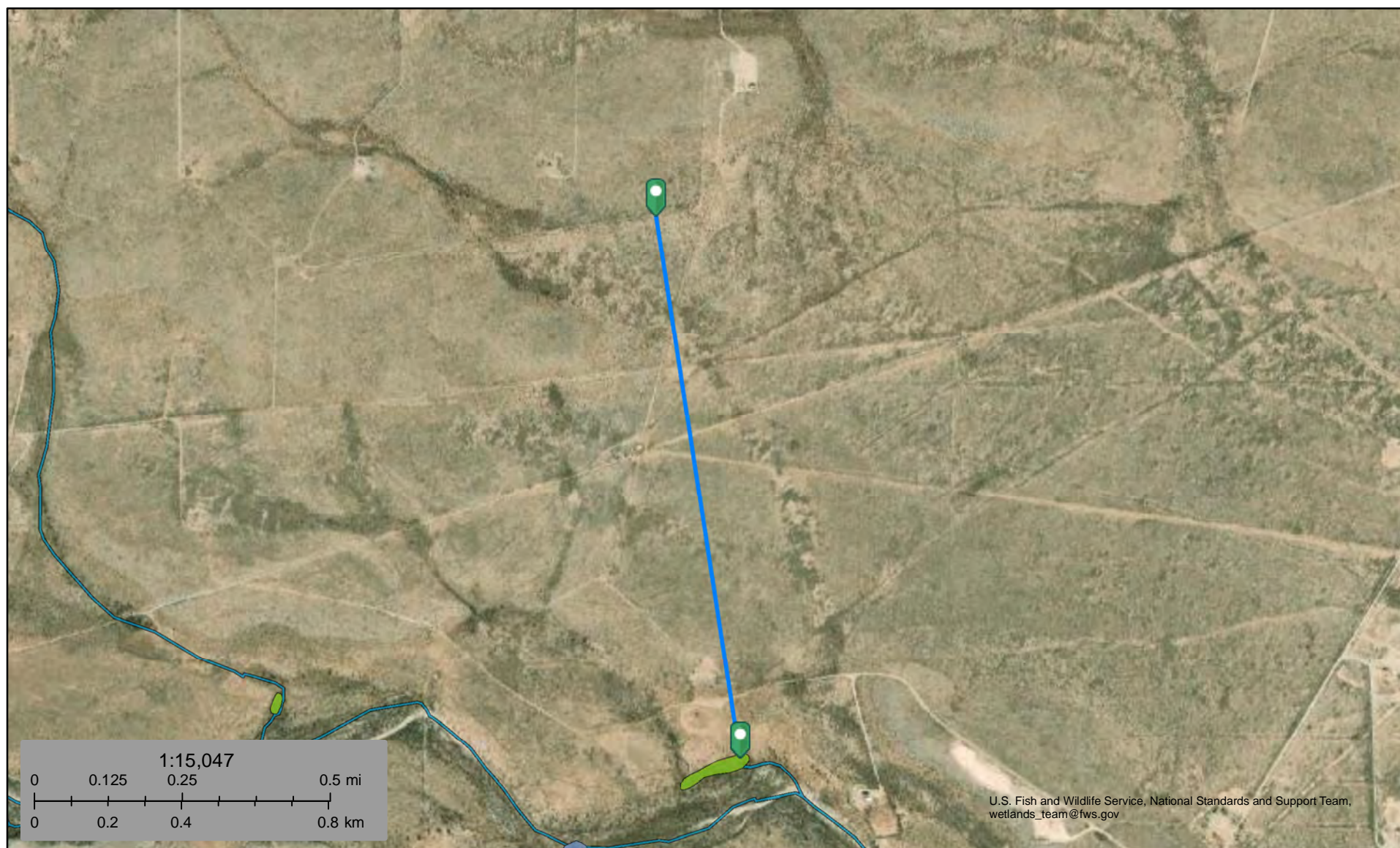
**UTMNAD83 Radius Search (in meters):**

**Easting (X):** 544723.35      **Northing (Y):** 3616234.31      **Radius:** 5000

**Sorted by:** Distance



## Irish Hills wetland 4,114 ft.



January 31, 2023

**Wetlands**

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

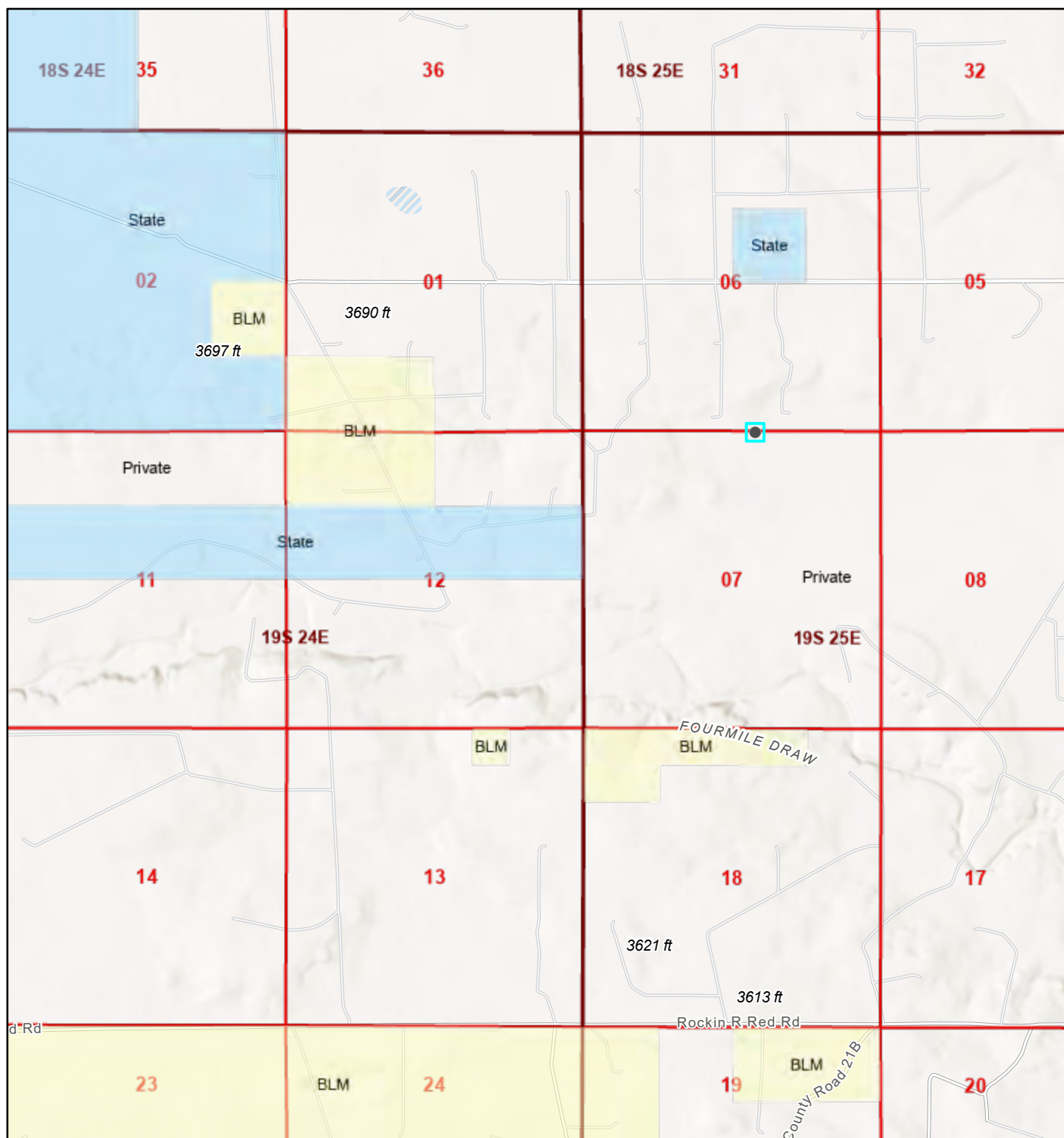
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

- Lake
- Other
- Riverine

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



## Active Mines in New Mexico



1/31/2023, 1:45:14 PM

1:36,112

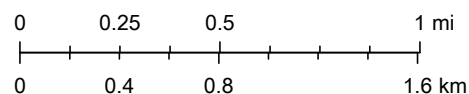
Land Ownership S

BLM

P

PLSS First Division

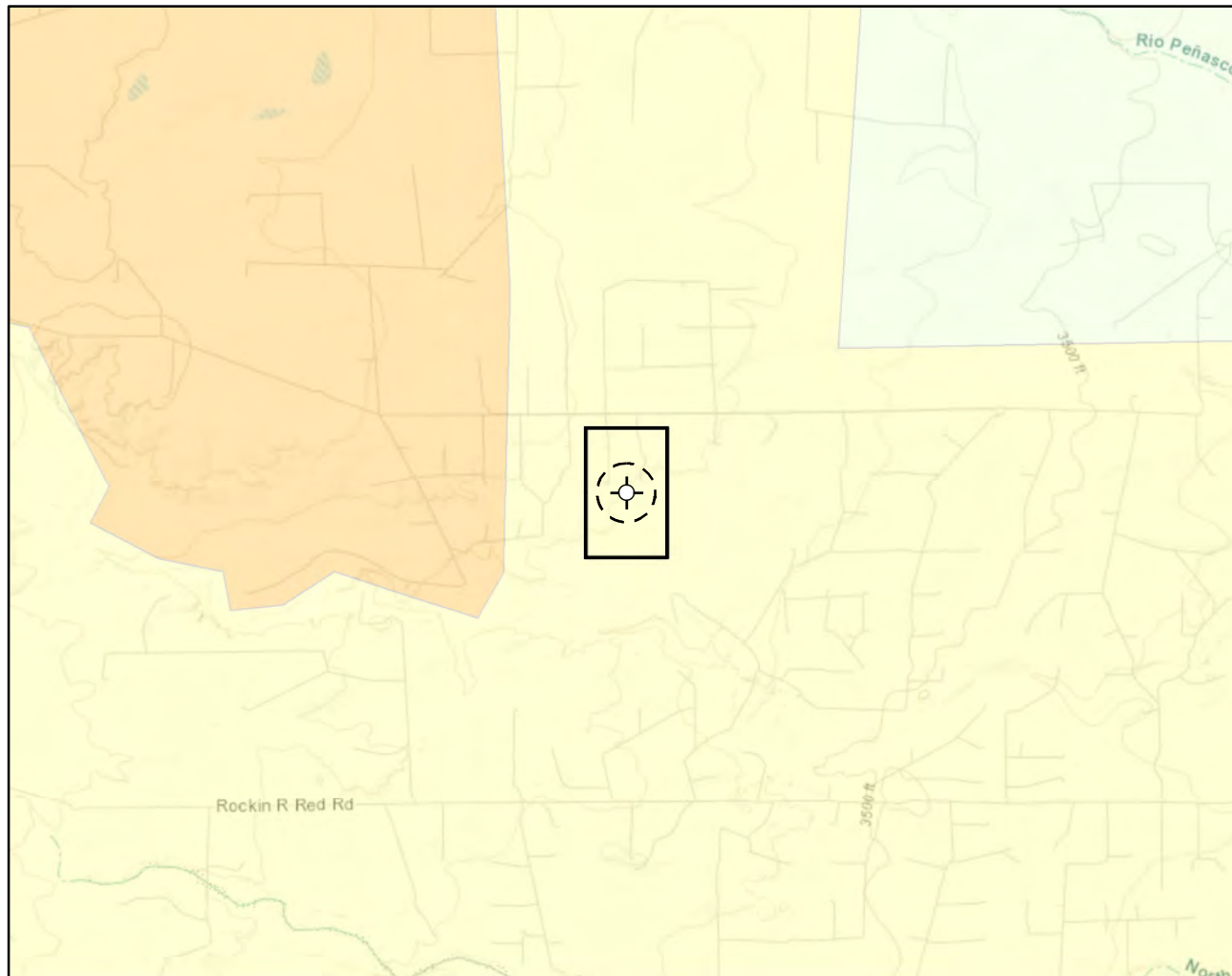
PLSS Townships



U.S. BLM, Esri, NASA, NGA, USGS, FEMA, BLM, New Mexico State University, Texas Parks & Wildlife, CONANP, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA

EMNRD MMD GIS Coordinator

Document Path: \\vrs-4s01.corp.internatshared\vs04 - Geomatics\1-Projects\US PROJECTS\EOG Resources Inc\22E-00716 (Howell Ranch Reclamation Projects)\002 - Irish Hills Pipeline\Figure X Karst Potential (Irish Hills Pipeline).mxd



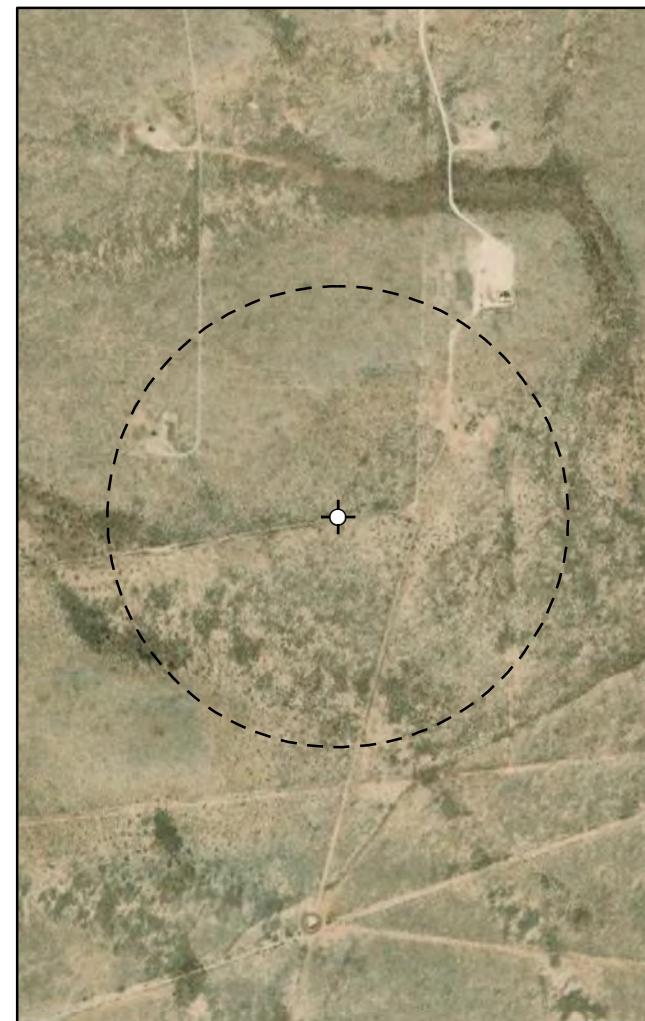
#### Karst Potential

- 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.



Map Center:  
Lat/Long: 32.682897, -104.522946

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



### Karst Potential Map Irish Hills Pipeline

FIGURE:

X



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

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

VERSATILITY. EXPERTISE.



# National Flood Hazard Layer FIRMMette



104°31'41"W 32°41'14"N



## 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 Water Surface Elevation
		17.5
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped



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 3/14/2023 at 8:24 AM 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 Eddy Area, New Mexico



January 31, 2023



# Preface

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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](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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# Contents

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**Preface**..... 2

**How Soil Surveys Are Made**.....5

**Soil Map**..... 8

    Soil Map.....9

    Legend.....10

    Map Unit Legend..... 11

    Map Unit Descriptions.....11

        Eddy Area, New Mexico.....13

            RE—Reagan-Upton association, 0 to 9 percent slopes..... 13

            UG—Upton gravelly loam, 0 to 9 percent slopes..... 15

**References**..... 17

## How Soil Surveys Are Made

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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

## Custom Soil Resource Report

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

## Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

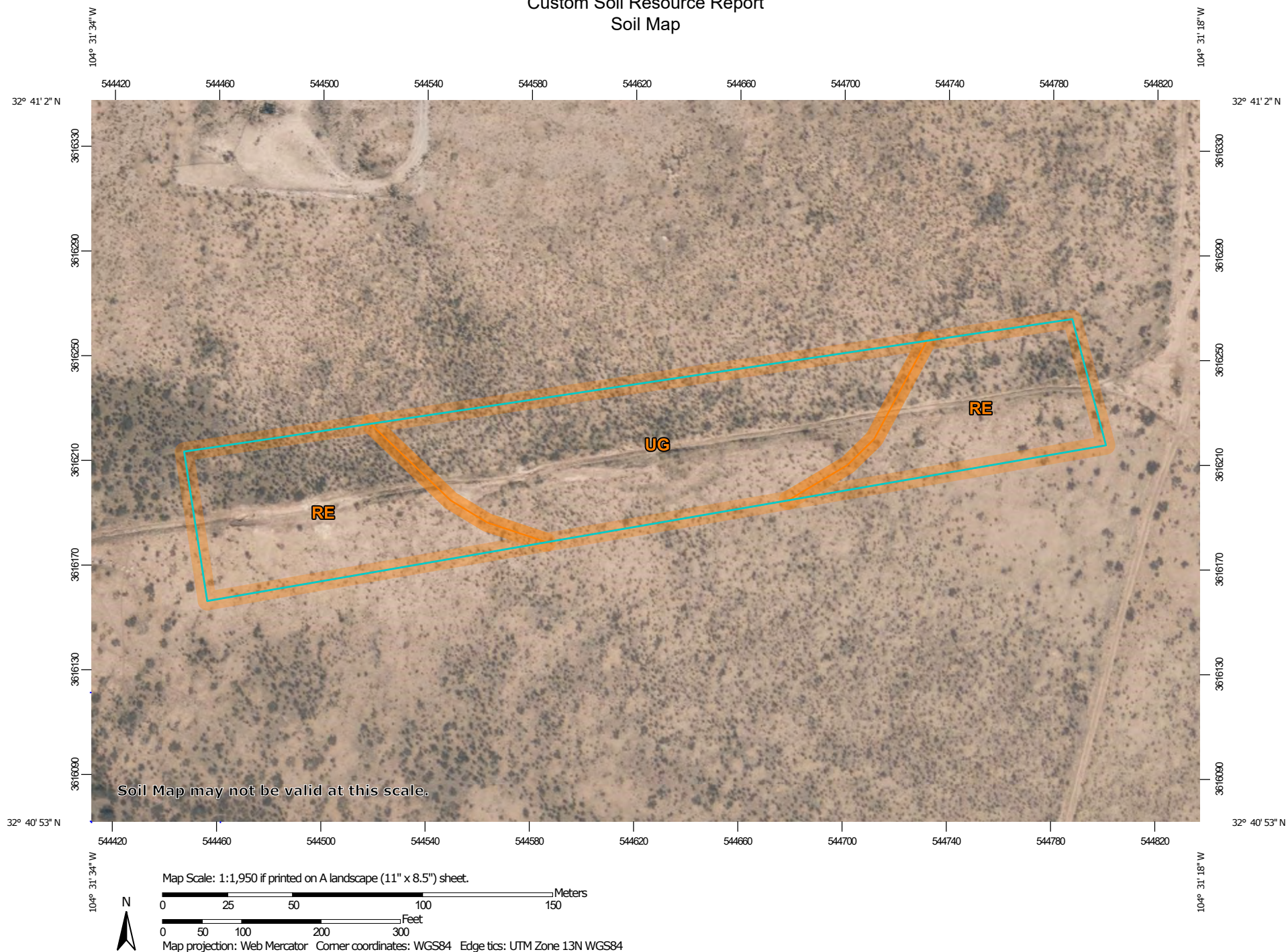
## Soil Map

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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






## Custom Soil Resource Report

## MAP LEGEND

## Area of Interest (AOI)

 Area of Interest (AOI)


## Soils


 Soil Map Unit Polygons


 Soil Map Unit Lines


 Soil Map Unit Points

## Special Point Features

 Blowout

 Borrow Pit


 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water


 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot


 Sinkhole

 Slide or Slip


 Sodic Spot

 Spoil Area

 Stony Spot


 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

## Water Features

 Streams and Canals


## Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

## Background

 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL:  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Eddy Area, New Mexico  
Survey Area Data: Version 18, Sep 8, 2022

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

Date(s) aerial images were photographed: Feb 27, 2020—Feb 28, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Custom Soil Resource Report

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
RE	Reagan-Upton association, 0 to 9 percent slopes	2.4	51.4%
UG	Upton gravelly loam, 0 to 9 percent slopes	2.2	48.6%
<b>Totals for Area of Interest</b>		<b>4.6</b>	<b>100.0%</b>

## 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,

## Custom Soil Resource Report

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.

## Custom Soil Resource Report

**Eddy Area, New Mexico****RE—Reagan-Upton association, 0 to 9 percent slopes****Map Unit Setting***National map unit symbol:* 1w5d*Elevation:* 1,100 to 5,400 feet*Mean annual precipitation:* 6 to 14 inches*Mean annual air temperature:* 60 to 64 degrees F*Frost-free period:* 180 to 240 days*Farmland classification:* Farmland of statewide importance**Map Unit Composition***Reagan and similar soils:* 70 percent*Upton and similar soils:* 25 percent*Minor components:* 5 percent*Estimates are based on observations, descriptions, and transects of the mapunit.***Description of Reagan****Setting***Landform:* Fan remnants, alluvial fans*Landform position (three-dimensional):* Rise*Down-slope shape:* Convex, linear*Across-slope shape:* Linear*Parent material:* Alluvium and/or eolian deposits**Typical profile***H1 - 0 to 8 inches:* loam*H2 - 8 to 60 inches:* loam**Properties and qualities***Slope:* 0 to 3 percent*Depth to restrictive feature:* More than 80 inches*Drainage class:* Well drained*Runoff class:* Low*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 2.00 in/hr)*Depth to water table:* More than 80 inches*Frequency of flooding:* None*Frequency of ponding:* None*Calcium carbonate, maximum content:* 40 percent*Maximum salinity:* Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)*Sodium adsorption ratio, maximum:* 1.0*Available water supply, 0 to 60 inches:* Moderate (about 8.2 inches)**Interpretive groups***Land capability classification (irrigated):* 2e*Land capability classification (nonirrigated):* 6e*Hydrologic Soil Group:* B*Ecological site:* R042CY153NM - Loamy*Hydric soil rating:* No



## Custom Soil Resource Report

**Description of Upton****Setting**

*Landform:* Ridges, fans

*Landform position (three-dimensional):* Side slope, rise

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Residuum weathered from limestone

**Typical profile**

*H1 - 0 to 9 inches:* gravelly loam

*H2 - 9 to 13 inches:* gravelly loam

*H3 - 13 to 21 inches:* cemented

*H4 - 21 to 60 inches:* very gravelly loam

**Properties and qualities**

*Slope:* 0 to 9 percent

*Depth to restrictive feature:* 7 to 20 inches to petrocalcic

*Drainage class:* Well drained

*Runoff class:* High

*Capacity of the most limiting layer to transmit water (Ksat):* Low to moderately high  
(0.01 to 0.60 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum content:* 75 percent

*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Sodium adsorption ratio, maximum:* 1.0

*Available water supply, 0 to 60 inches:* Very low (about 1.4 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 7s

*Hydrologic Soil Group:* D

*Ecological site:* R042CY159NM - Shallow Loamy

*Hydric soil rating:* No

**Minor Components****Atoka**

*Percent of map unit:* 3 percent

*Ecological site:* R070BC007NM - Loamy

*Hydric soil rating:* No

**Pima**

*Percent of map unit:* 2 percent

*Ecological site:* R070BC017NM - Bottomland

*Hydric soil rating:* No

## Custom Soil Resource Report

**UG—Upton gravelly loam, 0 to 9 percent slopes****Map Unit Setting**

*National map unit symbol:* 1w64  
*Elevation:* 1,100 to 4,400 feet  
*Mean annual precipitation:* 7 to 15 inches  
*Mean annual air temperature:* 60 to 70 degrees F  
*Frost-free period:* 200 to 240 days  
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Upton and similar soils:* 96 percent  
*Minor components:* 4 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Upton****Setting**

*Landform:* Ridges, fans  
*Landform position (three-dimensional):* Side slope, rise  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Residuum weathered from limestone

**Typical profile**

*H1 - 0 to 9 inches:* gravelly loam  
*H2 - 9 to 13 inches:* gravelly loam  
*H3 - 13 to 21 inches:* cemented  
*H4 - 21 to 60 inches:* very gravelly loam

**Properties and qualities**

*Slope:* 0 to 9 percent  
*Depth to restrictive feature:* 7 to 20 inches to petrocalcic  
*Drainage class:* Well drained  
*Runoff class:* High  
*Capacity of the most limiting layer to transmit water (Ksat):* Low to moderately high  
 (0.01 to 0.60 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 75 percent  
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Sodium adsorption ratio, maximum:* 1.0  
*Available water supply, 0 to 60 inches:* Very low (about 1.4 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7s  
*Hydrologic Soil Group:* D

Custom Soil Resource Report

*Ecological site:* R070BC025NM - Shallow

*Hydric soil rating:* No

**Minor Components**

**Reagan**

*Percent of map unit:* 1 percent

*Ecological site:* R070BC007NM - Loamy

*Hydric soil rating:* No

**Atoka**

*Percent of map unit:* 1 percent

*Ecological site:* R070BC007NM - Loamy

*Hydric soil rating:* No

**Atoka**

*Percent of map unit:* 1 percent

*Ecological site:* R070BC007NM - Loamy

*Hydric soil rating:* No

**Upton**

*Percent of map unit:* 1 percent

*Ecological site:* R070BC025NM - Shallow

*Hydric soil rating:* No

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## Custom Soil Resource Report

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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](http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf)

## Ecological site R070BC025NM Shallow

Accessed: 01/31/2023

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### General information

**Provisional.** A provisional ecological site description has undergone quality control and quality assurance review. It contains a working state and transition model and enough information to identify the ecological site.

#### Figure 1. Mapped extent

Areas shown in blue indicate the maximum mapped extent of this ecological site. Other ecological sites likely occur within the highlighted areas. It is also possible for this ecological site to occur outside of highlighted areas if detailed soil survey has not been completed or recently updated.

**Table 1. Dominant plant species**

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

### Physiographic features

This site occurs on knolls, ridges, hillslopes alluvial fans and escarpments. Slopes range from 0 to 25 percent and average about 7 percent. Direction of slope varies and is usually not significant. Elevations range from 2,842 to 4,500 feet.

**Table 2. Representative physiographic features**

Landforms	(1) Hill (2) Ridge (3) Fan piedmont
Flooding frequency	None
Ponding frequency	None
Elevation	2,842–4,500 ft
Slope	0–25%
Aspect	Aspect is not a significant factor

### Climatic features

The average annual precipitation ranges from 8 to 13 inches. Variations of 5 inches, more or less, are common. Over 80 percent of the precipitation falls from April through October. Most of the summer precipitation comes in the form of high intensity – short duration thunderstorms.

Temperatures are characterized by distinct seasonal changes and large annual and diurnal temperature changes. The average annual temperature is 61 degrees with extremes of 25 degrees below zero in the winter to 112 degrees in the summer.

The average frost-free season is 180 to 220 days. The last killing frost is late March or early April, and the first killing frost is in late October or early November.

Temperature and rainfall both favor warm season perennial plant growth. In years of abundant spring moisture, annual forbs and cool season grasses can make up an important component of this site. Because of the shallow soil depth, the vegetation on this site can take advantage of moisture almost anytime it falls. Strong winds that blow from the west and southwest blow from January through June, which accelerates soil drying at a critical time for cool season plant growth.

Climate data was obtained from <http://www.wrcc.sage.dri.edu/summary/climsmnm.html> web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

**Table 3. Representative climatic features**

Frost-free period (average)	220 days
Freeze-free period (average)	240 days
Precipitation total (average)	13 in

### Influencing water features

This site is not influenced from water from wetlands or streams.

### Soil features

The soils of this site are shallow to very shallow. Soils are derived from mixed calcareous eolian deposits derived from sedimentary rock. Surface layers are very cobbly loam, very gravelly loam, gravelly loam, cobbly loam, gravelly fine sandy loam or gravelly sandy loam.

There is an indurated caliche layer or limestone bedrock that occurs within 20 inches and averages less than 10 inches. Limestone or caliche layer may be the restrictive layer.

Minimum and maximum values listed below represent the characteristic soils for this site.

Characteristic soils:

Lozier  
Potter  
Tencee  
Upton  
Ector  
Kimbrough

**Table 4. Representative soil features**

Surface texture	(1) Gravelly loam (2) Extremely gravelly loam (3) Extremely cobbly loam
Family particle size	(1) Loamy
Drainage class	Well drained
Permeability class	Very slow to moderately slow
Soil depth	4–20 in
Surface fragment cover <=3"	15–40%
Available water capacity (0–40in)	1 in
Calcium carbonate equivalent (0–40in)	15–60%

Electrical conductivity (0-40in)	0–2 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)	13–42%
Subsurface fragment volume >3" (Depth not specified)	0–1%

## Ecological dynamics

### Overview:

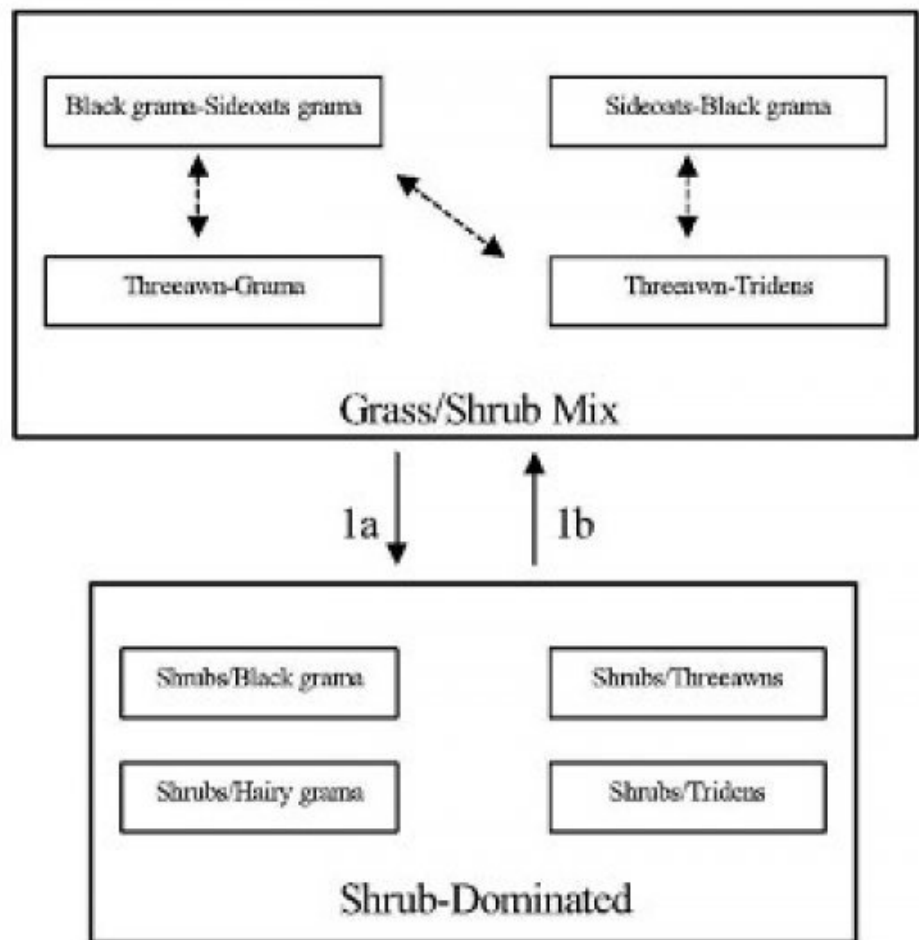
The Shallow site is associated with and Limestone Hills, Loamy, and Shallow Sandy sites. When associated with Limestone Hills, the Shallow site occurs on the summits, foot slopes and toeslopes of hills. Loamy sites often occur as areas between low elongated hills with rounded crests (Shallow site). When the Shallow Sandy site and Shallow site occur in association, the Shallow Sandy soils occupy the tops of low ridges and the Shallow site soils occur on the steeper sideslopes of the ridge. The historic plant community of the Shallow site has the aspect of a grassland/shrub mix, dominated by grasses, but with shrubs common throughout the site. Black grama is the dominant grass species; creosotebush, mesquite, and catclaw mimosa are common shrubs. Overgrazing and or extended drought can reduce grass cover, effect a change in grass species dominance, and may result in a shrub-dominated state. 1

## State and transition model



## Plant Communities and Transitional Pathways (diagram)

### MLRA-42, SD-3, Shallow



1a. Extended drought, overgrazing, no fire

1b. Brush control, Prescribed grazing

### State 1

#### Grass/Shrub Mix

### Community 1.1

#### Grass/Shrub Mix

Grassland/Shrub Mix: The historic plant community is dominated by black grama with sideoats grama as the sub-dominant. Blue grama, hairy grama, bush muhly, and sand dropseed also occur in significant amounts. Sideoats grama can occur as the dominant grass with black grama as sub-dominant on the western side of the Land Resource Unit SD-3. This may be due to higher average elevation on the west side. Retrogression within this state due to extended drought or overgrazing will cause a decrease in species such as black grama, sideoats grama, blue grama, and bush muhly. Threeawns may become the dominant grass species due to a decline in more palatable grasses or because of its ability to quickly recover following drought. Continued loss of grass cover and associated increase in amount of bare ground may result in a shrub-dominated state. Decreased fire frequencies may also be

an important component in the cause of this transition. Diagnosis: Grass cover is fairly uniform, however, surface gravel, cobble, and bare ground make up a large percent of total ground cover, and grass production during unfavorable years may only average 150-175 pounds per acre. Shrubs are common with canopy cover averaging five to ten percent. Evidence of erosion such as rills and gullies are rare, but may occur on slopes greater than eight percent.

**Table 5. Annual production by plant type**

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	168	352	536
Shrub/Vine	63	131	200
Forb	20	42	64
<b>Total</b>	<b>251</b>	<b>525</b>	<b>800</b>

**Table 6. Ground cover**

Tree foliar cover	0%
Shrub/vine/liana foliar cover	5-10%
Grass/grasslike foliar cover	10-15%
Forb foliar cover	0%
Non-vascular plants	0%
Biological crusts	0%
Litter	5-8%
Surface fragments >0.25" and <=3"	0%
Surface fragments >3"	0%
Bedrock	0%
Water	0%
Bare ground	40-60%

**Figure 5. Plant community growth curve (percent production by month).  
NM2825, R042XC025NM Shallow HCPC. R042XC025NM Shallow HCPC Warm  
Season Plant Community.**

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	3	5	10	10	25	30	12	5	0	0

## State 2 Shrub-Dominated

### Community 2.1 Shrub-Dominated

Shrub-Dominated: This state is characterized by an increase in shrubs and a decrease in grass cover relative to grassland/shrub mix. As grass cover decreases shrubs increase, especially creosotebush, catclaw mimosa, whitethorn acacia, and mesquite. Each of these shrub species may become dominant in localized areas or across the site, depending on the spatial variability in soil characteristics and landscape position. Black grama, threeawns, hairy grama, or hairy tridens may be the dominant grass species. Fluffgrass, burrograss and broom snakeweed increase in representation. The Shallow site is resistant to state change, due to the natural rock armor of the soil and a shallow impermeable layer. The amount of rock fragments on the soil surface assist in retarding erosion. On Shallow sites with low slope, the shallow depth to either a petrocalcic layer or limestone bedrock helps to keep water perched and available to shallow rooted grasses for extended periods. 2 Diagnosis: Shrubs are the dominant species, especially creosotebush, catclaw mimosa, whitethorn acacia, or mesquite. Grass cover is variable ranging

from patchy with large connected bare areas present to sparse with only a limited amount in shrub inter-spaces. Transition to Shrub-Dominated (1a) Overgrazing and or extended periods of drought, and suppression of natural fire regimes are thought to cause this transition. As grass cover is lost, soil fertility and available soil moisture decline, due to the reduction of organic matter and decreased infiltration.<sup>3</sup> Shrubs have the ability to extract nutrients and water from a greater area of soil than grasses and are better able to utilize limited water. Competition by shrubs for water and nutrients limits grass recruitment and establishment. Fire historically may have played a part in suppressing shrub expansion; fire suppression may therefore facilitate shrub expansion. Key indicators of approach to transition: \*Decrease or change in composition or distribution of grass cover. \*Increase in size and frequency of bare patches. \*Increase in amount of shrub seedlings. Transition back to Grassland/Shrub Mix (1b) Brush control is necessary to re-establish grasses. Prescribed grazing will help to ensure proper forage utilization and sustain grass cover. Once the transition is reversed and grass cover is re-established, periodic use of prescribed fire may assist in maintaining the Grassland/Shrub state.

## Additional community tables

Table 7. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
<b>Grass/Grasslike</b>					
1				105–158	
	black grama	BOER4	<i>Bouteloua eriopoda</i>	105–158	–
2				79–105	
	sideoats grama	BOCU	<i>Bouteloua curtipendula</i>	79–105	–
3				79–105	
	blue grama	BOGR2	<i>Bouteloua gracilis</i>	79–105	–
	hairy grama	BOHI2	<i>Bouteloua hirsuta</i>	79–105	–
4				26–53	
	bush muhly	MUPO2	<i>Muhlenbergia porteri</i>	26–53	–
5				16–26	
	cane bluestem	BOBA3	<i>Bothriochloa barbinodis</i>	16–26	–
6				26–53	
	sand dropseed	SPCR	<i>Sporobolus cryptandrus</i>	26–53	–
7				16–26	
	hairy woollygrass	ERPI5	<i>Erioneuron pilosum</i>	16–26	–
8				5–16	
	ear muhly	MUAR	<i>Muhlenbergia arenacea</i>	5–16	–
9				5–16	
	New Mexico feathergrass	HENE5	<i>Hesperostipa neomexicana</i>	5–16	–
10				5–16	
	low woollygrass	DAPU7	<i>Dasyochloa pulchella</i>	5–16	–
11				16–26	
	Grass, perennial	2GP	<i>Grass, perennial</i>	16–26	–
<b>Forb</b>					
12				11–26	
	stemless four-nerve daisy	TEACE	<i>Tetraneuris acaulis</i> var. <i>epunctata</i>	11–26	–
13				5–16	
	woolly groundsel	PACA15	<i>Packera cana</i>	5–16	–

14				5-16	
	globemallow	SPHAE	<i>Sphaeralcea</i>	5-16	—
15				5-16	
	bladderpod	LESQU	<i>Lesquerella</i>	5-16	—
16				5-16	
	cassia	CASSI	<i>Cassia</i>	5-16	—
17				11-26	
	Forb (herbaceous, not grass nor grass-like)	2FORB	<i>Forb (herbaceous, not grass nor grass-like)</i>	11-26	—
<b>Shrub/Vine</b>					
18				5-16	
	littleleaf sumac	RHMI3	<i>Rhus microphylla</i>	5-16	—
19				5-16	
	creosote bush	LATR2	<i>Larrea tridentata</i>	5-16	—
20				5-16	
	littleleaf ratany	KRER	<i>Krameria erecta</i>	5-16	—
21				5-16	
	javelina bush	COER5	<i>Condalia ericoides</i>	5-16	—
22				5-16	
	American tarwort	FLCE	<i>Flourensia cernua</i>	5-16	—
23				5-16	
	crown of thorns	KOSP	<i>Koeberlinia spinosa</i>	5-16	—
24				11-26	
	honey mesquite	PRGL2	<i>Prosopis glandulosa</i>	11-26	—
	honey mesquite	PRGL2	<i>Prosopis glandulosa</i>	11-26	—
25				5-16	
	catclaw mimosa	MIACB	<i>Mimosa aculeaticarpa var. biuncifera</i>	5-16	—
26				5-16	
	pricklypear	OPUNT	<i>Opuntia</i>	5-16	—
27				11-26	
	mariola	PAIN2	<i>Parthenium incanum</i>	11-26	—
	mariola	PAIN2	<i>Parthenium incanum</i>	11-26	—
28				5-16	
	broom snakeweed	GUSA2	<i>Gutierrezia sarothrae</i>	5-16	—
29				16-26	
	Shrub (>.5m)	2SHRUB	<i>Shrub (&gt;.5m)</i>	16-26	—

## Animal community

This site provides habitats which support a resident animal community that is characterized by desert cottontail, spotted ground squirrel, Merriam's kangaroo rat, cactus mouse, white-throated woodrat, gray fox, spotted skunk, roadrunner, Swainson's hawk, white-necked raven, cactus wren, pyrrhuloxia, lark sparrow, mourning dove, scaled quail, leopard lizard, round-tailed horned lizard, prairie rattlesnake, marbled whiptail, and greater earless lizard. Where associated with limestone hills, mule deer utilize this site.

Where large woody shrubs occur, most resident birds and scissor-tailed flycatcher, morning dove, lark sparrow and



Swainson's hawk nest.

## Hydrological functions

The runoff curve numbers are determined by field investigations using hydraulic cover conditions and hydrologic soil groups.

### Hydrologic Interpretations

Soil Series----- Hydrologic Group

Lozier----- D

Potter----- C

Tencee----- D

Upton----- C

Kimbrough----- D

Upton----- D

Ector----- D

## Recreational uses

This site offers recreation potential for hiking, horseback riding, rock hunting, nature photography and bird hunting and birding. During years of abundant spring moisture, a colorful array of wild flowers is displayed during May and June. A few summer and fall flowers also occur.

## Wood products

This site has no potential for wood production.

## Other products

This site is suited for grazing by all kinds and classes of livestock during all seasons of the year. Missmanagement will cause a decrease in black grama, sideoats grama, and blue grama, bush muhly and New Mexico feathergrass. A corresponding increase in bare ground will occur. There will also be an increase in muhlys, fluffgrass, creosotebush, javalinabush, catclaw, and mesquite. This site will respond best to a system of management that rotates the season of use.

## Other information

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index----- Ac/AUM

100 - 76----- 3.7 – 4.5

75 – 51----- 4.3 – 5.5

50 – 26----- 5.3 – 10.0

25 – 0----- 10.1 +

## Inventory data references

Data collection for this site was done in conjunction with the progressive soil surveys within the Southern Desertic Basins, Plains and Mountains, Major Land Resource Areas of New Mexico (SD-3). This site has been mapped and correlated with soils in the following soil surveys. Eddy County, Lea County, and Chaves County.

## Other references

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3. U.S. Department of Agriculture, Natural Resources Conservation Service. 2001. Soil Quality Information Sheets. Rangeland Soil Quality—Infiltration, Organic Matter, Rangeland Sheets 5,6. [Online]. Available: <http://www.statlab.iastate.edu/survey/SQL/range.html>

## Contributors

David Trujillo  
Don Sylvester

## Rangeland health reference sheet

Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators are typically considered in an assessment. The ecological site(s) representative of an assessment location must be known prior to applying the protocol and must be verified based on soils and climate. Current plant community cannot be used to identify the ecological site.

Author(s)/participant(s)	
Contact for lead author	
Date	
Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

## Indicators

### 1. Number and extent of rills:

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### 2. Presence of water flow patterns:

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### 3. Number and height of erosional pedestals or terracettes:

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

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### 5. Number of gullies and erosion associated with gullies:

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### 6. Extent of wind scoured, blowouts and/or depositional areas:

---

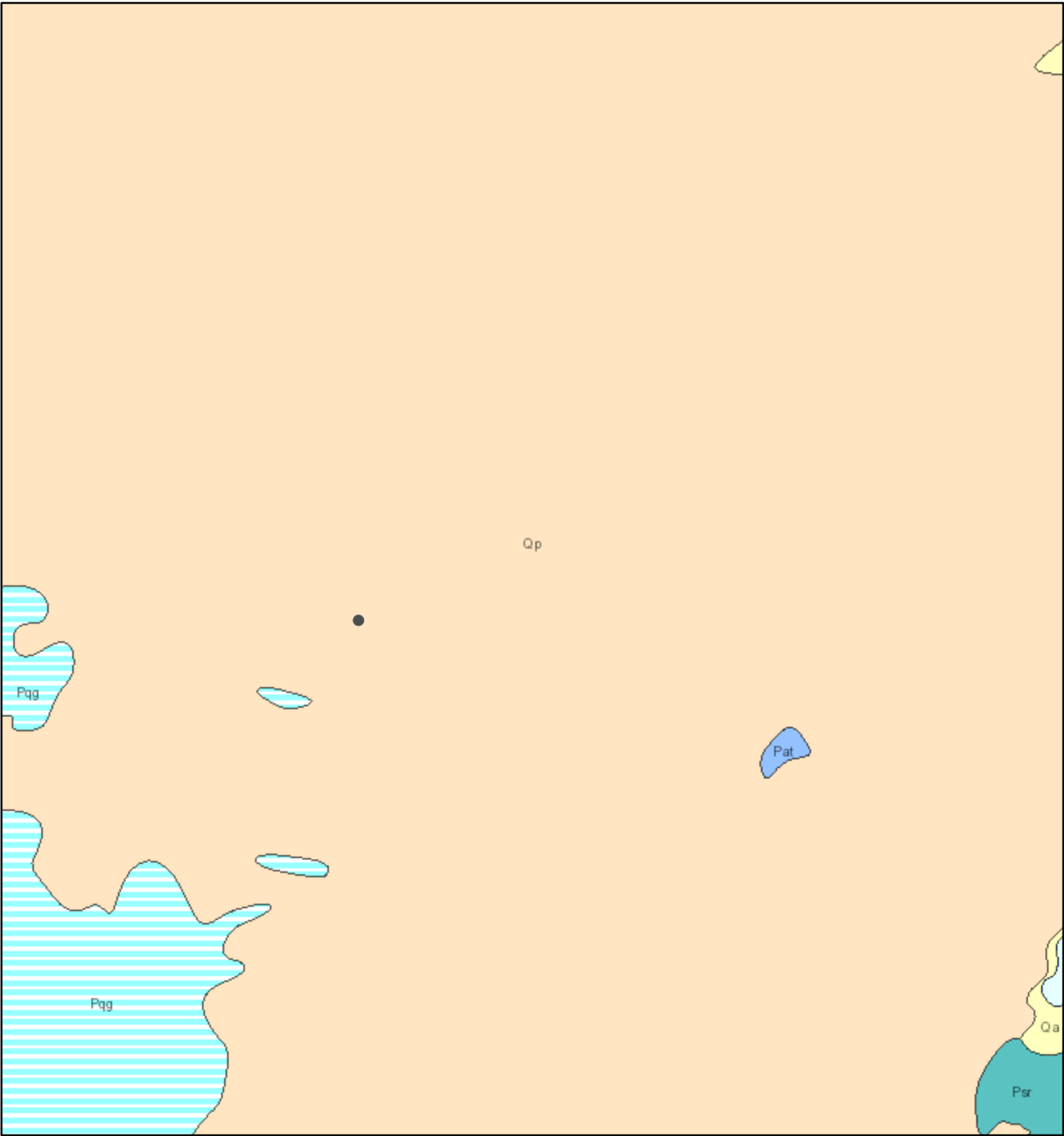
### 7. Amount of litter movement (describe size and distance expected to travel):

- 
8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):**
- 
9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):**
- 
10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:**
- 
11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):**
- 
12. **Functional/Structural Groups (list in order of descending dominance by above-ground annual-production or live foliar cover using symbols: >>, >, = to indicate much greater than, greater than, and equal to):**
- Dominant:
- Sub-dominant:
- Other:
- Additional:
- 
13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):**
- 
14. **Average percent litter cover (%) and depth ( in):**
- 
15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):**
- 
16. **Potential invasive (including noxious) species (native and non-native). List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment and growth is not actively controlled by management interventions. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants. Note that unlike other indicators, we are describing what is NOT expected in the reference state for the ecological site:**
- 
17. **Perennial plant reproductive capability:**
-








# ArcGIS Web Map

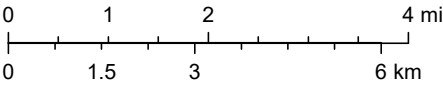


1/31/2023, 2:30:54 PM

1:144,448

Lithologic Units

-  Playa—Alluvium and evaporite deposits (Holocene)
-  Water—Perennial standing water
-  Qa—Alluvium (Holocene to upper Pleistocene)



Esri, NASA, NGA, USGS, USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data;

ArcGIS Web AppBuilder

## **ATTACHMENT 5**



## Daily Site Visit Report

Client:	EOG Resources Inc.	Inspection Date:	1/30/2023
Site Location Name:	Irish Hills Pipeline	Report Run Date:	1/30/2023 11:55 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	1/30/2023 9:00 AM
Departed Site	1/30/2023 2:25 PM

### Field Notes

**9:44** Completed safety paperwork on site

**10:55** Had kickoff meeting with Standard safety and PM Chance Dixon on site.

Established extent of excavation.

Put white paint lines on ground for guidance.

**10:59** Reclamation Standards will be used for guidance.

Base sample criteria 51'-100'.

Wall sample criteria 0'-50'.

Excavation will be taken to 4' bgs. Ground Surface has been established as level with road immediately south of excavation. (Seems as if previous scrape/immediate action to release had already removed 2' worth of material from area)

**11:01** 90' X 20' X 4' excavation measured out for immediate sampling as of today.

Walls will be stepped out 0.5-1' at a time to minimize excavation size.



## Daily Site Visit Report

**11:40** Obtained BES23-01 to 05 along base from West to East.

Obtained WES23-01 to 06.

WES23-01 on West end.

WES23-02 and 03 on North wall.

WES23-04 on East end.

WES23-05 and 06 on South wall.

All samples tested for TPH, Chloride and BTEX in field.

**14:23** Approximately 260 yards excavated

**14:25** All base samples pass reclamation criteria.

All wall samples were hot and over the 0-50' criteria and will be stepped out 1'.

### Next Steps & Recommendations

**1** Continue excavation



## Daily Site Visit Report



## Site Photos

Viewing Direction: East



East side before digging

Viewing Direction: West



West side before digging

Viewing Direction: East



Excavation

Viewing Direction: East



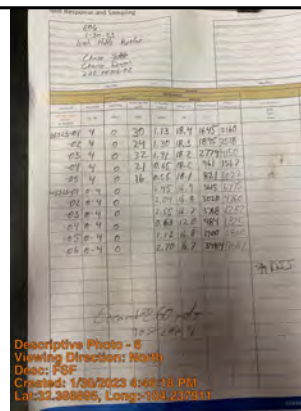
Excavation

**Viewing Direction: West**



## Excavation

**Viewing Direction: North**



FSF

## Daily Site Visit Report



Daily Site Visit Signature

**Inspector:** Austin Harris

**Signature:**

A handwritten signature in black ink, appearing to be 'AH' or similar initials, written over a horizontal line.

Signature



## Daily Site Visit Report

Client:	EOG Resources Inc.	Inspection Date:	4/3/2023
Site Location Name:	Irish Hills Pipeline	Report Run Date:	4/3/2023 8:07 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	4/3/2023 9:30 AM
Departed Site	4/3/2023 11:00 AM

### Field Notes

- 9:54** On site to make sure the pipeline is cut and capped in the east excavation. The contaminated material inside will be excavated and hauled off.
- 11:00** The three PVC lines have successfully been cut and capped.

### Next Steps & Recommendations

- 1 Put final DFR into closure report



# Daily Site Visit Report



## Site Photos

Viewing Direction: Northeast



Final west excavation

Viewing Direction: Southeast



Final west excavation

Viewing Direction: Northwest



Final west excavation





Viewing Direction: Southwest



Final west excavation



## Daily Site Visit Report

<p><b>Viewing Direction: Southeast</b></p>  <p>Descriptive Photo - 5 Viewing Direction: Southeast Desc: Final middle excavation Created: 4/3/2023 10:53:08 AM Lat:32.682697, Long:-104.524748</p>	<p><b>Viewing Direction: West</b></p>  <p>Descriptive Photo - 6 Viewing Direction: West Desc: Final middle excavation Created: 4/3/2023 10:56:18 AM Lat:32.682676, Long:-104.524137</p>
Final middle excavation	Final middle excavation
<p><b>Viewing Direction: Northeast</b></p>  <p>Descriptive Photo - 7 Viewing Direction: Northeast Desc: Final east excavation Created: 4/3/2023 10:55:06 AM Lat:32.682716, Long:-104.524082</p>	<p><b>Viewing Direction: Southwest</b></p>  <p>Descriptive Photo - 8 Viewing Direction: Southwest Desc: Final east excavation Created: 4/3/2023 10:57:32 AM Lat:32.682794, Long:-104.524005</p>
Final east excavation	Final east excavation

## Daily Site Visit Report



Daily Site Visit Signature

**Inspector:** Chance Dixon

**Signature:**

A handwritten signature in black ink, appearing to be 'CD' or 'CA' with a stylized flourish.

Signature



## Daily Site Visit Report

Client:	EOG Resources Inc.	Inspection Date:	
Site Location Name:	Irish Hills Pipeline	Report Run Date:	4/28/2023 11:39 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

Departed Site

### Field Notes

**7:57** On site to monitor and assist in the installation of pit liner, and document progress of backfill

**16:51** Monitored installation of liner

**16:52** Crew completed laying down the liner in all three excavations, but did not finish the application of the adhesive gel

### Next Steps & Recommendations

**1** Finish applying adhesive gel to liner, begin backfill



# Daily Site Visit Report



## Site Photos

Viewing Direction: West



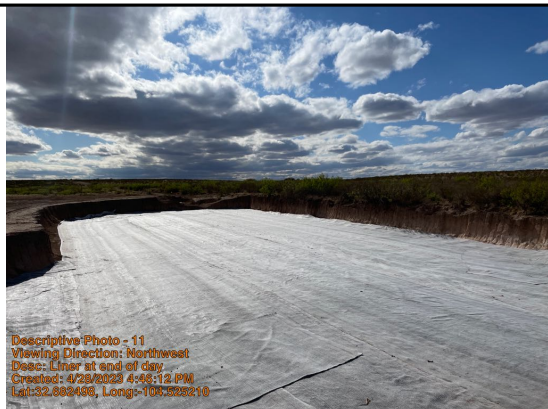
View of excavation prior to installation of liner

Viewing Direction: East



Applying liner adhesive

Viewing Direction: Northwest



Liner at end of day

Viewing Direction: West





View of liner during installation







## Daily Site Visit Report

<p><b>Viewing Direction: West</b></p>  <p>Descriptive Photo - 3 Viewing Direction: West Desc: Liner installed Created: 4/28/2023 10:28:05 AM Lat:32.882488, Long:-104.825411</p>	<p><b>Viewing Direction: Northwest</b></p>  <p>Descriptive Photo - 4 Viewing Direction: North Desc: Liner installed Created: 4/28/2023 10:29:30 AM Lat:32.882448, Long:-104.825411</p>
Liner installed	Liner installed
<p><b>Viewing Direction: East</b></p>  <p>Descriptive Photo - 5 Viewing Direction: East Desc: Liner installed Created: 4/28/2023 10:30:01 AM Lat:32.882488, Long:-104.825411</p>	<p><b>Viewing Direction: East</b></p>  <p>Descriptive Photo - 6 Viewing Direction: East Desc: Liner being installed Created: 4/28/2023 11:38:00 AM Lat:32.882488, Long:-104.824903</p>
Liner installed	Liner being installed



## Daily Site Visit Report

Viewing Direction: West	Viewing Direction: Northeast
 <p>Descriptive Photo - 7 Viewing Direction: West Desc: View of liner Created: 4/28/2023 2:53:18 PM Lat:32.582265, Long:-104.524115</p>	 <p>Descriptive Photo - 8 Viewing Direction: Northeast Desc: View of liner Created: 4/28/2023 2:56:32 PM Lat:32.582265, Long:-104.524155</p>
View of liner	View of liner

## Daily Site Visit Report



Daily Site Visit Signature

**Inspector:** Zachery Englebert

**Signature:**

A handwritten signature in black ink, appearing to read 'Zachery Englebert', written over a horizontal line. The word 'Signature' is printed in small text to the left of the line.



## Daily Site Visit Report

Client:	EOG Resources Inc.	Inspection Date:	
Site Location Name:	Irish Hills Pipeline	Report Run Date:	4/29/2023 11:34 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

Departed Site

### Field Notes

**8:03** On site to monitor liner installation and backfill

**16:40** Crew finished applying adhesive to the liner and continued with backfill.

**16:40** Considerable amount of backfill remaining at the site

### Next Steps & Recommendations

1

# Daily Site Visit Report



## Site Photos

Viewing Direction: South



Beginning of backfill of largest of the three excavations

Viewing Direction: West



Liner after adhesive was applied

Viewing Direction: East



Liner after adhesive applied





## Daily Site Visit Report

**Viewing Direction: East**



Liner after adhesive application

**Viewing Direction: Southwest**



Progress of backfill at largest of the three excavations

**Viewing Direction: Southeast**



Progress of backfill at largest of the three excavations

**Viewing Direction: East**



Progress of backfill of the largest of the three excavations

## Daily Site Visit Report



Daily Site Visit Signature

**Inspector:** Zachery Englebert

**Signature:**

  
Signature



## Daily Site Visit Report

Client:	EOG Resources Inc.	Inspection Date:	
Site Location Name:	Irish Hills Pipeline	Report Run Date:	4/30/2023 11:08 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

Departed Site

### Field Notes

**8:02** On site to monitor backfill

**14:50** Backfill of largest excavation is about 95% completed, they will finish it and start backfilling the other two smaller excavations tomorrow

### Next Steps & Recommendations

1

# Daily Site Visit Report



## Site Photos

Viewing Direction: Southeast



Backfill progress

Viewing Direction: East



Backfill almost completed in largest excavation

Viewing Direction: East



Backfill progress

Viewing Direction: Northeast



Backfill progress





## Daily Site Visit Report

Viewing Direction: West



Backfill progressing

Viewing Direction: North



Backfill progressing

Viewing Direction: East



Backfill progress

Viewing Direction: East



Backfill remaining at the second of the three excavations





## Daily Site Visit Report

Viewing Direction: North



Backfill remaining at the smallest of the three excavations

Viewing Direction: West



Backfill almost completed for first excavation

## Daily Site Visit Report



Daily Site Visit Signature

Inspector: Zachery Englebert

Signature:

A handwritten signature in black ink, appearing to read 'Zachery Englebert', written over a horizontal line.

Signature

## **ATTACHMENT 6**

**From:** [Chase Settle](#)  
**To:** [Michael Moffitt](#); [Chance Dixon](#)  
**Subject:** FW: Irish Hills Pipeline (nAB1811529351/2RP-4710) Sampling Notification  
**Date:** January 23, 2023 7:46:51 AM  
**Attachments:** [image001.png](#)

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---

**From:** Tina Huerta <Tina\_Huerta@eogresources.com>  
**Sent:** Monday, January 23, 2023 7:36 AM  
**To:** ocd.enviro@emnrd.nm.gov; Alan & Cheryl <ahowell@pvtn.net>; Austin Weyant <austin@atkinseng.com>  
**Cc:** Andrea Felix <Andrea\_Felix@eogresources.com>; Katie Jamison <Katie\_Jamison@eogresources.com>; Michael Yemm <Michael\_Yemm@eogresources.com>; Terrence Gant <Terry\_Gant@eogresources.com>  
**Subject:** Irish Hills Pipeline (nAB1811529351/2RP-4710) Sampling Notification

Good Morning,

EOG Resources, Inc. respectfully submits notification (2) business days prior to conducting sampling on the following location.

Irish Hills Pipeline  
7-19S-25E  
Eddy County, NM  
nAB1811529351 (2RP-4710)

Sampling will begin at 12:00 p.m. on Wednesday, January 25, 2023 and will continue through Sunday, January 29, 2023.

Thank you,

*Tina Huerta*  
*Regulatory Specialist*  
*Direct: 575.748.4168*  
*Cell: 575.703.3121*  
*Email: [tina\\_huerta@eogresources.com](mailto:tina_huerta@eogresources.com)*



**Artesia Division**

## Sally Carttar

---

**From:** Tina Huerta <Tina\_Huerta@eogresources.com>  
**Sent:** January 26, 2023 7:17 AM  
**To:** ocd.enviro@emnrd.nm.gov; Alan & Cheryl ; Austin Weyant  
**Cc:** Andrea Felix; Katie Jamison; Michael Yemm; Terrence Gant  
**Subject:** Irish Hills Pipeline (nAB1811529351 & 2RP-4710) Sampling Notification

Good Morning,

EOG Resources, Inc. respectfully submits notification (2) business days prior to conducting sampling on the following location.

Irish Hills Pipeline  
7-19S-25E  
Eddy County, NM  
nAB1811529351 (2RP-4710)

Sampling will begin at 12:00 p.m. on Monday, January 30, 2023 and will continue through Sunday, February 5, 2023.

Thank you,

*Tina Huerta*  
*Regulatory Specialist*  
*Direct: 575.748.4168*  
*Cell: 575.703.3121*  
*Email: [tina\\_huerta@eogresources.com](mailto:tina_huerta@eogresources.com)*



**Artesia Division**



**From:** [Tina Huerta](#)  
**To:** [ocd.enviro@emnrd.nm.gov](mailto:ocd.enviro@emnrd.nm.gov); [Alan & Cheryl](#); [Austin Weyant](#)  
**Cc:** [Andrea Felix](#); [Katie Jamison](#); [Michael Yemm](#); [Terrence Gant](#)  
**Subject:** Irish Hills Pipeline (nAB1811529351/2RP-4710) Sampling Notification  
**Date:** February 2, 2023 6:01:23 AM  
**Attachments:** [image001.png](#)

---

Good Morning,

EOG Resources, Inc. respectfully submits notification (2) business days prior to conducting sampling on the following location.

Irish Hills Pipeline  
7-19S-25E  
Eddy County, NM  
nAB1811529351/2RP-4710

Sampling will begin at 8:00 a.m. on Monday, February 6, 2023 and will continue through Sunday, February 12, 2023.

Thank you,

**Tina Huerta**  
**Regulatory Specialist**  
**Direct: 575.748.4168**  
**Cell: 575.703.3121**  
**Email:** [tina\\_huerta@eogresources.com](mailto:tina_huerta@eogresources.com)



**Artesia Division**

**From:** [Tina Huerta](#)  
**To:** [ocd.enviro@emnrd.nm.gov](mailto:ocd.enviro@emnrd.nm.gov); [Alan & Cheryl](#); [Austin Weyant](#)  
**Cc:** [Andrea Felix](#); [Katie Jamison](#); [Michael Yemm](#); [Terrence Gant](#)  
**Subject:** Irish Hills Pipeline (nAB1811529351/2RP-4710) Sampling Notification  
**Date:** February 9, 2023 5:50:03 AM  
**Attachments:** [image001.png](#)

---

Good Morning,

EOG Resources, Inc. respectfully submits notification (2) business days prior to conducting sampling on the following location.

Irish Hills Pipeline  
7-19S-25E  
Eddy County, NM  
nAB1811529351/2RP-4710

Sampling will begin at 8:00 a.m. on Monday, February 13, 2023 and will continue through Saturday, February 18, 2023.

Thank you,

*Tina Huerta*  
*Regulatory Specialist*  
*Direct: 575.748.4168*  
*Cell: 575.703.3121*  
*Email: [tina\\_huerta@eogresources.com](mailto:tina_huerta@eogresources.com)*



**Artesia Division**

**From:** [Tina Huerta](#)  
**To:** [ocd.enviro@emnrd.nm.gov](mailto:ocd.enviro@emnrd.nm.gov); [Alan & Cheryl](#); [Austin Weyant](#)  
**Cc:** [Andrea Felix](#); [Katie Jamison](#); [Michael Yemm](#); [Terrence Gant](#)  
**Subject:** Irish Hills Pipeline (nAB1811529351/2RP-4710) Sampling Notificaiton  
**Date:** February 16, 2023 7:43:31 AM  
**Attachments:** [image001.png](#)

---

Good morning,

EOG Resources, Inc. respectfully submits notification (2) business days prior to conducting sampling on the following location.

Irish Hills Pipeline  
7-19S-25E  
Eddy County, NM  
nAB1811529351/2RP-4710

Sampling will begin at 8:00 a.m. on Monday, February 20, 2023, and will continue through Saturday, February 25, 2023.

Thank you,

*Tina Huerta*  
*Regulatory Specialist*  
*Direct: 575.748.4168*  
*Cell: 575.703.3121*  
*Email: [tina\\_huerta@eogresources.com](mailto:tina_huerta@eogresources.com)*



**Artesia Division**

**From:** [Tina Huerta](#)  
**To:** [ocd.enviro@emnrd.nm.gov](mailto:ocd.enviro@emnrd.nm.gov); [Alan & Cheryl](#); [Austin Weyant](#)  
**Cc:** [Andrea Felix](#); [Katie Jamison](#); [Michael Yemm](#); [Terrence Gant](#)  
**Subject:** Irish Hills Pipeline (nAB1811529351/2RP-4710) Sampling Notification  
**Date:** February 23, 2023 8:13:01 AM  
**Attachments:** [image001.png](#)

---

Good morning,

EOG Resources, Inc. respectfully submits notification (2) business days prior to conducting sampling on the following location.

Irish Hills Pipeline  
7-19S-25E  
Eddy County, NM  
nAB1811529351/2RP-4710

Sampling will begin at 8:00 a.m. on Monday, February 27, 2023, and will continue through Saturday, March 4, 2023.

Thank you,

*Tina Huerta*  
*Regulatory Specialist*  
*Direct: 575.748.4168*  
*Cell: 575.703.3121*  
*Email: [tina\\_huerta@eogresources.com](mailto:tina_huerta@eogresources.com)*



**Artesia Division**

**From:** [Tina Huerta](#)  
**To:** [ocd.enviro@emnrd.nm.gov](mailto:ocd.enviro@emnrd.nm.gov); [Alan & Cheryl](#); [Austin Weyant](#)  
**Cc:** [Andrea Felix](#); [Katie Jamison](#); [Michael Yemm](#); [Terrence Gant](#)  
**Subject:** Irish Hills Pipeline (nAB1811529351 & 2RP-4710) Sampling Notification  
**Date:** March 2, 2023 6:06:12 AM  
**Attachments:** [image001.png](#)

---

Good morning,

EOG Resources, Inc. respectfully submits notification (2) business days prior to conducting sampling on the following location.

Irish Hills Pipeline  
D-7-19S-25E  
Eddy County, NM  
nAB1811529351/2RP-4710

Sampling will begin at 8:00 a.m. on Monday, March 6, 2023, and will continue through Saturday, March 11, 2023.

Thank you,

*Tina Huerta*  
*Regulatory Specialist*  
*Direct: 575.748.4168*  
*Cell: 575.703.3121*  
*Email: [tina\\_huerta@eogresources.com](mailto:tina_huerta@eogresources.com)*



**Artesia Division**



**From:** [Tina Huerta](#)  
**To:** [ocd.enviro@emnrd.nm.gov](mailto:ocd.enviro@emnrd.nm.gov); [Alan & Cheryl](#); [Austin Weyant](#)  
**Cc:** [Andrea Felix](#); [Katie Jamison](#); [Michael Yemm](#); [Terrence Gant](#)  
**Subject:** Irish Hills Pipeline (nAB1811529351 & 2RP-4710) Sampling Notification  
**Date:** March 9, 2023 5:22:57 AM  
**Attachments:** [image001.png](#)

---

Good morning,

EOG Resources, Inc. respectfully submits notification (2) business days prior to conducting sampling on the following location.

Irish Hills Pipeline  
D-7-19S-25E  
Eddy County, NM  
nAB1811529351 & 2RP-4710

Sampling will begin at 8:00 a.m. on Monday, March 13, 2023, and will continue through Saturday, March 18, 2023.

Thank you,

*Tina Huerta*  
*Regulatory Specialist*  
*Direct: 575.748.4168*  
*Cell: 575.703.3121*  
*Email: [tina\\_huerta@eogresources.com](mailto:tina_huerta@eogresources.com)*



**Artesia Division**

**From:** [Miriam Morales](#)  
**To:** [ocd.enviro@emnrd.nm.gov](mailto:ocd.enviro@emnrd.nm.gov); [Alan & Cheryl](#); [Austin Weyant](#)  
**Cc:** [Andrea Felix](#); [Katie Jamison](#); [Michael Yemm](#); [Terrence Gant](#)  
**Subject:** Irish Hills Pipeline (nAB1811529351 & 2RP-4710) Sampling Notification  
**Date:** March 15, 2023 4:40:25 PM

---

Good afternoon,

EOG Resources, Inc. respectfully submits notification (2) business days prior to conducting sampling on the following location.

Irish Hills Pipeline  
D-7-19S-25E  
Eddy County, NM  
nAB1811529351 & 2RP-4710

Sampling will begin at 8:00 a.m. on Monday, March 20, 2023, and will continue through Friday, March 24, 2023.

Thank you,

*Miriam Morales*

**From:** [Tina Huerta](#)  
**To:** [ocd.enviro@emnrd.nm.gov](mailto:ocd.enviro@emnrd.nm.gov); [Alan & Cheryl](#); [Austin Weyant](#)  
**Cc:** [Andrea Felix](#); [Katie Jamison](#); [Michael Yemm](#); [Terrence Gant](#)  
**Subject:** Irish Hills Pipeline - Area 1 (nAB1811529351 & 2RP-4710) Sampling Notification  
**Date:** March 23, 2023 8:18:00 AM  
**Attachments:** [image001.png](#)

---

Good morning,

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

Irish Hills Pipeline – Area 1  
D-7-19S-25E  
Eddy County, NM  
nAB1811529351 & 2RP-4710

Sampling will begin at 8:30 a.m. on Monday, March 27, 2023, and continue through Saturday, April 1, 2023.

Sorry, this is late.

Thank you,

*Tina Huerta*  
*Regulatory Specialist*  
*Direct: 575.748.4168*  
*Cell: 575.703.3121*  
*Email: [tina\\_huerta@eogresources.com](mailto:tina_huerta@eogresources.com)*



**Artesia Division**

## **ATTACHMENT 7**



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

March 06, 2018

Austin Weyant  
Souder, Miller & Associates  
201 S Halagueno  
Carlsbad, NM 88221  
TEL: (575) 689-7040  
FAX

RE: Irish Hills BH1

OrderNo.: 1802C88

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 10 sample(s) on 2/23/2018 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](http://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 #NM0190

Sincerely,

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

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109



## Analytical Report

Lab Order 1802C88

Date Reported: 3/6/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller &amp; Associates

Client Sample ID: BH1-5'

Project: Irish Hills BH1

Collection Date: 2/20/2018 8:26:00 AM

Lab ID: 1802C88-001

Matrix: SOIL

Received Date: 2/23/2018 9:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	6800	300		mg/Kg	200	3/2/2018 12:02:04 PM	36746
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	2/28/2018 1:07:14 PM	36728
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	2/28/2018 1:07:14 PM	36728
Surr: DNOP	105	70-130		%Rec	1	2/28/2018 1:07:14 PM	36728
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/26/2018 5:34:25 PM	36697
Surr: BFB	91.9	15-316		%Rec	1	2/26/2018 5:34:25 PM	36697
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Methyl tert-butyl ether (MTBE)	ND	0.098		mg/Kg	1	2/26/2018 5:34:25 PM	36697
Benzene	ND	0.025		mg/Kg	1	2/26/2018 5:34:25 PM	36697
Toluene	ND	0.049		mg/Kg	1	2/26/2018 5:34:25 PM	36697
Ethylbenzene	ND	0.049		mg/Kg	1	2/26/2018 5:34:25 PM	36697
Xylenes, Total	ND	0.098		mg/Kg	1	2/26/2018 5:34:25 PM	36697
Surr: 4-Bromofluorobenzene	91.3	80-120		%Rec	1	2/26/2018 5:34:25 PM	36697

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

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

Page 1 of 15

Analytical Report

Lab Order 1802C88

Date Reported: 3/6/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates

Client Sample ID: BH1-10'

Project: Irish Hills BH1

Collection Date: 2/20/2018 8:32:00 AM

Lab ID: 1802C88-002

Matrix: SOIL

Received Date: 2/23/2018 9:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	2100		75	mg/Kg	50	3/2/2018 12:14:28 PM	36746

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

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

## Analytical Report

Lab Order 1802C88

Date Reported: 3/6/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller &amp; Associates

Client Sample ID: BH1-15'

Project: Irish Hills BH1

Collection Date: 2/20/2018 8:36:00 AM

Lab ID: 1802C88-003

Matrix: SOIL

Received Date: 2/23/2018 9:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	910	30		mg/Kg	20	2/28/2018 12:50:33 AM	36746

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

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

Page 3 of 15

## Analytical Report

Lab Order 1802C88

Date Reported: 3/6/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller &amp; Associates

Client Sample ID: BH1-20'

Project: Irish Hills BH1

Collection Date: 2/20/2018 8:42:00 AM

Lab ID: 1802C88-004

Matrix: SOIL

Received Date: 2/23/2018 9:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	350	30		mg/Kg	20	2/28/2018 1:02:57 AM	36746
<b>EPA METHOD 6010B: SOIL METALS</b>							Analyst: <b>JLF</b>
Iron	5200	120		mg/Kg	50	3/5/2018 5:06:47 PM	36792
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	2/28/2018 2:12:57 PM	36728
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	2/28/2018 2:12:57 PM	36728
Surr: DNOP	109	70-130		%Rec	1	2/28/2018 2:12:57 PM	36728
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/26/2018 5:57:51 PM	36697
Surr: BFB	92.4	15-316		%Rec	1	2/26/2018 5:57:51 PM	36697
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Methyl tert-butyl ether (MTBE)	ND	0.099		mg/Kg	1	2/26/2018 5:57:51 PM	36697
Benzene	ND	0.025		mg/Kg	1	2/26/2018 5:57:51 PM	36697
Toluene	ND	0.050		mg/Kg	1	2/26/2018 5:57:51 PM	36697
Ethylbenzene	ND	0.050		mg/Kg	1	2/26/2018 5:57:51 PM	36697
Xylenes, Total	ND	0.099		mg/Kg	1	2/26/2018 5:57:51 PM	36697
Surr: 4-Bromofluorobenzene	90.3	80-120		%Rec	1	2/26/2018 5:57:51 PM	36697

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

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

Page 4 of 15

## Analytical Report

Lab Order 1802C88

Date Reported: 3/6/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller &amp; Associates

Client Sample ID: BH1-25'

Project: Irish Hills BH1

Collection Date: 2/20/2018 8:57:00 AM

Lab ID: 1802C88-005

Matrix: SOIL

Received Date: 2/23/2018 9:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	2/28/2018 1:15:22 AM	36746

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

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

Page 5 of 15



Analytical Report

Lab Order 1802C88

Date Reported: 3/6/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates

Client Sample ID: BH1-30'

Project: Irish Hills BH1

Collection Date: 2/20/2018 9:11:00 AM

Lab ID: 1802C88-006

Matrix: SOIL

Received Date: 2/23/2018 9:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	130	30		mg/Kg	20	2/28/2018 1:52:36 AM	36746
EPA METHOD 6010B: SOIL METALS							Analyst: JLF
Iron	11000	120		mg/Kg	50	3/5/2018 5:05:10 PM	36792

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

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

## Analytical Report

Lab Order 1802C88

Date Reported: 3/6/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller &amp; Associates

Client Sample ID: BH1-35'

Project: Irish Hills BH1

Collection Date: 2/20/2018 9:18:00 AM

Lab ID: 1802C88-007

Matrix: SOIL

Received Date: 2/23/2018 9:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	2/28/2018 2:05:00 AM	36746

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

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

Page 7 of 15

## Analytical Report

Lab Order 1802C88

Date Reported: 3/6/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller &amp; Associates

Client Sample ID: BH1-40'

Project: Irish Hills BH1

Collection Date: 2/20/2018 9:40:00 AM

Lab ID: 1802C88-008

Matrix: SOIL

Received Date: 2/23/2018 9:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	250	30		mg/Kg	20	2/28/2018 2:17:24 AM	36746

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

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

Page 8 of 15

## Analytical Report

Lab Order 1802C88

Date Reported: 3/6/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller &amp; Associates

Client Sample ID: BH1-45'

Project: Irish Hills BH1

Collection Date: 2/20/2018 9:46:00 AM

Lab ID: 1802C88-009

Matrix: SOIL

Received Date: 2/23/2018 9:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	2/28/2018 2:29:48 AM	36746

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

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

Page 9 of 15

## Analytical Report

Lab Order 1802C88

Date Reported: 3/6/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller &amp; Associates

Client Sample ID: BH1-50'

Project: Irish Hills BH1

Collection Date: 2/20/2018 9:58:00 AM

Lab ID: 1802C88-010

Matrix: SOIL

Received Date: 2/23/2018 9:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	2/28/2018 2:42:13 AM	36746

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

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

Page 10 of 15

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1802C88

06-Mar-18

Client: Souder, Miller & Associates

Project: Irish Hills BH1

Sample ID	MB-36746	SampType:	mblk	TestCode:	EPA Method 300.0: Anions						
Client ID:	PBS	Batch ID:	36746	RunNo:	49437						
Prep Date:	2/27/2018	Analysis Date:	2/27/2018	SeqNo:	1596883	Units:	mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	ND	1.5									

Sample ID	LCS-36746	SampType:	lcs	TestCode:	EPA Method 300.0: Anions						
Client ID:	LCSS	Batch ID:	36746	RunNo:	49437						
Prep Date:	2/27/2018	Analysis Date:	2/27/2018	SeqNo:	1596884	Units:	mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	14	1.5	15.00	0	91.5	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 Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Page 11 of 15



**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 1802C88

06-Mar-18

**Client:** Souder, Miller & Associates**Project:** Irish Hills BH1

Sample ID	LCS-36728		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 36728		RunNo: 49398					
Prep Date:	2/26/2018		Analysis Date: 2/27/2018		SeqNo: 1595183		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	87.9	70	130			
Surr: DNOP	4.5		5.000		90.9	70	130			

Sample ID	MB-36728	SampType: MBLK			TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID: 36728			RunNo: 49398					
Prep Date:	2/26/2018	Analysis Date: 2/27/2018			SeqNo: 1595184		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	9.4		10.00		94.2	70	130			

Sample ID	1802C88-001AMS		SampType: MS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	BH1-5'		Batch ID: 36728		RunNo: 49443					
Prep Date:	2/26/2018		Analysis Date: 2/28/2018		SeqNo: 1599266		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	9.6	47.85	0	94.5	55.8	125			
Surr: DNOP	4.3		4.785		90.4	70	130			

Sample ID	1802C88-001AMSD		SampType:	MSD		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	BH1-5'		Batch ID:	36728		RunNo:	49443				
Prep Date:	2/26/2018		Analysis Date:	2/28/2018		SeqNo:	1599267		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	95.3	55.8	125	0.788	20		
Surr: DNOP	4.6		4.785		95.2	70	130	0	0		

**Qualifiers:**

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

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

Page 12 of 15

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1802C88  
06-Mar-18

Client: Souder, Miller & Associates  
Project: Irish Hills BH1

Sample ID	MB-36697	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	36697	RunNo:	49378					
Prep Date:	2/23/2018	Analysis Date:	2/26/2018	SeqNo:	1594725	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	15	316			

Sample ID	LCS-36697	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	36697	RunNo:	49379					
Prep Date:	2/23/2018	Analysis Date:	2/26/2018	SeqNo:	1594780	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	84.2	75.9	131			
Surr: BFB	1000		1000		105	15	316			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Page 13 of 15

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**WO#: **1802C88****06-Mar-18****Client:** Souder, Miller & Associates**Project:** Irish Hills BH1

Sample ID <b>MB-36697</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>36697</b>		RunNo: <b>49378</b>							
Prep Date: <b>2/23/2018</b>	Analysis Date: <b>2/26/2018</b>		SeqNo: <b>1594752</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	0.10								
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.99		1.000		99.2	80	120			

Sample ID <b>LCS-36697</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>36697</b>		RunNo: <b>49378</b>							
Prep Date: <b>2/23/2018</b>	Analysis Date: <b>2/26/2018</b>		SeqNo: <b>1594753</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	1.0	0.10	1.000	0	101	70.1	121			
Benzene	1.1	0.025	1.000	0	107	77.3	128			
Toluene	1.1	0.050	1.000	0	106	79.2	125			
Ethylbenzene	1.0	0.050	1.000	0	105	80.7	127			
Xylenes, Total	3.2	0.10	3.000	0	108	81.6	129			
Surr: 4-Bromofluorobenzene	0.99		1.000		98.8	80	120			

**Qualifiers:**

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

Page 14 of 15

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1802C88  
06-Mar-18

Client: Souder, Miller & Associates  
Project: Irish Hills BH1

Sample ID	MB-36792	SampType:	MBLK	TestCode:	EPA Method 6010B: Soil Metals					
Client ID:	PBS	Batch ID:	36792	RunNo:	49554					
Prep Date:	3/1/2018	Analysis Date:	3/5/2018	SeqNo:	1601817	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	2.5								

Sample ID	LCS-36792	SampType:	LCS	TestCode:	EPA Method 6010B: Soil Metals					
Client ID:	LCSS	Batch ID:	36792	RunNo:	49554					
Prep Date:	3/1/2018	Analysis Date:	3/5/2018	SeqNo:	1601819	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	23	2.5	25.00	0	93.6	80	120			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Page 15 of 15



Hall Environmental Analysis Laboratory  
1901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

### Sample Log-In Check List

Client Name SMA-CARLSRAD

Work Order Number: 1602C8E

RcptNo: 1

Received By: Dennis Suazo

2/23/2018 9:35:00 AM

Completed By: Ashley Gallegos

2/23/2018 10:35:56 AM

Reviewed By:

labeled by: SNE 02/23/18

### 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 <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | NA <input type="checkbox"/>   |
| 4. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to $6.0^{\circ}\text{C}$ | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | NA <input type="checkbox"/>   |
| 5. Sample(s) in proper container(s)?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |   |
| 6. Sufficient sample volume for indicated test(s)?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |   |
| 7. Are samples (except VOA and ONG) properly preserved?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |   |
| 8. Was preservative added to bottles?  | Yes <input type="checkbox"/>            | No <input checked="" type="checkbox"/> | NA <input type="checkbox"/>   |
| 9. VOA vials have zero headspace?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | No VOA Vials <input checked="" type="checkbox"/>                        |
| 10. Were any sample containers received broken?  | Yes <input type="checkbox"/>            | No <input checked="" type="checkbox"/> | # of preserved bottles checked for pH _____<br>(<2 or >12 unless noted) |
| 11. Does paperwork match bottle labels?<br>(Note discrepancies on chain of custody)            | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |   |
| 12. Are matrices correctly identified on Chain of Custody?                                     | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | Adjusted? _____   |
| 13. Is it clear what analyses were requested?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |   |
| 14. Were all holding times able to be met?<br>(If no, notify customer for authorization)       | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | Checked by: _____   |

**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	2.5	Good	Yes			



## Chain-of-Custody Record

Client: SMA - CbadMailing Address: 201 S. Halaragueno

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard☐ Level 4 (Full Validation)

Accreditation

☐ NELAP☐ Other☐ EDD (Type)

Project Manager:

Austin WeyantSampler: NELAPOn Job: ☒ Yes ☐ NoSample Temperature: 25

Date

Time

Matrix

Sample Request ID

Container Type and #

Preservative Type

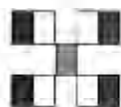
HEAL No.

2/24/18 8:248:24801BH1-5'40218020888:328:32BH1-10'-0018:368:36BH1-15'-0038:428:42BH1-20'-0048:578:57BH1-25'-0059:119:11BH1-30'-0069:169:16BH1-35'-0079:409:40BH1-40'-0089:469:46BH1-45'-0099:589:58BH1-50'-010

Remarks:

EDG

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 labeled on the analytical report.

**HALL ENVIRONMENTAL  
ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

BTEX + MTBE + TMBs (8021)	<input checked="" type="checkbox"/>	BTEX + MTBE + TPH (Gas only)	<input checked="" type="checkbox"/>	TPH 8015B (GRO / DRO / MRO)	<input checked="" type="checkbox"/>	TPH (Method 418.1)		EDB (Method 504.1)		PAHs (8310 or 8270 SIMS)		RCRA 8 Metals		Anions (F, Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> )	<input checked="" type="checkbox"/>	8081 Pesticides / 8082 PCBs		8260B (VOA)		8270 (Semi-VOA)	<input checked="" type="checkbox"/>	6010B (Iron)		Air Bubbles (Y or N)	
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Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

March 06, 2018

Austin Weyant  
Souder, Miller & Associates  
201 S Halagueno  
Carlsbad, NM 88221  
TEL: (575) 689-7040  
FAX

RE: Irish Hills BH2

OrderNo.: 1802C92

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 10 sample(s) on 2/23/2018 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](http://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 #NM0190

Sincerely,

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

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

## Analytical Report

Lab Order 1802C92

Date Reported: 3/6/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller &amp; Associates

Client Sample ID: BH2-5'

Project: Irish Hills BH2

Collection Date: 2/20/2018 10:25:00 AM

Lab ID: 1802C92-001

Matrix: SOIL

Received Date: 2/23/2018 9:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	5000	300		mg/Kg	200	3/2/2018 12:26:52 PM	36746
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	2/28/2018 2:46:46 PM	36728
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/28/2018 2:46:46 PM	36728
Surr: DNOP	101	70-130		%Rec	1	2/28/2018 2:46:46 PM	36728
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	2/26/2018 6:21:15 PM	36697
Surr: BFB	89.1	15-316		%Rec	1	2/26/2018 6:21:15 PM	36697
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Methyl tert-butyl ether (MTBE)	ND	0.092		mg/Kg	1	2/26/2018 6:21:15 PM	36697
Benzene	ND	0.023		mg/Kg	1	2/26/2018 6:21:15 PM	36697
Toluene	ND	0.046		mg/Kg	1	2/26/2018 6:21:15 PM	36697
Ethylbenzene	ND	0.046		mg/Kg	1	2/26/2018 6:21:15 PM	36697
Xylenes, Total	ND	0.092		mg/Kg	1	2/26/2018 6:21:15 PM	36697
Surr: 4-Bromofluorobenzene	90.4	80-120		%Rec	1	2/26/2018 6:21:15 PM	36697

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

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

Page 1 of 15

## Analytical Report

Lab Order **1802C92**Date Reported: **3/6/2018****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Souder, Miller & Associates**Client Sample ID:** BH2-10'**Project:** Irish Hills BH2**Collection Date:** 2/20/2018 10:31:00 AM**Lab ID:** 1802C92-002**Matrix:** SOIL**Received Date:** 2/23/2018 9:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	2400	150		mg/Kg	100	3/1/2018 5:27:10 PM	36746
<b>EPA METHOD 6010B: SOIL METALS</b>							Analyst: <b>JLF</b>
Iron	3100	49		mg/Kg	20	3/5/2018 5:08:25 PM	36792

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

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

Page 2 of 15

## Analytical Report

Lab Order 1802C92

Date Reported: 3/6/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller &amp; Associates

Client Sample ID: BH2-15'

Project: Irish Hills BH2

Collection Date: 2/20/2018 10:35:00 AM

Lab ID: 1802C92-003

Matrix: SOIL

Received Date: 2/23/2018 9:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	2400	150		mg/Kg	100	3/1/2018 5:39:34 PM	36746

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

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

Page 3 of 15

## Analytical Report

Lab Order 1802C92

Date Reported: 3/6/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller &amp; Associates

Client Sample ID: BH2-20'

Project: Irish Hills BH2

Collection Date: 2/20/2018 10:40:00 AM

Lab ID: 1802C92-004

Matrix: SOIL

Received Date: 2/23/2018 9:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	1000	75		mg/Kg	50	3/2/2018 12:39:17 PM	36746

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

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

Page 4 of 15

## Analytical Report

Lab Order 1802C92

Date Reported: 3/6/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller &amp; Associates

Client Sample ID: BH2-25'

Project: Irish Hills BH2

Collection Date: 2/20/2018 10:46:00 AM

Lab ID: 1802C92-005

Matrix: SOIL

Received Date: 2/23/2018 9:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: CJS
Chloride	ND	30		mg/Kg	20	2/28/2018 12:11:52 PM	36768

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

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

Page 5 of 15



## Analytical Report

Lab Order 1802C92

Date Reported: 3/6/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller &amp; Associates

Client Sample ID: BH2-30'

Project: Irish Hills BH2

Collection Date: 2/20/2018 10:52:00 AM

Lab ID: 1802C92-006

Matrix: SOIL

Received Date: 2/23/2018 9:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>CJS</b>
Chloride	ND	30		mg/Kg	20	2/28/2018 12:24:16 PM	36768
<b>EPA METHOD 6010B: SOIL METALS</b>							Analyst: <b>JLF</b>
Iron	15000	250		mg/Kg	100	3/5/2018 5:10:03 PM	36792
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	2/28/2018 3:11:11 PM	36728
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/28/2018 3:11:11 PM	36728
Surr: DNOP	82.1	70-130		%Rec	1	2/28/2018 3:11:11 PM	36728
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/26/2018 6:44:38 PM	36697
Surr: BFB	85.4	15-316		%Rec	1	2/26/2018 6:44:38 PM	36697
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Methyl tert-butyl ether (MTBE)	ND	0.095		mg/Kg	1	2/26/2018 6:44:38 PM	36697
Benzene	ND	0.024		mg/Kg	1	2/26/2018 6:44:38 PM	36697
Toluene	ND	0.048		mg/Kg	1	2/26/2018 6:44:38 PM	36697
Ethylbenzene	ND	0.048		mg/Kg	1	2/26/2018 6:44:38 PM	36697
Xylenes, Total	ND	0.095		mg/Kg	1	2/26/2018 6:44:38 PM	36697
Surr: 4-Bromofluorobenzene	86.6	80-120		%Rec	1	2/26/2018 6:44:38 PM	36697

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

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

Page 6 of 15

## Analytical Report

Lab Order 1802C92

Date Reported: 3/6/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller &amp; Associates

Client Sample ID: BH2-35'

Project: Irish Hills BH2

Collection Date: 2/20/2018 10:55:00 AM

Lab ID: 1802C92-007

Matrix: SOIL

Received Date: 2/23/2018 9:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: CJS
Chloride	ND	30		mg/Kg	20	2/28/2018 1:26:20 PM	36768

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

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

Page 7 of 15

## Analytical Report

Lab Order **1802C92**Date Reported: **3/6/2018****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Souder, Miller & Associates**Client Sample ID:** BH2-40'**Project:** Irish Hills BH2**Collection Date:** 2/20/2018 11:01:00 AM**Lab ID:** 1802C92-008**Matrix:** SOIL**Received Date:** 2/23/2018 9:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>CJS</b>
Chloride	ND	30		mg/Kg	20	2/28/2018 1:38:44 PM	36768

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

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

Page 8 of 15

## Analytical Report

Lab Order **1802C92**Date Reported: **3/6/2018****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Souder, Miller & Associates**Client Sample ID:** BH2-50'**Project:** Irish Hills BH2**Collection Date:** 2/20/2018 11:13:00 AM**Lab ID:** 1802C92-009**Matrix:** SOIL**Received Date:** 2/23/2018 9:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>CJS</b>
Chloride	73	30		mg/Kg	20	2/28/2018 1:51:09 PM	36768

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

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

Page 9 of 15

## Analytical Report

Lab Order **1802C92**Date Reported: **3/6/2018****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Souder, Miller & Associates**Client Sample ID:** BH2-60'**Project:** Irish Hills BH2**Collection Date:** 2/20/2018 11:29:00 AM**Lab ID:** 1802C92-010**Matrix:** SOIL**Received Date:** 2/23/2018 9:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>CJS</b>
Chloride	ND	30		mg/Kg	20	2/28/2018 2:03:34 PM	36768

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

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

Page 10 of 15

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 1802C92

06-Mar-18

**Client:** Souder, Miller & Associates**Project:** Irish Hills BH2

Sample ID	MB-36746		SampType:	mblk		TestCode:	EPA Method 300.0: Anions				
Client ID:	PBS		Batch ID:	36746		RunNo:	49437				
Prep Date:	2/27/2018		Analysis Date:	2/27/2018		SeqNo:	1596883		Units:	mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	ND	1.5									

Sample ID	LCS-36746		SampType: Ics		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSS		Batch ID: 36746		RunNo: 49437					
Prep Date:	2/27/2018		Analysis Date: 2/27/2018		SeqNo: 1596884		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.5	90	110			

Sample ID	MB-36768		SampType:	mblk		TestCode:	EPA Method 300.0: Anions				
Client ID:	PBS		Batch ID:	36768		RunNo:	49447				
Prep Date:	2/28/2018		Analysis Date:	2/28/2018		SeqNo:	1598319		Units:	mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	ND	1.5									

Sample ID	LCS-36768		SampType: lcs		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSS		Batch ID: 36768		RunNo: 49447					
Prep Date:	2/28/2018		Analysis Date: 2/28/2018		SeqNo: 1598320		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.7	90	110			

**Qualifiers:**

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

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified



**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**WO#: **1802C92****06-Mar-18****Client:** Souder, Miller & Associates**Project:** Irish Hills BH2

Sample ID <b>LCS-36728</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>36728</b>			RunNo: <b>49398</b>						
Prep Date: <b>2/26/2018</b>	Analysis Date: <b>2/27/2018</b>			SeqNo: <b>1595183</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	87.9	70	130			
Surr: DNOP	4.5		5.000		90.9	70	130			

Sample ID <b>MB-36728</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>PBS</b>	Batch ID: <b>36728</b>			RunNo: <b>49398</b>						
Prep Date: <b>2/26/2018</b>	Analysis Date: <b>2/27/2018</b>			SeqNo: <b>1595184</b>		Units: <b>mg/Kg</b>				
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	9.4		10.00		94.2	70	130			

**Qualifiers:**

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

Page 12 of 15

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1802C92  
06-Mar-18

Client: Souder, Miller & Associates  
Project: Irish Hills BH2

Sample ID	MB-36697	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	36697	RunNo:	49378					
Prep Date:	2/23/2018	Analysis Date:	2/26/2018	SeqNo:	1594725	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	15	316			

Sample ID	LCS-36697	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	36697	RunNo:	49379					
Prep Date:	2/23/2018	Analysis Date:	2/26/2018	SeqNo:	1594780	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	84.2	75.9	131			
Surr: BFB	1000		1000		105	15	316			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Page 13 of 15

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**WO#: **1802C92****06-Mar-18****Client:** Souder, Miller & Associates**Project:** Irish Hills BH2

Sample ID <b>MB-36697</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>36697</b>		RunNo: <b>49378</b>							
Prep Date: <b>2/23/2018</b>	Analysis Date: <b>2/26/2018</b>		SeqNo: <b>1594752</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	0.10								
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.99		1.000		99.2	80	120			

Sample ID <b>LCS-36697</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>36697</b>		RunNo: <b>49378</b>							
Prep Date: <b>2/23/2018</b>	Analysis Date: <b>2/26/2018</b>		SeqNo: <b>1594753</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	1.0	0.10	1.000	0	101	70.1	121			
Benzene	1.1	0.025	1.000	0	107	77.3	128			
Toluene	1.1	0.050	1.000	0	106	79.2	125			
Ethylbenzene	1.0	0.050	1.000	0	105	80.7	127			
Xylenes, Total	3.2	0.10	3.000	0	108	81.6	129			
Surr: 4-Bromofluorobenzene	0.99		1.000		98.8	80	120			

**Qualifiers:**

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1802C92  
06-Mar-18

Client: Souder, Miller & Associates  
Project: Irish Hills BH2

Sample ID	MB-36792	SampType:	MBLK	TestCode:	EPA Method 6010B: Soil Metals					
Client ID:	PBS	Batch ID:	36792	RunNo:	49554					
Prep Date:	3/1/2018	Analysis Date:	3/5/2018	SeqNo:	1601817	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	2.5								

Sample ID	LCS-36792	SampType:	LCS	TestCode:	EPA Method 6010B: Soil Metals					
Client ID:	LCSS	Batch ID:	36792	RunNo:	49554					
Prep Date:	3/1/2018	Analysis Date:	3/5/2018	SeqNo:	1601819	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	23	2.5	25.00	0	93.6	80	120			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Page 15 of 15



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4197  
Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: SMA-CARLSBAD

Work Order Number: 1802C92

RcptNo: 1

Received By: Dennis Suazo

2/23/2018 9:35:00 AM

Completed By: Ashley Gallegos

2/23/2018 10:47:58 AM

Reviewed By:

02/23/18

labeled by: SRE 02/23/18

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  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
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:

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 PersonRegarding:                     Client Instructions:                     

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.5	Good	Yes			



## Chain-of-Custody Record

Client: SMA - CarlisbadMailing Address: 201 S. Halagueno

Phone #:

Email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other☐ EDD (Type)

Turn-Around Time:

☐ Standard ☒ Rush

Project Name:

Wish Hills (BH2)

Project #:

Project Manager:

Austrik Wegant

Sampler:

MES CENOn Ice: ☒ Yes ☐ NoSample Temperature: 7.5

Date

Time

Matrix

Sample Request ID

Container Type and #

Preservative Type

HEAL No.

BTEX + MTBE + TMB's (8021)

BTEX + MTBE + TPH (Gas only)

TPH B015B (GRO / DRO / MRO)

TPH (Method 418.1)

EDB (Method 504.1)

PAH's (8310 or 8270 SIMS)

RCRA 8 Metals

Anions (F, Cl, NO<sub>3</sub>, NO<sub>2</sub>, PO<sub>4</sub>, SO<sub>4</sub>)

8081 Pesticides / 8082 PCB's

8260B (VOA)

8270 (Semi-VOA)

(Iron) U10B

Air Bubbles (Y or N)

Date

Time

Relinquished by:

Received by:

Date

Time

Remarks:

2-22-18

1600

M. Long

Sgt

2/22/18

1600

E09

2/22/18

1900

Sgt

D. Long

2/23/18

0935





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

March 06, 2018

Austin Weyant  
Souder, Miller & Associates  
201 S Halagueno  
Carlsbad, NM 88221  
TEL: (575) 689-7040  
FAX

RE: Irish Hills BH3

OrderNo.: 1802C96

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 9 sample(s) on 2/23/2018 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](http://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 #NM0190

Sincerely,

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

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

## Analytical Report

Lab Order 1802C96

Date Reported: 3/6/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller &amp; Associates

Client Sample ID: BH3-5'

Project: Irish Hills BH3

Collection Date: 2/20/2018 12:11:00 PM

Lab ID: 1802C96-001

Matrix: SOIL

Received Date: 2/23/2018 9:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>CJS</b>
Chloride	1600	75		mg/Kg	50	2/28/2018 5:09:43 PM	36744
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	2/28/2018 3:35:26 PM	36728
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/28/2018 3:35:26 PM	36728
Surr: DNOP	92.2	70-130		%Rec	1	2/28/2018 3:35:26 PM	36728
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	2/26/2018 7:08:01 PM	36697
Surr: BFB	88.6	15-316		%Rec	1	2/26/2018 7:08:01 PM	36697
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Methyl tert-butyl ether (MTBE)	ND	0.094		mg/Kg	1	2/26/2018 7:08:01 PM	36697
Benzene	ND	0.024		mg/Kg	1	2/26/2018 7:08:01 PM	36697
Toluene	ND	0.047		mg/Kg	1	2/26/2018 7:08:01 PM	36697
Ethylbenzene	ND	0.047		mg/Kg	1	2/26/2018 7:08:01 PM	36697
Xylenes, Total	ND	0.094		mg/Kg	1	2/26/2018 7:08:01 PM	36697
Surr: 4-Bromofluorobenzene	86.9	80-120		%Rec	1	2/26/2018 7:08:01 PM	36697

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

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

Page 1 of 14

## Analytical Report

Lab Order **1802C96**Date Reported: **3/6/2018****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Souder, Miller & Associates**Client Sample ID:** BH3-10'**Project:** Irish Hills BH3**Collection Date:** 2/20/2018 12:21:00 PM**Lab ID:** 1802C96-002**Matrix:** SOIL**Received Date:** 2/23/2018 9:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>CJS</b>
Chloride	1700		75	mg/Kg	50	2/28/2018 5:22:07 PM	36744

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

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

Page 2 of 14

## Analytical Report

Lab Order 1802C96

Date Reported: 3/6/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller &amp; Associates

Client Sample ID: BH3-15'

Project: Irish Hills BH3

Collection Date: 2/20/2018 12:24:00 PM

Lab ID: 1802C96-003

Matrix: SOIL

Received Date: 2/23/2018 9:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: CJS
Chloride	2300	75		mg/Kg	50	2/28/2018 5:59:21 PM	36744

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

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

Page 3 of 14

## Analytical Report

Lab Order 1802C96

Date Reported: 3/6/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller &amp; Associates

Client Sample ID: BH3-20'

Project: Irish Hills BH3

Collection Date: 2/20/2018 12:32:00 PM

Lab ID: 1802C96-004

Matrix: SOIL

Received Date: 2/23/2018 9:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	580	30		mg/Kg	20	2/27/2018 5:47:05 PM	36744

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

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

Page 4 of 14

## Analytical Report

Lab Order 1802C96

Date Reported: 3/6/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller &amp; Associates

Client Sample ID: BH3-25'

Project: Irish Hills BH3

Collection Date: 2/20/2018 12:37:00 PM

Lab ID: 1802C96-005

Matrix: SOIL

Received Date: 2/23/2018 9:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	2/27/2018 5:59:29 PM	36744

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

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

Page 5 of 14



## Analytical Report

Lab Order 1802C96

Date Reported: 3/6/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller &amp; Associates

Client Sample ID: BH3-30'

Project: Irish Hills BH3

Collection Date: 2/20/2018 12:48:00 PM

Lab ID: 1802C96-006

Matrix: SOIL

Received Date: 2/23/2018 9:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>CJS</b>
Chloride	280	30		mg/Kg	20	2/28/2018 4:20:05 PM	36768
<b>EPA METHOD 6010B: SOIL METALS</b>							Analyst: <b>JLF</b>
Iron	9800	120		mg/Kg	50	3/5/2018 5:11:40 PM	36792
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	2/28/2018 4:00:00 PM	36728
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/28/2018 4:00:00 PM	36728
Surr: DNOP	89.1	70-130		%Rec	1	2/28/2018 4:00:00 PM	36728
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/26/2018 7:31:19 PM	36697
Surr: BFB	92.7	15-316		%Rec	1	2/26/2018 7:31:19 PM	36697
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Methyl tert-butyl ether (MTBE)	ND	0.097		mg/Kg	1	2/26/2018 7:31:19 PM	36697
Benzene	ND	0.024		mg/Kg	1	2/26/2018 7:31:19 PM	36697
Toluene	ND	0.048		mg/Kg	1	2/26/2018 7:31:19 PM	36697
Ethylbenzene	ND	0.048		mg/Kg	1	2/26/2018 7:31:19 PM	36697
Xylenes, Total	ND	0.097		mg/Kg	1	2/26/2018 7:31:19 PM	36697
Surr: 4-Bromofluorobenzene	91.6	80-120		%Rec	1	2/26/2018 7:31:19 PM	36697

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

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

Page 6 of 14

## Analytical Report

Lab Order 1802C96

Date Reported: 3/6/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller &amp; Associates

Client Sample ID: BH3-35'

Project: Irish Hills BH3

Collection Date: 2/20/2018 12:57:00 PM

Lab ID: 1802C96-007

Matrix: SOIL

Received Date: 2/23/2018 9:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: CJS
Chloride	ND	30		mg/Kg	20	2/28/2018 4:32:29 PM	36768

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

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

Page 7 of 14

## Analytical Report

Lab Order **1802C96**Date Reported: **3/6/2018****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Souder, Miller & Associates**Client Sample ID:** BH3-40'**Project:** Irish Hills BH3**Collection Date:** 2/20/2018 1:05:00 PM**Lab ID:** 1802C96-008**Matrix:** SOIL**Received Date:** 2/23/2018 9:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>CJS</b>
Chloride	ND	30		mg/Kg	20	2/28/2018 4:44:54 PM	36768
<b>EPA METHOD 6010B: SOIL METALS</b>							Analyst: <b>JLF</b>
Iron	12000	240		mg/Kg	100	3/5/2018 5:13:17 PM	36792

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

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

Page 8 of 14

## Analytical Report

Lab Order 1802C96

Date Reported: 3/6/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller &amp; Associates

Client Sample ID: BH3-50'

Project: Irish Hills BH3

Collection Date: 2/20/2018 1:25:00 PM

Lab ID: 1802C96-009

Matrix: SOIL

Received Date: 2/23/2018 9:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: CJS
Chloride	ND	30		mg/Kg	20	2/28/2018 4:57:19 PM	36768

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

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

Page 9 of 14

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**WO#: **1802C96****06-Mar-18****Client:** Souder, Miller & Associates**Project:** Irish Hills BH3

Sample ID <b>MB-36744</b>	SampType: <b>mblk</b>			TestCode: <b>EPA Method 300.0: Anions</b>						
Client ID: <b>PBS</b>	Batch ID: <b>36744</b>			RunNo: <b>49418</b>						
Prep Date: <b>2/27/2018</b>	Analysis Date: <b>2/27/2018</b>			SeqNo: <b>1596960</b>	Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID <b>LCS-36744</b>	SampType: <b>lcs</b>			TestCode: <b>EPA Method 300.0: Anions</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>36744</b>			RunNo: <b>49418</b>						
Prep Date: <b>2/27/2018</b>	Analysis Date: <b>2/27/2018</b>			SeqNo: <b>1596961</b>	Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.8	90	110			

Sample ID <b>MB-36768</b>	SampType: <b>mblk</b>			TestCode: <b>EPA Method 300.0: Anions</b>						
Client ID: <b>PBS</b>	Batch ID: <b>36768</b>			RunNo: <b>49447</b>						
Prep Date: <b>2/28/2018</b>	Analysis Date: <b>2/28/2018</b>			SeqNo: <b>1598319</b>	Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID <b>LCS-36768</b>	SampType: <b>lcs</b>			TestCode: <b>EPA Method 300.0: Anions</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>36768</b>			RunNo: <b>49447</b>						
Prep Date: <b>2/28/2018</b>	Analysis Date: <b>2/28/2018</b>			SeqNo: <b>1598320</b>	Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.7	90	110			

**Qualifiers:**

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1802C96  
06-Mar-18

Client: Souder, Miller & Associates  
Project: Irish Hills BH3

Sample ID	LCS-36728	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	36728	RunNo:	49398					
Prep Date:	2/26/2018	Analysis Date:	2/27/2018	SeqNo:	1595183	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	87.9	70	130			
Surr: DNOP	4.5		5.000		90.9	70	130			

Sample ID	MB-36728	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	36728	RunNo:	49398					
Prep Date:	2/26/2018	Analysis Date:	2/27/2018	SeqNo:	1595184	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	9.4		10.00		94.2	70	130			

Qualifiers:

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

Page 11 of 14



QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 1802C96  
06-Mar-18

Client: Souder, Miller & Associates  
Project: Irish Hills BH3

Sample ID	MB-36697		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS		Batch ID: 36697		RunNo: 49378					
Prep Date:	2/23/2018		Analysis Date: 2/26/2018		SeqNo: 1594725		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	15	316			

Sample ID	LCS-36697		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 36697		RunNo: 49379					
Prep Date:	2/23/2018		Analysis Date: 2/26/2018		SeqNo: 1594780		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	84.2	75.9	131			
Surr: BFB	1000		1000		105	15	316			

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1802C96  
06-Mar-18

Client: Souder, Miller & Associates  
Project: Irish Hills BH3

Sample ID	MB-36697		SampType: MBLK		TestCode: EPA Method 8021B: Volatiles					
Client ID:	PBS		Batch ID: 36697		RunNo: 49378					
Prep Date:	2/23/2018		Analysis Date: 2/26/2018		SeqNo: 1594752		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	0.10								
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.99		1.000		99.2	80	120			

Sample ID	LCS-36697		SampType: LCS		TestCode: EPA Method 8021B: Volatiles					
Client ID:	LCSS		Batch ID: 36697		RunNo: 49378					
Prep Date:	2/23/2018		Analysis Date: 2/26/2018		SeqNo: 1594753		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	1.0	0.10	1.000	0	101	70.1	121			
Benzene	1.1	0.025	1.000	0	107	77.3	128			
Toluene	1.1	0.050	1.000	0	106	79.2	125			
Ethylbenzene	1.0	0.050	1.000	0	105	80.7	127			
Xylenes, Total	3.2	0.10	3.000	0	108	81.6	129			
Surr: 4-Bromofluorobenzene	0.99		1.000		98.8	80	120			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Page 13 of 14

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 1802C96  
06-Mar-18

Client: Souder, Miller & Associates  
Project: Irish Hills BH3

Sample ID	MB-36792	SampType:	MBLK	TestCode:	EPA Method 6010B: Soil Metals					
Client ID:	PBS	Batch ID:	36792	RunNo:	49554					
Prep Date:	3/1/2018	Analysis Date:	3/5/2018	SeqNo:	1601817	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	2.5								

Sample ID	LCS-36792	SampType:	LCS	TestCode:	EPA Method 6010B: Soil Metals					
Client ID:	LCSS	Batch ID:	36792	RunNo:	49554					
Prep Date:	3/1/2018	Analysis Date:	3/5/2018	SeqNo:	1601819	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	23	2.5	25.00	0	93.6	80	120			

Qualifiers:

- \*

Value exceeds Maximum Contaminant Level.
- D

Sample Diluted Due to Matrix
- H

Holding times for preparation or analysis exceeded
- ND

Not Detected at the Reporting Limit
- PQL

Practical Quantitative Limit
- S

% Recovery outside of range due to dilution or matrix
- B

Analyte detected in the associated Method Blank
- E

Value above quantitation range
- J

Analyte detected below quantitation limits
- P

Sample pH Not In Range
- RL

Reporting Detection Limit
- W

Sample container temperature is out of limit as specified



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: SMA-CARLSBAD

Work Order Number: 1802C96

RcptNo: 1

Received By: Dennis Suazo 2/23/2018 9:35:00 AM

Completed By: Ashley Gallegos 2/23/2018 11:33:39 AM

Reviewed By: *[Signature]* 02/23/18  
Labeled By: *[Signature]* 02/23/18Chain of Custody1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐2. How was the sample delivered? CourierLog In3. 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. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒10. Were any sample containers received broken? Yes ☐ No ☒11. Does paperwork match bottle labels? Yes ☒ No ☐

(Note discrepancies on chain of custody)

12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐13. Is it clear what analyses were requested? Yes ☒ No ☐14. Were all holding times able to be met? Yes ☒ No ☐

(If no, notify customer for authorization.)

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

Adjusted? \_\_\_\_\_

Checked by: \_\_\_\_\_

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	2.5	Good	Yes			





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

February 10, 2023

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

RE: Irish Hills Pipeline

OrderNo.: 2302139

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 5 sample(s) on 2/3/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109



## Analytical Report

Lab Order 2302139

Date Reported: 2/10/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WES23-10 4.0'

Project: Irish Hills Pipeline

Collection Date: 2/1/2023 9:00:00 AM

Lab ID: 2302139-001

Matrix: SOIL

Received Date: 2/3/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>NAI</b>
Chloride	1100	60		mg/Kg	20	2/4/2023 7:00:35 PM	73004
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	2/6/2023 10:24:41 PM	72997
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/6/2023 10:24:41 PM	72997
Surr: DNOP	110	69-147		%Rec	1	2/6/2023 10:24:41 PM	72997
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/7/2023 3:09:31 AM	72992
Surr: BFB	102	37.7-212		%Rec	1	2/7/2023 3:09:31 AM	72992
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JJP</b>
Benzene	ND	0.025		mg/Kg	1	2/7/2023 3:09:31 AM	72992
Toluene	ND	0.050		mg/Kg	1	2/7/2023 3:09:31 AM	72992
Ethylbenzene	ND	0.050		mg/Kg	1	2/7/2023 3:09:31 AM	72992
Xylenes, Total	ND	0.10		mg/Kg	1	2/7/2023 3:09:31 AM	72992
Surr: 4-Bromofluorobenzene	88.9	70-130		%Rec	1	2/7/2023 3:09:31 AM	72992

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

## Analytical Report

Lab Order 2302139

Date Reported: 2/10/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WES23-15 4.0'

Project: Irish Hills Pipeline

Collection Date: 2/1/2023 9:30:00 AM

Lab ID: 2302139-002

Matrix: SOIL

Received Date: 2/3/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>NAI</b>
Chloride	1000	60		mg/Kg	20	2/4/2023 7:13:00 PM	73004
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	2/6/2023 10:38:36 PM	72997
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/6/2023 10:38:36 PM	72997
Surr: DNOP	103	69-147		%Rec	1	2/6/2023 10:38:36 PM	72997
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/7/2023 3:32:54 AM	72992
Surr: BFB	101	37.7-212		%Rec	1	2/7/2023 3:32:54 AM	72992
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JJP</b>
Benzene	ND	0.025		mg/Kg	1	2/7/2023 3:32:54 AM	72992
Toluene	ND	0.050		mg/Kg	1	2/7/2023 3:32:54 AM	72992
Ethylbenzene	ND	0.050		mg/Kg	1	2/7/2023 3:32:54 AM	72992
Xylenes, Total	ND	0.10		mg/Kg	1	2/7/2023 3:32:54 AM	72992
Surr: 4-Bromofluorobenzene	88.1	70-130		%Rec	1	2/7/2023 3:32:54 AM	72992

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

## Analytical Report

Lab Order 2302139

Date Reported: 2/10/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WES23-17 4.0'

Project: Irish Hills Pipeline

Collection Date: 2/1/2023 9:40:00 AM

Lab ID: 2302139-003

Matrix: SOIL

Received Date: 2/3/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>NAI</b>
Chloride	530	60		mg/Kg	20	2/4/2023 7:25:25 PM	73004
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	2/6/2023 10:52:35 PM	72997
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/6/2023 10:52:35 PM	72997
Surr: DNOP	110	69-147		%Rec	1	2/6/2023 10:52:35 PM	72997
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/7/2023 3:56:16 AM	72992
Surr: BFB	101	37.7-212		%Rec	1	2/7/2023 3:56:16 AM	72992
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JJP</b>
Benzene	ND	0.025		mg/Kg	1	2/7/2023 3:56:16 AM	72992
Toluene	ND	0.049		mg/Kg	1	2/7/2023 3:56:16 AM	72992
Ethylbenzene	ND	0.049		mg/Kg	1	2/7/2023 3:56:16 AM	72992
Xylenes, Total	ND	0.098		mg/Kg	1	2/7/2023 3:56:16 AM	72992
Surr: 4-Bromofluorobenzene	88.5	70-130		%Rec	1	2/7/2023 3:56:16 AM	72992

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

## Analytical Report

Lab Order 2302139

Date Reported: 2/10/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WES23-23 4.0'

Project: Irish Hills Pipeline

Collection Date: 2/1/2023 11:00:00 AM

Lab ID: 2302139-004

Matrix: SOIL

Received Date: 2/3/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>NAI</b>
Chloride	720	60		mg/Kg	20	2/4/2023 7:37:50 PM	73004
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	8.7		mg/Kg	1	2/6/2023 11:06:38 PM	72997
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	2/6/2023 11:06:38 PM	72997
Surr: DNOP	100	69-147		%Rec	1	2/6/2023 11:06:38 PM	72997
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/7/2023 4:19:43 AM	72992
Surr: BFB	102	37.7-212		%Rec	1	2/7/2023 4:19:43 AM	72992
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JJP</b>
Benzene	ND	0.025		mg/Kg	1	2/7/2023 4:19:43 AM	72992
Toluene	ND	0.049		mg/Kg	1	2/7/2023 4:19:43 AM	72992
Ethylbenzene	ND	0.049		mg/Kg	1	2/7/2023 4:19:43 AM	72992
Xylenes, Total	ND	0.098		mg/Kg	1	2/7/2023 4:19:43 AM	72992
Surr: 4-Bromofluorobenzene	89.8	70-130		%Rec	1	2/7/2023 4:19:43 AM	72992

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

## Analytical Report

Lab Order 2302139

Date Reported: 2/10/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WES23-24 4.0'

Project: Irish Hills Pipeline

Collection Date: 2/1/2023 11:10:00 AM

Lab ID: 2302139-005

Matrix: SOIL

Received Date: 2/3/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>NAI</b>
Chloride	1400	60		mg/Kg	20	2/4/2023 7:50:15 PM	73004
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	2/6/2023 11:20:36 PM	72997
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/6/2023 11:20:36 PM	72997
Surr: DNOP	103	69-147		%Rec	1	2/6/2023 11:20:36 PM	72997
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/7/2023 4:43:09 AM	72992
Surr: BFB	101	37.7-212		%Rec	1	2/7/2023 4:43:09 AM	72992
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	2/7/2023 4:43:09 AM	72992
Toluene	ND	0.049		mg/Kg	1	2/7/2023 4:43:09 AM	72992
Ethylbenzene	ND	0.049		mg/Kg	1	2/7/2023 4:43:09 AM	72992
Xylenes, Total	ND	0.098		mg/Kg	1	2/7/2023 4:43:09 AM	72992
Surr: 4-Bromofluorobenzene	87.6	70-130		%Rec	1	2/7/2023 4:43:09 AM	72992

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2302139  
10-Feb-23

Client: EOG  
Project: Irish Hills Pipeline

Sample ID: MB-73004	SampType: mblk	TestCode: EPA Method 300.0: Anions
Client ID: PBS	Batch ID: 73004	RunNo: 94417
Prep Date: 2/4/2023	Analysis Date: 2/4/2023	SeqNo: 3411174 Units: mg/Kg
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Chloride	ND	1.5

Sample ID: LCS-73004	SampType: lcs	TestCode: EPA Method 300.0: Anions
Client ID: LCSS	Batch ID: 73004	RunNo: 94417
Prep Date: 2/4/2023	Analysis Date: 2/4/2023	SeqNo: 3411175 Units: mg/Kg
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Chloride	14	1.5 15.00 0 96.4 90 110

Qualifiers:

- \*

Value exceeds Maximum Contaminant Level.
- D

Sample Diluted Due to Matrix
- H

Holding times for preparation or analysis exceeded
- ND

Not Detected at the Reporting Limit
- PQL

Practical Quantitative Limit
- S

% Recovery outside of standard limits. If undiluted results may be estimated.
- B

Analyte detected in the associated Method Blank
- E

Above Quantitation Range/Estimated Value
- J

Analyte detected below quantitation limits
- P

Sample pH Not In Range
- RL

Reporting Limit



QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2302139  
10-Feb-23

Client: EOG  
Project: Irish Hills Pipeline

Sample ID: LCS-72997	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 72997	RunNo: 94419								
Prep Date: 2/3/2023	Analysis Date: 2/6/2023	SeqNo: 3411232			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	10	50.00	0	79.4	61.9	130			
Surr: DNOP	4.3		5.000		86.2	69	147			

Sample ID: MB-72997	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 72997	RunNo: 94419								
Prep Date: 2/3/2023	Analysis Date: 2/6/2023	SeqNo: 3411234			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	8.8		10.00		87.7	69	147			

Qualifiers:

- \*

Value exceeds Maximum Contaminant Level.
- D

Sample Diluted Due to Matrix
- H

Holding times for preparation or analysis exceeded
- ND

Not Detected at the Reporting Limit
- PQL

Practical Quantitative Limit
- S

% Recovery outside of standard limits. If undiluted results may be estimated.
- B

Analyte detected in the associated Method Blank
- E

Above Quantitation Range/Estimated Value
- J

Analyte detected below quantitation limits
- P

Sample pH Not In Range
- RL

Reporting Limit

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2302139  
10-Feb-23

Client: EOG  
Project: Irish Hills Pipeline

Sample ID: <b>lcs-72992</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>72992</b>			RunNo: <b>94414</b>						
Prep Date: <b>2/3/2023</b>	Analysis Date: <b>2/6/2023</b>			SeqNo: <b>3411909</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	25.00	0	108	72.3	137			
Surr: BFB	1100		1000		113	37.7	212			

Sample ID: <b>mb-72992</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>PBS</b>	Batch ID: <b>72992</b>			RunNo: <b>94414</b>						
Prep Date: <b>2/3/2023</b>	Analysis Date: <b>2/6/2023</b>			SeqNo: <b>3411910</b>		Units: <b>mg/Kg</b>				
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			

Qualifiers:

- \*

Value exceeds Maximum Contaminant Level.
- D

Sample Diluted Due to Matrix
- H

Holding times for preparation or analysis exceeded
- ND

Not Detected at the Reporting Limit
- PQL

Practical Quantitative Limit
- S

% Recovery outside of standard limits. If undiluted results may be estimated.
- B

Analyte detected in the associated Method Blank
- E

Above Quantitation Range/Estimated Value
- J

Analyte detected below quantitation limits
- P

Sample pH Not In Range
- RL

Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2302139

10-Feb-23

**Client:** EOG  
**Project:** Irish Hills Pipeline

Sample ID: <b>LCS-72992</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>72992</b>	RunNo: <b>94414</b>								
Prep Date: <b>2/3/2023</b>	Analysis Date: <b>2/6/2023</b>	SeqNo: <b>3412014</b>	Units: <b>mg/Kg</b>							
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	0.86	0.050	1.000	0	85.9	80	120			
Ethylbenzene	0.85	0.050	1.000	0	84.7	80	120			
Xylenes, Total	2.6	0.10	3.000	0	85.3	80	120			
Surr: 4-Bromofluorobenzene	0.90		1.000		90.5	70	130			

Sample ID: <b>mb-72992</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>72992</b>	RunNo: <b>94414</b>								
Prep Date: <b>2/3/2023</b>	Analysis Date: <b>2/6/2023</b>	SeqNo: <b>3412015</b>	Units: <b>mg/Kg</b>							
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	0.90		1.000		90.1	70	130			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit



Hall Environmental Analysis Laboratory  
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: 2302139

RcptNo: 1

Received By: Tracy Casarrubias 2/3/2023 7:25:00 AM

Completed By: Tracy Casarrubias 2/3/2023 8:03:17 AM

Reviewed By: *[Signature]* 2-3-23

### Chain of Custody

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

### Log In

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

# of preserved  
bottles checked  
for pH:

(<2 or >12 unless noted)

Adjusted?

Checked by: *Jr 2/3/23*

### Special Handling (if applicable)

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

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

### 17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.9	Good	Yes	Morty		

## Chain-of-Custody Record

Client: Direct BillMailing Address: EOG

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)Accreditation: ☐ Az Compliance☐ NELAC ☐ Other☐ EDD (Type)

Turn-Around Time:

☐ Standard ☒ Rush

Project Name:

Irish Hills Pipeline

Project #:

22E-0076-02

Project Manager:

Chance Dixon

Sampler:

AKOn Ice: ☒ Yes ☐ No

Morty

# of Coolers:

Cooler Temp (including CF): 1.1-0.2-0.9 (°C)

Date Time Matrix Sample Name

2-1-23 0900 Soil WES23-10 4.0'0930 WES23-15 4.0'0940 WES23-17 4.0'1100 WES23-23 4.0'1110 WES23-24 4.0'

Date:

Time:

Relinquished by:

Date:

Time:

Relinquished by:

Received by:

Via:

Date

Time

Received by:

Via:

Date

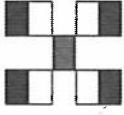
Time

Remarks:

CC: Chance Dixon

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.

Released to Imaging: 9/15/2023 10:26:47 AM

HALL ENVIRONMENTAL  
ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

TPH8015D(GRO / DRO / MRO)

8081 Pesticides/8082 PCB's

EDB (Method 504.1)

PAHs by 8310 or 8270SIMS

RCRA 8 Metals

(C) F, Br, NO<sub>3</sub>, NO<sub>2</sub>, PO<sub>4</sub>, SO<sub>4</sub>

8260 (VOA)

8270 (Semi-VOA)

Total Coliform (Present/Absent)

BTEX / MTBE / TMB's (8021)



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

February 10, 2023

Chance Dixon

EOG

105 South Fourth Street

Artesia, NM 88210

TEL:

FAX

RE: Irish Hills Pipeline

OrderNo.: 2302195

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 2 sample(s) on 2/4/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109



## Analytical Report

Lab Order 2302195

Date Reported: 2/10/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WES23-36 4.0'

Project: Irish Hills Pipeline

Collection Date: 2/2/2023 10:30:00 AM

Lab ID: 2302195-001

Matrix: MEOH (SOIL)

Received Date: 2/4/2023 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>NAI</b>
Chloride	1300	60		mg/Kg	20	2/4/2023 3:29:35 PM	73004
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	10	10		mg/Kg	1	2/6/2023 5:42:29 PM	73008
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/6/2023 5:42:29 PM	73008
Surr: DNOP	119	69-147		%Rec	1	2/6/2023 5:42:29 PM	73008
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.5		mg/Kg	1	2/4/2023 8:15:00 PM	G94421
Surr: BFB	96.7	37.7-212		%Rec	1	2/4/2023 8:15:00 PM	G94421
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>CCM</b>
Benzene	ND	0.023		mg/Kg	1	2/4/2023 8:15:00 PM	B94421
Toluene	ND	0.045		mg/Kg	1	2/4/2023 8:15:00 PM	B94421
Ethylbenzene	ND	0.045		mg/Kg	1	2/4/2023 8:15:00 PM	B94421
Xylenes, Total	ND	0.090		mg/Kg	1	2/4/2023 8:15:00 PM	B94421
Surr: 4-Bromofluorobenzene	99.8	70-130		%Rec	1	2/4/2023 8:15:00 PM	B94421

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 1 of 6

## Analytical Report

Lab Order 2302195

Date Reported: 2/10/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WES23-37 4.0'

Project: Irish Hills Pipeline

Collection Date: 2/2/2023 10:35:00 AM

Lab ID: 2302195-002

Matrix: MEOH (SOIL)

Received Date: 2/4/2023 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>NAI</b>
Chloride	310	60		mg/Kg	20	2/4/2023 4:06:49 PM	73004
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	2/6/2023 5:55:43 PM	73008
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/6/2023 5:55:43 PM	73008
Surr: DNOP	117	69-147		%Rec	1	2/6/2023 5:55:43 PM	73008
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	2/4/2023 8:35:00 PM	G94421
Surr: BFB	100	37.7-212		%Rec	1	2/4/2023 8:35:00 PM	G94421
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>CCM</b>
Benzene	ND	0.023		mg/Kg	1	2/4/2023 8:35:00 PM	B94421
Toluene	ND	0.046		mg/Kg	1	2/4/2023 8:35:00 PM	B94421
Ethylbenzene	ND	0.046		mg/Kg	1	2/4/2023 8:35:00 PM	B94421
Xylenes, Total	ND	0.091		mg/Kg	1	2/4/2023 8:35:00 PM	B94421
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	2/4/2023 8:35:00 PM	B94421

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 2 of 6

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2302195

10-Feb-23

Client: EOG

Project: Irish Hills Pipeline

Sample ID: MB-73004		SampType: mblk			TestCode: EPA Method 300.0: Anions					
Client ID: PBS		Batch ID: 73004			RunNo: 94417					
Prep Date: 2/4/2023		Analysis Date: 2/4/2023			SeqNo: 3411174		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-73004		SampType: lcs			TestCode: EPA Method 300.0: Anions					
Client ID: LCSS		Batch ID: 73004			RunNo: 94417					
Prep Date: 2/4/2023		Analysis Date: 2/4/2023			SeqNo: 3411175		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.4	90	110			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 3 of 6

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2302195  
10-Feb-23

Client: EOG  
Project: Irish Hills Pipeline

Sample ID: MB-73008	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 73008	RunNo: 94419								
Prep Date: 2/6/2023	Analysis Date: 2/6/2023	SeqNo: 3411236		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	8.8		10.00		88.2	69	147			

Sample ID: LCS-73008	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 73008	RunNo: 94419								
Prep Date: 2/6/2023	Analysis Date: 2/6/2023	SeqNo: 3411569		Units: mg/Kg						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	41	10	50.00	0	81.5	61.9	130			
Surr: DNOP	4.4		5.000		88.7	69	147			

Qualifiers:

- \*

Value exceeds Maximum Contaminant Level.
- D

Sample Diluted Due to Matrix
- H

Holding times for preparation or analysis exceeded
- ND

Not Detected at the Reporting Limit
- PQL

Practical Quantitative Limit
- S

% Recovery outside of standard limits. If undiluted results may be estimated.
- B

Analyte detected in the associated Method Blank
- E

Above Quantitation Range/Estimated Value
- J

Analyte detected below quantitation limits
- P

Sample pH Not In Range
- RL

Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2302195

10-Feb-23

Client: EOG

Project: Irish Hills Pipeline

Sample ID: <b>mb 2</b>		SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>PBS</b>		Batch ID: <b>G94421</b>		RunNo: <b>94421</b>						
Prep Date:		Analysis Date: <b>2/4/2023</b>		SeqNo: <b>3411275</b>		Units: <b>mg/Kg</b>				
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		108	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 Quantitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2302195

10-Feb-23

**Client:** EOG  
**Project:** Irish Hills Pipeline

Sample ID: <b>100ng btex lcs</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>B94421</b>			RunNo: <b>94421</b>						
Prep Date:	Analysis Date: <b>2/4/2023</b>			SeqNo: <b>3411509</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.025	1.000	0	93.6	80	120			
Toluene	0.99	0.050	1.000	0	98.7	80	120			
Ethylbenzene	1.0	0.050	1.000	0	100	80	120			
Xylenes, Total	3.0	0.10	3.000	0	101	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	70	130			

Sample ID: <b>mb 2</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>PBS</b>	Batch ID: <b>B94421</b>			RunNo: <b>94421</b>						
Prep Date:	Analysis Date: <b>2/4/2023</b>			SeqNo: <b>3411510</b>		Units: <b>mg/Kg</b>				
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			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit





Hall Environmental Analysis Laboratory  
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: 2302195

RcptNo: 1

Received By: Cheyenne Cason 2/4/2023 9:00:00 AM

Completed By: Cheyenne Cason 2/4/2023 9:05:59 AM

Reviewed By: *02/04/2023*

*Chml*

*Chml*

### 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  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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:

( $\leq 2$  or  $>12$  unless noted)

Adjusted? \_\_\_\_\_

Checked by: *cmc 2/4/23*

### Special Handling (if applicable)

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

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

16. Additional remarks:

Client Information incomplete on COC - CMC 2/4/23

### 17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.3	Good	Not Present	Morty		
2	0.6	Good	Not Present	Morty		

## Chain-of-Custody Record

Client:

EDG

Dread Bill

**Mailing Address:**

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard☐ Level 4 (Full Validation)

Accreditation:

☐ Az Compliance☐ Other

□ EDD (Type)

Date	Time	Matrix	Sample Name
2-2-23	1030	S.O.I	NES23-36 4.0`
↓	1035	✓	NES23-37 4.0`
Date:	Time:	Relinquished by:	
2/2/23	1040		

Date:	Time:	Relinquished by:
-------	-------	------------------

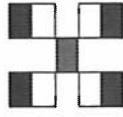
Date:	Time:	Relinquished by:
-------	-------	------------------

Received by:	Via:	Date	Time
--------------	------	------	------

Received by:	Via:	Date	Time
--------------	------	------	------

One row 2/4/23 2900

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

[www.hallenvironmental.com](http://www.hallenvironmental.com)

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

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 <sup>-</sup> , F <sup>-</sup> , Br <sup>-</sup> , NO <sub>3</sub> <sup>-</sup> , PO <sub>4</sub> <sup>-</sup> , SO <sub>4</sub> <sup>-</sup>	→
8260 (VOA)	
8270 (Semi-VOA)	
Total Coliform (Present/Absent)	

Remarks:

cc: Chance Dixon



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

February 13, 2023

Chance Dixon

EOG

105 South Fourth Street

Artesia, NM 88210

TEL:

FAX:

RE: Irish Hills Pipeline

OrderNo.: 2302260

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 2 sample(s) on 2/7/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2302260

Date Reported: 2/13/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WES23-59 4.0'

Project: Irish Hills Pipeline

Collection Date: 2/3/2023 1:00:00 PM

Lab ID: 2302260-001

Matrix: MEOH (SOIL)

Received Date: 2/7/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>NAI</b>
Chloride	460	60		mg/Kg	20	2/8/2023 1:47:19 PM	73076
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	9.7	9.4		mg/Kg	1	2/7/2023 10:14:23 AM	73041
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/7/2023 10:14:23 AM	73041
Surr: DNOP	105	69-147		%Rec	1	2/7/2023 10:14:23 AM	73041
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.1		mg/Kg	1	2/7/2023 1:00:00 PM	GS94442
Surr: BFB	92.8	37.7-212		%Rec	1	2/7/2023 1:00:00 PM	GS94442
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>CCM</b>
Benzene	ND	0.020		mg/Kg	1	2/7/2023 1:00:00 PM	BS94442
Toluene	ND	0.041		mg/Kg	1	2/7/2023 1:00:00 PM	BS94442
Ethylbenzene	ND	0.041		mg/Kg	1	2/7/2023 1:00:00 PM	BS94442
Xylenes, Total	ND	0.082		mg/Kg	1	2/7/2023 1:00:00 PM	BS94442
Surr: 4-Bromofluorobenzene	92.5	70-130		%Rec	1	2/7/2023 1:00:00 PM	BS94442

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 1 of 6

## Analytical Report

Lab Order 2302260

Date Reported: 2/13/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WES23-72 4.0'

Project: Irish Hills Pipeline

Collection Date: 2/4/2023 12:15:00 PM

Lab ID: 2302260-002

Matrix: MEOH (SOIL)

Received Date: 2/7/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>NAI</b>
Chloride	670	60		mg/Kg	20	2/8/2023 1:59:44 PM	73076
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	10	9.5		mg/Kg	1	2/7/2023 10:27:57 AM	73041
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/7/2023 10:27:57 AM	73041
Surr: DNOP	99.8	69-147		%Rec	1	2/7/2023 10:27:57 AM	73041
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.5		mg/Kg	1	2/7/2023 1:20:00 PM	GS94442
Surr: BFB	98.9	37.7-212		%Rec	1	2/7/2023 1:20:00 PM	GS94442
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>CCM</b>
Benzene	ND	0.023		mg/Kg	1	2/7/2023 1:20:00 PM	BS94442
Toluene	ND	0.045		mg/Kg	1	2/7/2023 1:20:00 PM	BS94442
Ethylbenzene	ND	0.045		mg/Kg	1	2/7/2023 1:20:00 PM	BS94442
Xylenes, Total	ND	0.091		mg/Kg	1	2/7/2023 1:20:00 PM	BS94442
Surr: 4-Bromofluorobenzene	96.1	70-130		%Rec	1	2/7/2023 1:20:00 PM	BS94442

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 2 of 6

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2302260

13-Feb-23

Client: EOG  
Project: Irish Hills Pipeline

Sample ID: MB-73076	SampType: MBLK	TestCode: EPA Method 300.0: Anions
Client ID: PBS	Batch ID: 73076	RunNo: 94475
Prep Date: 2/8/2023	Analysis Date: 2/8/2023	SeqNo: 3414519 Units: mg/Kg
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Chloride	ND	1.5

Sample ID: LCS-73076	SampType: LCS	TestCode: EPA Method 300.0: Anions
Client ID: LCSS	Batch ID: 73076	RunNo: 94475
Prep Date: 2/8/2023	Analysis Date: 2/8/2023	SeqNo: 3414520 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.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 3 of 6



**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2302260

13-Feb-23

**Client:** EOG  
**Project:** Irish Hills Pipeline

Sample ID: <b>LCS-73041</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>73041</b>			RunNo: <b>94435</b>						
Prep Date: <b>2/7/2023</b>	Analysis Date: <b>2/7/2023</b>			SeqNo: <b>3412440</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.00	0	98.5	61.9	130			
Surr: DNOP	5.1		5.000		102	69	147			

Sample ID: <b>MB-73041</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>PBS</b>	Batch ID: <b>73041</b>			RunNo: <b>94435</b>						
Prep Date: <b>2/7/2023</b>	Analysis Date: <b>2/7/2023</b>			SeqNo: <b>3412441</b>		Units: <b>mg/Kg</b>				
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		101	69	147			

Sample ID: <b>MB-73034</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>PBS</b>	Batch ID: <b>73034</b>			RunNo: <b>94435</b>						
Prep Date: <b>2/6/2023</b>	Analysis Date: <b>2/7/2023</b>			SeqNo: <b>3412826</b>		Units: <b>%Rec</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	10		10.00		102	69	147			

Sample ID: <b>LCS-73034</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>73034</b>			RunNo: <b>94435</b>						
Prep Date: <b>2/6/2023</b>	Analysis Date: <b>2/7/2023</b>			SeqNo: <b>3412827</b>		Units: <b>%Rec</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.9		5.000		97.3	69	147			

Sample ID: <b>MB-73030</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>PBS</b>	Batch ID: <b>73030</b>			RunNo: <b>94448</b>						
Prep Date: <b>2/6/2023</b>	Analysis Date: <b>2/7/2023</b>			SeqNo: <b>3413657</b>		Units: <b>%Rec</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	10		10.00		101	69	147			

Sample ID: <b>LCS-73030</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>73030</b>			RunNo: <b>94448</b>						
Prep Date: <b>2/6/2023</b>	Analysis Date: <b>2/7/2023</b>			SeqNo: <b>3413658</b>		Units: <b>%Rec</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.9		5.000		97.8	69	147			

**Qualifiers:**

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2302260  
13-Feb-23

Client: EOG  
Project: Irish Hills Pipeline

Sample ID: mb	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: GS94442	RunNo: 94442								
Prep Date:	Analysis Date: 2/7/2023	SeqNo: 3412381 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		105	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 Quantitative Limit
  - S % Recovery outside of standard limits. If undiluted results may be estimated.

- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2302260

13-Feb-23

**Client:** EOG  
**Project:** Irish Hills Pipeline

Sample ID: <b>100ng btex lcs</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>BS94442</b>		RunNo: <b>94442</b>							
Prep Date:	Analysis Date: <b>2/7/2023</b>		SeqNo: <b>3412385</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	99.6	80	120			
Toluene	1.0	0.050	1.000	0	100	80	120			
Ethylbenzene	1.0	0.050	1.000	0	99.8	80	120			
Xylenes, Total	3.0	0.10	3.000	0	100	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		104	70	130			

Sample ID: <b>mb</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>BS94442</b>		RunNo: <b>94442</b>							
Prep Date:	Analysis Date: <b>2/7/2023</b>		SeqNo: <b>3412386</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		105	70	130			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit



Hall Environmental Analysis Laboratory  
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: 2302260

RcptNo: 1

Received By: Juan Rojas

2/7/2023 7:50:00 AM

Completed By: Sean Livingston

2/7/2023 8:02:44 AM

Reviewed By: *[Signature]* 2-7-23

*[Signature]*

*[Signature]*

## 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? Yes ☒ No ☐

(Note discrepancies on chain of custody)

12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐

13. Is it clear what analyses were requested? Yes ☒ No ☐

14. Were all holding times able to be met? Yes ☒ No ☐

(If no, notify customer for authorization.)

# of preserved  
bottles checked  
for pH:

(<2 or >12 unless noted)

Adjusted? \_\_\_\_\_

Checked by: *ju 2/7/23*

## Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

## 17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.2	Good	Not Present	Morty		





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

February 15, 2023

Chance Dixon

EOG

105 South Fourth Street

Artesia, NM 88210

TEL:

FAX

RE: Irish Hills Pipeline

OrderNo.: 2302493

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 5 sample(s) on 2/10/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2302493

Date Reported: 2/15/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WES23-106 4.0'

Project: Irish Hills Pipeline

Collection Date: 2/8/2023 11:30:00 AM

Lab ID: 2302493-001

Matrix: SOIL

Received Date: 2/10/2023 7:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	ND	60		mg/Kg	20	2/11/2023 7:49:59 AM	73140
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	2/14/2023 3:04:53 PM	73126
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/14/2023 3:04:53 PM	73126
Surr: DNOP	76.7	69-147		%Rec	1	2/14/2023 3:04:53 PM	73126
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/14/2023 3:56:00 PM	73123
Surr: BFB	95.2	37.7-212		%Rec	1	2/14/2023 3:56:00 PM	73123
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	2/14/2023 3:56:00 PM	73123
Toluene	ND	0.049		mg/Kg	1	2/14/2023 3:56:00 PM	73123
Ethylbenzene	ND	0.049		mg/Kg	1	2/14/2023 3:56:00 PM	73123
Xylenes, Total	ND	0.099		mg/Kg	1	2/14/2023 3:56:00 PM	73123
Surr: 4-Bromofluorobenzene	90.1	70-130		%Rec	1	2/14/2023 3:56:00 PM	73123

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 1 of 10



## Analytical Report

Lab Order 2302493

Date Reported: 2/15/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WES23-107 4.0'

Project: Irish Hills Pipeline

Collection Date: 2/8/2023 11:45:00 AM

Lab ID: 2302493-002

Matrix: SOIL

Received Date: 2/10/2023 7:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	ND	61		mg/Kg	20	2/11/2023 8:52:04 AM	73140
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	2/14/2023 1:04:54 PM	73130
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/14/2023 1:04:54 PM	73130
Surr: DNOP	113	69-147		%Rec	1	2/14/2023 1:04:54 PM	73130
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/14/2023 12:36:00 AM	73127
Surr: BFB	91.4	37.7-212		%Rec	1	2/14/2023 12:36:00 AM	73127
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	2/14/2023 12:36:00 AM	73127
Toluene	ND	0.049		mg/Kg	1	2/14/2023 12:36:00 AM	73127
Ethylbenzene	ND	0.049		mg/Kg	1	2/14/2023 12:36:00 AM	73127
Xylenes, Total	ND	0.097		mg/Kg	1	2/14/2023 12:36:00 AM	73127
Surr: 4-Bromofluorobenzene	87.7	70-130		%Rec	1	2/14/2023 12:36:00 AM	73127

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 2 of 10

## Analytical Report

Lab Order 2302493

Date Reported: 2/15/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WES23-109 4.0'

Project: Irish Hills Pipeline

Collection Date: 2/8/2023 12:00:00 PM

Lab ID: 2302493-003

Matrix: SOIL

Received Date: 2/10/2023 7:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	320	60		mg/Kg	20	2/11/2023 9:04:28 AM	73140
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	2/14/2023 1:15:35 PM	73130
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/14/2023 1:15:35 PM	73130
Surr: DNOP	78.4	69-147		%Rec	1	2/14/2023 1:15:35 PM	73130
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/14/2023 1:35:00 AM	73127
Surr: BFB	97.6	37.7-212		%Rec	1	2/14/2023 1:35:00 AM	73127
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	2/14/2023 1:35:00 AM	73127
Toluene	ND	0.048		mg/Kg	1	2/14/2023 1:35:00 AM	73127
Ethylbenzene	ND	0.048		mg/Kg	1	2/14/2023 1:35:00 AM	73127
Xylenes, Total	ND	0.096		mg/Kg	1	2/14/2023 1:35:00 AM	73127
Surr: 4-Bromofluorobenzene	91.7	70-130		%Rec	1	2/14/2023 1:35:00 AM	73127

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

## Analytical Report

Lab Order 2302493

Date Reported: 2/15/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WES23-110 4.0'

Project: Irish Hills Pipeline

Collection Date: 2/8/2023 12:15:00 PM

Lab ID: 2302493-004

Matrix: SOIL

Received Date: 2/10/2023 7:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	140	60		mg/Kg	20	2/11/2023 9:16:53 AM	73140
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	2/14/2023 1:26:17 PM	73130
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/14/2023 1:26:17 PM	73130
Surr: DNOP	76.8	69-147		%Rec	1	2/14/2023 1:26:17 PM	73130
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/14/2023 2:34:00 AM	73127
Surr: BFB	94.7	37.7-212		%Rec	1	2/14/2023 2:34:00 AM	73127
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	2/14/2023 2:34:00 AM	73127
Toluene	ND	0.049		mg/Kg	1	2/14/2023 2:34:00 AM	73127
Ethylbenzene	ND	0.049		mg/Kg	1	2/14/2023 2:34:00 AM	73127
Xylenes, Total	ND	0.099		mg/Kg	1	2/14/2023 2:34:00 AM	73127
Surr: 4-Bromofluorobenzene	92.3	70-130		%Rec	1	2/14/2023 2:34:00 AM	73127

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 4 of 10

## Analytical Report

Lab Order 2302493

Date Reported: 2/15/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WES23-112 4.0'

Project: Irish Hills Pipeline

Collection Date: 2/8/2023 12:30:00 PM

Lab ID: 2302493-005

Matrix: SOIL

Received Date: 2/10/2023 7:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	1400	60		mg/Kg	20	2/11/2023 9:29:18 AM	73140
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	2/14/2023 1:46:00 PM	73130
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/14/2023 1:46:00 PM	73130
Surr: DNOP	70.6	69-147		%Rec	1	2/14/2023 1:46:00 PM	73130
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/14/2023 2:53:00 AM	73127
Surr: BFB	97.6	37.7-212		%Rec	1	2/14/2023 2:53:00 AM	73127
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	2/14/2023 2:53:00 AM	73127
Toluene	ND	0.050		mg/Kg	1	2/14/2023 2:53:00 AM	73127
Ethylbenzene	ND	0.050		mg/Kg	1	2/14/2023 2:53:00 AM	73127
Xylenes, Total	ND	0.099		mg/Kg	1	2/14/2023 2:53:00 AM	73127
Surr: 4-Bromofluorobenzene	88.0	70-130		%Rec	1	2/14/2023 2:53:00 AM	73127

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 5 of 10

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2302493  
15-Feb-23

Client: EOG  
Project: Irish Hills Pipeline

Sample ID: MB-73140	SampType: mblk	TestCode: EPA Method 300.0: Anions
Client ID: PBS	Batch ID: 73140	RunNo: 94561
Prep Date: 2/11/2023	Analysis Date: 2/11/2023	SeqNo: 3418153 Units: mg/Kg
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Chloride	ND	1.5

Sample ID: LCS-73140	SampType: lcs	TestCode: EPA Method 300.0: Anions
Client ID: LCSS	Batch ID: 73140	RunNo: 94561
Prep Date: 2/11/2023	Analysis Date: 2/11/2023	SeqNo: 3418154 Units: mg/Kg
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Chloride	14	1.5 15.00 0 95.3 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 Quantitative Limit
  - S % Recovery outside of standard limits. If undiluted results may be estimated.

- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2302493

15-Feb-23

**Client:** EOG  
**Project:** Irish Hills Pipeline

Sample ID: <b>LCS-73130</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>73130</b>			RunNo: <b>94595</b>						
Prep Date: <b>2/10/2023</b>	Analysis Date: <b>2/14/2023</b>			SeqNo: <b>3419498</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	88.9	61.9	130			
Surr: DNOP	4.4		5.000		88.6	69	147			

Sample ID: <b>MB-73130</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>PBS</b>	Batch ID: <b>73130</b>			RunNo: <b>94595</b>						
Prep Date: <b>2/10/2023</b>	Analysis Date: <b>2/14/2023</b>			SeqNo: <b>3419500</b>		Units: <b>mg/Kg</b>				
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		108	69	147			

Sample ID: <b>LCS-73126</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>73126</b>			RunNo: <b>94595</b>						
Prep Date: <b>2/10/2023</b>	Analysis Date: <b>2/15/2023</b>			SeqNo: <b>3420304</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	10	50.00	0	80.2	61.9	130			
Surr: DNOP	4.0		5.000		80.0	69	147			

Sample ID: <b>MB-73126</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>PBS</b>	Batch ID: <b>73126</b>			RunNo: <b>94595</b>						
Prep Date: <b>2/10/2023</b>	Analysis Date: <b>2/15/2023</b>			SeqNo: <b>3420309</b>		Units: <b>mg/Kg</b>				
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	8.0		10.00		79.9	69	147			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2302493

15-Feb-23

**Client:** EOG  
**Project:** Irish Hills Pipeline

Sample ID: <b>lcs-73127</b>	SampType: <b>LCS</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>LCSS</b>	Batch ID: <b>73127</b>				RunNo: <b>94574</b>					
Prep Date: <b>2/10/2023</b>	Analysis Date: <b>2/13/2023</b>				SeqNo: <b>3418792</b>	Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	90.5	72.3	137			
Surr: BFB	2000		1000		199	37.7	212			

Sample ID: <b>mb-73127</b>	SampType: <b>MBLK</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>PBS</b>	Batch ID: <b>73127</b>				RunNo: <b>94574</b>					
Prep Date: <b>2/10/2023</b>	Analysis Date: <b>2/14/2023</b>				SeqNo: <b>3418793</b>	Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	950		1000		95.0	37.7	212			

Sample ID: <b>lcs-73123</b>	SampType: <b>LCS</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>LCSS</b>	Batch ID: <b>73123</b>				RunNo: <b>94588</b>					
Prep Date: <b>2/10/2023</b>	Analysis Date: <b>2/14/2023</b>				SeqNo: <b>3419781</b>	Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	101	72.3	137			
Surr: BFB	2100		1000		205	37.7	212			

Sample ID: <b>mb-73123</b>	SampType: <b>MBLK</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>PBS</b>	Batch ID: <b>73123</b>				RunNo: <b>94588</b>					
Prep Date: <b>2/10/2023</b>	Analysis Date: <b>2/14/2023</b>				SeqNo: <b>3419782</b>	Units: <b>mg/Kg</b>				
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		92.6	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 Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit



**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2302493

15-Feb-23

**Client:** EOG  
**Project:** Irish Hills Pipeline

Sample ID: <b>ics-73131</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>73131</b>			RunNo: <b>94574</b>						
Prep Date: <b>2/10/2023</b>	Analysis Date: <b>2/13/2023</b>			SeqNo: <b>3418828</b>			Units: <b>%Rec</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.95		1.000		94.8	70	130			

Sample ID: <b>mb-73131</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>PBS</b>	Batch ID: <b>73131</b>			RunNo: <b>94574</b>						
Prep Date: <b>2/10/2023</b>	Analysis Date: <b>2/13/2023</b>			SeqNo: <b>3418829</b>			Units: <b>%Rec</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.92		1.000		91.7	70	130			

Sample ID: <b>LCS-73127</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>73127</b>			RunNo: <b>94574</b>						
Prep Date: <b>2/10/2023</b>	Analysis Date: <b>2/13/2023</b>			SeqNo: <b>3418867</b>			Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.86	0.025	1.000	0	85.6	80	120			
Toluene	0.86	0.050	1.000	0	85.6	80	120			
Ethylbenzene	0.84	0.050	1.000	0	83.9	80	120			
Xylenes, Total	2.5	0.10	3.000	0	83.1	80	120			
Surr: 4-Bromofluorobenzene	0.89		1.000		88.8	70	130			

Sample ID: <b>mb-73127</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>PBS</b>	Batch ID: <b>73127</b>			RunNo: <b>94574</b>						
Prep Date: <b>2/10/2023</b>	Analysis Date: <b>2/14/2023</b>			SeqNo: <b>3418868</b>			Units: <b>mg/Kg</b>			
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	0.90		1.000		90.2	70	130			

Sample ID: <b>ics-73123</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>73123</b>			RunNo: <b>94588</b>						
Prep Date: <b>2/10/2023</b>	Analysis Date: <b>2/14/2023</b>			SeqNo: <b>3419790</b>			Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.84	0.025	1.000	0	83.6	80	120			
Toluene	0.83	0.050	1.000	0	83.3	80	120			
Ethylbenzene	0.82	0.050	1.000	0	82.3	80	120			
Xylenes, Total	2.4	0.10	3.000	0	81.2	80	120			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2302493

15-Feb-23

**Client:** EOG  
**Project:** Irish Hills Pipeline

Sample ID: <b>lcs-73123</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>73123</b>	RunNo: <b>94588</b>								
Prep Date: <b>2/10/2023</b>	Analysis Date: <b>2/14/2023</b>	SeqNo: <b>3419790</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.91		1.000		91.2	70	130			

Sample ID: <b>mb-73123</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>73123</b>	RunNo: <b>94588</b>								
Prep Date: <b>2/10/2023</b>	Analysis Date: <b>2/14/2023</b>	SeqNo: <b>3419791</b>	Units: <b>mg/Kg</b>							
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	0.88		1.000		88.2	70	130			

### Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 10 of 10



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: 2302493

RcptNo: 1

Received By: Juan Rojas

2/10/2023 7:10:00 AM

Completed By: Tracy Casarrubias

2/10/2023 7:36:31 AM

Reviewed By: *sa 2/10/23*

*[Signature]*

## 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  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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: *sa 2/10/23*

## Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

## 17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.6	Good	Yes	Morty		

## Chain-of-Custody Record

Client: EOGMailing Address: Direct Bill

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)Accreditation: ☐ Az Compliance☐ NELAC ☐ Other☐ EDD (Type)

Turn-Around Time:

☐ Standard ☒ Rush

Project Name:

Irish Hills Pipeline

Project #:

22E-00716-02

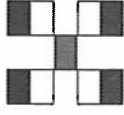
Project Manager:

Chance Dixon

Sampler:

On Ice: ☒ Yes ☐ No# of Coolers: 1Cooler Temp (including CF): 0.402 ± 0.2 (°C)

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.
2-8-23	1130	Soil	WES23-06	402	ICE	2302493
	1145		WES23-07			001
	1200		WES23-09			002
	1215		WES23-10			003
	1230		WES23-12			004
						005

Date: 2/9/23 Time: 1900Date: 2/9/23 Time: 1900Received by: [Signature] Date: 2/9/23 Time: 1900Received by: [Signature] Date: 2/10/23 Time: 7:10Remarks: CL: Chance DixonHALL ENVIRONMENTAL  
ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub>	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
TPH/8015D(GRO / DRO / MRO)							
BTEX / MTBE / TMB's (8021)							



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

February 20, 2023

Chance Dixon

EOG

105 South Fourth Street

Artesia, NM 88210

TEL:

FAX:

RE: Irish Hills Pipeline

OrderNo.: 2302591

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 3 sample(s) on 2/14/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2302591

Date Reported: 2/20/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WES23-122 4'

Project: Irish Hills Pipeline

Collection Date: 2/10/2023 11:00:00 AM

Lab ID: 2302591-001

Matrix: SOIL

Received Date: 2/14/2023 10:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: CAS
Chloride	240	60		mg/Kg	20	2/15/2023 12:04:23 AM	73184
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	2/16/2023 11:27:19 AM	73180
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/16/2023 11:27:19 AM	73180
Surr: DNOP	96.0	69-147		%Rec	1	2/16/2023 11:27:19 AM	73180
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/15/2023 2:57:26 PM	73175
Surr: BFB	104	37.7-212		%Rec	1	2/15/2023 2:57:26 PM	73175
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	2/15/2023 2:57:26 PM	73175
Toluene	ND	0.048		mg/Kg	1	2/15/2023 2:57:26 PM	73175
Ethylbenzene	ND	0.048		mg/Kg	1	2/15/2023 2:57:26 PM	73175
Xylenes, Total	ND	0.097		mg/Kg	1	2/15/2023 2:57:26 PM	73175
Surr: 4-Bromofluorobenzene	98.8	70-130		%Rec	1	2/15/2023 2:57:26 PM	73175

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 1 of 7

## Analytical Report

Lab Order 2302591

Date Reported: 2/20/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WES23-124 4'

Project: Irish Hills Pipeline

Collection Date: 2/10/2023 11:15:00 AM

Lab ID: 2302591-002

Matrix: SOIL

Received Date: 2/14/2023 10:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: CAS
Chloride	380	60		mg/Kg	20	2/15/2023 12:41:25 AM	73184
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	2/16/2023 11:58:41 AM	73180
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/16/2023 11:58:41 AM	73180
Surr: DNOP	73.9	69-147		%Rec	1	2/16/2023 11:58:41 AM	73180
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/15/2023 4:08:10 PM	73175
Surr: BFB	105	37.7-212		%Rec	1	2/15/2023 4:08:10 PM	73175
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	2/15/2023 4:08:10 PM	73175
Toluene	ND	0.049		mg/Kg	1	2/15/2023 4:08:10 PM	73175
Ethylbenzene	ND	0.049		mg/Kg	1	2/15/2023 4:08:10 PM	73175
Xylenes, Total	ND	0.097		mg/Kg	1	2/15/2023 4:08:10 PM	73175
Surr: 4-Bromofluorobenzene	99.8	70-130		%Rec	1	2/15/2023 4:08:10 PM	73175

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 2 of 7



## Analytical Report

Lab Order 2302591

Date Reported: 2/20/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WES23-125 4'

Project: Irish Hills Pipeline

Collection Date: 2/10/2023 12:45:00 AM

Lab ID: 2302591-003

Matrix: SOIL

Received Date: 2/14/2023 10:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: CAS
Chloride	89	60		mg/Kg	20	2/15/2023 12:53:46 AM	73184
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	2/16/2023 12:09:12 PM	73180
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/16/2023 12:09:12 PM	73180
Surr: DNOP	85.5	69-147		%Rec	1	2/16/2023 12:09:12 PM	73180
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	2/15/2023 5:18:58 PM	73175
Surr: BFB	103	37.7-212		%Rec	1	2/15/2023 5:18:58 PM	73175
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	2/15/2023 5:18:58 PM	73175
Toluene	ND	0.047		mg/Kg	1	2/15/2023 5:18:58 PM	73175
Ethylbenzene	ND	0.047		mg/Kg	1	2/15/2023 5:18:58 PM	73175
Xylenes, Total	ND	0.094		mg/Kg	1	2/15/2023 5:18:58 PM	73175
Surr: 4-Bromofluorobenzene	99.0	70-130		%Rec	1	2/15/2023 5:18:58 PM	73175

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 3 of 7

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2302591

20-Feb-23

Client: EOG

Project: Irish Hills Pipeline

Sample ID: <b>MB-73184</b>	SampType: <b>mblk</b>			TestCode: <b>EPA Method 300.0: Anions</b>						
Client ID: <b>PBS</b>	Batch ID: <b>73184</b>			RunNo: <b>94587</b>						
Prep Date: <b>2/14/2023</b>	Analysis Date: <b>2/14/2023</b>			SeqNo: <b>3420401</b>			Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-73184</b>	SampType: <b>lcs</b>			TestCode: <b>EPA Method 300.0: Anions</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>73184</b>			RunNo: <b>94587</b>						
Prep Date: <b>2/14/2023</b>	Analysis Date: <b>2/14/2023</b>			SeqNo: <b>3420402</b>			Units: <b>mg/Kg</b>			
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			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 4 of 7

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2302591

20-Feb-23

**Client:** EOG  
**Project:** Irish Hills Pipeline

Sample ID: <b>LCS-73180</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>73180</b>		RunNo: <b>94650</b>							
Prep Date: <b>2/14/2023</b>	Analysis Date: <b>2/16/2023</b>		SeqNo: <b>3421848</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	50.00	0	106	61.9	130			
Surr: DNOP	6.6		5.000		132	69	147			

Sample ID: <b>LCS-73213</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>73213</b>		RunNo: <b>94650</b>							
Prep Date: <b>2/16/2023</b>	Analysis Date: <b>2/16/2023</b>		SeqNo: <b>3421849</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.2		5.000		84.2	69	147			

Sample ID: <b>MB-73180</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>PBS</b>	Batch ID: <b>73180</b>		RunNo: <b>94650</b>							
Prep Date: <b>2/14/2023</b>	Analysis Date: <b>2/16/2023</b>		SeqNo: <b>3421851</b>		Units: <b>mg/Kg</b>					
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	9.7		10.00		97.2	69	147			

Sample ID: <b>MB-73213</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>PBS</b>	Batch ID: <b>73213</b>		RunNo: <b>94650</b>							
Prep Date: <b>2/16/2023</b>	Analysis Date: <b>2/16/2023</b>		SeqNo: <b>3421852</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.0		10.00		79.6	69	147			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2302591

20-Feb-23

**Client:** EOG  
**Project:** Irish Hills Pipeline

Sample ID: <b>ics-73175</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>73175</b>		RunNo: <b>94613</b>							
Prep Date: <b>2/14/2023</b>	Analysis Date: <b>2/15/2023</b>		SeqNo: <b>3420523</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	101	72.3	137			
Surr: BFB	2000		1000		200	37.7	212			

Sample ID: <b>mb-73175</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>73175</b>		RunNo: <b>94613</b>							
Prep Date: <b>2/14/2023</b>	Analysis Date: <b>2/15/2023</b>		SeqNo: <b>3420544</b>		Units: <b>mg/Kg</b>					
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		105	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 Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

Page 6 of 7

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2302591

20-Feb-23

**Client:** EOG  
**Project:** Irish Hills Pipeline

Sample ID: <b>LCS-73175</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>73175</b>			RunNo: <b>94613</b>						
Prep Date: <b>2/14/2023</b>	Analysis Date: <b>2/15/2023</b>			SeqNo: <b>3420525</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.80	0.025	1.000	0	80.0	80	120			
Toluene	0.87	0.050	1.000	0	86.9	80	120			
Ethylbenzene	0.88	0.050	1.000	0	87.6	80	120			
Xylenes, Total	2.6	0.10	3.000	0	87.9	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		103	70	130			

Sample ID: <b>mb-73175</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>PBS</b>	Batch ID: <b>73175</b>			RunNo: <b>94613</b>						
Prep Date: <b>2/14/2023</b>	Analysis Date: <b>2/15/2023</b>			SeqNo: <b>3420547</b>		Units: <b>mg/Kg</b>				
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		98.1	70	130			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit



Hall Environmental Analysis Laboratory  
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: 2302591

RcptNo: 1

Received By: Cheyenne Cason

2/14/2023 10:45:00 AM

*Chad*

Completed By: Sean Livingston

2/14/2023 10:56:25 AM

*Sean Livingston*Reviewed By: *JA 2-14-23*

## Chain of Custody

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

## Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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: *JA 2/14/23*

## Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

## 17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.1	Good	Not Present	YOGI		







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

February 22, 2023

Chance Dixon

EOG

105 South Fourth Street

Artesia, NM 88210

TEL:

FAX:

RE: Irish Hills Pipeline

OrderNo.: 2302784

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 2 sample(s) on 2/17/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2302784

Date Reported: 2/22/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WS23-126 0-4'

Project: Irish Hills Pipeline

Collection Date: 2/15/2023 7:35:00 AM

Lab ID: 2302784-001

Matrix: SOIL

Received Date: 2/17/2023 8:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: CAS
Chloride	680	61		mg/Kg	20	2/18/2023 8:10:23 AM	73252
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	8.4		mg/Kg	1	2/20/2023 1:04:52 PM	73243
Motor Oil Range Organics (MRO)	ND	42		mg/Kg	1	2/20/2023 1:04:52 PM	73243
Surr: DNOP	115	69-147		%Rec	1	2/20/2023 1:04:52 PM	73243
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/20/2023 12:43:11 PM	73238
Surr: BFB	103	37.7-212		%Rec	1	2/20/2023 12:43:11 PM	73238
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	2/20/2023 12:43:11 PM	73238
Toluene	ND	0.048		mg/Kg	1	2/20/2023 12:43:11 PM	73238
Ethylbenzene	ND	0.048		mg/Kg	1	2/20/2023 12:43:11 PM	73238
Xylenes, Total	ND	0.096		mg/Kg	1	2/20/2023 12:43:11 PM	73238
Surr: 4-Bromofluorobenzene	98.9	70-130		%Rec	1	2/20/2023 12:43:11 PM	73238

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

## Analytical Report

Lab Order 2302784

Date Reported: 2/22/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WS23-131 0-4'

Project: Irish Hills Pipeline

Collection Date: 2/15/2023 8:00:00 AM

Lab ID: 2302784-002

Matrix: SOIL

Received Date: 2/17/2023 8:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: CAS
Chloride	ND	60		mg/Kg	20	2/18/2023 8:22:47 AM	73252
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	2/20/2023 1:36:30 PM	73243
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/20/2023 1:36:30 PM	73243
Surr: DNOP	111	69-147		%Rec	1	2/20/2023 1:36:30 PM	73243
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/20/2023 1:54:11 PM	73238
Surr: BFB	101	37.7-212		%Rec	1	2/20/2023 1:54:11 PM	73238
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	2/20/2023 1:54:11 PM	73238
Toluene	ND	0.048		mg/Kg	1	2/20/2023 1:54:11 PM	73238
Ethylbenzene	ND	0.048		mg/Kg	1	2/20/2023 1:54:11 PM	73238
Xylenes, Total	ND	0.097		mg/Kg	1	2/20/2023 1:54:11 PM	73238
Surr: 4-Bromofluorobenzene	96.6	70-130		%Rec	1	2/20/2023 1:54:11 PM	73238

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 2 of 6

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2302784  
22-Feb-23

Client: EOG  
Project: Irish Hills Pipeline

Sample ID: MB-73252	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 73252	RunNo: 94705								
Prep Date: 2/18/2023	Analysis Date: 2/18/2023	SeqNo: 3423662	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-73252	SampType: lcs	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 73252	RunNo: 94705								
Prep Date: 2/18/2023	Analysis Date: 2/18/2023	SeqNo: 3423663	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	96.8	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 Quantitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2302784

22-Feb-23

**Client:** EOG  
**Project:** Irish Hills Pipeline

Sample ID: <b>LCS-73243</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>73243</b>		RunNo: <b>94749</b>							
Prep Date: <b>2/17/2023</b>	Analysis Date: <b>2/20/2023</b>		SeqNo: <b>3424939</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	64	10	50.00	0	128	61.9	130			
Surr: DNOP	6.2		5.000		124	69	147			

Sample ID: <b>MB-73243</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>PBS</b>	Batch ID: <b>73243</b>		RunNo: <b>94749</b>							
Prep Date: <b>2/17/2023</b>	Analysis Date: <b>2/20/2023</b>		SeqNo: <b>3424941</b>		Units: <b>mg/Kg</b>					
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		100	69	147			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2302784

22-Feb-23

Client: EOG

Project: Irish Hills Pipeline

Sample ID: <b>ics-73238</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>73238</b>			RunNo: <b>94713</b>						
Prep Date: <b>2/17/2023</b>	Analysis Date: <b>2/20/2023</b>			SeqNo: <b>3423969</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	82.1	72.3	137			
Surr: BFB	1800		1000		183	37.7	212			

Sample ID: <b>mb-73238</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>PBS</b>	Batch ID: <b>73238</b>			RunNo: <b>94713</b>						
Prep Date: <b>2/17/2023</b>	Analysis Date: <b>2/20/2023</b>			SeqNo: <b>3423996</b>		Units: <b>mg/Kg</b>				
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			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 5 of 6

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2302784

22-Feb-23

**Client:** EOG  
**Project:** Irish Hills Pipeline

Sample ID: <b>LCS-73238</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>73238</b>			RunNo: <b>94713</b>						
Prep Date: <b>2/17/2023</b>	Analysis Date: <b>2/20/2023</b>			SeqNo: <b>3423971</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.025	1.000	0	88.2	80	120			
Toluene	0.91	0.050	1.000	0	91.4	80	120			
Ethylbenzene	0.91	0.050	1.000	0	91.3	80	120			
Xylenes, Total	2.7	0.10	3.000	0	91.2	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	70	130			

Sample ID: <b>mb-73238</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>PBS</b>	Batch ID: <b>73238</b>			RunNo: <b>94713</b>						
Prep Date: <b>2/17/2023</b>	Analysis Date: <b>2/20/2023</b>			SeqNo: <b>3423999</b>		Units: <b>mg/Kg</b>				
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			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit





Hall Environmental Analysis Laboratory  
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: 2302784

RcptNo: 1

Received By: Tracy Casarrubias 2/17/2023 8:25:00 AM

Completed By: Tracy Casarrubias 2/17/2023 9:16:28 AM

Reviewed By: *jn 2/17/23*

### Chain of Custody

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

### Log In

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

# of preserved  
bottles checked  
for pH:

( $<2$  or  $>12$  unless noted)

Adjusted? \_\_\_\_\_

Checked by: *jn 2-17-23*

### Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_ Date: \_\_\_\_\_  
By Whom: \_\_\_\_\_ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person  
Regarding: \_\_\_\_\_  
Client Instructions: \_\_\_\_\_

16. Additional remarks:

### 17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.2	Good	Yes	Morty		





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

February 27, 2023

Chance Dixon

EOG

105 South Fourth Street

Artesia, NM 88210

TEL:

FAX:

RE: Irish Hills Pipeline

OrderNo.: 2302814

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 4 sample(s) on 2/18/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman'.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2302814

Date Reported: 2/27/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WS23-133 0-4'

Project: Irish Hills Pipeline

Collection Date: 2/16/2023 9:35:00 AM

Lab ID: 2302814-001

Matrix: SOIL

Received Date: 2/18/2023 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>NAI</b>
Chloride	610	60		mg/Kg	20	2/21/2023 11:33:11 AM	73277
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	2/21/2023 5:10:37 PM	73273
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/21/2023 5:10:37 PM	73273
Surr: DNOP	87.0	69-147		%Rec	1	2/21/2023 5:10:37 PM	73273
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/21/2023 4:38:10 PM	73280
Surr: BFB	107	37.7-212		%Rec	1	2/21/2023 4:38:10 PM	73280
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	2/21/2023 4:38:10 PM	73280
Toluene	ND	0.048		mg/Kg	1	2/21/2023 4:38:10 PM	73280
Ethylbenzene	ND	0.048		mg/Kg	1	2/21/2023 4:38:10 PM	73280
Xylenes, Total	ND	0.096		mg/Kg	1	2/21/2023 4:38:10 PM	73280
Surr: 4-Bromofluorobenzene	98.4	70-130		%Rec	1	2/21/2023 4:38:10 PM	73280

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 1 of 8

## Analytical Report

Lab Order 2302814

Date Reported: 2/27/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BS23-06 4'

Project: Irish Hills Pipeline

Collection Date: 2/16/2023 3:05:00 PM

Lab ID: 2302814-002

Matrix: SOIL

Received Date: 2/18/2023 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>NAI</b>
Chloride	2000	60		mg/Kg	20	2/21/2023 12:10:13 PM	73277
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	2/21/2023 5:21:27 PM	73273
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/21/2023 5:21:27 PM	73273
Surr: DNOP	95.7	69-147		%Rec	1	2/21/2023 5:21:27 PM	73273
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/21/2023 5:01:51 PM	73280
Surr: BFB	108	37.7-212		%Rec	1	2/21/2023 5:01:51 PM	73280
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	2/21/2023 5:01:51 PM	73280
Toluene	ND	0.048		mg/Kg	1	2/21/2023 5:01:51 PM	73280
Ethylbenzene	ND	0.048		mg/Kg	1	2/21/2023 5:01:51 PM	73280
Xylenes, Total	ND	0.096		mg/Kg	1	2/21/2023 5:01:51 PM	73280
Surr: 4-Bromofluorobenzene	99.5	70-130		%Rec	1	2/21/2023 5:01:51 PM	73280

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 2 of 8

## Analytical Report

Lab Order 2302814

Date Reported: 2/27/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BS23-07 4'

Project: Irish Hills Pipeline

Collection Date: 2/16/2023 3:10:00 PM

Lab ID: 2302814-003

Matrix: SOIL

Received Date: 2/18/2023 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>NAI</b>
Chloride	2100	60		mg/Kg	20	2/21/2023 12:47:15 PM	73277
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	2/21/2023 5:32:26 PM	73273
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/21/2023 5:32:26 PM	73273
Surr: DNOP	97.4	69-147		%Rec	1	2/21/2023 5:32:26 PM	73273
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	2/21/2023 5:49:21 PM	73280
Surr: BFB	107	37.7-212		%Rec	1	2/21/2023 5:49:21 PM	73280
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JJP</b>
Benzene	ND	0.023		mg/Kg	1	2/21/2023 5:49:21 PM	73280
Toluene	ND	0.047		mg/Kg	1	2/21/2023 5:49:21 PM	73280
Ethylbenzene	ND	0.047		mg/Kg	1	2/21/2023 5:49:21 PM	73280
Xylenes, Total	ND	0.094		mg/Kg	1	2/21/2023 5:49:21 PM	73280
Surr: 4-Bromofluorobenzene	97.1	70-130		%Rec	1	2/21/2023 5:49:21 PM	73280

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 3 of 8

## Analytical Report

Lab Order 2302814

Date Reported: 2/27/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BS23-08 4'

Project: Irish Hills Pipeline

Collection Date: 2/16/2023 3:15:00 PM

Lab ID: 2302814-004

Matrix: SOIL

Received Date: 2/18/2023 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	2900	150		mg/Kg	50	2/23/2023 12:53:42 AM	73277
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	2/21/2023 11:56:43 AM	73273
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/21/2023 11:56:43 AM	73273
Surr: DNOP	92.6	69-147		%Rec	1	2/21/2023 11:56:43 AM	73273
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	2/21/2023 6:13:20 PM	73280
Surr: BFB	112	37.7-212		%Rec	1	2/21/2023 6:13:20 PM	73280
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	2/21/2023 6:13:20 PM	73280
Toluene	ND	0.047		mg/Kg	1	2/21/2023 6:13:20 PM	73280
Ethylbenzene	ND	0.047		mg/Kg	1	2/21/2023 6:13:20 PM	73280
Xylenes, Total	ND	0.095		mg/Kg	1	2/21/2023 6:13:20 PM	73280
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	2/21/2023 6:13:20 PM	73280

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 4 of 8



QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2302814  
27-Feb-23

Client: EOG  
Project: Irish Hills Pipeline

Sample ID: MB-73277	SampType: mblk	TestCode: EPA Method 300.0: Anions
Client ID: PBS	Batch ID: 73277	RunNo: 94770
Prep Date: 2/21/2023	Analysis Date: 2/21/2023	SeqNo: 3425718 Units: mg/Kg
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Chloride	ND	1.5

Sample ID: LCS-73277	SampType: lcs	TestCode: EPA Method 300.0: Anions
Client ID: LCSS	Batch ID: 73277	RunNo: 94770
Prep Date: 2/21/2023	Analysis Date: 2/21/2023	SeqNo: 3425719 Units: mg/Kg
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Chloride	14	1.5 15.00 0 92.9 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 Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2302814

27-Feb-23

**Client:** EOG  
**Project:** Irish Hills Pipeline

Sample ID: <b>LCS-73273</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>73273</b>	RunNo: <b>94787</b>								
Prep Date: <b>2/20/2023</b>	Analysis Date: <b>2/21/2023</b>	SeqNo: <b>3426200</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	10	50.00	0	83.5	61.9	130			
Surr: DNOP	4.7		5.000		93.4	69	147			

Sample ID: <b>MB-73273</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>73273</b>	RunNo: <b>94787</b>								
Prep Date: <b>2/20/2023</b>	Analysis Date: <b>2/21/2023</b>	SeqNo: <b>3426201</b>	Units: <b>mg/Kg</b>							
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	9.0		10.00		90.4	69	147			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2302814

27-Feb-23

**Client:** EOG  
**Project:** Irish Hills Pipeline

Sample ID: <b>LCS-73280</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>73280</b>		RunNo: <b>94751</b>							
Prep Date: <b>2/20/2023</b>	Analysis Date: <b>2/21/2023</b>		SeqNo: <b>3425194</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	92.7	72.3	137			
Surr: BFB	2000		1000		195	37.7	212			

Sample ID: <b>mb-73280</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>73280</b>		RunNo: <b>94751</b>							
Prep Date: <b>2/20/2023</b>	Analysis Date: <b>2/21/2023</b>		SeqNo: <b>3425195</b>		Units: <b>mg/Kg</b>					
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		108	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 Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

Page 7 of 8

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2302814

27-Feb-23

**Client:** EOG  
**Project:** Irish Hills Pipeline

Sample ID: <b>LCS-73280</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>73280</b>		RunNo: <b>94751</b>							
Prep Date: <b>2/20/2023</b>	Analysis Date: <b>2/21/2023</b>		SeqNo: <b>3425196</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.025	1.000	0	91.8	80	120			
Toluene	0.96	0.050	1.000	0	95.6	80	120			
Ethylbenzene	0.94	0.050	1.000	0	94.1	80	120			
Xylenes, Total	2.8	0.10	3.000	0	94.1	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		103	70	130			

Sample ID: <b>mb-73280</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>73280</b>		RunNo: <b>94751</b>							
Prep Date: <b>2/20/2023</b>	Analysis Date: <b>2/21/2023</b>		SeqNo: <b>3425197</b>		Units: <b>mg/Kg</b>					
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		101	70	130			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit



Hall Environmental Analysis Laboratory  
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: 2302814

RcptNo: 1

Received By: Tracy Casarrubias 2/18/2023 9:30:00 AM

Completed By: Tracy Casarrubias 2/18/2023 10:23:17 AM

Reviewed By: *Cmc* 2/20/23

### Chain of Custody

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

### Log In

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

# of preserved  
bottles checked  
for pH:

( $<2$  or  $>12$  unless noted)

Adjusted? \_\_\_\_\_

Checked by: *TMC* 2/18/23

### Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

### 17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.9	Good	Yes	Morty		

## Chain-of-Custody Record

Client: EOG (Vertex)

Mailing Address: on file

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)Accreditation: ☐ Az Compliance☐ NELAC ☐ Other☐ EDD (Type)

Turn-Around Time:

☐ Standard ☒ Rush

48 hr

Project Name:

Irish Hills Pipeline

Project #:

22E-00716-02

Project Manager:

Chance Dixon

Sampler:

SPC

On Ice:

☒ Yes ☐ No

marty

# of Coolers:

1

Cooler Temp (including CFY): 0.9 - 0.9 - 0.9 (°C)

Container Type and #

403 jar

Preservative Type

ice

HEAL No.

23025014

001

002

003

004

Date Time Matrix Sample Name

2/16/23 9:35 Soil WS23-133 0-4'

15:05 BS23-06 4'

15:10 BS23-07 4'

15:15 BS23-08 4'

Date: Time: Relinquished by:

2/16/23 17:40

Sally Carter

Date: Time: Relinquished by:

2/17/23 19:00

Cummings

Received by: Via:

W. Cummings

Date Time

2/17/23 9:45

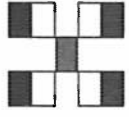
Received by: Via:

C. Cummings

Date Time

2/18/23 9:30

Remarks:

Direct bill EOG  
cc C Dixon, S CarterHALL ENVIRONMENTAL  
ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	(C)F, Br, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub>	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
(BTEX) MTBE / TMB's (8021)								



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

March 01, 2023

Chance Dixon

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX:

RE: Irish Hills Pipeline

OrderNo.: 2302850

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 13 sample(s) on 2/21/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109



## Analytical Report

Lab Order 2302850

Date Reported: 3/1/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS23-144 0-4'

Project: Irish Hills Pipeline

Collection Date: 2/17/2023 8:45:00 AM

Lab ID: 2302850-001

Matrix: SOIL

Received Date: 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	2/22/2023 3:09:27 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/22/2023 3:09:27 PM
Surr: DNOP	97.3	69-147		%Rec	1	2/22/2023 3:09:27 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/22/2023 1:52:02 PM
Surr: BFB	110	37.7-212		%Rec	1	2/22/2023 1:52:02 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.025		mg/Kg	1	2/22/2023 1:52:02 PM
Toluene	ND	0.049		mg/Kg	1	2/22/2023 1:52:02 PM
Ethylbenzene	ND	0.049		mg/Kg	1	2/22/2023 1:52:02 PM
Xylenes, Total	ND	0.099		mg/Kg	1	2/22/2023 1:52:02 PM
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	2/22/2023 1:52:02 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	570	60		mg/Kg	20	2/22/2023 7:06:15 PM

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 1 of 17

## Analytical Report

Lab Order 2302850

Date Reported: 3/1/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS23-152 0-4'

Project: Irish Hills Pipeline

Collection Date: 2/17/2023 2:30:00 PM

Lab ID: 2302850-002

Matrix: SOIL

Received Date: 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	2/22/2023 3:41:40 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/22/2023 3:41:40 PM
Surr: DNOP	74.3	69-147		%Rec	1	2/22/2023 3:41:40 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/22/2023 3:02:54 PM
Surr: BFB	109	37.7-212		%Rec	1	2/22/2023 3:02:54 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.025		mg/Kg	1	2/22/2023 3:02:54 PM
Toluene	ND	0.050		mg/Kg	1	2/22/2023 3:02:54 PM
Ethylbenzene	ND	0.050		mg/Kg	1	2/22/2023 3:02:54 PM
Xylenes, Total	ND	0.10		mg/Kg	1	2/22/2023 3:02:54 PM
Surr: 4-Bromofluorobenzene	97.0	70-130		%Rec	1	2/22/2023 3:02:54 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	61	60		mg/Kg	20	2/22/2023 7:18:39 PM

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 2 of 17

## Analytical Report

Lab Order 2302850

Date Reported: 3/1/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-09 4'

Project: Irish Hills Pipeline

Collection Date: 2/17/2023 10:45:00 AM

Lab ID: 2302850-003

Matrix: SOIL

Received Date: 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	2/22/2023 3:52:27 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/22/2023 3:52:27 PM
Surr: DNOP	76.7	69-147		%Rec	1	2/22/2023 3:52:27 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/22/2023 4:13:56 PM
Surr: BFB	104	37.7-212		%Rec	1	2/22/2023 4:13:56 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.025		mg/Kg	1	2/22/2023 4:13:56 PM
Toluene	ND	0.049		mg/Kg	1	2/22/2023 4:13:56 PM
Ethylbenzene	ND	0.049		mg/Kg	1	2/22/2023 4:13:56 PM
Xylenes, Total	ND	0.098		mg/Kg	1	2/22/2023 4:13:56 PM
Surr: 4-Bromofluorobenzene	94.9	70-130		%Rec	1	2/22/2023 4:13:56 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	2800	150		mg/Kg	50	2/23/2023 4:36:07 PM

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 3 of 17

## Analytical Report

Lab Order 2302850

Date Reported: 3/1/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-10 4'

Project: Irish Hills Pipeline

Collection Date: 2/17/2023 10:50:00 AM

Lab ID: 2302850-004

Matrix: SOIL

Received Date: 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	2/22/2023 4:03:18 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/22/2023 4:03:18 PM
Surr: DNOP	75.5	69-147		%Rec	1	2/22/2023 4:03:18 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/22/2023 4:37:31 PM
Surr: BFB	105	37.7-212		%Rec	1	2/22/2023 4:37:31 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.025		mg/Kg	1	2/22/2023 4:37:31 PM
Toluene	ND	0.050		mg/Kg	1	2/22/2023 4:37:31 PM
Ethylbenzene	ND	0.050		mg/Kg	1	2/22/2023 4:37:31 PM
Xylenes, Total	ND	0.10		mg/Kg	1	2/22/2023 4:37:31 PM
Surr: 4-Bromofluorobenzene	97.0	70-130		%Rec	1	2/22/2023 4:37:31 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	4000	150		mg/Kg	50	2/23/2023 4:48:32 PM

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 4 of 17

## Analytical Report

Lab Order 2302850

Date Reported: 3/1/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-11 4'

Project: Irish Hills Pipeline

Collection Date: 2/17/2023 10:55:00 AM

Lab ID: 2302850-005

Matrix: SOIL

Received Date: 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	10	9.5		mg/Kg	1	2/22/2023 4:14:08 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/22/2023 4:14:08 PM
Surr: DNOP	82.6	69-147		%Rec	1	2/22/2023 4:14:08 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/22/2023 5:01:11 PM
Surr: BFB	104	37.7-212		%Rec	1	2/22/2023 5:01:11 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	2/22/2023 5:01:11 PM
Toluene	ND	0.049		mg/Kg	1	2/22/2023 5:01:11 PM
Ethylbenzene	ND	0.049		mg/Kg	1	2/22/2023 5:01:11 PM
Xylenes, Total	ND	0.097		mg/Kg	1	2/22/2023 5:01:11 PM
Surr: 4-Bromofluorobenzene	96.1	70-130		%Rec	1	2/22/2023 5:01:11 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	2000	150		mg/Kg	50	2/23/2023 5:00:56 PM

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 5 of 17

## Analytical Report

Lab Order 2302850

Date Reported: 3/1/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-12 4'

Project: Irish Hills Pipeline

Collection Date: 2/17/2023 11:00:00 AM

Lab ID: 2302850-006

Matrix: SOIL

Received Date: 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	2/22/2023 4:24:56 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/22/2023 4:24:56 PM
Surr: DNOP	77.4	69-147		%Rec	1	2/22/2023 4:24:56 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/22/2023 5:24:47 PM
Surr: BFB	105	37.7-212		%Rec	1	2/22/2023 5:24:47 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.025		mg/Kg	1	2/22/2023 5:24:47 PM
Toluene	ND	0.050		mg/Kg	1	2/22/2023 5:24:47 PM
Ethylbenzene	ND	0.050		mg/Kg	1	2/22/2023 5:24:47 PM
Xylenes, Total	ND	0.10		mg/Kg	1	2/22/2023 5:24:47 PM
Surr: 4-Bromofluorobenzene	98.0	70-130		%Rec	1	2/22/2023 5:24:47 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	3700	150		mg/Kg	50	2/23/2023 5:38:09 PM

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

## Analytical Report

Lab Order 2302850

Date Reported: 3/1/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-13 4'

Project: Irish Hills Pipeline

Collection Date: 2/17/2023 11:05:00 AM

Lab ID: 2302850-007

Matrix: SOIL

Received Date: 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	2/22/2023 4:35:42 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/22/2023 4:35:42 PM
Surr: DNOP	77.9	69-147		%Rec	1	2/22/2023 4:35:42 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/22/2023 5:48:20 PM
Surr: BFB	104	37.7-212		%Rec	1	2/22/2023 5:48:20 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	2/22/2023 5:48:20 PM
Toluene	ND	0.048		mg/Kg	1	2/22/2023 5:48:20 PM
Ethylbenzene	ND	0.048		mg/Kg	1	2/22/2023 5:48:20 PM
Xylenes, Total	ND	0.096		mg/Kg	1	2/22/2023 5:48:20 PM
Surr: 4-Bromofluorobenzene	96.9	70-130		%Rec	1	2/22/2023 5:48:20 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	3800	150		mg/Kg	50	2/23/2023 5:50:33 PM

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 7 of 17



## Analytical Report

Lab Order 2302850

Date Reported: 3/1/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-14 4'

Project: Irish Hills Pipeline

Collection Date: 2/18/2023 11:40:00 AM

Lab ID: 2302850-008

Matrix: SOIL

Received Date: 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	2/22/2023 4:46:27 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/22/2023 4:46:27 PM
Surr: DNOP	73.3	69-147		%Rec	1	2/22/2023 4:46:27 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/22/2023 6:11:58 PM
Surr: BFB	104	37.7-212		%Rec	1	2/22/2023 6:11:58 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.025		mg/Kg	1	2/22/2023 6:11:58 PM
Toluene	ND	0.050		mg/Kg	1	2/22/2023 6:11:58 PM
Ethylbenzene	ND	0.050		mg/Kg	1	2/22/2023 6:11:58 PM
Xylenes, Total	ND	0.10		mg/Kg	1	2/22/2023 6:11:58 PM
Surr: 4-Bromofluorobenzene	96.2	70-130		%Rec	1	2/22/2023 6:11:58 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	1900	60		mg/Kg	20	2/22/2023 9:22:45 PM

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 8 of 17

## Analytical Report

Lab Order 2302850

Date Reported: 3/1/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-15 4'

Project: Irish Hills Pipeline

Collection Date: 2/18/2023 11:45:00 AM

Lab ID: 2302850-009

Matrix: SOIL

Received Date: 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	2/22/2023 4:57:16 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/22/2023 4:57:16 PM
Surr: DNOP	75.0	69-147		%Rec	1	2/22/2023 4:57:16 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	2/22/2023 6:35:41 PM
Surr: BFB	103	37.7-212		%Rec	1	2/22/2023 6:35:41 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	2/22/2023 6:35:41 PM
Toluene	ND	0.047		mg/Kg	1	2/22/2023 6:35:41 PM
Ethylbenzene	ND	0.047		mg/Kg	1	2/22/2023 6:35:41 PM
Xylenes, Total	ND	0.095		mg/Kg	1	2/22/2023 6:35:41 PM
Surr: 4-Bromofluorobenzene	95.9	70-130		%Rec	1	2/22/2023 6:35:41 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	2100	60		mg/Kg	20	2/22/2023 9:35:10 PM

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 9 of 17

## Analytical Report

Lab Order 2302850

Date Reported: 3/1/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-16 4'

Project: Irish Hills Pipeline

Collection Date: 2/18/2023 11:50:00 AM

Lab ID: 2302850-010

Matrix: SOIL

Received Date: 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	2/22/2023 5:07:59 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/22/2023 5:07:59 PM
Surr: DNOP	70.4	69-147		%Rec	1	2/22/2023 5:07:59 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/22/2023 6:59:16 PM
Surr: BFB	101	37.7-212		%Rec	1	2/22/2023 6:59:16 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	2/22/2023 6:59:16 PM
Toluene	ND	0.049		mg/Kg	1	2/22/2023 6:59:16 PM
Ethylbenzene	ND	0.049		mg/Kg	1	2/22/2023 6:59:16 PM
Xylenes, Total	ND	0.098		mg/Kg	1	2/22/2023 6:59:16 PM
Surr: 4-Bromofluorobenzene	93.2	70-130		%Rec	1	2/22/2023 6:59:16 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	2500	150		mg/Kg	50	2/23/2023 6:02:58 PM

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

## Analytical Report

Lab Order 2302850

Date Reported: 3/1/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-17 4'

Project: Irish Hills Pipeline

Collection Date: 2/18/2023 11:55:00 AM

Lab ID: 2302850-011

Matrix: SOIL

Received Date: 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	2/22/2023 5:18:43 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/22/2023 5:18:43 PM
Surr: DNOP	74.5	69-147		%Rec	1	2/22/2023 5:18:43 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	2/22/2023 8:10:17 PM
Surr: BFB	103	37.7-212		%Rec	1	2/22/2023 8:10:17 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	2/22/2023 8:10:17 PM
Toluene	ND	0.047		mg/Kg	1	2/22/2023 8:10:17 PM
Ethylbenzene	ND	0.047		mg/Kg	1	2/22/2023 8:10:17 PM
Xylenes, Total	ND	0.094		mg/Kg	1	2/22/2023 8:10:17 PM
Surr: 4-Bromofluorobenzene	96.2	70-130		%Rec	1	2/22/2023 8:10:17 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	2800	150		mg/Kg	50	2/23/2023 6:15:23 PM

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

## Analytical Report

Lab Order 2302850

Date Reported: 3/1/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS23-157 0-4'

Project: Irish Hills Pipeline

Collection Date: 2/18/2023 1:15:00 PM

Lab ID: 2302850-012

Matrix: SOIL

Received Date: 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	2/22/2023 5:29:21 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/22/2023 5:29:21 PM
Surr: DNOP	81.2	69-147		%Rec	1	2/22/2023 5:29:21 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/22/2023 8:33:52 PM
Surr: BFB	99.4	37.7-212		%Rec	1	2/22/2023 8:33:52 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.025		mg/Kg	1	2/22/2023 8:33:52 PM
Toluene	ND	0.050		mg/Kg	1	2/22/2023 8:33:52 PM
Ethylbenzene	ND	0.050		mg/Kg	1	2/22/2023 8:33:52 PM
Xylenes, Total	ND	0.10		mg/Kg	1	2/22/2023 8:33:52 PM
Surr: 4-Bromofluorobenzene	92.4	70-130		%Rec	1	2/22/2023 8:33:52 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	ND	60		mg/Kg	20	2/22/2023 10:12:24 PM

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

## Analytical Report

Lab Order 2302850

Date Reported: 3/1/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS23-158 0-4'

Project: Irish Hills Pipeline

Collection Date: 2/18/2023 1:20:00 PM

Lab ID: 2302850-013

Matrix: SOIL

Received Date: 2/21/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	2/22/2023 5:40:02 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/22/2023 5:40:02 PM
Surr: DNOP	84.8	69-147		%Rec	1	2/22/2023 5:40:02 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/22/2023 8:57:42 PM
Surr: BFB	102	37.7-212		%Rec	1	2/22/2023 8:57:42 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.025		mg/Kg	1	2/22/2023 8:57:42 PM
Toluene	ND	0.049		mg/Kg	1	2/22/2023 8:57:42 PM
Ethylbenzene	ND	0.049		mg/Kg	1	2/22/2023 8:57:42 PM
Xylenes, Total	ND	0.098		mg/Kg	1	2/22/2023 8:57:42 PM
Surr: 4-Bromofluorobenzene	94.6	70-130		%Rec	1	2/22/2023 8:57:42 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	1100	60		mg/Kg	20	2/22/2023 10:24:49 PM

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 13 of 17

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2302850  
01-Mar-23

Client: Vertex Resources Services, Inc.  
Project: Irish Hills Pipeline

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

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quantitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit



**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2302850

01-Mar-23

**Client:** Vertex Resources Services, Inc.**Project:** Irish Hills Pipeline

Sample ID: <b>2302850-001AMS</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>WS23-144 0-4'</b>	Batch ID: <b>73294</b>	RunNo: <b>94831</b>								
Prep Date: <b>2/21/2023</b>	Analysis Date: <b>2/22/2023</b>	SeqNo: <b>3427333</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	9.8	49.02	9.799	69.7	54.2	135			
Surr: DNOP	4.0		4.902		82.0	69	147			

Sample ID: <b>2302850-001AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>WS23-144 0-4'</b>	Batch ID: <b>73294</b>	RunNo: <b>94831</b>								
Prep Date: <b>2/21/2023</b>	Analysis Date: <b>2/22/2023</b>	SeqNo: <b>3427334</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	9.6	48.17	9.799	68.3	54.2	135	2.84	29.2	
Surr: DNOP	4.1		4.817		85.3	69	147	0	0	

Sample ID: <b>LCS-73294</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>73294</b>	RunNo: <b>94831</b>								
Prep Date: <b>2/21/2023</b>	Analysis Date: <b>2/22/2023</b>	SeqNo: <b>3427390</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	102	61.9	130			
Surr: DNOP	5.2		5.000		104	69	147			

Sample ID: <b>MB-73294</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>73294</b>	RunNo: <b>94831</b>								
Prep Date: <b>2/21/2023</b>	Analysis Date: <b>2/22/2023</b>	SeqNo: <b>3427394</b> Units: <b>mg/Kg</b>								
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	9.1		10.00		90.8	69	147			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

Page 15 of 17

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2302850

01-Mar-23

**Client:** Vertex Resources Services, Inc.**Project:** Irish Hills Pipeline

Sample ID: <b>ics-73289</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>73289</b>		RunNo: <b>94799</b>							
Prep Date: <b>2/21/2023</b>	Analysis Date: <b>2/22/2023</b>		SeqNo: <b>3426522</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	25.00	0	106	72.3	137			
Surr: BFB	2100		1000		214	37.7	212			S

Sample ID: <b>mb-73289</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>73289</b>		RunNo: <b>94799</b>							
Prep Date: <b>2/21/2023</b>	Analysis Date: <b>2/22/2023</b>		SeqNo: <b>3426523</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1200		1000		117	37.7	212			

Sample ID: <b>2302850-001ams</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>WS23-144 0-4'</b>	Batch ID: <b>73289</b>		RunNo: <b>94799</b>							
Prep Date: <b>2/21/2023</b>	Analysis Date: <b>2/22/2023</b>		SeqNo: <b>3426525</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	29	4.9	24.63	0	117	70	130			
Surr: BFB	2200		985.2		223	37.7	212			S

Sample ID: <b>2302850-001amsd</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>WS23-144 0-4'</b>	Batch ID: <b>73289</b>		RunNo: <b>94799</b>							
Prep Date: <b>2/21/2023</b>	Analysis Date: <b>2/22/2023</b>		SeqNo: <b>3426526</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	30	4.9	24.61	0	120	70	130	3.17	20	
Surr: BFB	2200		984.3		223	37.7	212	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 Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

Page 16 of 17

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2302850

01-Mar-23

**Client:** Vertex Resources Services, Inc.**Project:** Irish Hills Pipeline

Sample ID: <b>LCS-73289</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>73289</b>		RunNo: <b>94799</b>							
Prep Date: <b>2/21/2023</b>	Analysis Date: <b>2/22/2023</b>		SeqNo: <b>3426528</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	1.000	0	89.8	80	120			
Toluene	0.93	0.050	1.000	0	92.9	80	120			
Ethylbenzene	0.91	0.050	1.000	0	91.4	80	120			
Xylenes, Total	2.8	0.10	3.000	0	92.4	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		105	70	130			

Sample ID: <b>mb-73289</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>73289</b>		RunNo: <b>94799</b>							
Prep Date: <b>2/21/2023</b>	Analysis Date: <b>2/22/2023</b>		SeqNo: <b>3426529</b>		Units: <b>mg/Kg</b>					
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: <b>2302850-002ams</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>WS23-152 0-4'</b>	Batch ID: <b>73289</b>		RunNo: <b>94799</b>							
Prep Date: <b>2/21/2023</b>	Analysis Date: <b>2/22/2023</b>		SeqNo: <b>3426623</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	0.9940	0	101	68.8	120			
Toluene	1.1	0.050	0.9940	0.01811	104	73.6	124			
Ethylbenzene	1.0	0.050	0.9940	0	105	72.7	129			
Xylenes, Total	3.1	0.099	2.982	0	105	75.7	126			
Surr: 4-Bromofluorobenzene	1.0		0.9940		100	70	130			

Sample ID: <b>2302850-002amsd</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>WS23-152 0-4'</b>	Batch ID: <b>73289</b>		RunNo: <b>94799</b>							
Prep Date: <b>2/21/2023</b>	Analysis Date: <b>2/22/2023</b>		SeqNo: <b>3426624</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	0.9881	0	102	68.8	120	0.386	20	
Toluene	1.1	0.049	0.9881	0.01811	106	73.6	124	1.68	20	
Ethylbenzene	1.1	0.049	0.9881	0	109	72.7	129	2.74	20	
Xylenes, Total	3.2	0.099	2.964	0	108	75.7	126	2.45	20	
Surr: 4-Bromofluorobenzene	0.97		0.9881		98.0	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 Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

Page 17 of 17



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: 2302850

RcptNo: 1

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

Completed By: Tracy Casarrubias 2/21/2023 8:07:54 AM

Reviewed By: *[Signature]* 2-21-23

### Chain of Custody

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

### Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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 2/21/23*

### Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

### 17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.2	Good	Yes	Yogi		









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

March 06, 2023

Chance Dixon

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX

RE: Irish Hills Pipeline

OrderNo.: 2302A02

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 1 sample(s) on 2/23/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109



## Analytical Report

Lab Order 2302A02

Date Reported: 3/6/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS23-172 0-4'

Project: Irish Hills Pipeline

Collection Date: 2/21/2023 10:00:00 AM

Lab ID: 2302A02-001

Matrix: SOIL

Received Date: 2/23/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	2/27/2023 11:02:09 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/27/2023 11:02:09 AM
Surr: DNOP	98.3	69-147		%Rec	1	2/27/2023 11:02:09 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/27/2023 4:40:00 PM
Surr: BFB	104	37.7-212		%Rec	1	2/27/2023 4:40:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	2/27/2023 4:40:00 PM
Toluene	ND	0.050		mg/Kg	1	2/27/2023 4:40:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	2/27/2023 4:40:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	2/27/2023 4:40:00 PM
Surr: 4-Bromofluorobenzene	98.6	70-130		%Rec	1	2/27/2023 4:40:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	2900	150		mg/Kg	50	2/27/2023 12:49:36 PM

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2302A02

06-Mar-23

Client: Vertex Resources Services, Inc.

Project: Irish Hills Pipeline

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

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

Qualifiers:

- \*

Value exceeds Maximum Contaminant Level.
- D

Sample Diluted Due to Matrix
- H

Holding times for preparation or analysis exceeded
- ND

Not Detected at the Reporting Limit
- PQL

Practical Quantitative Limit
- S

% Recovery outside of standard limits. If undiluted results may be estimated.

B

Analyte detected in the associated Method Blank

E

Above Quantitation Range/Estimated Value

J

Analyte detected below quantitation limits

P

Sample pH Not In Range

RL

Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2302A02

06-Mar-23

**Client:** Vertex Resources Services, Inc.**Project:** Irish Hills Pipeline

Sample ID: <b>LCS-73381</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>73381</b>			RunNo: <b>94894</b>						
Prep Date: <b>2/24/2023</b>	Analysis Date: <b>2/27/2023</b>			SeqNo: <b>3430275</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	10	50.00	0	84.7	61.9	130			
Surr: DNOP	4.7		5.000		93.1	69	147			

Sample ID: <b>MB-73381</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>PBS</b>	Batch ID: <b>73381</b>			RunNo: <b>94894</b>						
Prep Date: <b>2/24/2023</b>	Analysis Date: <b>2/27/2023</b>			SeqNo: <b>3430281</b>		Units: <b>mg/Kg</b>				
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		91.7	69	147			

Sample ID: <b>MB-73474</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>PBS</b>	Batch ID: <b>73474</b>			RunNo: <b>94965</b>						
Prep Date: <b>3/2/2023</b>	Analysis Date: <b>3/2/2023</b>			SeqNo: <b>3434009</b>		Units: <b>%Rec</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.4		10.00		84.0	69	147			

Sample ID: <b>LCS-73474</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>73474</b>			RunNo: <b>94965</b>						
Prep Date: <b>3/2/2023</b>	Analysis Date: <b>3/2/2023</b>			SeqNo: <b>3434010</b>		Units: <b>%Rec</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.5		5.000		90.1	69	147			

Sample ID: <b>MB-73456</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>PBS</b>	Batch ID: <b>73456</b>			RunNo: <b>94965</b>						
Prep Date: <b>3/1/2023</b>	Analysis Date: <b>3/2/2023</b>			SeqNo: <b>3434451</b>		Units: <b>%Rec</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	11		10.00		113	69	147			

Sample ID: <b>LCS-73456</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>73456</b>			RunNo: <b>94965</b>						
Prep Date: <b>3/1/2023</b>	Analysis Date: <b>3/2/2023</b>			SeqNo: <b>3434452</b>		Units: <b>%Rec</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.0		5.000		100	69	147			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2302A02  
06-Mar-23

Client: Vertex Resources Services, Inc.  
Project: Irish Hills Pipeline

Sample ID: <b>lcs-73354</b>	SampType: <b>LCS</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>LCSS</b>	Batch ID: <b>73354</b>				RunNo: <b>94903</b>					
Prep Date: <b>2/23/2023</b>	Analysis Date: <b>2/27/2023</b>				SeqNo: <b>3430672</b>	Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	101	72.3	137			
Surr: BFB	2200		1000		222	37.7	212			S

Sample ID: <b>mb-73354</b>	SampType: <b>MBLK</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>PBS</b>	Batch ID: <b>73354</b>				RunNo: <b>94903</b>					
Prep Date: <b>2/23/2023</b>	Analysis Date: <b>2/27/2023</b>				SeqNo: <b>3430673</b>	Units: <b>mg/Kg</b>				
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			

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2302A02

06-Mar-23

**Client:** Vertex Resources Services, Inc.**Project:** Irish Hills Pipeline

Sample ID: <b>lcs-73354</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>73354</b>			RunNo: <b>94903</b>						
Prep Date: <b>2/23/2023</b>	Analysis Date: <b>2/27/2023</b>			SeqNo: <b>3430697</b>		Units: <b>mg/Kg</b>				
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	95.8	80	120			
Ethylbenzene	0.97	0.050	1.000	0	96.9	80	120			
Xylenes, Total	2.9	0.10	3.000	0	96.5	80	120			
Surr: 4-Bromofluorobenzene	0.97		1.000		96.8	70	130			

Sample ID: <b>mb-73354</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>PBS</b>	Batch ID: <b>73354</b>			RunNo: <b>94903</b>						
Prep Date: <b>2/23/2023</b>	Analysis Date: <b>2/27/2023</b>			SeqNo: <b>3430698</b>		Units: <b>mg/Kg</b>				
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		100	70	130			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit



Hall Environmental Analysis Laboratory  
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: 2302A02

RcptNo: 1

Received By: Tracy Casarrubias 2/23/2023 7:30:00 AM

Completed By: Sean Livingston 2/23/2023 7:58:01 AM

Reviewed By:

KPC 2.23.23  
Q KPC 2.23.23

Sm Livingston

### 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: see 2/23/23

### Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

### 17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.3	Good	Not Present	Morty		







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

March 06, 2023

Chance Dixon

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX

RE: Irish Hills Pipeline

OrderNo.: 2302A65

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 1 sample(s) on 2/24/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2302A65

Date Reported: 3/6/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS23-173 0-4'

Project: Irish Hills Pipeline

Collection Date: 2/22/2023 10:45:00 AM

Lab ID: 2302A65-001

Matrix: SOIL

Received Date: 2/24/2023 7:28:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: JME
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	3/2/2023 9:05:34 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/2/2023 9:05:34 AM
Surr: DNOP	82.8	69-147		%Rec	1	3/2/2023 9:05:34 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/28/2023 9:40:00 PM
Surr: BFB	95.9	37.7-212		%Rec	1	2/28/2023 9:40:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	3/1/2023 11:54:10 AM
Toluene	ND	0.049		mg/Kg	1	3/1/2023 11:54:10 AM
Ethylbenzene	ND	0.049		mg/Kg	1	3/1/2023 11:54:10 AM
Xylenes, Total	ND	0.098		mg/Kg	1	3/1/2023 11:54:10 AM
Surr: 4-Bromofluorobenzene	91.5	70-130		%Rec	1	3/1/2023 11:54:10 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: NAI
Chloride	ND	59		mg/Kg	20	2/27/2023 8:39:19 PM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 1 of 5

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2302A65  
06-Mar-23

Client: Vertex Resources Services, Inc.  
Project: Irish Hills Pipeline

Sample ID: MB-73405	SampType: mblk	TestCode: EPA Method 300.0: Anions
Client ID: PBS	Batch ID: 73405	RunNo: 94908
Prep Date: 2/27/2023	Analysis Date: 2/27/2023	SeqNo: 3431077 Units: mg/Kg
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Chloride	ND	1.5

Sample ID: LCS-73405	SampType: lcs	TestCode: EPA Method 300.0: Anions
Client ID: LCSS	Batch ID: 73405	RunNo: 94908
Prep Date: 2/27/2023	Analysis Date: 2/27/2023	SeqNo: 3431078 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

Qualifiers:

- \*

Value exceeds Maximum Contaminant Level.
- D

Sample Diluted Due to Matrix
- H

Holding times for preparation or analysis exceeded
- ND

Not Detected at the Reporting Limit
- PQL

Practical Quantitative Limit
- S

% Recovery outside of standard limits. If undiluted results may be estimated.
- B

Analyte detected in the associated Method Blank
- E

Above Quantitation Range/Estimated Value
- J

Analyte detected below quantitation limits
- P

Sample pH Not In Range
- RL

Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2302A65

06-Mar-23

**Client:** Vertex Resources Services, Inc.**Project:** Irish Hills Pipeline

Sample ID: <b>LCS-73377</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>73377</b>			RunNo: <b>94894</b>						
Prep Date: <b>2/24/2023</b>	Analysis Date: <b>2/27/2023</b>			SeqNo: <b>3430273</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	36	10	50.00	0	72.8	61.9	130			
Surr: DNOP	3.9		5.000		79.0	69	147			

Sample ID: <b>MB-73377</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>PBS</b>	Batch ID: <b>73377</b>			RunNo: <b>94894</b>						
Prep Date: <b>2/24/2023</b>	Analysis Date: <b>2/27/2023</b>			SeqNo: <b>3430279</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	7.9		10.00		79.3	69	147			

Sample ID: <b>MB-73474</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>PBS</b>	Batch ID: <b>73474</b>			RunNo: <b>94965</b>						
Prep Date: <b>3/2/2023</b>	Analysis Date: <b>3/2/2023</b>			SeqNo: <b>3434009</b>		Units: <b>%Rec</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.4		10.00		84.0	69	147			

Sample ID: <b>LCS-73474</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>73474</b>			RunNo: <b>94965</b>						
Prep Date: <b>3/2/2023</b>	Analysis Date: <b>3/2/2023</b>			SeqNo: <b>3434010</b>		Units: <b>%Rec</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.5		5.000		90.1	69	147			

Sample ID: <b>MB-73456</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>PBS</b>	Batch ID: <b>73456</b>			RunNo: <b>94965</b>						
Prep Date: <b>3/1/2023</b>	Analysis Date: <b>3/2/2023</b>			SeqNo: <b>3434451</b>		Units: <b>%Rec</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	11		10.00		113	69	147			

Sample ID: <b>LCS-73456</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>73456</b>			RunNo: <b>94965</b>						
Prep Date: <b>3/1/2023</b>	Analysis Date: <b>3/2/2023</b>			SeqNo: <b>3434452</b>		Units: <b>%Rec</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.0		5.000		100	69	147			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2302A65

06-Mar-23

**Client:** Vertex Resources Services, Inc.**Project:** Irish Hills Pipeline

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

Sample ID: <b>mb-73371</b>	SampType: <b>MBLK</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>PBS</b>	Batch ID: <b>73371</b>				RunNo: <b>94929</b>					
Prep Date: <b>2/24/2023</b>	Analysis Date: <b>2/28/2023</b>				SeqNo: <b>3431930</b>	Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		100	37.7	212			

Sample ID: <b>mb-73371</b>	SampType: <b>MBLK</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>PBS</b>	Batch ID: <b>73371</b>				RunNo: <b>94933</b>					
Prep Date: <b>2/24/2023</b>	Analysis Date: <b>3/1/2023</b>				SeqNo: <b>3432056</b>	Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		102	37.7	212			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2302A65

06-Mar-23

**Client:** Vertex Resources Services, Inc.**Project:** Irish Hills Pipeline

Sample ID: <b>LCS-73371</b>		SampType: <b>LCS</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>					
Client ID: <b>LCSS</b>	Batch ID: <b>73371</b>			RunNo: <b>94933</b>						
Prep Date: <b>2/24/2023</b>	Analysis Date: <b>3/1/2023</b>			SeqNo: <b>3432053</b>			Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.025	1.000	0	87.5	80	120			
Toluene	0.92	0.050	1.000	0	91.6	80	120			
Ethylbenzene	0.89	0.050	1.000	0	89.3	80	120			
Xylenes, Total	2.7	0.10	3.000	0	90.3	80	120			
Surr: 4-Bromofluorobenzene	0.96		1.000		95.8	70	130			

Sample ID: <b>mb-73371</b>		SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>					
Client ID: <b>PBS</b>		Batch ID: <b>73371</b>			RunNo: <b>94933</b>					
Prep Date: <b>2/24/2023</b>		Analysis Date: <b>3/1/2023</b>			SeqNo: <b>3432077</b>		Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.93		1.000		93.4	70	130			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit



Hall Environmental Analysis Laboratory  
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: 2302A65

RcptNo: 1

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

Completed By: Tracy Casarrubias 2/24/2023 7:56:43 AM

Reviewed By: *in 2/24/23*

### Chain of Custody

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

### Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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: *sa 2/24/23*

### Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

### 17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.6	Good	Yes	Morty		



## Chain-of-Custody Record

Client: Verity (EOG)Mailing Address: on file

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)Accreditation: ☐ Az Compliance☐ NELAC ☐ Other☐ EDD (Type)

Date	Time	Matrix	Sample Name
2/22/23	10:45	Soil	WS23-173 0-4'

Turn-Around Time:

☐ Standard ☒ Rush

Project Name:

Irish Hills Pipeline

Project #:

22E-00716-02

Project Manager:

Chance Dixon

Sampler:

SPC

On Ice:

☒ Yes ☐ No

# of Coolers:

1Cooler Temp (including CF): 36-36 (°C)

Container Type and #

1 4oz jar

Preservative Type

ice

HEAL No.

2302AUS

## HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCBs	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub>	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
<input checked="" type="checkbox"/> BTEX / MTBE / TMB's (8021)	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>			

Date: 2/24/23 Time: 13:21Relinquished by: Shay CartanDate: 2/23/23 Time: 19:00Relinquished by: Chance DixonReceived by: Chance DixonDate: 2/23/23 Time: 9:15Received by: Chance DixonDate: 2/24/23 Time: 7:28

Remarks:

Direct bill EOG  
cc C Dixon, S Cartan

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



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

March 07, 2023

Chance Dixon

EOG

105 South Fourth Street

Artesia, NM 88210

TEL:

FAX:

RE: Irish Hills Pipeline

OrderNo.: 2302B04

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 21 sample(s) on 2/25/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2302B04

Date Reported: 3/7/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BS23-18 4'

Project: Irish Hills Pipeline

Collection Date: 2/23/2023 8:15:00 AM

Lab ID: 2302B04-001

Matrix: SOIL

Received Date: 2/25/2023 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>CAS</b>
Chloride	1700	60		mg/Kg	20	2/28/2023 11:00:14 PM	73440
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	3/2/2023 11:36:59 AM	73414
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/2/2023 11:36:59 AM	73414
Surr: DNOP	71.5	69-147		%Rec	1	3/2/2023 11:36:59 AM	73414
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/28/2023 10:58:00 PM	73401
Surr: BFB	102	37.7-212		%Rec	1	2/28/2023 10:58:00 PM	73401
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	3/2/2023 10:13:00 PM	73401
Toluene	ND	0.049		mg/Kg	1	3/2/2023 10:13:00 PM	73401
Ethylbenzene	ND	0.049		mg/Kg	1	3/2/2023 10:13:00 PM	73401
Xylenes, Total	ND	0.098		mg/Kg	1	3/2/2023 10:13:00 PM	73401
Surr: 4-Bromofluorobenzene	89.8	70-130		%Rec	1	3/2/2023 10:13:00 PM	73401

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 1 of 28

## Analytical Report

Lab Order 2302B04

Date Reported: 3/7/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BS23-19 4'

Project: Irish Hills Pipeline

Collection Date: 2/23/2023 8:20:00 AM

Lab ID: 2302B04-002

Matrix: SOIL

Received Date: 2/25/2023 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>CAS</b>
Chloride	1800	60		mg/Kg	20	3/1/2023 12:02:18 AM	73440
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	3/1/2023 12:01:14 PM	73414
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/1/2023 12:01:14 PM	73414
Surr: DNOP	62.2	69-147	S	%Rec	1	3/1/2023 12:01:14 PM	73414
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	2/28/2023 11:57:00 PM	73401
Surr: BFB	102	37.7-212		%Rec	1	2/28/2023 11:57:00 PM	73401
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	3/2/2023 10:34:00 PM	73401
Toluene	ND	0.047		mg/Kg	1	3/2/2023 10:34:00 PM	73401
Ethylbenzene	ND	0.047		mg/Kg	1	3/2/2023 10:34:00 PM	73401
Xylenes, Total	ND	0.095		mg/Kg	1	3/2/2023 10:34:00 PM	73401
Surr: 4-Bromofluorobenzene	91.0	70-130		%Rec	1	3/2/2023 10:34:00 PM	73401

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 2 of 28

## Analytical Report

Lab Order 2302B04

Date Reported: 3/7/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BS23-20 4'

Project: Irish Hills Pipeline

Collection Date: 2/23/2023 8:25:00 AM

Lab ID: 2302B04-003

Matrix: SOIL

Received Date: 2/25/2023 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	2700	150		mg/Kg	50	3/1/2023 10:48:22 AM	73437
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	3/1/2023 12:14:53 PM	73414
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/1/2023 12:14:53 PM	73414
Surr: DNOP	69.1	69-147		%Rec	1	3/1/2023 12:14:53 PM	73414
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/1/2023 12:56:00 AM	73401
Surr: BFB	103	37.7-212		%Rec	1	3/1/2023 12:56:00 AM	73401
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	3/2/2023 11:39:00 PM	73401
Toluene	ND	0.048		mg/Kg	1	3/2/2023 11:39:00 PM	73401
Ethylbenzene	ND	0.048		mg/Kg	1	3/2/2023 11:39:00 PM	73401
Xylenes, Total	ND	0.096		mg/Kg	1	3/2/2023 11:39:00 PM	73401
Surr: 4-Bromofluorobenzene	87.4	70-130		%Rec	1	3/2/2023 11:39:00 PM	73401

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 3 of 28

## Analytical Report

Lab Order 2302B04

Date Reported: 3/7/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BS23-21 4'

Project: Irish Hills Pipeline

Collection Date: 2/23/2023 8:30:00 AM

Lab ID: 2302B04-004

Matrix: SOIL

Received Date: 2/25/2023 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>CAS</b>
Chloride	2000	60		mg/Kg	20	3/1/2023 12:39:31 AM	73440
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	3/2/2023 12:24:50 PM	73414
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/2/2023 12:24:50 PM	73414
Surr: DNOP	77.3	69-147		%Rec	1	3/2/2023 12:24:50 PM	73414
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/1/2023 1:15:00 AM	73401
Surr: BFB	101	37.7-212		%Rec	1	3/1/2023 1:15:00 AM	73401
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	3/3/2023	73401
Toluene	ND	0.047		mg/Kg	1	3/3/2023	73401
Ethylbenzene	ND	0.047		mg/Kg	1	3/3/2023	73401
Xylenes, Total	ND	0.094		mg/Kg	1	3/3/2023	73401
Surr: 4-Bromofluorobenzene	90.0	70-130		%Rec	1	3/3/2023	73401

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 4 of 28

## Analytical Report

Lab Order 2302B04

Date Reported: 3/7/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BS23-22 4'

Project: Irish Hills Pipeline

Collection Date: 2/23/2023 8:35:00 AM

Lab ID: 2302B04-005

Matrix: SOIL

Received Date: 2/25/2023 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: CAS
Chloride	2300	60		mg/Kg	20	3/1/2023 12:51:56 AM	73440
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	3/2/2023 3:35:24 PM	73414
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/2/2023 3:35:24 PM	73414
Surr: DNOP	74.6	69-147		%Rec	1	3/2/2023 3:35:24 PM	73414
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/1/2023 1:35:00 AM	73401
Surr: BFB	99.8	37.7-212		%Rec	1	3/1/2023 1:35:00 AM	73401
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	3/3/2023 12:22:00 AM	73401
Toluene	ND	0.050		mg/Kg	1	3/3/2023 12:22:00 AM	73401
Ethylbenzene	ND	0.050		mg/Kg	1	3/3/2023 12:22:00 AM	73401
Xylenes, Total	ND	0.10		mg/Kg	1	3/3/2023 12:22:00 AM	73401
Surr: 4-Bromofluorobenzene	90.6	70-130		%Rec	1	3/3/2023 12:22:00 AM	73401

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 5 of 28



## Analytical Report

Lab Order 2302B04

Date Reported: 3/7/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BS23-23 4'

Project: Irish Hills Pipeline

Collection Date: 2/23/2023 8:40:00 AM

Lab ID: 2302B04-006

Matrix: SOIL

Received Date: 2/25/2023 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	4800	300		mg/Kg	100	3/1/2023 11:00:47 AM	73440
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	8.6		mg/Kg	1	3/1/2023 12:55:59 PM	73414
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	3/1/2023 12:55:59 PM	73414
Surr: DNOP	87.1	69-147		%Rec	1	3/1/2023 12:55:59 PM	73414
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/1/2023 1:55:00 AM	73401
Surr: BFB	101	37.7-212		%Rec	1	3/1/2023 1:55:00 AM	73401
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	3/3/2023 12:44:00 AM	73401
Toluene	ND	0.048		mg/Kg	1	3/3/2023 12:44:00 AM	73401
Ethylbenzene	ND	0.048		mg/Kg	1	3/3/2023 12:44:00 AM	73401
Xylenes, Total	ND	0.096		mg/Kg	1	3/3/2023 12:44:00 AM	73401
Surr: 4-Bromofluorobenzene	89.0	70-130		%Rec	1	3/3/2023 12:44:00 AM	73401

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 6 of 28

## Analytical Report

Lab Order 2302B04

Date Reported: 3/7/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BS23-24 4'

Project: Irish Hills Pipeline

Collection Date: 2/23/2023 8:45:00 AM

Lab ID: 2302B04-007

Matrix: SOIL

Received Date: 2/25/2023 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	4600	150		mg/Kg	50	3/1/2023 11:13:12 AM	73440
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	8.9		mg/Kg	1	3/1/2023 1:09:45 PM	73414
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	3/1/2023 1:09:45 PM	73414
Surr: DNOP	93.7	69-147		%Rec	1	3/1/2023 1:09:45 PM	73414
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/1/2023 2:34:00 AM	73401
Surr: BFB	97.1	37.7-212		%Rec	1	3/1/2023 2:34:00 AM	73401
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	3/3/2023 1:05:00 AM	73401
Toluene	ND	0.049		mg/Kg	1	3/3/2023 1:05:00 AM	73401
Ethylbenzene	ND	0.049		mg/Kg	1	3/3/2023 1:05:00 AM	73401
Xylenes, Total	ND	0.098		mg/Kg	1	3/3/2023 1:05:00 AM	73401
Surr: 4-Bromofluorobenzene	89.7	70-130		%Rec	1	3/3/2023 1:05:00 AM	73401

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 7 of 28

## Analytical Report

Lab Order 2302B04

Date Reported: 3/7/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BS23-25 4'

Project: Irish Hills Pipeline

Collection Date: 2/23/2023 9:00:00 AM

Lab ID: 2302B04-008

Matrix: SOIL

Received Date: 2/25/2023 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>JMT</b>
Chloride	3900	150		mg/Kg	50	3/1/2023 11:25:37 AM	73440
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	3/2/2023 1:19:22 PM	73414
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/2/2023 1:19:22 PM	73414
Surr: DNOP	72.7	69-147		%Rec	1	3/2/2023 1:19:22 PM	73414
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/1/2023 2:53:00 AM	73401
Surr: BFB	99.1	37.7-212		%Rec	1	3/1/2023 2:53:00 AM	73401
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	3/3/2023 1:27:00 AM	73401
Toluene	ND	0.048		mg/Kg	1	3/3/2023 1:27:00 AM	73401
Ethylbenzene	ND	0.048		mg/Kg	1	3/3/2023 1:27:00 AM	73401
Xylenes, Total	ND	0.096		mg/Kg	1	3/3/2023 1:27:00 AM	73401
Surr: 4-Bromofluorobenzene	90.9	70-130		%Rec	1	3/3/2023 1:27:00 AM	73401

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 8 of 28

## Analytical Report

Lab Order 2302B04

Date Reported: 3/7/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BS23-26 4'

Project: Irish Hills Pipeline

Collection Date: 2/23/2023 9:05:00 AM

Lab ID: 2302B04-009

Matrix: SOIL

Received Date: 2/25/2023 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	3400	150		mg/Kg	50	3/1/2023 11:38:02 AM	73440
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	ND	8.8		mg/Kg	1	3/2/2023 12:48:36 PM	73414
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	3/2/2023 12:48:36 PM	73414
Surr: DNOP	72.7	69-147		%Rec	1	3/2/2023 12:48:36 PM	73414
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/1/2023 3:13:00 AM	73401
Surr: BFB	101	37.7-212		%Rec	1	3/1/2023 3:13:00 AM	73401
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	3/3/2023 1:48:00 AM	73401
Toluene	ND	0.049		mg/Kg	1	3/3/2023 1:48:00 AM	73401
Ethylbenzene	ND	0.049		mg/Kg	1	3/3/2023 1:48:00 AM	73401
Xylenes, Total	ND	0.097		mg/Kg	1	3/3/2023 1:48:00 AM	73401
Surr: 4-Bromofluorobenzene	91.9	70-130		%Rec	1	3/3/2023 1:48:00 AM	73401

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 9 of 28

## Analytical Report

Lab Order 2302B04

Date Reported: 3/7/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BS23-27 4'

Project: Irish Hills Pipeline

Collection Date: 2/23/2023 9:20:00 AM

Lab ID: 2302B04-010

Matrix: SOIL

Received Date: 2/25/2023 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: CAS
Chloride	2200	60		mg/Kg	20	3/1/2023 2:18:47 AM	73440
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	15	9.4		mg/Kg	1	3/3/2023 10:54:28 AM	73489
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/3/2023 10:54:28 AM	73489
Surr: DNOP	76.9	69-147		%Rec	1	3/3/2023 10:54:28 AM	73489
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/1/2023 3:32:00 AM	73401
Surr: BFB	100	37.7-212		%Rec	1	3/1/2023 3:32:00 AM	73401
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	3/3/2023 2:10:00 AM	73401
Toluene	ND	0.049		mg/Kg	1	3/3/2023 2:10:00 AM	73401
Ethylbenzene	ND	0.049		mg/Kg	1	3/3/2023 2:10:00 AM	73401
Xylenes, Total	ND	0.098		mg/Kg	1	3/3/2023 2:10:00 AM	73401
Surr: 4-Bromofluorobenzene	89.5	70-130		%Rec	1	3/3/2023 2:10:00 AM	73401

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 10 of 28

## Analytical Report

Lab Order 2302B04

Date Reported: 3/7/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BS23-28 4'

Project: Irish Hills Pipeline

Collection Date: 2/23/2023 9:25:00 AM

Lab ID: 2302B04-011

Matrix: SOIL

Received Date: 2/25/2023 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	4300	150		mg/Kg	50	3/1/2023 11:50:27 AM	73440
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	15	9.8		mg/Kg	1	3/3/2023 11:05:02 AM	73489
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/3/2023 11:05:02 AM	73489
Surr: DNOP	95.5	69-147		%Rec	1	3/3/2023 11:05:02 AM	73489
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/1/2023 3:52:00 AM	73401
Surr: BFB	97.8	37.7-212		%Rec	1	3/1/2023 3:52:00 AM	73401
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	3/3/2023 2:53:00 AM	73401
Toluene	ND	0.047		mg/Kg	1	3/3/2023 2:53:00 AM	73401
Ethylbenzene	ND	0.047		mg/Kg	1	3/3/2023 2:53:00 AM	73401
Xylenes, Total	ND	0.095		mg/Kg	1	3/3/2023 2:53:00 AM	73401
Surr: 4-Bromofluorobenzene	90.0	70-130		%Rec	1	3/3/2023 2:53:00 AM	73401

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 11 of 28

## Analytical Report

Lab Order 2302B04

Date Reported: 3/7/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BS23-29 4'

Project: Irish Hills Pipeline

Collection Date: 2/23/2023 9:30:00 AM

Lab ID: 2302B04-012

Matrix: SOIL

Received Date: 2/25/2023 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	4200	150		mg/Kg	50	3/1/2023 12:02:52 PM	73440
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	ND	8.6		mg/Kg	1	3/2/2023 1:59:59 PM	73414
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	3/2/2023 1:59:59 PM	73414
Surr: DNOP	81.4	69-147		%Rec	1	3/2/2023 1:59:59 PM	73414
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/1/2023 4:11:00 AM	73401
Surr: BFB	103	37.7-212		%Rec	1	3/1/2023 4:11:00 AM	73401
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	3/3/2023 3:15:00 AM	73401
Toluene	ND	0.048		mg/Kg	1	3/3/2023 3:15:00 AM	73401
Ethylbenzene	ND	0.048		mg/Kg	1	3/3/2023 3:15:00 AM	73401
Xylenes, Total	ND	0.096		mg/Kg	1	3/3/2023 3:15:00 AM	73401
Surr: 4-Bromofluorobenzene	89.3	70-130		%Rec	1	3/3/2023 3:15:00 AM	73401

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 12 of 28



## Analytical Report

Lab Order 2302B04

Date Reported: 3/7/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BS23-30 4'

Project: Irish Hills Pipeline

Collection Date: 2/23/2023 9:35:00 AM

Lab ID: 2302B04-013

Matrix: SOIL

Received Date: 2/25/2023 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	4500	150		mg/Kg	50	3/1/2023 12:15:16 PM	73440
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	8.6		mg/Kg	1	3/1/2023 2:33:04 PM	73414
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	3/1/2023 2:33:04 PM	73414
Surr: DNOP	71.6	69-147		%Rec	1	3/1/2023 2:33:04 PM	73414
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/1/2023 4:31:00 AM	73401
Surr: BFB	94.1	37.7-212		%Rec	1	3/1/2023 4:31:00 AM	73401
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	3/3/2023 3:36:00 AM	73401
Toluene	ND	0.049		mg/Kg	1	3/3/2023 3:36:00 AM	73401
Ethylbenzene	ND	0.049		mg/Kg	1	3/3/2023 3:36:00 AM	73401
Xylenes, Total	ND	0.097		mg/Kg	1	3/3/2023 3:36:00 AM	73401
Surr: 4-Bromofluorobenzene	89.5	70-130		%Rec	1	3/3/2023 3:36:00 AM	73401

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 13 of 28

## Analytical Report

Lab Order 2302B04

Date Reported: 3/7/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BS23-31 4'

Project: Irish Hills Pipeline

Collection Date: 2/23/2023 9:40:00 AM

Lab ID: 2302B04-014

Matrix: SOIL

Received Date: 2/25/2023 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	7100	300		mg/Kg	100	3/1/2023 12:27:41 PM	73440
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	3/1/2023 2:47:01 PM	73414
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/1/2023 2:47:01 PM	73414
Surr: DNOP	78.2	69-147		%Rec	1	3/1/2023 2:47:01 PM	73414
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/1/2023 4:51:00 AM	73401
Surr: BFB	103	37.7-212		%Rec	1	3/1/2023 4:51:00 AM	73401
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	3/3/2023 3:58:00 AM	73401
Toluene	ND	0.050		mg/Kg	1	3/3/2023 3:58:00 AM	73401
Ethylbenzene	ND	0.050		mg/Kg	1	3/3/2023 3:58:00 AM	73401
Xylenes, Total	ND	0.10		mg/Kg	1	3/3/2023 3:58:00 AM	73401
Surr: 4-Bromofluorobenzene	89.0	70-130		%Rec	1	3/3/2023 3:58:00 AM	73401

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 14 of 28

## Analytical Report

Lab Order 2302B04

Date Reported: 3/7/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BS23-32 4'

Project: Irish Hills Pipeline

Collection Date: 2/23/2023 9:45:00 AM

Lab ID: 2302B04-015

Matrix: SOIL

Received Date: 2/25/2023 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	7300	300		mg/Kg	100	3/1/2023 1:04:55 PM	73440
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	3/1/2023 3:00:50 PM	73414
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/1/2023 3:00:50 PM	73414
Surr: DNOP	88.4	69-147		%Rec	1	3/1/2023 3:00:50 PM	73414
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/1/2023 5:10:00 AM	73401
Surr: BFB	98.1	37.7-212		%Rec	1	3/1/2023 5:10:00 AM	73401
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	3/3/2023 4:19:00 AM	73401
Toluene	ND	0.050		mg/Kg	1	3/3/2023 4:19:00 AM	73401
Ethylbenzene	ND	0.050		mg/Kg	1	3/3/2023 4:19:00 AM	73401
Xylenes, Total	ND	0.10		mg/Kg	1	3/3/2023 4:19:00 AM	73401
Surr: 4-Bromofluorobenzene	89.7	70-130		%Rec	1	3/3/2023 4:19:00 AM	73401

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 15 of 28

## Analytical Report

Lab Order 2302B04

Date Reported: 3/7/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BS23-33 4'

Project: Irish Hills Pipeline

Collection Date: 2/23/2023 9:50:00 AM

Lab ID: 2302B04-016

Matrix: SOIL

Received Date: 2/25/2023 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	4800	300		mg/Kg	100	3/1/2023 1:17:20 PM	73440
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	8.6		mg/Kg	1	3/1/2023 3:14:44 PM	73414
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	3/1/2023 3:14:44 PM	73414
Surr: DNOP	71.7	69-147		%Rec	1	3/1/2023 3:14:44 PM	73414
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/1/2023 5:30:00 AM	73401
Surr: BFB	105	37.7-212		%Rec	1	3/1/2023 5:30:00 AM	73401
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	3/3/2023 4:41:00 AM	73401
Toluene	ND	0.048		mg/Kg	1	3/3/2023 4:41:00 AM	73401
Ethylbenzene	ND	0.048		mg/Kg	1	3/3/2023 4:41:00 AM	73401
Xylenes, Total	ND	0.096		mg/Kg	1	3/3/2023 4:41:00 AM	73401
Surr: 4-Bromofluorobenzene	89.5	70-130		%Rec	1	3/3/2023 4:41:00 AM	73401

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 16 of 28

## Analytical Report

Lab Order 2302B04

Date Reported: 3/7/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BS23-34 4'

Project: Irish Hills Pipeline

Collection Date: 2/23/2023 9:55:00 AM

Lab ID: 2302B04-017

Matrix: SOIL

Received Date: 2/25/2023 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	2200	150		mg/Kg	50	3/1/2023 1:29:44 PM	73440
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	3/1/2023 3:28:46 PM	73414
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/1/2023 3:28:46 PM	73414
Surr: DNOP	58.9	69-147	S	%Rec	1	3/1/2023 3:28:46 PM	73414
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/3/2023 5:02:00 AM	73401
Surr: BFB	86.5	37.7-212		%Rec	1	3/3/2023 5:02:00 AM	73401
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	3/3/2023 5:02:00 AM	73401
Toluene	ND	0.050		mg/Kg	1	3/3/2023 5:02:00 AM	73401
Ethylbenzene	ND	0.050		mg/Kg	1	3/3/2023 5:02:00 AM	73401
Xylenes, Total	ND	0.099		mg/Kg	1	3/3/2023 5:02:00 AM	73401
Surr: 4-Bromofluorobenzene	90.5	70-130		%Rec	1	3/3/2023 5:02:00 AM	73401

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 17 of 28

## Analytical Report

Lab Order 2302B04

Date Reported: 3/7/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BS23-35 4'

Project: Irish Hills Pipeline

Collection Date: 2/23/2023 10:00:00 AM

Lab ID: 2302B04-018

Matrix: SOIL

Received Date: 2/25/2023 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: CAS
Chloride	1300	60		mg/Kg	20	3/1/2023 3:58:05 AM	73440
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	3/2/2023 2:47:36 PM	73414
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/2/2023 2:47:36 PM	73414
Surr: DNOP	70.7	69-147		%Rec	1	3/2/2023 2:47:36 PM	73414
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/3/2023 5:24:00 AM	73401
Surr: BFB	87.0	37.7-212		%Rec	1	3/3/2023 5:24:00 AM	73401
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	3/3/2023 5:24:00 AM	73401
Toluene	ND	0.048		mg/Kg	1	3/3/2023 5:24:00 AM	73401
Ethylbenzene	ND	0.048		mg/Kg	1	3/3/2023 5:24:00 AM	73401
Xylenes, Total	ND	0.097		mg/Kg	1	3/3/2023 5:24:00 AM	73401
Surr: 4-Bromofluorobenzene	90.2	70-130		%Rec	1	3/3/2023 5:24:00 AM	73401

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 18 of 28

## Analytical Report

Lab Order 2302B04

Date Reported: 3/7/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BS23-36 4'

Project: Irish Hills Pipeline

Collection Date: 2/23/2023 10:05:00 AM

Lab ID: 2302B04-019

Matrix: SOIL

Received Date: 2/25/2023 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	2500	150		mg/Kg	50	3/1/2023 1:42:09 PM	73440
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	3/1/2023 3:56:42 PM	73414
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/1/2023 3:56:42 PM	73414
Surr: DNOP	74.8	69-147		%Rec	1	3/1/2023 3:56:42 PM	73414
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/3/2023 5:45:00 AM	73401
Surr: BFB	85.8	37.7-212		%Rec	1	3/3/2023 5:45:00 AM	73401
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	3/3/2023 5:45:00 AM	73401
Toluene	ND	0.047		mg/Kg	1	3/3/2023 5:45:00 AM	73401
Ethylbenzene	ND	0.047		mg/Kg	1	3/3/2023 5:45:00 AM	73401
Xylenes, Total	ND	0.095		mg/Kg	1	3/3/2023 5:45:00 AM	73401
Surr: 4-Bromofluorobenzene	90.5	70-130		%Rec	1	3/3/2023 5:45:00 AM	73401

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 19 of 28



## Analytical Report

Lab Order 2302B04

Date Reported: 3/7/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BS23-37 4'

Project: Irish Hills Pipeline

Collection Date: 2/23/2023 10:10:00 AM

Lab ID: 2302B04-020

Matrix: SOIL

Received Date: 2/25/2023 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>JMT</b>
Chloride	4700	150		mg/Kg	50	3/1/2023 1:54:33 PM	73440
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	3/2/2023 12:58:12 PM	73414
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/2/2023 12:58:12 PM	73414
Surr: DNOP	105	69-147		%Rec	1	3/2/2023 12:58:12 PM	73414
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/3/2023 6:07:00 AM	73401
Surr: BFB	88.4	37.7-212		%Rec	1	3/3/2023 6:07:00 AM	73401
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	3/3/2023 6:07:00 AM	73401
Toluene	ND	0.047		mg/Kg	1	3/3/2023 6:07:00 AM	73401
Ethylbenzene	ND	0.047		mg/Kg	1	3/3/2023 6:07:00 AM	73401
Xylenes, Total	ND	0.094		mg/Kg	1	3/3/2023 6:07:00 AM	73401
Surr: 4-Bromofluorobenzene	89.2	70-130		%Rec	1	3/3/2023 6:07:00 AM	73401

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

## Analytical Report

Lab Order 2302B04

Date Reported: 3/7/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BS23-38 4'

Project: Irish Hills Pipeline

Collection Date: 2/23/2023 10:15:00 AM

Lab ID: 2302B04-021

Matrix: SOIL

Received Date: 2/25/2023 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	2300	150		mg/Kg	50	3/1/2023 2:06:58 PM	73440
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: JR
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/28/2023 12:33:25 PM	73404
Surr: BFB	102	70-130		%Rec	1	2/28/2023 12:33:25 PM	73404
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	3/1/2023 2:20:40 PM	73421
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/1/2023 2:20:40 PM	73421
Surr: DNOP	87.2	69-147		%Rec	1	3/1/2023 2:20:40 PM	73421
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: JR
Benzene	ND	0.024		mg/Kg	1	2/28/2023 12:33:25 PM	73404
Toluene	ND	0.048		mg/Kg	1	2/28/2023 12:33:25 PM	73404
Ethylbenzene	ND	0.048		mg/Kg	1	2/28/2023 12:33:25 PM	73404
Xylenes, Total	ND	0.096		mg/Kg	1	2/28/2023 12:33:25 PM	73404
Surr: 1,2-Dichloroethane-d4	97.9	70-130		%Rec	1	2/28/2023 12:33:25 PM	73404
Surr: 4-Bromofluorobenzene	92.9	70-130		%Rec	1	2/28/2023 12:33:25 PM	73404
Surr: Dibromofluoromethane	101	70-130		%Rec	1	2/28/2023 12:33:25 PM	73404
Surr: Toluene-d8	95.0	70-130		%Rec	1	2/28/2023 12:33:25 PM	73404

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 21 of 28

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**WO#: **2302B04****07-Mar-23**

**Client:** EOG  
**Project:** Irish Hills Pipeline

Sample ID: <b>MB-73440</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>73440</b>		RunNo: <b>94936</b>							
Prep Date: <b>2/28/2023</b>	Analysis Date: <b>2/28/2023</b>		SeqNo: <b>3432105</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-73440</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>73440</b>		RunNo: <b>94936</b>							
Prep Date: <b>2/28/2023</b>	Analysis Date: <b>2/28/2023</b>		SeqNo: <b>3432106</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.5	90	110			

Sample ID: <b>MB-73437</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>73437</b>		RunNo: <b>94936</b>							
Prep Date: <b>2/28/2023</b>	Analysis Date: <b>2/28/2023</b>		SeqNo: <b>3432107</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-73437</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>73437</b>		RunNo: <b>94936</b>							
Prep Date: <b>2/28/2023</b>	Analysis Date: <b>2/28/2023</b>		SeqNo: <b>3432108</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.0	90	110			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

Page 22 of 28

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2302B04

07-Mar-23

**Client:** EOG  
**Project:** Irish Hills Pipeline

Sample ID: <b>LCS-73414</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>73414</b>			RunNo: <b>94952</b>						
Prep Date: <b>2/28/2023</b>	Analysis Date: <b>3/1/2023</b>			SeqNo: <b>3432995</b>		Units: <b>mg/Kg</b>				
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	61.9	130			
Surr: DNOP	5.0		5.000		101	69	147			

Sample ID: <b>LCS-73421</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>73421</b>			RunNo: <b>94952</b>						
Prep Date: <b>2/28/2023</b>	Analysis Date: <b>3/1/2023</b>			SeqNo: <b>3432996</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	41	10	50.00	0	81.2	61.9	130			
Surr: DNOP	4.5		5.000		90.0	69	147			

Sample ID: <b>MB-73414</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>PBS</b>	Batch ID: <b>73414</b>			RunNo: <b>94952</b>						
Prep Date: <b>2/28/2023</b>	Analysis Date: <b>3/1/2023</b>			SeqNo: <b>3432997</b>		Units: <b>mg/Kg</b>				
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		98.3	69	147			

Sample ID: <b>MB-73421</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>PBS</b>	Batch ID: <b>73421</b>			RunNo: <b>94952</b>						
Prep Date: <b>2/28/2023</b>	Analysis Date: <b>3/1/2023</b>			SeqNo: <b>3432998</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		104	69	147			

Sample ID: <b>MB-73474</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>PBS</b>	Batch ID: <b>73474</b>			RunNo: <b>94965</b>						
Prep Date: <b>3/2/2023</b>	Analysis Date: <b>3/2/2023</b>			SeqNo: <b>3434009</b>		Units: <b>%Rec</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.4		10.00		84.0	69	147			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2302B04

07-Mar-23

**Client:** EOG  
**Project:** Irish Hills Pipeline

Sample ID: <b>LCS-73474</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>73474</b>		RunNo: <b>94965</b>							
Prep Date: <b>3/2/2023</b>	Analysis Date: <b>3/2/2023</b>		SeqNo: <b>3434010</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.5		5.000		90.1	69	147			

Sample ID: <b>MB-73456</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>PBS</b>	Batch ID: <b>73456</b>		RunNo: <b>94965</b>							
Prep Date: <b>3/1/2023</b>	Analysis Date: <b>3/2/2023</b>		SeqNo: <b>3434451</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	11		10.00		113	69	147			

Sample ID: <b>LCS-73456</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>73456</b>		RunNo: <b>94965</b>							
Prep Date: <b>3/1/2023</b>	Analysis Date: <b>3/2/2023</b>		SeqNo: <b>3434452</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.0		5.000		100	69	147			

Sample ID: <b>LCS-73489</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>73489</b>		RunNo: <b>95019</b>							
Prep Date: <b>3/2/2023</b>	Analysis Date: <b>3/3/2023</b>		SeqNo: <b>3435789</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	63	10	50.00	0	126	61.9	130			
Surr: DNOP	6.6		5.000		132	69	147			

Sample ID: <b>MB-73489</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>PBS</b>	Batch ID: <b>73489</b>		RunNo: <b>95019</b>							
Prep Date: <b>3/2/2023</b>	Analysis Date: <b>3/3/2023</b>		SeqNo: <b>3435792</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	12		10.00		120	69	147			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2302B04  
07-Mar-23

Client: EOG  
Project: Irish Hills Pipeline

Sample ID: Ics-73401	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: LCSS	Batch ID: 73401			RunNo: 94929						
Prep Date: 2/27/2023	Analysis Date: 2/28/2023			SeqNo: 3431937		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	85.8	72.3	137			
Surr: BFB	2200		1000		218	37.7	212			S

Sample ID: mb-73401	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: PBS	Batch ID: 73401			RunNo: 94929						
Prep Date: 2/27/2023	Analysis Date: 2/28/2023			SeqNo: 3431938		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		104	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 Quantitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2302B04

07-Mar-23

**Client:** EOG  
**Project:** Irish Hills Pipeline

Sample ID: <b>lcs-73401</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>73401</b>		RunNo: <b>95007</b>							
Prep Date: <b>2/27/2023</b>	Analysis Date: <b>3/2/2023</b>		SeqNo: <b>3435022</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.86	0.025	1.000	0	86.0	80	120			
Toluene	0.86	0.050	1.000	0	85.9	80	120			
Ethylbenzene	0.84	0.050	1.000	0	83.9	80	120			
Xylenes, Total	2.5	0.10	3.000	0	83.0	80	120			
Surr: 4-Bromofluorobenzene	0.91		1.000		90.7	70	130			

Sample ID: <b>mb-73401</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>73401</b>		RunNo: <b>95007</b>							
Prep Date: <b>2/27/2023</b>	Analysis Date: <b>3/2/2023</b>		SeqNo: <b>3435023</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.91		1.000		90.6	70	130			

### Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 26 of 28



**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**WO#: **2302B04****07-Mar-23**

**Client:** EOG  
**Project:** Irish Hills Pipeline

Sample ID: <b>ics-73404</b>	SampType: <b>LCS4</b>		TestCode: <b>EPA Method 8260B: Volatiles Short List</b>							
Client ID: <b>BatchQC</b>	Batch ID: <b>73404</b>		RunNo: <b>94927</b>							
Prep Date: <b>2/27/2023</b>	Analysis Date: <b>2/28/2023</b>		SeqNo: <b>3431736</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.82	0.025	1.000	0	82.0	80	120			
Toluene	0.94	0.050	1.000	0	94.0	80	120			
Ethylbenzene	0.96	0.050	1.000	0	96.3	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.1	80	120			
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		94.1	70	130			
Surr: 4-Bromofluorobenzene	0.47		0.5000		94.5	70	130			
Surr: Dibromofluoromethane	0.48		0.5000		95.3	70	130			
Surr: Toluene-d8	0.50		0.5000		99.6	70	130			

Sample ID: <b>mb-73404</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8260B: Volatiles Short List</b>							
Client ID: <b>PBS</b>	Batch ID: <b>73404</b>		RunNo: <b>94927</b>							
Prep Date: <b>2/27/2023</b>	Analysis Date: <b>2/28/2023</b>		SeqNo: <b>3431737</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.48		0.5000		95.1	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		100	70	130			
Surr: Dibromofluoromethane	0.49		0.5000		97.1	70	130			
Surr: Toluene-d8	0.49		0.5000		98.7	70	130			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2302B04

07-Mar-23

Client: EOG

Project: Irish Hills Pipeline

Sample ID: <b>ics-73404</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015D Mod: Gasoline Range</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>73404</b>			RunNo: <b>94927</b>						
Prep Date: <b>2/27/2023</b>	Analysis Date: <b>2/28/2023</b>			SeqNo: <b>3431792</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	5.0	25.00	0	78.4	70	130			
Surr: BFB	500		500.0		99.4	70	130			

Sample ID: <b>mb-73404</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015D Mod: Gasoline Range</b>						
Client ID: <b>PBS</b>	Batch ID: <b>73404</b>			RunNo: <b>94927</b>						
Prep Date: <b>2/27/2023</b>	Analysis Date: <b>2/28/2023</b>			SeqNo: <b>3431793</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	530		500.0		105	70	130			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit



Hall Environmental Analysis Laboratory  
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: 2302B04

RcptNo: 1

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

Completed By: Tracy Casarrubias 2/25/2023 9:54:06 AM

Reviewed By: DAD 2/27/23

### Chain of Custody

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

### Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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: TME 2/25/23

### Special Handling (if applicable)

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

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

### 17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.1	Good	Yes	Yogi		



## Chain-of-Custody Record

Client: Vertex (EOG)

Mailing Address: on file

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)Accreditation: ☐ Az Compliance☐ NELAC ☐ Other☐ EDD (Type)

# of Coolers: 1

Cooler Temp (including CF): 2.1 - 2.1 (°C)

Container Type and #

Preservative Type

HEAL No.

Date

Time

Matrix

Sample Name

Date

Time

Matrix

Sample Name

Date

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

March 03, 2023

Chance Dixon

EOG

105 South Fourth Street

Artesia, NM 88210

TEL:

FAX:

RE: Irish Hills Pipeline

OrderNo.: 2302B51

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 4 sample(s) on 2/28/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2302B51

Date Reported: 3/3/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WS23-175 0-4'

Project: Irish Hills Pipeline

Collection Date: 2/24/2023 7:35:00 AM

Lab ID: 2302B51-001

Matrix: SOIL

Received Date: 2/28/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	780	60		mg/Kg	20	3/2/2023 12:48:34 AM	73467
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/2/2023 2:45:50 PM	73450
Surr: BFB	110	70-130		%Rec	1	3/2/2023 2:45:50 PM	73450
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	3/2/2023 4:13:44 PM	73456
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/2/2023 4:13:44 PM	73456
Surr: DNOP	88.7	69-147		%Rec	1	3/2/2023 4:13:44 PM	73456
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	3/2/2023 2:45:50 PM	73450
Toluene	ND	0.049		mg/Kg	1	3/2/2023 2:45:50 PM	73450
Ethylbenzene	ND	0.049		mg/Kg	1	3/2/2023 2:45:50 PM	73450
Xylenes, Total	ND	0.098		mg/Kg	1	3/2/2023 2:45:50 PM	73450
Surr: 1,2-Dichloroethane-d4	110	70-130		%Rec	1	3/2/2023 2:45:50 PM	73450
Surr: 4-Bromofluorobenzene	104	70-130		%Rec	1	3/2/2023 2:45:50 PM	73450
Surr: Dibromofluoromethane	104	70-130		%Rec	1	3/2/2023 2:45:50 PM	73450
Surr: Toluene-d8	103	70-130		%Rec	1	3/2/2023 2:45:50 PM	73450

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		



## Analytical Report

Lab Order 2302B51

Date Reported: 3/3/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WS23-176 0-4'

Project: Irish Hills Pipeline

Collection Date: 2/24/2023 7:40:00 AM

Lab ID: 2302B51-002

Matrix: SOIL

Received Date: 2/28/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	ND	60		mg/Kg	20	3/2/2023 1:00:59 AM	73467
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/2/2023 1:24:46 PM	73450
Surr: BFB	111	70-130		%Rec	1	3/2/2023 1:24:46 PM	73450
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	3/2/2023 4:24:39 PM	73456
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/2/2023 4:24:39 PM	73456
Surr: DNOP	95.8	69-147		%Rec	1	3/2/2023 4:24:39 PM	73456
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	3/2/2023 1:24:46 PM	73450
Toluene	ND	0.047		mg/Kg	1	3/2/2023 1:24:46 PM	73450
Ethylbenzene	ND	0.047		mg/Kg	1	3/2/2023 1:24:46 PM	73450
Xylenes, Total	ND	0.095		mg/Kg	1	3/2/2023 1:24:46 PM	73450
Surr: 1,2-Dichloroethane-d4	106	70-130		%Rec	1	3/2/2023 1:24:46 PM	73450
Surr: 4-Bromofluorobenzene	112	70-130		%Rec	1	3/2/2023 1:24:46 PM	73450
Surr: Dibromofluoromethane	108	70-130		%Rec	1	3/2/2023 1:24:46 PM	73450
Surr: Toluene-d8	104	70-130		%Rec	1	3/2/2023 1:24:46 PM	73450

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

## Analytical Report

Lab Order 2302B51

Date Reported: 3/3/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WS23-177 0-4'

Project: Irish Hills Pipeline

Collection Date: 2/24/2023 7:45:00 AM

Lab ID: 2302B51-003

Matrix: SOIL

Received Date: 2/28/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	ND	60		mg/Kg	20	3/2/2023 1:13:24 AM	73467
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/2/2023 1:51:48 PM	73450
Surr: BFB	104	70-130		%Rec	1	3/2/2023 1:51:48 PM	73450
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	3/2/2023 4:35:30 PM	73456
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/2/2023 4:35:30 PM	73456
Surr: DNOP	95.4	69-147		%Rec	1	3/2/2023 4:35:30 PM	73456
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	3/2/2023 1:51:48 PM	73450
Toluene	ND	0.047		mg/Kg	1	3/2/2023 1:51:48 PM	73450
Ethylbenzene	ND	0.047		mg/Kg	1	3/2/2023 1:51:48 PM	73450
Xylenes, Total	ND	0.095		mg/Kg	1	3/2/2023 1:51:48 PM	73450
Surr: 1,2-Dichloroethane-d4	112	70-130		%Rec	1	3/2/2023 1:51:48 PM	73450
Surr: 4-Bromofluorobenzene	104	70-130		%Rec	1	3/2/2023 1:51:48 PM	73450
Surr: Dibromofluoromethane	113	70-130		%Rec	1	3/2/2023 1:51:48 PM	73450
Surr: Toluene-d8	105	70-130		%Rec	1	3/2/2023 1:51:48 PM	73450

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

## Analytical Report

Lab Order 2302B51

Date Reported: 3/3/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WS23-179 0-4'

Project: Irish Hills Pipeline

Collection Date: 2/24/2023 2:10:00 PM

Lab ID: 2302B51-004

Matrix: SOIL

Received Date: 2/28/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	330	60		mg/Kg	20	3/2/2023 1:50:38 AM	73467
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/2/2023 2:18:50 PM	73450
Surr: BFB	110	70-130		%Rec	1	3/2/2023 2:18:50 PM	73450
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	3/2/2023 4:46:20 PM	73456
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/2/2023 4:46:20 PM	73456
Surr: DNOP	81.4	69-147		%Rec	1	3/2/2023 4:46:20 PM	73456
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	3/2/2023 2:18:50 PM	73450
Toluene	ND	0.047		mg/Kg	1	3/2/2023 2:18:50 PM	73450
Ethylbenzene	ND	0.047		mg/Kg	1	3/2/2023 2:18:50 PM	73450
Xylenes, Total	ND	0.094		mg/Kg	1	3/2/2023 2:18:50 PM	73450
Surr: 1,2-Dichloroethane-d4	96.1	70-130		%Rec	1	3/2/2023 2:18:50 PM	73450
Surr: 4-Bromofluorobenzene	111	70-130		%Rec	1	3/2/2023 2:18:50 PM	73450
Surr: Dibromofluoromethane	108	70-130		%Rec	1	3/2/2023 2:18:50 PM	73450
Surr: Toluene-d8	105	70-130		%Rec	1	3/2/2023 2:18:50 PM	73450

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 4 of 9

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2302B51  
03-Mar-23

Client: EOG  
Project: Irish Hills Pipeline

Sample ID: MB-73467	SampType: mblk	TestCode: EPA Method 300.0: Anions
Client ID: PBS	Batch ID: 73467	RunNo: 94974
Prep Date: 3/1/2023	Analysis Date: 3/1/2023	SeqNo: 3433861 Units: mg/Kg
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Chloride	ND	1.5

Sample ID: LCS-73467	SampType: lcs	TestCode: EPA Method 300.0: Anions
Client ID: LCSS	Batch ID: 73467	RunNo: 94974
Prep Date: 3/1/2023	Analysis Date: 3/1/2023	SeqNo: 3433862 Units: mg/Kg
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Chloride	14	1.5 15.00 0 94.2 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 Quantitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2302B51

03-Mar-23

**Client:** EOG  
**Project:** Irish Hills Pipeline

Sample ID: <b>MB-73474</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>PBS</b>	Batch ID: <b>73474</b>		RunNo: <b>94965</b>							
Prep Date: <b>3/2/2023</b>	Analysis Date: <b>3/2/2023</b>		SeqNo: <b>3434009</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.4		10.00		84.0	69	147			

Sample ID: <b>LCS-73474</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>73474</b>		RunNo: <b>94965</b>							
Prep Date: <b>3/2/2023</b>	Analysis Date: <b>3/2/2023</b>		SeqNo: <b>3434010</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.5		5.000		90.1	69	147			

Sample ID: <b>MB-73456</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>PBS</b>	Batch ID: <b>73456</b>		RunNo: <b>94965</b>							
Prep Date: <b>3/1/2023</b>	Analysis Date: <b>3/2/2023</b>		SeqNo: <b>3434451</b>		Units: <b>mg/Kg</b>					
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		113	69	147			

Sample ID: <b>LCS-73456</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>73456</b>		RunNo: <b>94965</b>							
Prep Date: <b>3/1/2023</b>	Analysis Date: <b>3/2/2023</b>		SeqNo: <b>3434452</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	90.8	61.9	130			
Surr: DNOP	5.0		5.000		100	69	147			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2302B51

03-Mar-23

**Client:** EOG**Project:** Irish Hills Pipeline

Sample ID: <b>LCS-73450</b>	SampType: <b>LCS4</b>		TestCode: <b>EPA Method 8260B: Volatiles Short List</b>							
Client ID: <b>BatchQC</b>	Batch ID: <b>73450</b>		RunNo: <b>94979</b>							
Prep Date: <b>3/1/2023</b>	Analysis Date: <b>3/2/2023</b>		SeqNo: <b>3434446</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.025	1.000	0	87.8	80	120			
Toluene	0.87	0.050	1.000	0	87.3	80	120			
Ethylbenzene	0.84	0.050	1.000	0	83.6	80	120			
Xylenes, Total	2.6	0.10	3.000	0	86.8	80	120			
Surr: 1,2-Dichloroethane-d4	0.48		0.5000		96.9	70	130			
Surr: 4-Bromofluorobenzene	0.54		0.5000		107	70	130			
Surr: Dibromofluoromethane	0.53		0.5000		107	70	130			
Surr: Toluene-d8	0.53		0.5000		105	70	130			

Sample ID: <b>mb-73450</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8260B: Volatiles Short List</b>							
Client ID: <b>PBS</b>	Batch ID: <b>73450</b>		RunNo: <b>94979</b>							
Prep Date: <b>3/1/2023</b>	Analysis Date: <b>3/2/2023</b>		SeqNo: <b>3434447</b>		Units: <b>mg/Kg</b>					
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	0.53		0.5000		106	70	130			
Surr: 4-Bromofluorobenzene	0.55		0.5000		111	70	130			
Surr: Dibromofluoromethane	0.53		0.5000		105	70	130			
Surr: Toluene-d8	0.55		0.5000		110	70	130			

Sample ID: <b>2302b51-002ams</b>	SampType: <b>MS4</b>		TestCode: <b>EPA Method 8260B: Volatiles Short List</b>							
Client ID: <b>WS23-176 0-4'</b>	Batch ID: <b>73450</b>		RunNo: <b>94979</b>							
Prep Date: <b>3/1/2023</b>	Analysis Date: <b>3/2/2023</b>		SeqNo: <b>3435242</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.024	0.9452	0	93.4	75.8	123			
Toluene	0.85	0.047	0.9452	0.02337	88.0	68.3	130			
Ethylbenzene	0.88	0.047	0.9452	0	92.7	76.6	132			
Xylenes, Total	2.7	0.095	2.836	0.05961	94.7	74.7	132			
Surr: 1,2-Dichloroethane-d4	0.56		0.4726		119	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.4726		101	70	130			
Surr: Dibromofluoromethane	0.53		0.4726		112	70	130			
Surr: Toluene-d8	0.48		0.4726		102	70	130			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2302B51

03-Mar-23

Client: EOG

Project: Irish Hills Pipeline

Sample ID: 2302b51-002amsd	SampType: MSD4	TestCode: EPA Method 8260B: Volatiles Short List								
Client ID: WS23-176 0-4'	Batch ID: 73450	RunNo: 94979								
Prep Date: 3/1/2023	Analysis Date: 3/2/2023	SeqNo: 3435243 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.024	0.9461	0	95.7	75.8	123	2.59	20	
Toluene	0.95	0.047	0.9461	0.02337	97.6	68.3	130	10.2	20	
Ethylbenzene	0.94	0.047	0.9461	0	98.8	76.6	132	6.53	20	
Xylenes, Total	2.9	0.095	2.838	0.05961	101	74.7	132	6.17	20	
Surr: 1,2-Dichloroethane-d4	0.52		0.4730		110	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.52		0.4730		111	70	130	0	0	
Surr: Dibromofluoromethane	0.48		0.4730		101	70	130	0	0	
Surr: Toluene-d8	0.50		0.4730		107	70	130	0	0	

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

Page 8 of 9



QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2302B51  
03-Mar-23

Client: EOG  
Project: Irish Hills Pipeline

Sample ID: LCS-73450	SampType: LCS	TestCode: EPA Method 8015D Mod: Gasoline Range								
Client ID: LCSS	Batch ID: 73450	RunNo: 94979								
Prep Date: 3/1/2023	Analysis Date: 3/2/2023	SeqNo: 3434118	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	5.0	25.00	0	80.0	70	130			
Surr: BFB	530		500.0		106	70	130			

Sample ID: mb-73450	SampType: MBLK	TestCode: EPA Method 8015D Mod: Gasoline Range								
Client ID: PBS	Batch ID: 73450	RunNo: 94979								
Prep Date: 3/1/2023	Analysis Date: 3/2/2023	SeqNo: 3434119	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	570		500.0		115	70	130			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit



Hall Environmental Analysis Laboratory  
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: 2302B51

RcptNo: 1

Received By: Cheyenne Cason 2/28/2023 8:00:00 AM

Completed By: Sean Livingston 2/28/2023 8:47:28 AM

Reviewed By: *JA* 2.28.23*Chad**Sean Livingston*

## 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: *KR 2.28.23*

## Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

## 17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.1	Good	Not Present	YOGI		





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

March 10, 2023

Chance Dixon

EOG

105 South Fourth Street

Artesia, NM 88210

TEL:

FAX:

RE: Irish Hills Pipeline

OrderNo.: 2303086

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 10 sample(s) on 3/2/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2303086

Date Reported: 3/10/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-39 4'

Project: Irish Hills Pipeline

Collection Date: 2/28/2023 1:00:00 PM

Lab ID: 2303086-001

Matrix: SOIL

Received Date: 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: CAS
Chloride	170	61		mg/Kg	20	3/2/2023 11:07:31 PM	73490
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	3/6/2023 11:46:29 AM	73482
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/6/2023 11:46:29 AM	73482
Surr: DNOP	80.5	69-147		%Rec	1	3/6/2023 11:46:29 AM	73482
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/4/2023 4:27:00 AM	73472
Surr: BFB	84.9	37.7-212		%Rec	1	3/4/2023 4:27:00 AM	73472
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	3/4/2023 4:27:00 AM	73472
Toluene	ND	0.048		mg/Kg	1	3/4/2023 4:27:00 AM	73472
Ethylbenzene	ND	0.048		mg/Kg	1	3/4/2023 4:27:00 AM	73472
Xylenes, Total	ND	0.095		mg/Kg	1	3/4/2023 4:27:00 AM	73472
Surr: 4-Bromofluorobenzene	89.1	70-130		%Rec	1	3/4/2023 4:27:00 AM	73472

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 1 of 14

## Analytical Report

Lab Order 2303086

Date Reported: 3/10/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-40 4'

Project: Irish Hills Pipeline

Collection Date: 2/28/2023 1:05:00 PM

Lab ID: 2303086-002

Matrix: SOIL

Received Date: 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: CAS
Chloride	1900	60		mg/Kg	20	3/2/2023 11:19:52 PM	73490
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	3/3/2023 7:07:41 PM	73482
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/3/2023 7:07:41 PM	73482
Surr: DNOP	86.0	69-147		%Rec	1	3/3/2023 7:07:41 PM	73482
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/4/2023 4:49:00 AM	73472
Surr: BFB	91.2	37.7-212		%Rec	1	3/4/2023 4:49:00 AM	73472
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	3/4/2023 4:49:00 AM	73472
Toluene	ND	0.049		mg/Kg	1	3/4/2023 4:49:00 AM	73472
Ethylbenzene	ND	0.049		mg/Kg	1	3/4/2023 4:49:00 AM	73472
Xylenes, Total	ND	0.098		mg/Kg	1	3/4/2023 4:49:00 AM	73472
Surr: 4-Bromofluorobenzene	92.4	70-130		%Rec	1	3/4/2023 4:49:00 AM	73472

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 2 of 14

## Analytical Report

Lab Order 2303086

Date Reported: 3/10/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-41 4'

Project: Irish Hills Pipeline

Collection Date: 2/28/2023 1:10:00 PM

Lab ID: 2303086-003

Matrix: SOIL

Received Date: 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JTT
Chloride	2500	150		mg/Kg	50	3/3/2023 10:55:52 AM	73490
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	3/3/2023 7:18:08 PM	73482
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/3/2023 7:18:08 PM	73482
Surr: DNOP	92.4	69-147		%Rec	1	3/3/2023 7:18:08 PM	73482
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/4/2023 5:11:00 AM	73472
Surr: BFB	87.6	37.7-212		%Rec	1	3/4/2023 5:11:00 AM	73472
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.023		mg/Kg	1	3/4/2023 5:11:00 AM	73472
Toluene	ND	0.047		mg/Kg	1	3/4/2023 5:11:00 AM	73472
Ethylbenzene	ND	0.047		mg/Kg	1	3/4/2023 5:11:00 AM	73472
Xylenes, Total	ND	0.093		mg/Kg	1	3/4/2023 5:11:00 AM	73472
Surr: 4-Bromofluorobenzene	90.3	70-130		%Rec	1	3/4/2023 5:11:00 AM	73472

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 3 of 14



## Analytical Report

Lab Order 2303086

Date Reported: 3/10/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-42 4'

Project: Irish Hills Pipeline

Collection Date: 2/28/2023 1:15:00 PM

Lab ID: 2303086-004

Matrix: SOIL

Received Date: 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: CAS
Chloride	1500	60		mg/Kg	20	3/2/2023 11:44:33 PM	73490
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	8.6		mg/Kg	1	3/3/2023 7:28:33 PM	73482
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	3/3/2023 7:28:33 PM	73482
Surr: DNOP	78.3	69-147		%Rec	1	3/3/2023 7:28:33 PM	73482
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/4/2023 5:32:00 AM	73472
Surr: BFB	89.1	37.7-212		%Rec	1	3/4/2023 5:32:00 AM	73472
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	3/4/2023 5:32:00 AM	73472
Toluene	ND	0.048		mg/Kg	1	3/4/2023 5:32:00 AM	73472
Ethylbenzene	ND	0.048		mg/Kg	1	3/4/2023 5:32:00 AM	73472
Xylenes, Total	ND	0.097		mg/Kg	1	3/4/2023 5:32:00 AM	73472
Surr: 4-Bromofluorobenzene	91.0	70-130		%Rec	1	3/4/2023 5:32:00 AM	73472

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 4 of 14

## Analytical Report

Lab Order 2303086

Date Reported: 3/10/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-43 4'

Project: Irish Hills Pipeline

Collection Date: 2/28/2023 1:20:00 PM

Lab ID: 2303086-005

Matrix: SOIL

Received Date: 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: CAS
Chloride	910	60		mg/Kg	20	3/2/2023 11:56:54 PM	73490
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	3/6/2023 12:10:21 PM	73482
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/6/2023 12:10:21 PM	73482
Surr: DNOP	80.2	69-147		%Rec	1	3/6/2023 12:10:21 PM	73482
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/4/2023 5:54:00 AM	73472
Surr: BFB	91.4	37.7-212		%Rec	1	3/4/2023 5:54:00 AM	73472
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	3/4/2023 5:54:00 AM	73472
Toluene	ND	0.048		mg/Kg	1	3/4/2023 5:54:00 AM	73472
Ethylbenzene	ND	0.048		mg/Kg	1	3/4/2023 5:54:00 AM	73472
Xylenes, Total	ND	0.097		mg/Kg	1	3/4/2023 5:54:00 AM	73472
Surr: 4-Bromofluorobenzene	93.4	70-130		%Rec	1	3/4/2023 5:54:00 AM	73472

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 5 of 14

## Analytical Report

Lab Order 2303086

Date Reported: 3/10/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-44 4'

Project: Irish Hills Pipeline

Collection Date: 2/28/2023 1:25:00 PM

Lab ID: 2303086-006

Matrix: SOIL

Received Date: 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JTT
Chloride	870	60		mg/Kg	20	3/3/2023 11:26:12 AM	73498
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	3/6/2023 12:34:19 PM	73482
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	3/6/2023 12:34:19 PM	73482
Surr: DNOP	72.0	69-147		%Rec	1	3/6/2023 12:34:19 PM	73482
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/4/2023 6:15:00 AM	73472
Surr: BFB	88.8	37.7-212		%Rec	1	3/4/2023 6:15:00 AM	73472
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	3/4/2023 6:15:00 AM	73472
Toluene	ND	0.047		mg/Kg	1	3/4/2023 6:15:00 AM	73472
Ethylbenzene	ND	0.047		mg/Kg	1	3/4/2023 6:15:00 AM	73472
Xylenes, Total	ND	0.095		mg/Kg	1	3/4/2023 6:15:00 AM	73472
Surr: 4-Bromofluorobenzene	91.7	70-130		%Rec	1	3/4/2023 6:15:00 AM	73472

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 6 of 14

## Analytical Report

Lab Order 2303086

Date Reported: 3/10/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-45 4'

Project: Irish Hills Pipeline

Collection Date: 2/28/2023 1:30:00 PM

Lab ID: 2303086-007

Matrix: SOIL

Received Date: 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JTT
Chloride	460	60		mg/Kg	20	3/3/2023 11:38:33 AM	73498
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	3/7/2023 2:29:14 PM	73482
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/7/2023 2:29:14 PM	73482
Surr: DNOP	98.8	69-147		%Rec	1	3/7/2023 2:29:14 PM	73482
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/4/2023 6:37:00 AM	73472
Surr: BFB	89.9	37.7-212		%Rec	1	3/4/2023 6:37:00 AM	73472
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.023		mg/Kg	1	3/4/2023 6:37:00 AM	73472
Toluene	ND	0.047		mg/Kg	1	3/4/2023 6:37:00 AM	73472
Ethylbenzene	ND	0.047		mg/Kg	1	3/4/2023 6:37:00 AM	73472
Xylenes, Total	ND	0.093		mg/Kg	1	3/4/2023 6:37:00 AM	73472
Surr: 4-Bromofluorobenzene	90.5	70-130		%Rec	1	3/4/2023 6:37:00 AM	73472

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 7 of 14

## Analytical Report

Lab Order 2303086

Date Reported: 3/10/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-46 4'

Project: Irish Hills Pipeline

Collection Date: 2/28/2023 1:35:00 PM

Lab ID: 2303086-008

Matrix: SOIL

Received Date: 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JTT
Chloride	1000	60		mg/Kg	20	3/3/2023 11:50:53 AM	73498
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	3/6/2023 1:22:25 PM	73482
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/6/2023 1:22:25 PM	73482
Surr: DNOP	79.4	69-147		%Rec	1	3/6/2023 1:22:25 PM	73482
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/4/2023 6:59:00 AM	73472
Surr: BFB	94.0	37.7-212		%Rec	1	3/4/2023 6:59:00 AM	73472
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	3/4/2023 6:59:00 AM	73472
Toluene	ND	0.049		mg/Kg	1	3/4/2023 6:59:00 AM	73472
Ethylbenzene	ND	0.049		mg/Kg	1	3/4/2023 6:59:00 AM	73472
Xylenes, Total	ND	0.097		mg/Kg	1	3/4/2023 6:59:00 AM	73472
Surr: 4-Bromofluorobenzene	90.8	70-130		%Rec	1	3/4/2023 6:59:00 AM	73472

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 8 of 14

## Analytical Report

Lab Order 2303086

Date Reported: 3/10/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WES23-184 0-4'

Project: Irish Hills Pipeline

Collection Date: 2/28/2023 2:00:00 PM

Lab ID: 2303086-009

Matrix: SOIL

Received Date: 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JTT
Chloride	81	60		mg/Kg	20	3/3/2023 12:03:14 PM	73498
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	3/7/2023 2:40:05 PM	73482
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/7/2023 2:40:05 PM	73482
Surr: DNOP	88.1	69-147		%Rec	1	3/7/2023 2:40:05 PM	73482
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/4/2023 7:42:00 AM	73472
Surr: BFB	92.1	37.7-212		%Rec	1	3/4/2023 7:42:00 AM	73472
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	3/4/2023 7:42:00 AM	73472
Toluene	ND	0.050		mg/Kg	1	3/4/2023 7:42:00 AM	73472
Ethylbenzene	ND	0.050		mg/Kg	1	3/4/2023 7:42:00 AM	73472
Xylenes, Total	ND	0.099		mg/Kg	1	3/4/2023 7:42:00 AM	73472
Surr: 4-Bromofluorobenzene	91.4	70-130		%Rec	1	3/4/2023 7:42:00 AM	73472

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 9 of 14

## Analytical Report

Lab Order 2303086

Date Reported: 3/10/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WES23-186 0-4'

Project: Irish Hills Pipeline

Collection Date: 2/28/2023 2:05:00 PM

Lab ID: 2303086-010

Matrix: SOIL

Received Date: 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JTT
Chloride	130	60		mg/Kg	20	3/3/2023 12:15:34 PM	73498
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	3/6/2023 2:10:41 PM	73482
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/6/2023 2:10:41 PM	73482
Surr: DNOP	85.7	69-147		%Rec	1	3/6/2023 2:10:41 PM	73482
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/4/2023 8:04:00 AM	73472
Surr: BFB	91.8	37.7-212		%Rec	1	3/4/2023 8:04:00 AM	73472
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	3/4/2023 8:04:00 AM	73472
Toluene	ND	0.049		mg/Kg	1	3/4/2023 8:04:00 AM	73472
Ethylbenzene	ND	0.049		mg/Kg	1	3/4/2023 8:04:00 AM	73472
Xylenes, Total	ND	0.097		mg/Kg	1	3/4/2023 8:04:00 AM	73472
Surr: 4-Bromofluorobenzene	91.6	70-130		%Rec	1	3/4/2023 8:04:00 AM	73472

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 10 of 14



**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2303086

10-Mar-23

**Client:** EOG  
**Project:** Irish Hills Pipeline

Sample ID: <b>MB-73490</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>73490</b>		RunNo: <b>94984</b>							
Prep Date: <b>3/2/2023</b>	Analysis Date: <b>3/2/2023</b>		SeqNo: <b>3435083</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-73490</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>73490</b>		RunNo: <b>94984</b>							
Prep Date: <b>3/2/2023</b>	Analysis Date: <b>3/2/2023</b>		SeqNo: <b>3435084</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.2	90	110			

Sample ID: <b>MB-73498</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>73498</b>		RunNo: <b>95029</b>							
Prep Date: <b>3/3/2023</b>	Analysis Date: <b>3/3/2023</b>		SeqNo: <b>3436122</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-73498</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>73498</b>		RunNo: <b>95029</b>							
Prep Date: <b>3/3/2023</b>	Analysis Date: <b>3/3/2023</b>		SeqNo: <b>3436123</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.9	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 Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

Page 11 of 14

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2303086

10-Mar-23

**Client:** EOG  
**Project:** Irish Hills Pipeline

Sample ID: <b>LCS-73482</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>73482</b>		RunNo: <b>95019</b>							
Prep Date: <b>3/2/2023</b>	Analysis Date: <b>3/3/2023</b>		SeqNo: <b>3435788</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	10	50.00	0	83.8	61.9	130			
Surr: DNOP	4.2		5.000		84.9	69	147			

Sample ID: <b>MB-73482</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>PBS</b>	Batch ID: <b>73482</b>		RunNo: <b>95019</b>							
Prep Date: <b>3/2/2023</b>	Analysis Date: <b>3/3/2023</b>		SeqNo: <b>3435791</b>		Units: <b>mg/Kg</b>					
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	8.6		10.00		86.3	69	147			

Sample ID: <b>LCS-73532</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>73532</b>		RunNo: <b>95077</b>							
Prep Date: <b>3/6/2023</b>	Analysis Date: <b>3/7/2023</b>		SeqNo: <b>3438281</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.4		5.000		87.7	69	147			

Sample ID: <b>MB-73532</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>PBS</b>	Batch ID: <b>73532</b>		RunNo: <b>95077</b>							
Prep Date: <b>3/6/2023</b>	Analysis Date: <b>3/7/2023</b>		SeqNo: <b>3438285</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.9		10.00		89.2	69	147			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2303086  
10-Mar-23

Client: EOG  
Project: Irish Hills Pipeline

Sample ID: <b>lcs-73472</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>73472</b>			RunNo: <b>95008</b>						
Prep Date: <b>3/2/2023</b>	Analysis Date: <b>3/4/2023</b>			SeqNo: <b>3436398</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	5.0	25.00	0	78.2	72.3	137			
Surr: BFB	1800		1000		176	37.7	212			

Sample ID: <b>mb-73472</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>PBS</b>	Batch ID: <b>73472</b>			RunNo: <b>95008</b>						
Prep Date: <b>3/2/2023</b>	Analysis Date: <b>3/4/2023</b>			SeqNo: <b>3436399</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	910		1000		90.7	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 Quantitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2303086

10-Mar-23

**Client:** EOG  
**Project:** Irish Hills Pipeline

Sample ID: <b>lcs-73472</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>73472</b>			RunNo: <b>95008</b>						
Prep Date: <b>3/2/2023</b>	Analysis Date: <b>3/4/2023</b>			SeqNo: <b>3436461</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.83	0.025	1.000	0	83.5	80	120			
Toluene	0.83	0.050	1.000	0	83.2	80	120			
Ethylbenzene	0.82	0.050	1.000	0	81.8	80	120			
Xylenes, Total	2.4	0.10	3.000	0	81.0	80	120			
Surr: 4-Bromofluorobenzene	0.92		1.000		92.0	70	130			

Sample ID: <b>mb-73472</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>PBS</b>	Batch ID: <b>73472</b>			RunNo: <b>95008</b>						
Prep Date: <b>3/2/2023</b>	Analysis Date: <b>3/4/2023</b>			SeqNo: <b>3436462</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.91		1.000		90.9	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 Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit



Hall Environmental Analysis Laboratory  
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: 2303086

RcptNo: 1

Received By: Tracy Casarrubias 3/2/2023 7:25:00 AM

Completed By: Tracy Casarrubias 3/2/2023 8:22:16 AM

Reviewed By: *[Signature]* 3-2-23

## Chain of Custody

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

## Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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: *See 3/2/23*

## Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

## 17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.9	Good	Yes	Morty		

## Chain-of-Custody Record

Client: EOG

Direct Bill

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)Accreditation: ☐ Az Compliance☐ NELAC ☐ Other☐ EDD (Type)Turn-Around Time: 48-HOUR☐ Standard ☒ Rush

Project Name:

Irish Wells Pipeline

Project #:

22E-00716-02

Project Manager:

Chance DixonSampler: MTOn Ice: ☒ Yes ☐ No party# of Coolers: 1Cooler Temp (including CF): 4.1 - 0.2 - 3.9 (°C)

Container Type and #

Preservative Type

HEAL No.

2303086001002003004005006007008009010011012013014015016017018019020021022023024025026027028029030031032033034035036037038039040041042043044045046047048049050051052053054055056057058059060061062063064065066067068069070071072073074075076077078079080081082083084085086087088089090091092093094095096097098099100101102103104105106107108109110111112113114115116117118119120121122123124125126127128129130131132133134135136137138139140141142143144145146147148149150151152153154155156157158159160161162163164165166167168169170171172173174175176177178179180181182183184185186187188189190191192193194195196197198199200201202203204205206207208209210211212213214215216217218219220221222223224225226227228229230231232233234235236237238239240241242243244245246247248249250251252253254255256257258259260261262263264265266267268269270271272273274275276277278279280281282283284285286287288289290291292293294295296297298299300301302303304



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

March 10, 2023

Chance Dixon

EOG

105 South Fourth Street

Artesia, NM 88210

TEL:

FAX

RE: Irish Hills Pipeline

OrderNo.: 2303176

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 10 sample(s) on 3/3/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109



## Analytical Report

Lab Order 2303176

Date Reported: 3/10/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-47 4'

Project: Irish Hills Pipeline

Collection Date: 3/1/2023 12:00:00 PM

Lab ID: 2303176-001

Matrix: SOIL

Received Date: 3/3/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JTT
Chloride	470	60		mg/Kg	20	3/3/2023 9:55:49 PM	73511
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	3/6/2023 11:53:24 PM	73505
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/6/2023 11:53:24 PM	73505
Surr: DNOP	96.5	69-147		%Rec	1	3/6/2023 11:53:24 PM	73505
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/6/2023 2:23:52 PM	73504
Surr: BFB	101	37.7-212		%Rec	1	3/6/2023 2:23:52 PM	73504
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	3/6/2023 9:30:00 PM	73504
Toluene	ND	0.049		mg/Kg	1	3/6/2023 9:30:00 PM	73504
Ethylbenzene	ND	0.049		mg/Kg	1	3/6/2023 9:30:00 PM	73504
Xylenes, Total	ND	0.098		mg/Kg	1	3/6/2023 9:30:00 PM	73504
Surr: 4-Bromofluorobenzene	93.0	70-130		%Rec	1	3/6/2023 9:30:00 PM	73504

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 1 of 14

## Analytical Report

Lab Order 2303176

Date Reported: 3/10/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-48 4'

Project: Irish Hills Pipeline

Collection Date: 3/1/2023 12:05:00 PM

Lab ID: 2303176-002

Matrix: SOIL

Received Date: 3/3/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JTT
Chloride	700	60		mg/Kg	20	3/3/2023 10:08:09 PM	73511
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	3/7/2023 12:24:50 AM	73505
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/7/2023 12:24:50 AM	73505
Surr: DNOP	83.1	69-147		%Rec	1	3/7/2023 12:24:50 AM	73505
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: JJP
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/6/2023 3:34:20 PM	73504
Surr: BFB	99.2	37.7-212		%Rec	1	3/6/2023 3:34:20 PM	73504
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	3/6/2023 9:52:00 PM	73504
Toluene	ND	0.050		mg/Kg	1	3/6/2023 9:52:00 PM	73504
Ethylbenzene	ND	0.050		mg/Kg	1	3/6/2023 9:52:00 PM	73504
Xylenes, Total	ND	0.099		mg/Kg	1	3/6/2023 9:52:00 PM	73504
Surr: 4-Bromofluorobenzene	93.6	70-130		%Rec	1	3/6/2023 9:52:00 PM	73504

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 2 of 14

## Analytical Report

Lab Order 2303176

Date Reported: 3/10/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-49 4'

Project: Irish Hills Pipeline

Collection Date: 3/1/2023 12:10:00 PM

Lab ID: 2303176-003

Matrix: SOIL

Received Date: 3/3/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JTT
Chloride	2200	60		mg/Kg	20	3/3/2023 10:20:30 PM	73511
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	3/7/2023 12:35:22 AM	73505
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/7/2023 12:35:22 AM	73505
Surr: DNOP	85.7	69-147		%Rec	1	3/7/2023 12:35:22 AM	73505
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/6/2023 3:57:50 PM	73504
Surr: BFB	98.5	37.7-212		%Rec	1	3/6/2023 3:57:50 PM	73504
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	3/6/2023 10:58:00 PM	73504
Toluene	ND	0.049		mg/Kg	1	3/6/2023 10:58:00 PM	73504
Ethylbenzene	ND	0.049		mg/Kg	1	3/6/2023 10:58:00 PM	73504
Xylenes, Total	ND	0.099		mg/Kg	1	3/6/2023 10:58:00 PM	73504
Surr: 4-Bromofluorobenzene	94.2	70-130		%Rec	1	3/6/2023 10:58:00 PM	73504

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

## Analytical Report

Lab Order 2303176

Date Reported: 3/10/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-50 4'

Project: Irish Hills Pipeline

Collection Date: 3/1/2023 12:15:00 PM

Lab ID: 2303176-004

Matrix: SOIL

Received Date: 3/3/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JTT
Chloride	1500	60		mg/Kg	20	3/3/2023 10:57:32 PM	73511
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	3/7/2023 12:45:53 AM	73505
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/7/2023 12:45:53 AM	73505
Surr: DNOP	91.9	69-147		%Rec	1	3/7/2023 12:45:53 AM	73505
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/6/2023 4:21:11 PM	73504
Surr: BFB	103	37.7-212		%Rec	1	3/6/2023 4:21:11 PM	73504
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	3/6/2023 11:20:00 PM	73504
Toluene	ND	0.049		mg/Kg	1	3/6/2023 11:20:00 PM	73504
Ethylbenzene	ND	0.049		mg/Kg	1	3/6/2023 11:20:00 PM	73504
Xylenes, Total	ND	0.098		mg/Kg	1	3/6/2023 11:20:00 PM	73504
Surr: 4-Bromofluorobenzene	94.0	70-130		%Rec	1	3/6/2023 11:20:00 PM	73504

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 4 of 14

## Analytical Report

Lab Order 2303176

Date Reported: 3/10/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-51 4'

Project: Irish Hills Pipeline

Collection Date: 3/1/2023 12:20:00 PM

Lab ID: 2303176-005

Matrix: SOIL

Received Date: 3/3/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JTT
Chloride	370	60		mg/Kg	20	3/3/2023 11:09:51 PM	73511
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	8.6		mg/Kg	1	3/7/2023 12:56:22 AM	73505
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	3/7/2023 12:56:22 AM	73505
Surr: DNOP	87.6	69-147		%Rec	1	3/7/2023 12:56:22 AM	73505
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/6/2023 4:44:41 PM	73504
Surr: BFB	101	37.7-212		%Rec	1	3/6/2023 4:44:41 PM	73504
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	3/6/2023 11:42:00 PM	73504
Toluene	ND	0.049		mg/Kg	1	3/6/2023 11:42:00 PM	73504
Ethylbenzene	ND	0.049		mg/Kg	1	3/6/2023 11:42:00 PM	73504
Xylenes, Total	ND	0.097		mg/Kg	1	3/6/2023 11:42:00 PM	73504
Surr: 4-Bromofluorobenzene	92.6	70-130		%Rec	1	3/6/2023 11:42:00 PM	73504

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 5 of 14

## Analytical Report

Lab Order 2303176

Date Reported: 3/10/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-52 4'

Project: Irish Hills Pipeline

Collection Date: 3/1/2023 12:25:00 PM

Lab ID: 2303176-006

Matrix: SOIL

Received Date: 3/3/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JTT
Chloride	2200	60		mg/Kg	20	3/3/2023 11:22:12 PM	73511
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	3/7/2023 1:17:15 AM	73505
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/7/2023 1:17:15 AM	73505
Surr: DNOP	98.6	69-147		%Rec	1	3/7/2023 1:17:15 AM	73505
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/6/2023 5:08:12 PM	73504
Surr: BFB	105	37.7-212		%Rec	1	3/6/2023 5:08:12 PM	73504
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	3/7/2023 12:03:00 AM	73504
Toluene	ND	0.047		mg/Kg	1	3/7/2023 12:03:00 AM	73504
Ethylbenzene	ND	0.047		mg/Kg	1	3/7/2023 12:03:00 AM	73504
Xylenes, Total	ND	0.094		mg/Kg	1	3/7/2023 12:03:00 AM	73504
Surr: 4-Bromofluorobenzene	93.0	70-130		%Rec	1	3/7/2023 12:03:00 AM	73504

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 6 of 14

## Analytical Report

Lab Order 2303176

Date Reported: 3/10/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-53 4'

Project: Irish Hills Pipeline

Collection Date: 3/1/2023 12:30:00 PM

Lab ID: 2303176-007

Matrix: SOIL

Received Date: 3/3/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: CAS
Chloride	1200	60		mg/Kg	20	3/6/2023 11:54:19 AM	73517
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	3/7/2023 1:27:41 AM	73505
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/7/2023 1:27:41 AM	73505
Surr: DNOP	86.6	69-147		%Rec	1	3/7/2023 1:27:41 AM	73505
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	3/6/2023 5:31:52 PM	73504
Surr: BFB	101	37.7-212		%Rec	1	3/6/2023 5:31:52 PM	73504
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.023		mg/Kg	1	3/7/2023 12:25:00 AM	73504
Toluene	ND	0.046		mg/Kg	1	3/7/2023 12:25:00 AM	73504
Ethylbenzene	ND	0.046		mg/Kg	1	3/7/2023 12:25:00 AM	73504
Xylenes, Total	ND	0.092		mg/Kg	1	3/7/2023 12:25:00 AM	73504
Surr: 4-Bromofluorobenzene	92.8	70-130		%Rec	1	3/7/2023 12:25:00 AM	73504

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 7 of 14



## Analytical Report

Lab Order 2303176

Date Reported: 3/10/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-54 4'

Project: Irish Hills Pipeline

Collection Date: 3/1/2023 12:35:00 PM

Lab ID: 2303176-008

Matrix: SOIL

Received Date: 3/3/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>SNS</b>
Chloride	2400	150		mg/Kg	50	3/7/2023 10:09:24 AM	73517
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	3/7/2023 1:38:06 AM	73505
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/7/2023 1:38:06 AM	73505
Surr: DNOP	83.0	69-147		%Rec	1	3/7/2023 1:38:06 AM	73505
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/6/2023 5:55:56 PM	73504
Surr: BFB	103	37.7-212		%Rec	1	3/6/2023 5:55:56 PM	73504
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	3/7/2023 12:47:00 AM	73504
Toluene	ND	0.047		mg/Kg	1	3/7/2023 12:47:00 AM	73504
Ethylbenzene	ND	0.047		mg/Kg	1	3/7/2023 12:47:00 AM	73504
Xylenes, Total	ND	0.094		mg/Kg	1	3/7/2023 12:47:00 AM	73504
Surr: 4-Bromofluorobenzene	93.3	70-130		%Rec	1	3/7/2023 12:47:00 AM	73504

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 8 of 14

## Analytical Report

Lab Order 2303176

Date Reported: 3/10/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-55 4'

Project: Irish Hills Pipeline

Collection Date: 3/1/2023 12:40:00 PM

Lab ID: 2303176-009

Matrix: SOIL

Received Date: 3/3/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: CAS
Chloride	1700	60		mg/Kg	20	3/6/2023 12:57:27 PM	73517
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	3/7/2023 1:48:32 AM	73505
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/7/2023 1:48:32 AM	73505
Surr: DNOP	87.8	69-147		%Rec	1	3/7/2023 1:48:32 AM	73505
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/6/2023 6:19:34 PM	73504
Surr: BFB	101	37.7-212		%Rec	1	3/6/2023 6:19:34 PM	73504
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	3/7/2023 1:09:00 AM	73504
Toluene	ND	0.049		mg/Kg	1	3/7/2023 1:09:00 AM	73504
Ethylbenzene	ND	0.049		mg/Kg	1	3/7/2023 1:09:00 AM	73504
Xylenes, Total	ND	0.098		mg/Kg	1	3/7/2023 1:09:00 AM	73504
Surr: 4-Bromofluorobenzene	92.1	70-130		%Rec	1	3/7/2023 1:09:00 AM	73504

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 9 of 14

## Analytical Report

Lab Order 2303176

Date Reported: 3/10/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-56 4'

Project: Irish Hills Pipeline

Collection Date: 3/1/2023 12:45:00 PM

Lab ID: 2303176-010

Matrix: SOIL

Received Date: 3/3/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: CAS
Chloride	1500	60		mg/Kg	20	3/6/2023 1:09:52 PM	73517
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	3/7/2023 1:58:59 AM	73505
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/7/2023 1:58:59 AM	73505
Surr: DNOP	91.3	69-147		%Rec	1	3/7/2023 1:58:59 AM	73505
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/6/2023 6:43:32 PM	73504
Surr: BFB	103	37.7-212		%Rec	1	3/6/2023 6:43:32 PM	73504
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.023		mg/Kg	1	3/7/2023 1:31:00 AM	73504
Toluene	ND	0.047		mg/Kg	1	3/7/2023 1:31:00 AM	73504
Ethylbenzene	ND	0.047		mg/Kg	1	3/7/2023 1:31:00 AM	73504
Xylenes, Total	ND	0.094		mg/Kg	1	3/7/2023 1:31:00 AM	73504
Surr: 4-Bromofluorobenzene	94.0	70-130		%Rec	1	3/7/2023 1:31:00 AM	73504

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 10 of 14

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2303176

10-Mar-23

**Client:** EOG  
**Project:** Irish Hills Pipeline

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

Sample ID: <b>LCS-73511</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>73511</b>	RunNo: <b>95029</b>								
Prep Date: <b>3/3/2023</b>	Analysis Date: <b>3/3/2023</b>	SeqNo: <b>3436154</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.1	90	110			

Sample ID: <b>MB-73517</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>73517</b>	RunNo: <b>95055</b>								
Prep Date: <b>3/6/2023</b>	Analysis Date: <b>3/6/2023</b>	SeqNo: <b>3437412</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-73517</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>73517</b>	RunNo: <b>95055</b>								
Prep Date: <b>3/6/2023</b>	Analysis Date: <b>3/6/2023</b>	SeqNo: <b>3437413</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.2	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 Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2303176  
10-Mar-23

Client: EOG  
Project: Irish Hills Pipeline

Sample ID: LCS-73505	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 73505	RunNo: 95068								
Prep Date: 3/3/2023	Analysis Date: 3/6/2023	SeqNo: 3438073	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	10	50.00	0	80.1	61.9	130			
Surr: DNOP	4.5		5.000		90.1	69	147			

Sample ID: MB-73505	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 73505	RunNo: 95068								
Prep Date: 3/3/2023	Analysis Date: 3/6/2023	SeqNo: 3438076	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		93.2	69	147			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quantitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2303176

10-Mar-23

**Client:** EOG  
**Project:** Irish Hills Pipeline

Sample ID: <b>mb-73504</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>73504</b>	RunNo: <b>95044</b>								
Prep Date: <b>3/3/2023</b>	Analysis Date: <b>3/6/2023</b>	SeqNo: <b>3437037</b> Units: <b>mg/Kg</b>								
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		104	37.7	212			

Sample ID: <b>LCS-73504</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>73504</b>	RunNo: <b>95044</b>								
Prep Date: <b>3/3/2023</b>	Analysis Date: <b>3/6/2023</b>	SeqNo: <b>3437041</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	18	5.0	25.00	0	71.4	70	130			
Surr: BFB	1700		1000		169	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 Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2303176

10-Mar-23

**Client:** EOG  
**Project:** Irish Hills Pipeline

Sample ID: <b>lcs-73504</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>73504</b>			RunNo: <b>95057</b>						
Prep Date: <b>3/3/2023</b>	Analysis Date: <b>3/6/2023</b>			SeqNo: <b>3437777</b>			Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.82	0.025	1.000	0	81.7	80	120			
Toluene	0.83	0.050	1.000	0	82.8	80	120			
Ethylbenzene	0.82	0.050	1.000	0	82.3	80	120			
Xylenes, Total	2.5	0.10	3.000	0	82.2	80	120			
Surr: 4-Bromofluorobenzene	0.94		1.000		94.3	70	130			

Sample ID: <b>mb-73504</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>PBS</b>	Batch ID: <b>73504</b>			RunNo: <b>95057</b>						
Prep Date: <b>3/3/2023</b>	Analysis Date: <b>3/6/2023</b>			SeqNo: <b>3437781</b>			Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.92		1.000		91.9	70	130			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit





Hall Environmental Analysis Laboratory  
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: 2303176

RcptNo: 1

Received By: Tracy Casarrubias 3/3/2023 7:30:00 AM

Completed By: Sean Livingston 3/3/2023 8:05:10 AM

Reviewed By: *[Signature]* 3-3-23

*[Signature]*

## 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? Yes ☒ No ☐

(Note discrepancies on chain of custody)

12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐

13. Is it clear what analyses were requested? Yes ☒ No ☐

14. Were all holding times able to be met? Yes ☒ No ☐

(If no, notify customer for authorization.)

# of preserved  
bottles checked  
for pH:

(<2 or >12 unless noted)

Adjusted? \_\_\_\_\_

Checked by: *KPL 3-3-23*

## Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

## 17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.6	Good	Not Present	Morty		

## Chain-of-Custody Record

Client: EOGDirect Bill

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

Project Name:

Inish Hills Pipeline

Project #:

22E-00716-02

Project Manager:

Chance Dixon

Sampler:

On Ice: ☒ Yes ☐ No# of Coolers: 1Cooler Temp (including CF): 5.6 - 8 - 5.6 = (°C)

Container Type and #

Preservative Type

HEAL No.

2303176

001

002

003

004

005

006

007

008

009

010

Date:

Time:

Relinquished by:

Received by:

Date:

Time:

Remarks:

CC: Chance Dixon

Date:

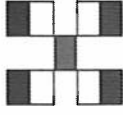
Time:

Relinquished by:

Received by:

Date:

Time:

HALL ENVIRONMENTAL  
ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

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<sub>3</sub>, NO<sub>2</sub>, PO<sub>4</sub>, SO<sub>4</sub>

8260 (VOA)

8270 (Semi-VOA)

Total Coliform (Present/Absent)



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

March 17, 2023

Chance Dixon

EOG

105 South Fourth Street

Artesia, NM 88210

TEL:

FAX:

RE: Irish Hills Pipeline

OrderNo.: 2303379

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 17 sample(s) on 3/8/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", with a stylized flourish at the end.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2303379

Date Reported: 3/17/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-57 4'

Project: Irish Hills Pipeline

Collection Date: 3/3/2023 9:00:00 AM

Lab ID: 2303379-001

Matrix: SOIL

Received Date: 3/8/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>SNS</b>
Chloride	2000	60		mg/Kg	20	3/9/2023 3:12:09 PM	73604
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	8.5		mg/Kg	1	3/9/2023 5:34:47 PM	73581
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	3/9/2023 5:34:47 PM	73581
Surr: DNOP	79.2	69-147		%Rec	1	3/9/2023 5:34:47 PM	73581
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/9/2023 12:06:51 PM	73575
Surr: BFB	104	37.7-212		%Rec	1	3/9/2023 12:06:51 PM	73575
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JJP</b>
Benzene	ND	0.025		mg/Kg	1	3/9/2023 12:06:51 PM	73575
Toluene	ND	0.049		mg/Kg	1	3/9/2023 12:06:51 PM	73575
Ethylbenzene	ND	0.049		mg/Kg	1	3/9/2023 12:06:51 PM	73575
Xylenes, Total	ND	0.099		mg/Kg	1	3/9/2023 12:06:51 PM	73575
Surr: 4-Bromofluorobenzene	93.6	70-130		%Rec	1	3/9/2023 12:06:51 PM	73575

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

## Analytical Report

Lab Order 2303379

Date Reported: 3/17/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-58 4'

Project: Irish Hills Pipeline

Collection Date: 3/3/2023 9:05:00 AM

Lab ID: 2303379-002

Matrix: SOIL

Received Date: 3/8/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>SNS</b>
Chloride	1700	60		mg/Kg	20	3/9/2023 3:24:33 PM	73604
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	3/9/2023 6:07:01 PM	73581
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/9/2023 6:07:01 PM	73581
Surr: DNOP	86.0	69-147		%Rec	1	3/9/2023 6:07:01 PM	73581
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/9/2023 12:30:26 PM	73575
Surr: BFB	105	37.7-212		%Rec	1	3/9/2023 12:30:26 PM	73575
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	3/9/2023 12:30:26 PM	73575
Toluene	ND	0.048		mg/Kg	1	3/9/2023 12:30:26 PM	73575
Ethylbenzene	ND	0.048		mg/Kg	1	3/9/2023 12:30:26 PM	73575
Xylenes, Total	ND	0.097		mg/Kg	1	3/9/2023 12:30:26 PM	73575
Surr: 4-Bromofluorobenzene	92.3	70-130		%Rec	1	3/9/2023 12:30:26 PM	73575

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 2 of 22

## Analytical Report

Lab Order 2303379

Date Reported: 3/17/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-59 4'

Project: Irish Hills Pipeline

Collection Date: 3/3/2023 9:10:00 AM

Lab ID: 2303379-003

Matrix: SOIL

Received Date: 3/8/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>SNS</b>
Chloride	2200	60		mg/Kg	20	3/9/2023 3:36:58 PM	73604
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	3/9/2023 6:17:44 PM	73581
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	3/9/2023 6:17:44 PM	73581
Surr: DNOP	98.7	69-147		%Rec	1	3/9/2023 6:17:44 PM	73581
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/9/2023 12:54:00 PM	73575
Surr: BFB	105	37.7-212		%Rec	1	3/9/2023 12:54:00 PM	73575
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JJP</b>
Benzene	ND	0.025		mg/Kg	1	3/9/2023 12:54:00 PM	73575
Toluene	ND	0.049		mg/Kg	1	3/9/2023 12:54:00 PM	73575
Ethylbenzene	ND	0.049		mg/Kg	1	3/9/2023 12:54:00 PM	73575
Xylenes, Total	ND	0.099		mg/Kg	1	3/9/2023 12:54:00 PM	73575
Surr: 4-Bromofluorobenzene	93.8	70-130		%Rec	1	3/9/2023 12:54:00 PM	73575

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

## Analytical Report

Lab Order 2303379

Date Reported: 3/17/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-60 4'

Project: Irish Hills Pipeline

Collection Date: 3/3/2023 9:15:00 AM

Lab ID: 2303379-004

Matrix: SOIL

Received Date: 3/8/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>SNS</b>
Chloride	2200	60		mg/Kg	20	3/9/2023 4:39:00 PM	73618
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	3/9/2023 6:28:27 PM	73581
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/9/2023 6:28:27 PM	73581
Surr: DNOP	97.6	69-147		%Rec	1	3/9/2023 6:28:27 PM	73581
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/9/2023 1:17:43 PM	73575
Surr: BFB	101	37.7-212		%Rec	1	3/9/2023 1:17:43 PM	73575
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JJP</b>
Benzene	ND	0.023		mg/Kg	1	3/9/2023 1:17:43 PM	73575
Toluene	ND	0.047		mg/Kg	1	3/9/2023 1:17:43 PM	73575
Ethylbenzene	ND	0.047		mg/Kg	1	3/9/2023 1:17:43 PM	73575
Xylenes, Total	ND	0.094		mg/Kg	1	3/9/2023 1:17:43 PM	73575
Surr: 4-Bromofluorobenzene	90.5	70-130		%Rec	1	3/9/2023 1:17:43 PM	73575

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		



## Analytical Report

Lab Order 2303379

Date Reported: 3/17/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-61 4'

Project: Irish Hills Pipeline

Collection Date: 3/3/2023 9:20:00 AM

Lab ID: 2303379-005

Matrix: SOIL

Received Date: 3/8/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JTT
Chloride	2600	150		mg/Kg	50	3/10/2023 10:25:11 AM	73618
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	3/9/2023 6:39:08 PM	73581
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/9/2023 6:39:08 PM	73581
Surr: DNOP	91.7	69-147		%Rec	1	3/9/2023 6:39:08 PM	73581
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/9/2023 1:41:25 PM	73575
Surr: BFB	103	37.7-212		%Rec	1	3/9/2023 1:41:25 PM	73575
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: JJP
Benzene	ND	0.023		mg/Kg	1	3/9/2023 1:41:25 PM	73575
Toluene	ND	0.047		mg/Kg	1	3/9/2023 1:41:25 PM	73575
Ethylbenzene	ND	0.047		mg/Kg	1	3/9/2023 1:41:25 PM	73575
Xylenes, Total	ND	0.094		mg/Kg	1	3/9/2023 1:41:25 PM	73575
Surr: 4-Bromofluorobenzene	92.5	70-130		%Rec	1	3/9/2023 1:41:25 PM	73575

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

## Analytical Report

Lab Order 2303379

Date Reported: 3/17/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-62 4'

Project: Irish Hills Pipeline

Collection Date: 3/3/2023 9:25:00 AM

Lab ID: 2303379-006

Matrix: SOIL

Received Date: 3/8/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>SNS</b>
Chloride	2100	60		mg/Kg	20	3/9/2023 5:28:38 PM	73618
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	3/9/2023 6:49:48 PM	73581
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/9/2023 6:49:48 PM	73581
Surr: DNOP	89.4	69-147		%Rec	1	3/9/2023 6:49:48 PM	73581
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/9/2023 2:05:11 PM	73575
Surr: BFB	103	37.7-212		%Rec	1	3/9/2023 2:05:11 PM	73575
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JJP</b>
Benzene	ND	0.023		mg/Kg	1	3/9/2023 2:05:11 PM	73575
Toluene	ND	0.047		mg/Kg	1	3/9/2023 2:05:11 PM	73575
Ethylbenzene	ND	0.047		mg/Kg	1	3/9/2023 2:05:11 PM	73575
Xylenes, Total	ND	0.093		mg/Kg	1	3/9/2023 2:05:11 PM	73575
Surr: 4-Bromofluorobenzene	92.0	70-130		%Rec	1	3/9/2023 2:05:11 PM	73575

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

## Analytical Report

Lab Order 2303379

Date Reported: 3/17/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-63 4'

Project: Irish Hills Pipeline

Collection Date: 3/3/2023 9:30:00 AM

Lab ID: 2303379-007

Matrix: SOIL

Received Date: 3/8/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>SNS</b>
Chloride	980	60		mg/Kg	20	3/9/2023 5:41:02 PM	73618
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	3/9/2023 7:00:27 PM	73581
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/9/2023 7:00:27 PM	73581
Surr: DNOP	89.3	69-147		%Rec	1	3/9/2023 7:00:27 PM	73581
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/9/2023 2:28:48 PM	73575
Surr: BFB	103	37.7-212		%Rec	1	3/9/2023 2:28:48 PM	73575
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	3/9/2023 2:28:48 PM	73575
Toluene	ND	0.047		mg/Kg	1	3/9/2023 2:28:48 PM	73575
Ethylbenzene	ND	0.047		mg/Kg	1	3/9/2023 2:28:48 PM	73575
Xylenes, Total	ND	0.094		mg/Kg	1	3/9/2023 2:28:48 PM	73575
Surr: 4-Bromofluorobenzene	93.3	70-130		%Rec	1	3/9/2023 2:28:48 PM	73575

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 7 of 22

## Analytical Report

Lab Order 2303379

Date Reported: 3/17/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-64 4'

Project: Irish Hills Pipeline

Collection Date: 3/3/2023 9:35:00 AM

Lab ID: 2303379-008

Matrix: SOIL

Received Date: 3/8/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JTT
Chloride	2400	150		mg/Kg	50	3/10/2023 10:37:33 AM	73618
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	3/9/2023 7:11:04 PM	73581
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/9/2023 7:11:04 PM	73581
Surr: DNOP	82.3	69-147		%Rec	1	3/9/2023 7:11:04 PM	73581
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/9/2023 2:52:28 PM	73575
Surr: BFB	103	37.7-212		%Rec	1	3/9/2023 2:52:28 PM	73575
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: JJP
Benzene	ND	0.023		mg/Kg	1	3/9/2023 2:52:28 PM	73575
Toluene	ND	0.047		mg/Kg	1	3/9/2023 2:52:28 PM	73575
Ethylbenzene	ND	0.047		mg/Kg	1	3/9/2023 2:52:28 PM	73575
Xylenes, Total	ND	0.094		mg/Kg	1	3/9/2023 2:52:28 PM	73575
Surr: 4-Bromofluorobenzene	93.1	70-130		%Rec	1	3/9/2023 2:52:28 PM	73575

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 8 of 22

## Analytical Report

Lab Order 2303379

Date Reported: 3/17/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-65 4'

Project: Irish Hills Pipeline

Collection Date: 3/3/2023 9:40:00 AM

Lab ID: 2303379-009

Matrix: SOIL

Received Date: 3/8/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>SNS</b>
Chloride	2200	61		mg/Kg	20	3/9/2023 6:05:51 PM	73618
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	3/9/2023 7:21:41 PM	73581
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/9/2023 7:21:41 PM	73581
Surr: DNOP	71.7	69-147		%Rec	1	3/9/2023 7:21:41 PM	73581
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/9/2023 3:16:09 PM	73575
Surr: BFB	102	37.7-212		%Rec	1	3/9/2023 3:16:09 PM	73575
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JJP</b>
Benzene	ND	0.025		mg/Kg	1	3/9/2023 3:16:09 PM	73575
Toluene	ND	0.049		mg/Kg	1	3/9/2023 3:16:09 PM	73575
Ethylbenzene	ND	0.049		mg/Kg	1	3/9/2023 3:16:09 PM	73575
Xylenes, Total	ND	0.099		mg/Kg	1	3/9/2023 3:16:09 PM	73575
Surr: 4-Bromofluorobenzene	91.7	70-130		%Rec	1	3/9/2023 3:16:09 PM	73575

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 9 of 22

## Analytical Report

Lab Order 2303379

Date Reported: 3/17/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-66 4'

Project: Irish Hills Pipeline

Collection Date: 3/3/2023 9:45:00 AM

Lab ID: 2303379-010

Matrix: SOIL

Received Date: 3/8/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>SNS</b>
Chloride	930	61		mg/Kg	20	3/9/2023 6:18:16 PM	73618
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	3/9/2023 7:42:45 PM	73581
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/9/2023 7:42:45 PM	73581
Surr: DNOP	97.5	69-147		%Rec	1	3/9/2023 7:42:45 PM	73581
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/9/2023 3:39:51 PM	73575
Surr: BFB	103	37.7-212		%Rec	1	3/9/2023 3:39:51 PM	73575
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	3/9/2023 3:39:51 PM	73575
Toluene	ND	0.048		mg/Kg	1	3/9/2023 3:39:51 PM	73575
Ethylbenzene	ND	0.048		mg/Kg	1	3/9/2023 3:39:51 PM	73575
Xylenes, Total	ND	0.095		mg/Kg	1	3/9/2023 3:39:51 PM	73575
Surr: 4-Bromofluorobenzene	93.4	70-130		%Rec	1	3/9/2023 3:39:51 PM	73575

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 10 of 22

## Analytical Report

Lab Order 2303379

Date Reported: 3/17/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-67 4'

Project: Irish Hills Pipeline

Collection Date: 3/3/2023 9:50:00 AM

Lab ID: 2303379-011

Matrix: SOIL

Received Date: 3/8/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>SNS</b>
Chloride	1800	60		mg/Kg	20	3/9/2023 6:30:41 PM	73618
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	3/9/2023 7:53:19 PM	73581
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/9/2023 7:53:19 PM	73581
Surr: DNOP	107	69-147		%Rec	1	3/9/2023 7:53:19 PM	73581
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	3/9/2023 4:26:57 PM	73575
Surr: BFB	103	37.7-212		%Rec	1	3/9/2023 4:26:57 PM	73575
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JJP</b>
Benzene	ND	0.023		mg/Kg	1	3/9/2023 4:26:57 PM	73575
Toluene	ND	0.046		mg/Kg	1	3/9/2023 4:26:57 PM	73575
Ethylbenzene	ND	0.046		mg/Kg	1	3/9/2023 4:26:57 PM	73575
Xylenes, Total	ND	0.092		mg/Kg	1	3/9/2023 4:26:57 PM	73575
Surr: 4-Bromofluorobenzene	93.5	70-130		%Rec	1	3/9/2023 4:26:57 PM	73575

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 11 of 22



## Analytical Report

Lab Order 2303379

Date Reported: 3/17/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-68 4'

Project: Irish Hills Pipeline

Collection Date: 3/3/2023 9:55:00 AM

Lab ID: 2303379-012

Matrix: SOIL

Received Date: 3/8/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>SNS</b>
Chloride	1200	60		mg/Kg	20	3/9/2023 6:43:05 PM	73618
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	3/9/2023 8:03:52 PM	73581
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/9/2023 8:03:52 PM	73581
Surr: DNOP	69.5	69-147		%Rec	1	3/9/2023 8:03:52 PM	73581
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	3/9/2023 4:50:39 PM	73575
Surr: BFB	104	37.7-212		%Rec	1	3/9/2023 4:50:39 PM	73575
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JJP</b>
Benzene	ND	0.023		mg/Kg	1	3/9/2023 4:50:39 PM	73575
Toluene	ND	0.046		mg/Kg	1	3/9/2023 4:50:39 PM	73575
Ethylbenzene	ND	0.046		mg/Kg	1	3/9/2023 4:50:39 PM	73575
Xylenes, Total	ND	0.092		mg/Kg	1	3/9/2023 4:50:39 PM	73575
Surr: 4-Bromofluorobenzene	93.0	70-130		%Rec	1	3/9/2023 4:50:39 PM	73575

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 12 of 22

## Analytical Report

Lab Order 2303379

Date Reported: 3/17/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-69 4'

Project: Irish Hills Pipeline

Collection Date: 3/3/2023 10:00:00 AM

Lab ID: 2303379-013

Matrix: SOIL

Received Date: 3/8/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>SNS</b>
Chloride	910	59		mg/Kg	20	3/9/2023 7:45:08 PM	73618
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	3/9/2023 8:14:24 PM	73581
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/9/2023 8:14:24 PM	73581
Surr: DNOP	70.1	69-147		%Rec	1	3/9/2023 8:14:24 PM	73581
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/9/2023 5:14:11 PM	73575
Surr: BFB	103	37.7-212		%Rec	1	3/9/2023 5:14:11 PM	73575
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JJP</b>
Benzene	ND	0.025		mg/Kg	1	3/9/2023 5:14:11 PM	73575
Toluene	ND	0.050		mg/Kg	1	3/9/2023 5:14:11 PM	73575
Ethylbenzene	ND	0.050		mg/Kg	1	3/9/2023 5:14:11 PM	73575
Xylenes, Total	ND	0.10		mg/Kg	1	3/9/2023 5:14:11 PM	73575
Surr: 4-Bromofluorobenzene	92.6	70-130		%Rec	1	3/9/2023 5:14:11 PM	73575

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 13 of 22

## Analytical Report

Lab Order 2303379

Date Reported: 3/17/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-70 4'

Project: Irish Hills Pipeline

Collection Date: 3/3/2023 10:05:00 AM

Lab ID: 2303379-014

Matrix: SOIL

Received Date: 3/8/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>SNS</b>
Chloride	2400	60		mg/Kg	20	3/9/2023 7:57:33 PM	73618
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	3/9/2023 8:24:55 PM	73581
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/9/2023 8:24:55 PM	73581
Surr: DNOP	107	69-147		%Rec	1	3/9/2023 8:24:55 PM	73581
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/9/2023 5:37:44 PM	73575
Surr: BFB	104	37.7-212		%Rec	1	3/9/2023 5:37:44 PM	73575
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	3/9/2023 5:37:44 PM	73575
Toluene	ND	0.048		mg/Kg	1	3/9/2023 5:37:44 PM	73575
Ethylbenzene	ND	0.048		mg/Kg	1	3/9/2023 5:37:44 PM	73575
Xylenes, Total	ND	0.096		mg/Kg	1	3/9/2023 5:37:44 PM	73575
Surr: 4-Bromofluorobenzene	92.0	70-130		%Rec	1	3/9/2023 5:37:44 PM	73575

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 14 of 22

## Analytical Report

Lab Order 2303379

Date Reported: 3/17/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WES23-195 0-4'

Project: Irish Hills Pipeline

Collection Date: 3/3/2023 1:00:00 PM

Lab ID: 2303379-015

Matrix: SOIL

Received Date: 3/8/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>SNS</b>
Chloride	220	60		mg/Kg	20	3/9/2023 8:09:57 PM	73618
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	3/9/2023 8:35:29 PM	73581
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/9/2023 8:35:29 PM	73581
Surr: DNOP	89.6	69-147		%Rec	1	3/9/2023 8:35:29 PM	73581
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/9/2023 6:01:39 PM	73575
Surr: BFB	105	37.7-212		%Rec	1	3/9/2023 6:01:39 PM	73575
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JJP</b>
Benzene	ND	0.025		mg/Kg	1	3/9/2023 6:01:39 PM	73575
Toluene	ND	0.049		mg/Kg	1	3/9/2023 6:01:39 PM	73575
Ethylbenzene	ND	0.049		mg/Kg	1	3/9/2023 6:01:39 PM	73575
Xylenes, Total	ND	0.098		mg/Kg	1	3/9/2023 6:01:39 PM	73575
Surr: 4-Bromofluorobenzene	92.5	70-130		%Rec	1	3/9/2023 6:01:39 PM	73575

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 15 of 22

## Analytical Report

Lab Order 2303379

Date Reported: 3/17/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WES23-196 0-4'

Project: Irish Hills Pipeline

Collection Date: 3/3/2023 1:05:00 PM

Lab ID: 2303379-016

Matrix: SOIL

Received Date: 3/8/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>SNS</b>
Chloride	1200	60		mg/Kg	20	3/9/2023 8:22:21 PM	73618
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	3/9/2023 8:46:02 PM	73581
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/9/2023 8:46:02 PM	73581
Surr: DNOP	81.5	69-147		%Rec	1	3/9/2023 8:46:02 PM	73581
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/9/2023 6:25:41 PM	73575
Surr: BFB	106	37.7-212		%Rec	1	3/9/2023 6:25:41 PM	73575
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	3/9/2023 6:25:41 PM	73575
Toluene	ND	0.048		mg/Kg	1	3/9/2023 6:25:41 PM	73575
Ethylbenzene	ND	0.048		mg/Kg	1	3/9/2023 6:25:41 PM	73575
Xylenes, Total	ND	0.096		mg/Kg	1	3/9/2023 6:25:41 PM	73575
Surr: 4-Bromofluorobenzene	93.8	70-130		%Rec	1	3/9/2023 6:25:41 PM	73575

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 16 of 22

**Hall Environmental Analysis Laboratory, Inc.****Analytical Report**Lab Order **2303379**Date Reported: **3/17/2023****CLIENT:** EOG**Client Sample ID:** WES23-197 0-4'**Project:** Irish Hills Pipeline**Collection Date:** 3/3/2023 1:10:00 PM**Lab ID:** 2303379-017**Matrix:** SOIL**Received Date:** 3/8/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>SNS</b>
Chloride	260	60		mg/Kg	20	3/9/2023 8:34:46 PM	73618
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	3/16/2023 11:21:13 AM	73749
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/16/2023 11:21:13 AM	73749
Surr: DNOP	103	69-147		%Rec	1	3/16/2023 11:21:13 AM	73749
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/9/2023 6:49:44 PM	73575
Surr: BFB	108	37.7-212		%Rec	1	3/9/2023 6:49:44 PM	73575
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	3/9/2023 6:49:44 PM	73575
Toluene	ND	0.048		mg/Kg	1	3/9/2023 6:49:44 PM	73575
Ethylbenzene	ND	0.048		mg/Kg	1	3/9/2023 6:49:44 PM	73575
Xylenes, Total	ND	0.096		mg/Kg	1	3/9/2023 6:49:44 PM	73575
Surr: 4-Bromofluorobenzene	96.5	70-130		%Rec	1	3/9/2023 6:49:44 PM	73575

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 17 of 22

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2303379

17-Mar-23

**Client:** EOG**Project:** Irish Hills Pipeline

Sample ID: <b>MB-73604</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>73604</b>		RunNo: <b>95145</b>							
Prep Date: <b>3/9/2023</b>	Analysis Date: <b>3/9/2023</b>		SeqNo: <b>3441856</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-73604</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>73604</b>		RunNo: <b>95145</b>							
Prep Date: <b>3/9/2023</b>	Analysis Date: <b>3/9/2023</b>		SeqNo: <b>3441857</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.0	90	110			

Sample ID: <b>MB-73618</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>73618</b>		RunNo: <b>95145</b>							
Prep Date: <b>3/9/2023</b>	Analysis Date: <b>3/9/2023</b>		SeqNo: <b>3441886</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-73618</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>73618</b>		RunNo: <b>95145</b>							
Prep Date: <b>3/9/2023</b>	Analysis Date: <b>3/9/2023</b>		SeqNo: <b>3441887</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.8	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 Quantitative Limit  
 S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
 E Above Quantitation Range/Estimated Value  
 J Analyte detected below quantitation limits  
 P Sample pH Not In Range  
 RL Reporting Limit

Page 18 of 22



**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2303379

17-Mar-23

**Client:** EOG**Project:** Irish Hills Pipeline

Sample ID: <b>LCS-73581</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>73581</b>			RunNo: <b>95174</b>						
Prep Date: <b>3/8/2023</b>	Analysis Date: <b>3/9/2023</b>			SeqNo: <b>3442336</b>			Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	93.8	61.9	130			
Surr: DNOP	5.0		5.000		99.4	69	147			

Sample ID: <b>MB-73581</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>PBS</b>	Batch ID: <b>73581</b>			RunNo: <b>95174</b>						
Prep Date: <b>3/8/2023</b>	Analysis Date: <b>3/9/2023</b>			SeqNo: <b>3442340</b>			Units: <b>mg/Kg</b>			
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	9.1		10.00		90.9	69	147			

Sample ID: <b>LCS-73598</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>73598</b>			RunNo: <b>95220</b>						
Prep Date: <b>3/9/2023</b>	Analysis Date: <b>3/10/2023</b>			SeqNo: <b>3444060</b>			Units: <b>%Rec</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.4		5.000		108	69	147			

Sample ID: <b>LCS-73599</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>73599</b>			RunNo: <b>95220</b>						
Prep Date: <b>3/9/2023</b>	Analysis Date: <b>3/10/2023</b>			SeqNo: <b>3444061</b>			Units: <b>%Rec</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.3		5.000		85.1	69	147			

Sample ID: <b>MB-73598</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>PBS</b>	Batch ID: <b>73598</b>			RunNo: <b>95220</b>						
Prep Date: <b>3/9/2023</b>	Analysis Date: <b>3/10/2023</b>			SeqNo: <b>3444065</b>			Units: <b>%Rec</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	11		10.00		105	69	147			

Sample ID: <b>MB-73599</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>PBS</b>	Batch ID: <b>73599</b>			RunNo: <b>95220</b>						
Prep Date: <b>3/9/2023</b>	Analysis Date: <b>3/10/2023</b>			SeqNo: <b>3444066</b>			Units: <b>%Rec</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.4		10.00		84.2	69	147			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2303379

17-Mar-23

**Client:** EOG**Project:** Irish Hills Pipeline

Sample ID: <b>LCS-73749</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>73749</b>			RunNo: <b>95320</b>						
Prep Date: <b>3/16/2023</b>	Analysis Date: <b>3/16/2023</b>			SeqNo: <b>3447733</b>			Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	93.2	61.9	130			
Surr: DNOP	4.8		5.000		95.9	69	147			

Sample ID: <b>MB-73749</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>PBS</b>	Batch ID: <b>73749</b>			RunNo: <b>95320</b>						
Prep Date: <b>3/16/2023</b>	Analysis Date: <b>3/16/2023</b>			SeqNo: <b>3447734</b>			Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.6		10.00		95.6	69	147			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2303379  
17-Mar-23

Client: EOG  
Project: Irish Hills Pipeline

Sample ID: lcs-73575	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: 73575	RunNo: 95134								
Prep Date: 3/8/2023	Analysis Date: 3/9/2023	SeqNo: 3440471 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	86.3	70	130			
Surr: BFB	1800		1000		184	37.7	212			

Sample ID: mb-73575	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: 73575	RunNo: 95134								
Prep Date: 3/8/2023	Analysis Date: 3/9/2023	SeqNo: 3440472 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			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quantitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2303379

17-Mar-23

**Client:** EOG**Project:** Irish Hills Pipeline

Sample ID: <b>LCS-73575</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>73575</b>			RunNo: <b>95134</b>						
Prep Date: <b>3/8/2023</b>	Analysis Date: <b>3/9/2023</b>			SeqNo: <b>3440474</b>			Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.86	0.025	1.000	0	85.9	80	120			
Toluene	0.88	0.050	1.000	0	88.0	80	120			
Ethylbenzene	0.87	0.050	1.000	0	87.1	80	120			
Xylenes, Total	2.6	0.10	3.000	0	87.3	80	120			
Surr: 4-Bromofluorobenzene	0.96		1.000		96.3	70	130			

Sample ID: <b>mb-73575</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>PBS</b>	Batch ID: <b>73575</b>			RunNo: <b>95134</b>						
Prep Date: <b>3/8/2023</b>	Analysis Date: <b>3/9/2023</b>			SeqNo: <b>3440475</b>			Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.91		1.000		91.1	70	130			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit



Hall Environmental Analysis Laboratory  
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: 2303379

RcptNo: 1

Received By: Juan Rojas 3/8/2023 7:30:00 AM

Completed By: Sean Livingston 3/8/2023 8:08:51 AM

Reviewed By: TME 3/8/23

*[Signature]*

*[Signature]*

## 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? Yes ☒ No ☐

(Note discrepancies on chain of custody)

12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐

13. Is it clear what analyses were requested? Yes ☒ No ☐

14. Were all holding times able to be met? Yes ☒ No ☐

(If no, notify customer for authorization.)

# of preserved  
bottles checked  
for pH:

(<2 or >12 unless noted)

Adjusted?

Checked by:

*[Signature]* 3/8/23

## Special Handling (if applicable)

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

Person Notified:

Date:

By Whom:

Via:

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

## 17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.2	Good	Not Present	Morty		

## Chain-of-Custody Record

Client: EOG  
Direct Bill  
 Mailing Address:

Phone #: \_\_\_\_\_  
 email or Fax#: \_\_\_\_\_  
 QA/QC Package:  
☐ Standard ☐ Level 4 (Full Validation)  
 Accreditation: ☐ Az Compliance  
☐ NELAC ☐ Other \_\_\_\_\_  
☐ EDD (Type) \_\_\_\_\_

Date	Time	Matrix	Sample Name
3-23	0900	Soil	BES23-57 4"
	0905		BES23-58 4"
	0910		BES23-59 4"
	0915		BES23-60 4"
	0920		BES23-61 4"
	0925		BES23-62 4"
	0930		BES23-63 4"
	0935		BES23-64 4"
	0940		BES23-65 4"
	0945		BES23-66 4"
	0950		BES23-67 4"
	0955		BES23-68 4"

Date: \_\_\_\_\_ Time: \_\_\_\_\_ Relinquished by: \_\_\_\_\_  
 Date: 3/13 Time: 1900 Relinquished by: amun

Turn-Around Time:

☐ Standard ☒ Rush 48 hour
Project Name: Irish Hills PipelineProject #: 22E-00716-02Project Manager: Chance Dixon
 Sampler: AM  
 On Ice: ☒ Yes ☐ No
# of Coolers: 1Cooler Temp (including CF): 1.3-4.1-1.2 (°C)

Container Type and #

Preservative Type

HEAL No. 2303379

Type and #

Type

Type

Type

Type

Type

Type

Type

Type

Type

Type

Type

Type

Type

Type

Type

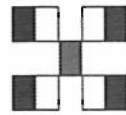
Type

Type

Type

Type

Type


**HALL ENVIRONMENTAL  
ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

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<sub>3</sub>, NO<sub>2</sub>, PO<sub>4</sub>, SO<sub>4</sub>  
 8260 (VOA)  
 8270 (Semi-VOA)  
 Total Coliform (Present/Absent)

Remarks: CL: Chance Dixon

Received by: amun Date: 3/13 Time: 0800  
 Received by: Chance Dixon Date: 3/13 Time: 0800









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

March 23, 2023

Chance Dixon

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX:

RE: Irish Hills Pipeline

OrderNo.: 2303842

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 7 sample(s) on 3/16/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2303842

Date Reported: 3/23/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-71

Project: Irish Hills Pipeline

Collection Date: 3/14/2023 10:00:00 AM

Lab ID: 2303842-001

Matrix: SOIL

Received Date: 3/16/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: JME
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	3/20/2023 11:06:47 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/20/2023 11:06:47 AM
Surr: DNOP	95.0	69-147		%Rec	1	3/20/2023 11:06:47 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/18/2023 12:17:00 AM
Surr: BFB	90.2	37.7-212		%Rec	1	3/18/2023 12:17:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	3/18/2023 12:17:00 AM
Toluene	ND	0.049		mg/Kg	1	3/18/2023 12:17:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	3/18/2023 12:17:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	3/18/2023 12:17:00 AM
Surr: 4-Bromofluorobenzene	91.3	70-130		%Rec	1	3/18/2023 12:17:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: JTT
Chloride	ND	60		mg/Kg	20	3/17/2023 9:14:29 PM

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 1 of 12

## Analytical Report

Lab Order 2303842

Date Reported: 3/23/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-72

Project: Irish Hills Pipeline

Collection Date: 3/14/2023 10:15:00 AM

Lab ID: 2303842-002

Matrix: SOIL

Received Date: 3/16/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: JME
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	3/20/2023 11:38:11 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/20/2023 11:38:11 AM
Surr: DNOP	88.4	69-147		%Rec	1	3/20/2023 11:38:11 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/18/2023 1:22:00 AM
Surr: BFB	87.6	37.7-212		%Rec	1	3/18/2023 1:22:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	3/18/2023 1:22:00 AM
Toluene	ND	0.049		mg/Kg	1	3/18/2023 1:22:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	3/18/2023 1:22:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	3/18/2023 1:22:00 AM
Surr: 4-Bromofluorobenzene	90.4	70-130		%Rec	1	3/18/2023 1:22:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SNS
Chloride	2600	150		mg/Kg	50	3/20/2023 4:31:58 PM

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 2 of 12

## Analytical Report

Lab Order 2303842

Date Reported: 3/23/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-73

Project: Irish Hills Pipeline

Collection Date: 3/14/2023 10:30:00 AM

Lab ID: 2303842-003

Matrix: SOIL

Received Date: 3/16/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: JME
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	3/20/2023 11:48:40 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/20/2023 11:48:40 AM
Surr: DNOP	93.3	69-147		%Rec	1	3/20/2023 11:48:40 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/18/2023 2:27:00 AM
Surr: BFB	89.8	37.7-212		%Rec	1	3/18/2023 2:27:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	3/18/2023 2:27:00 AM
Toluene	ND	0.050		mg/Kg	1	3/18/2023 2:27:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	3/18/2023 2:27:00 AM
Xylenes, Total	ND	0.10		mg/Kg	1	3/18/2023 2:27:00 AM
Surr: 4-Bromofluorobenzene	90.2	70-130		%Rec	1	3/18/2023 2:27:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SNS
Chloride	2500	150		mg/Kg	50	3/20/2023 4:44:19 PM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

## Analytical Report

Lab Order 2303842

Date Reported: 3/23/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS23-200

Project: Irish Hills Pipeline

Collection Date: 3/14/2023 10:45:00 AM

Lab ID: 2303842-004

Matrix: SOIL

Received Date: 3/16/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: JME
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	3/20/2023 11:59:09 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/20/2023 11:59:09 AM
Surr: DNOP	86.8	69-147		%Rec	1	3/20/2023 11:59:09 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/18/2023 2:48:00 AM
Surr: BFB	88.2	37.7-212		%Rec	1	3/18/2023 2:48:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	3/18/2023 2:48:00 AM
Toluene	ND	0.048		mg/Kg	1	3/18/2023 2:48:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	3/18/2023 2:48:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	3/18/2023 2:48:00 AM
Surr: 4-Bromofluorobenzene	89.2	70-130		%Rec	1	3/18/2023 2:48:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: JTT
Chloride	64	60		mg/Kg	20	3/17/2023 9:51:42 PM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

## Analytical Report

Lab Order 2303842

Date Reported: 3/23/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS23-204

Project: Irish Hills Pipeline

Collection Date: 3/14/2023 11:00:00 AM

Lab ID: 2303842-005

Matrix: SOIL

Received Date: 3/16/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: JME
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	3/20/2023 12:09:42 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/20/2023 12:09:42 PM
Surr: DNOP	89.1	69-147		%Rec	1	3/20/2023 12:09:42 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/18/2023 3:10:00 AM
Surr: BFB	87.6	37.7-212		%Rec	1	3/18/2023 3:10:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	3/18/2023 3:10:00 AM
Toluene	ND	0.050		mg/Kg	1	3/18/2023 3:10:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	3/18/2023 3:10:00 AM
Xylenes, Total	ND	0.10		mg/Kg	1	3/18/2023 3:10:00 AM
Surr: 4-Bromofluorobenzene	89.5	70-130		%Rec	1	3/18/2023 3:10:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: JTT
Chloride	ND	60		mg/Kg	20	3/17/2023 10:04:07 PM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

## Analytical Report

Lab Order 2303842

Date Reported: 3/23/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS23-205

Project: Irish Hills Pipeline

Collection Date: 3/14/2023 11:15:00 AM

Lab ID: 2303842-006

Matrix: SOIL

Received Date: 3/16/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: JME
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	3/20/2023 12:20:13 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/20/2023 12:20:13 PM
Surr: DNOP	94.8	69-147		%Rec	1	3/20/2023 12:20:13 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/18/2023 3:31:00 AM
Surr: BFB	91.2	37.7-212		%Rec	1	3/18/2023 3:31:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	3/18/2023 3:31:00 AM
Toluene	ND	0.049		mg/Kg	1	3/18/2023 3:31:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	3/18/2023 3:31:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	3/18/2023 3:31:00 AM
Surr: 4-Bromofluorobenzene	91.5	70-130		%Rec	1	3/18/2023 3:31:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: JTT
Chloride	530	60		mg/Kg	20	3/17/2023 10:16:31 PM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		



## Analytical Report

Lab Order 2303842

Date Reported: 3/23/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS23-206

Project: Irish Hills Pipeline

Collection Date: 3/14/2023 11:30:00 AM

Lab ID: 2303842-007

Matrix: SOIL

Received Date: 3/16/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: JME
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	3/20/2023 12:30:45 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/20/2023 12:30:45 PM
Surr: DNOP	91.6	69-147		%Rec	1	3/20/2023 12:30:45 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/18/2023 3:53:00 AM
Surr: BFB	92.1	37.7-212		%Rec	1	3/18/2023 3:53:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	3/18/2023 3:53:00 AM
Toluene	ND	0.048		mg/Kg	1	3/18/2023 3:53:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	3/18/2023 3:53:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	3/18/2023 3:53:00 AM
Surr: 4-Bromofluorobenzene	90.1	70-130		%Rec	1	3/18/2023 3:53:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: JTT
Chloride	360	60		mg/Kg	20	3/17/2023 10:53:44 PM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2303842

23-Mar-23

Client: Vertex Resources Services, Inc.  
Project: Irish Hills Pipeline

Sample ID: <b>MB-73788</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>73788</b>		RunNo: <b>95364</b>							
Prep Date: <b>3/17/2023</b>	Analysis Date: <b>3/17/2023</b>		SeqNo: <b>3449726</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-73788</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>73788</b>		RunNo: <b>95364</b>							
Prep Date: <b>3/17/2023</b>	Analysis Date: <b>3/17/2023</b>		SeqNo: <b>3449727</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.2	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 Quantitative Limit
- S

% Recovery outside of standard limits. If undiluted results may be estimated.
- B

Analyte detected in the associated Method Blank
- E

Above Quantitation Range/Estimated Value
- J

Analyte detected below quantitation limits
- P

Sample pH Not In Range
- RL

Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2303842

23-Mar-23

**Client:** Vertex Resources Services, Inc.**Project:** Irish Hills Pipeline

Sample ID: <b>MB-73773</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>73773</b>	RunNo: <b>95380</b>								
Prep Date: <b>3/17/2023</b>	Analysis Date: <b>3/20/2023</b>	SeqNo: <b>3450240</b>			Units: <b>mg/Kg</b>					
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	8.8		10.00		87.7	69	147			

Sample ID: <b>LCS-73773</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>73773</b>	RunNo: <b>95380</b>								
Prep Date: <b>3/17/2023</b>	Analysis Date: <b>3/20/2023</b>	SeqNo: <b>3450242</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)	42	10	50.00	0	85.0	61.9	130			
Surr: DNOP	4.6		5.000		91.5	69	147			

Sample ID: <b>2303842-001AMS</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>BS23-71</b>	Batch ID: <b>73773</b>	RunNo: <b>95380</b>								
Prep Date: <b>3/17/2023</b>	Analysis Date: <b>3/20/2023</b>	SeqNo: <b>3450252</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)	44	9.2	46.08	0	94.7	54.2	135			
Surr: DNOP	4.1		4.608		88.9	69	147			

Sample ID: <b>2303842-001AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>BS23-71</b>	Batch ID: <b>73773</b>	RunNo: <b>95380</b>								
Prep Date: <b>3/17/2023</b>	Analysis Date: <b>3/20/2023</b>	SeqNo: <b>3450253</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)	43	9.4	47.08	0	90.6	54.2	135	2.26	29.2	
Surr: DNOP	3.7		4.708		78.3	69	147	0	0	

Sample ID: <b>MB-73819</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>73819</b>	RunNo: <b>95415</b>								
Prep Date: <b>3/20/2023</b>	Analysis Date: <b>3/21/2023</b>	SeqNo: <b>3451853</b>			Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Surr: DNOP	9.2		10.00		92.0	69	147			
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Sample ID: <b>LCS-73819</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>73819</b>	RunNo: <b>95415</b>								
Prep Date: <b>3/20/2023</b>	Analysis Date: <b>3/21/2023</b>	SeqNo: <b>3451856</b>			Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

**Qualifiers:**

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Above Quantitation Range/Estimated Value
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
PQL Practical Quantitative Limit	RL Reporting Limit
S % Recovery outside of standard limits. If undiluted results may be estimated.	

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2303842  
23-Mar-23

Client: Vertex Resources Services, Inc.  
Project: Irish Hills Pipeline

Sample ID: LCS-73819	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 73819	RunNo: 95415								
Prep Date: 3/20/2023	Analysis Date: 3/21/2023	SeqNo: 3451856		Units: %Rec						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.0		5.000		99.7	69	147			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quantitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2303842

23-Mar-23

**Client:** Vertex Resources Services, Inc.**Project:** Irish Hills Pipeline

Sample ID: <b>ics-73764</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>73764</b>		RunNo: <b>95373</b>							
Prep Date: <b>3/16/2023</b>	Analysis Date: <b>3/17/2023</b>		SeqNo: <b>3450001</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	91.0	70	130			
Surr: BFB	2000		1000		196	37.7	212			

Sample ID: <b>mb-73764</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>73764</b>		RunNo: <b>95373</b>							
Prep Date: <b>3/16/2023</b>	Analysis Date: <b>3/17/2023</b>		SeqNo: <b>3450002</b>		Units: <b>mg/Kg</b>					
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		87.9	37.7	212			

Sample ID: <b>2303842-001ams</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>BS23-71</b>	Batch ID: <b>73764</b>		RunNo: <b>95373</b>							
Prep Date: <b>3/16/2023</b>	Analysis Date: <b>3/18/2023</b>		SeqNo: <b>3450004</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	4.9	24.44	0	90.3	70	130			
Surr: BFB	2000		977.5		202	37.7	212			

Sample ID: <b>2303842-001amsd</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>BS23-71</b>	Batch ID: <b>73764</b>		RunNo: <b>95373</b>							
Prep Date: <b>3/16/2023</b>	Analysis Date: <b>3/18/2023</b>		SeqNo: <b>3450005</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	4.9	24.46	0	90.8	70	130	0.628	20	
Surr: BFB	2000		978.5		207	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 Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2303842

23-Mar-23

**Client:** Vertex Resources Services, Inc.**Project:** Irish Hills Pipeline

Sample ID: <b>ics-73764</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>73764</b>		RunNo: <b>95373</b>							
Prep Date: <b>3/16/2023</b>	Analysis Date: <b>3/17/2023</b>		SeqNo: <b>3450073</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.025	1.000	0	91.5	80	120			
Toluene	0.92	0.050	1.000	0	91.5	80	120			
Ethylbenzene	0.90	0.050	1.000	0	89.7	80	120			
Xylenes, Total	2.7	0.10	3.000	0	89.3	80	120			
Surr: 4-Bromofluorobenzene	0.93		1.000		92.8	70	130			

Sample ID: <b>mb-73764</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>73764</b>		RunNo: <b>95373</b>							
Prep Date: <b>3/16/2023</b>	Analysis Date: <b>3/17/2023</b>		SeqNo: <b>3450074</b>		Units: <b>mg/Kg</b>					
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	0.90		1.000		90.2	70	130			

Sample ID: <b>2303842-002ams</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>BS23-72</b>	Batch ID: <b>73764</b>		RunNo: <b>95373</b>							
Prep Date: <b>3/16/2023</b>	Analysis Date: <b>3/18/2023</b>		SeqNo: <b>3450077</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	0.9872	0	105	68.8	120			
Toluene	1.0	0.049	0.9872	0	106	73.6	124			
Ethylbenzene	1.0	0.049	0.9872	0	105	72.7	129			
Xylenes, Total	3.1	0.099	2.962	0	104	75.7	126			
Surr: 4-Bromofluorobenzene	0.91		0.9872		92.2	70	130			

Sample ID: <b>2303842-002amsd</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>BS23-72</b>	Batch ID: <b>73764</b>		RunNo: <b>95373</b>							
Prep Date: <b>3/16/2023</b>	Analysis Date: <b>3/18/2023</b>		SeqNo: <b>3450078</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.98	0.025	0.9843	0	99.4	68.8	120	5.77	20	
Toluene	0.98	0.049	0.9843	0	99.6	73.6	124	6.20	20	
Ethylbenzene	0.97	0.049	0.9843	0	98.4	72.7	129	6.43	20	
Xylenes, Total	2.9	0.098	2.953	0	97.4	75.7	126	6.46	20	
Surr: 4-Bromofluorobenzene	0.91		0.9843		92.0	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 Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit



Hall Environmental Analysis Laboratory  
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: 2303842

RcptNo: 1

Received By: Desiree Dominguez 3/16/2023 8:00:00 AM

Completed By: Sean Livingston 3/16/2023 9:06:29 AM

Reviewed By: DAD 3/16/23

TS  
S. Livingston

### 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  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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: JA 3-16-23

### Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

### 17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.6	Good	Not Present	Morty		







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

March 24, 2023

Chance Dixon

EOG

105 South Fourth Street

Artesia, NM 88210

TEL:

FAX

RE: Irish Hills Pipeline

OrderNo.: 2303943

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 3 sample(s) on 3/17/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2303943

Date Reported: 3/24/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WS23-212 0-4'

Project: Irish Hills Pipeline

Collection Date: 3/15/2023 2:25:00 PM

Lab ID: 2303943-001

Matrix: SOIL

Received Date: 3/17/2023 8:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>SNS</b>
Chloride	ND	60		mg/Kg	20	3/20/2023 7:49:28 PM	73818
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	3/20/2023 2:47:48 PM	73794
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/20/2023 2:47:48 PM	73794
Surr: DNOP	86.1	69-147		%Rec	1	3/20/2023 2:47:48 PM	73794
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/20/2023 11:50:37 AM	73777
Surr: BFB	104	37.7-212		%Rec	1	3/20/2023 11:50:37 AM	73777
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JJP</b>
Benzene	ND	0.025		mg/Kg	1	3/20/2023 11:50:37 AM	73777
Toluene	ND	0.049		mg/Kg	1	3/20/2023 11:50:37 AM	73777
Ethylbenzene	ND	0.049		mg/Kg	1	3/20/2023 11:50:37 AM	73777
Xylenes, Total	ND	0.098		mg/Kg	1	3/20/2023 11:50:37 AM	73777
Surr: 4-Bromofluorobenzene	94.9	70-130		%Rec	1	3/20/2023 11:50:37 AM	73777

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 1 of 7

## Analytical Report

Lab Order 2303943

Date Reported: 3/24/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BS23-74 4'

Project: Irish Hills Pipeline

Collection Date: 3/15/2023 2:45:00 PM

Lab ID: 2303943-002

Matrix: SOIL

Received Date: 3/17/2023 8:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>SNS</b>
Chloride	2800	150		mg/Kg	50	3/21/2023 9:57:39 AM	73818
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	3/20/2023 3:11:33 PM	73794
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/20/2023 3:11:33 PM	73794
Surr: DNOP	84.6	69-147		%Rec	1	3/20/2023 3:11:33 PM	73794
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/20/2023 12:14:27 PM	73777
Surr: BFB	102	37.7-212		%Rec	1	3/20/2023 12:14:27 PM	73777
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	3/20/2023 12:14:27 PM	73777
Toluene	ND	0.047		mg/Kg	1	3/20/2023 12:14:27 PM	73777
Ethylbenzene	ND	0.047		mg/Kg	1	3/20/2023 12:14:27 PM	73777
Xylenes, Total	ND	0.095		mg/Kg	1	3/20/2023 12:14:27 PM	73777
Surr: 4-Bromofluorobenzene	93.8	70-130		%Rec	1	3/20/2023 12:14:27 PM	73777

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 2 of 7

## Analytical Report

Lab Order 2303943

Date Reported: 3/24/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BS23-75 4'

Project: Irish Hills Pipeline

Collection Date: 3/15/2023 2:50:00 PM

Lab ID: 2303943-003

Matrix: SOIL

Received Date: 3/17/2023 8:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>SNS</b>
Chloride	1600	60		mg/Kg	20	3/20/2023 8:38:50 PM	73818
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	8.7		mg/Kg	1	3/20/2023 3:35:17 PM	73794
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	3/20/2023 3:35:17 PM	73794
Surr: DNOP	84.0	69-147		%Rec	1	3/20/2023 3:35:17 PM	73794
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/20/2023 12:38:15 PM	73777
Surr: BFB	101	37.7-212		%Rec	1	3/20/2023 12:38:15 PM	73777
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JJP</b>
Benzene	ND	0.025		mg/Kg	1	3/20/2023 12:38:15 PM	73777
Toluene	ND	0.049		mg/Kg	1	3/20/2023 12:38:15 PM	73777
Ethylbenzene	ND	0.049		mg/Kg	1	3/20/2023 12:38:15 PM	73777
Xylenes, Total	ND	0.099		mg/Kg	1	3/20/2023 12:38:15 PM	73777
Surr: 4-Bromofluorobenzene	91.2	70-130		%Rec	1	3/20/2023 12:38:15 PM	73777

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2303943  
24-Mar-23

Client: EOG  
Project: Irish Hills Pipeline

Sample ID: MB-73818	SampType: MBLK	TestCode: EPA Method 300.0: Anions
Client ID: PBS	Batch ID: 73818	RunNo: 95410
Prep Date: 3/20/2023	Analysis Date: 3/20/2023	SeqNo: 3451749 Units: mg/Kg
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Chloride	ND	1.5

Sample ID: LCS-73818	SampType: LCS	TestCode: EPA Method 300.0: Anions
Client ID: LCSS	Batch ID: 73818	RunNo: 95410
Prep Date: 3/20/2023	Analysis Date: 3/20/2023	SeqNo: 3451750 Units: mg/Kg
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Chloride	14	1.5 15.00 0 91.9 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 Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2303943

24-Mar-23

**Client:** EOG  
**Project:** Irish Hills Pipeline

Sample ID: <b>MB-73773</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>73773</b>	RunNo: <b>95380</b>								
Prep Date: <b>3/17/2023</b>	Analysis Date: <b>3/20/2023</b>	SeqNo: <b>3450240</b>	Units: <b>%Rec</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.8		10.00		87.7	69	147			

Sample ID: <b>MB-73794</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>73794</b>	RunNo: <b>95380</b>								
Prep Date: <b>3/20/2023</b>	Analysis Date: <b>3/20/2023</b>	SeqNo: <b>3450241</b>	Units: <b>mg/Kg</b>							
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	8.6		10.00		86.4	69	147			

Sample ID: <b>LCS-73773</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>73773</b>	RunNo: <b>95380</b>								
Prep Date: <b>3/17/2023</b>	Analysis Date: <b>3/20/2023</b>	SeqNo: <b>3450242</b>	Units: <b>%Rec</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.6		5.000		91.5	69	147			

Sample ID: <b>LCS-73794</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>73794</b>	RunNo: <b>95380</b>								
Prep Date: <b>3/20/2023</b>	Analysis Date: <b>3/20/2023</b>	SeqNo: <b>3450243</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	91.6	61.9	130			
Surr: DNOP	4.4		5.000		87.0	69	147			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit



QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2303943  
24-Mar-23

Client: EOG  
Project: Irish Hills Pipeline

Sample ID: lcs-73777	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: 73777	RunNo: 95394								
Prep Date: 3/17/2023	Analysis Date: 3/20/2023	SeqNo: 3451025		Units: mg/Kg						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	87.9	70	130			
Surr: BFB	1900		1000		189	37.7	212			

Sample ID: mb-73777	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: 73777	RunNo: 95394								
Prep Date: 3/17/2023	Analysis Date: 3/20/2023	SeqNo: 3451026		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			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quantitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2303943

24-Mar-23

**Client:** EOG  
**Project:** Irish Hills Pipeline

Sample ID: <b>LCS-73777</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>73777</b>	RunNo: <b>95394</b>								
Prep Date: <b>3/17/2023</b>	Analysis Date: <b>3/20/2023</b>	SeqNo: <b>3451035</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	1.000	0	89.9	80	120			
Toluene	0.90	0.050	1.000	0	90.5	80	120			
Ethylbenzene	0.90	0.050	1.000	0	89.8	80	120			
Xylenes, Total	2.7	0.10	3.000	0	89.7	80	120			
Surr: 4-Bromofluorobenzene	0.97		1.000		96.9	70	130			

Sample ID: <b>mb-73777</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>73777</b>	RunNo: <b>95394</b>								
Prep Date: <b>3/17/2023</b>	Analysis Date: <b>3/20/2023</b>	SeqNo: <b>3451036</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.93		1.000		93.0	70	130			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit



Hall Environmental Analysis Laboratory  
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: 2303943

RcptNo: 1

Received By: Juan Rojas

3/17/2023 8:35:00 AM

Completed By: Sean Livingston

3/17/2023 8:47:55 AM

Reviewed By:

*JA 3-17-23*

*[Signature]*

*[Signature]*

### 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  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐

5. Sample(s) in proper container(s)? Yes ☒ No ☐

6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐

7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐

8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐

9. Received at least 1 vial with headspace  $<1/4$ " for AQ VOA? Yes ☐ No ☐ NA ☒

10. Were any sample containers received broken? Yes ☐ No ☒

11. Does paperwork match bottle labels? Yes ☒ No ☐

(Note discrepancies on chain of custody)

12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐

13. Is it clear what analyses were requested? Yes ☒ No ☐

14. Were all holding times able to be met? Yes ☒ No ☐

(If no, notify customer for authorization.)

# of preserved  
bottles checked  
for pH:

( $<2$  or  $>12$  unless noted)

Adjusted? \_\_\_\_\_

Checked by *CMC 3/17/23*

### Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

### 17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.7	Good	Not Present	Morty		

## Chain-of-Custody Record

Client: EOG / Vertex

Mailing Address: on file

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)Accreditation: ☐ Az Compliance☐ NELAC ☐ Other☐ EDD (Type)

Turn-Around Time:

☐ Standard ☒ Rush

48 hr

Project Name:

Irish Hills Pipeline

Project #:

22E-00716-02

Project Manager:

Chance Dixon

Sampler:

SPC

On Ice:

☐ Yes ☐ No

# of Coolers: 1

Warranty

Cooler Temp (including CP): 0.57 ± 0.2 = 0.7 (°C)

Date Time Matrix Sample Name

3/15/23 1425 Soil WS23-212 0-4'

1445 BS23-74 4'

1450 BS23-75 4'

Container Type and #

403 jar ice

1

1

HEAL No.

2303943

001

002

003

Preservative Type

ice

1

1

## Analysis Request

BTEX / MTBE / TMBs (8021)

TPH:8015D(GRO / DRO / MRO)

8081 Pesticides/8082 PCB's

EDB (Method 504.1)

PAHs by 8310 or 8270SIMS

RCRA 8 Metals

Cl<sup>-</sup>, F<sup>-</sup>, Br<sup>-</sup>, NO<sub>3</sub><sup>-</sup>, NO<sub>2</sub><sup>-</sup>, PO<sub>4</sub><sup>3-</sup>, SO<sub>4</sub><sup>2-</sup>

8260 (VOA)

8270 (Semi-VOA)

Total Coliform (Present/Absent)

Date: 3/15/23 1754

Relinquished by: Sally Carter

Date: 3/16/23 1900

Relinquished by: Gunning

Received by: Gunning

Date: 3/16/23 900

Date: 3/17/23 8:35

Remarks:

Direct bill EOG  
cc scarthar@vertex.ca



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

April 06, 2023

Chance Dixon

EOG

105 South Fourth Street

Artesia, NM 88210

TEL:

FAX

RE: Irish Hills Pipeline

OrderNo.: 2304085

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 7 sample(s) on 4/4/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2304085

Date Reported: 4/6/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-01 4'

Project: Irish Hills Pipeline

Collection Date: 3/31/2023 10:45:00 AM

Lab ID: 2304085-001

Matrix: SOIL

Received Date: 4/4/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>SNS</b>
Chloride	4600	150		mg/Kg	50	4/4/2023 1:46:14 PM	74109
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	4/4/2023 10:40:43 AM	74102
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/4/2023 10:40:43 AM	74102
Surr: DNOP	81.6	69-147		%Rec	1	4/4/2023 10:40:43 AM	74102
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.0		mg/Kg	1	4/4/2023 12:02:13 PM	GS95767
Surr: BFB	97.4	37.7-212		%Rec	1	4/4/2023 12:02:13 PM	GS95767
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JJP</b>
Benzene	ND	0.020		mg/Kg	1	4/4/2023 12:02:13 PM	R95767
Toluene	ND	0.040		mg/Kg	1	4/4/2023 12:02:13 PM	R95767
Ethylbenzene	ND	0.040		mg/Kg	1	4/4/2023 12:02:13 PM	R95767
Xylenes, Total	ND	0.079		mg/Kg	1	4/4/2023 12:02:13 PM	R95767
Surr: 4-Bromofluorobenzene	82.5	70-130		%Rec	1	4/4/2023 12:02:13 PM	R95767

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 1 of 11

## Analytical Report

Lab Order 2304085

Date Reported: 4/6/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-02 4'

Project: Irish Hills Pipeline

Collection Date: 3/31/2023 10:50:00 AM

Lab ID: 2304085-002

Matrix: SOIL

Received Date: 4/4/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>SNS</b>
Chloride	2300	150		mg/Kg	50	4/4/2023 1:58:34 PM	74109
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/4/2023 11:23:48 AM	74102
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/4/2023 11:23:48 AM	74102
Surr: DNOP	77.5	69-147		%Rec	1	4/4/2023 11:23:48 AM	74102
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	4/4/2023 12:25:41 PM	GS95767
Surr: BFB	99.5	37.7-212		%Rec	1	4/4/2023 12:25:41 PM	GS95767
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JJP</b>
Benzene	ND	0.019		mg/Kg	1	4/4/2023 12:25:41 PM	R95767
Toluene	ND	0.038		mg/Kg	1	4/4/2023 12:25:41 PM	R95767
Ethylbenzene	ND	0.038		mg/Kg	1	4/4/2023 12:25:41 PM	R95767
Xylenes, Total	ND	0.076		mg/Kg	1	4/4/2023 12:25:41 PM	R95767
Surr: 4-Bromofluorobenzene	83.5	70-130		%Rec	1	4/4/2023 12:25:41 PM	R95767

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		



## Analytical Report

Lab Order 2304085

Date Reported: 4/6/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-03 4'

Project: Irish Hills Pipeline

Collection Date: 3/31/2023 10:55:00 AM

Lab ID: 2304085-003

Matrix: SOIL

Received Date: 4/4/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>SNS</b>
Chloride	2200	60		mg/Kg	20	4/4/2023 11:30:25 AM	74109
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	4/4/2023 2:14:08 PM	74102
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/4/2023 2:14:08 PM	74102
Surr: DNOP	81.6	69-147		%Rec	1	4/4/2023 2:14:08 PM	74102
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	4/4/2023 12:49:11 PM	GS95767
Surr: BFB	102	37.7-212		%Rec	1	4/4/2023 12:49:11 PM	GS95767
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JJP</b>
Benzene	ND	0.020		mg/Kg	1	4/4/2023 12:49:11 PM	R95767
Toluene	ND	0.039		mg/Kg	1	4/4/2023 12:49:11 PM	R95767
Ethylbenzene	ND	0.039		mg/Kg	1	4/4/2023 12:49:11 PM	R95767
Xylenes, Total	ND	0.079		mg/Kg	1	4/4/2023 12:49:11 PM	R95767
Surr: 4-Bromofluorobenzene	86.1	70-130		%Rec	1	4/4/2023 12:49:11 PM	R95767

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 3 of 11

## Analytical Report

Lab Order 2304085

Date Reported: 4/6/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-04 4'

Project: Irish Hills Pipeline

Collection Date: 3/31/2023 11:00:00 AM

Lab ID: 2304085-004

Matrix: SOIL

Received Date: 4/4/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>SNS</b>
Chloride	12000	600		mg/Kg	200	4/4/2023 2:10:54 PM	74109
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	4/4/2023 11:52:37 AM	74102
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/4/2023 11:52:37 AM	74102
Surr: DNOP	79.6	69-147		%Rec	1	4/4/2023 11:52:37 AM	74102
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	4/4/2023 1:12:45 PM	GS95767
Surr: BFB	100	37.7-212		%Rec	1	4/4/2023 1:12:45 PM	GS95767
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JJP</b>
Benzene	ND	0.018		mg/Kg	1	4/4/2023 1:12:45 PM	R95767
Toluene	ND	0.036		mg/Kg	1	4/4/2023 1:12:45 PM	R95767
Ethylbenzene	ND	0.036		mg/Kg	1	4/4/2023 1:12:45 PM	R95767
Xylenes, Total	ND	0.071		mg/Kg	1	4/4/2023 1:12:45 PM	R95767
Surr: 4-Bromofluorobenzene	84.9	70-130		%Rec	1	4/4/2023 1:12:45 PM	R95767

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 4 of 11

## Analytical Report

Lab Order 2304085

Date Reported: 4/6/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-05 4'

Project: Irish Hills Pipeline

Collection Date: 3/31/2023 11:05:00 AM

Lab ID: 2304085-005

Matrix: SOIL

Received Date: 4/4/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>SNS</b>
Chloride	11000	600		mg/Kg	200	4/4/2023 2:23:16 PM	74109
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/4/2023 12:06:06 PM	74102
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/4/2023 12:06:06 PM	74102
Surr: DNOP	83.0	69-147		%Rec	1	4/4/2023 12:06:06 PM	74102
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	4/4/2023 1:36:29 PM	GS95767
Surr: BFB	101	37.7-212		%Rec	1	4/4/2023 1:36:29 PM	GS95767
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JJP</b>
Benzene	ND	0.018		mg/Kg	1	4/4/2023 1:36:29 PM	R95767
Toluene	ND	0.035		mg/Kg	1	4/4/2023 1:36:29 PM	R95767
Ethylbenzene	ND	0.035		mg/Kg	1	4/4/2023 1:36:29 PM	R95767
Xylenes, Total	ND	0.070		mg/Kg	1	4/4/2023 1:36:29 PM	R95767
Surr: 4-Bromofluorobenzene	84.1	70-130		%Rec	1	4/4/2023 1:36:29 PM	R95767

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 5 of 11

## Analytical Report

Lab Order 2304085

Date Reported: 4/6/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES23-76 4'

Project: Irish Hills Pipeline

Collection Date: 3/31/2023 11:10:00 AM

Lab ID: 2304085-006

Matrix: SOIL

Received Date: 4/4/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>SNS</b>
Chloride	7800	300		mg/Kg	100	4/4/2023 2:35:37 PM	74109
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/4/2023 12:20:04 PM	74102
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/4/2023 12:20:04 PM	74102
Surr: DNOP	71.8	69-147		%Rec	1	4/4/2023 12:20:04 PM	74102
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	3.2		mg/Kg	1	4/4/2023 2:00:07 PM	GS95767
Surr: BFB	99.6	37.7-212		%Rec	1	4/4/2023 2:00:07 PM	GS95767
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JJP</b>
Benzene	ND	0.016		mg/Kg	1	4/4/2023 2:00:07 PM	R95767
Toluene	ND	0.032		mg/Kg	1	4/4/2023 2:00:07 PM	R95767
Ethylbenzene	ND	0.032		mg/Kg	1	4/4/2023 2:00:07 PM	R95767
Xylenes, Total	ND	0.064		mg/Kg	1	4/4/2023 2:00:07 PM	R95767
Surr: 4-Bromofluorobenzene	84.9	70-130		%Rec	1	4/4/2023 2:00:07 PM	R95767

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 6 of 11

## Analytical Report

Lab Order 2304085

Date Reported: 4/6/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WES23-194 0-4'

Project: Irish Hills Pipeline

Collection Date: 3/31/2023 11:15:00 AM

Lab ID: 2304085-007

Matrix: SOIL

Received Date: 4/4/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>SNS</b>
Chloride	ND	60		mg/Kg	20	4/4/2023 12:19:49 PM	74109
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	ND	8.7		mg/Kg	1	4/4/2023 12:34:26 PM	74102
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	4/4/2023 12:34:26 PM	74102
Surr: DNOP	81.4	69-147		%Rec	1	4/4/2023 12:34:26 PM	74102
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	3.3		mg/Kg	1	4/4/2023 2:23:43 PM	GS95767
Surr: BFB	98.7	37.7-212		%Rec	1	4/4/2023 2:23:43 PM	GS95767
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JJP</b>
Benzene	ND	0.016		mg/Kg	1	4/4/2023 2:23:43 PM	R95767
Toluene	ND	0.033		mg/Kg	1	4/4/2023 2:23:43 PM	R95767
Ethylbenzene	ND	0.033		mg/Kg	1	4/4/2023 2:23:43 PM	R95767
Xylenes, Total	ND	0.065		mg/Kg	1	4/4/2023 2:23:43 PM	R95767
Surr: 4-Bromofluorobenzene	83.0	70-130		%Rec	1	4/4/2023 2:23:43 PM	R95767

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 7 of 11

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2304085

06-Apr-23

Client: EOG

Project: Irish Hills Pipeline

Sample ID: <b>MB-74109</b>		SampType: <b>MBLK</b>		TestCode: <b>EPA Method 300.0: Anions</b>						
Client ID: <b>PBS</b>		Batch ID: <b>74109</b>		RunNo: <b>95776</b>						
Prep Date: <b>4/4/2023</b>		Analysis Date: <b>4/4/2023</b>		SeqNo: <b>3467690</b>			Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-74109</b>		SampType: <b>LCS</b>		TestCode: <b>EPA Method 300.0: Anions</b>						
Client ID: <b>LCSS</b>		Batch ID: <b>74109</b>		RunNo: <b>95776</b>						
Prep Date: <b>4/4/2023</b>		Analysis Date: <b>4/4/2023</b>		SeqNo: <b>3467691</b>			Units: <b>mg/Kg</b>			
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			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 8 of 11

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2304085

06-Apr-23

**Client:** EOG  
**Project:** Irish Hills Pipeline

Sample ID: <b>MB-74102</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>74102</b>	RunNo: <b>95770</b>								
Prep Date: <b>4/4/2023</b>	Analysis Date: <b>4/4/2023</b>	SeqNo: <b>3466591</b>	Units: <b>mg/Kg</b>							
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	9.0		10.00		90.4	69	147			

Sample ID: <b>LCS-74102</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>74102</b>	RunNo: <b>95770</b>								
Prep Date: <b>4/4/2023</b>	Analysis Date: <b>4/4/2023</b>	SeqNo: <b>3466592</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	92.2	61.9	130			
Surr: DNOP	4.6		5.000		91.4	69	147			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit



**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2304085

06-Apr-23

**Client:** EOG  
**Project:** Irish Hills Pipeline

Sample ID: <b>2.5ug gro lcs</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>GS95767</b>		RunNo: <b>95767</b>							
Prep Date:	Analysis Date: <b>4/4/2023</b>		SeqNo: <b>3466476</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	96.1	70	130			
Surr: BFB	1900		1000		192	37.7	212			

Sample ID: <b>mb</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>GS95767</b>		RunNo: <b>95767</b>							
Prep Date:	Analysis Date: <b>4/4/2023</b>		SeqNo: <b>3466477</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	980		1000		98.2	37.7	212			

Sample ID: <b>lcs-74070</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>74070</b>		RunNo: <b>95767</b>							
Prep Date: <b>3/31/2023</b>	Analysis Date: <b>4/4/2023</b>		SeqNo: <b>3467365</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1900		1000		193	37.7	212			

Sample ID: <b>mb-74070</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>74070</b>		RunNo: <b>95767</b>							
Prep Date: <b>3/31/2023</b>	Analysis Date: <b>4/4/2023</b>		SeqNo: <b>3467366</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		102	37.7	212			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2304085

06-Apr-23

**Client:** EOG  
**Project:** Irish Hills Pipeline

Sample ID: <b>100ng btex lcs</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>R95767</b>			RunNo: <b>95767</b>						
Prep Date:	Analysis Date: <b>4/4/2023</b>			SeqNo: <b>3466482</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.025	1.000	0	92.5	80	120			
Toluene	0.91	0.050	1.000	0	91.5	80	120			
Ethylbenzene	0.89	0.050	1.000	0	89.3	80	120			
Xylenes, Total	2.7	0.10	3.000	0	89.2	80	120			
Surr: 4-Bromofluorobenzene	0.88		1.000		87.7	70	130			

Sample ID: <b>mb</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>PBS</b>	Batch ID: <b>R95767</b>			RunNo: <b>95767</b>						
Prep Date:	Analysis Date: <b>4/4/2023</b>			SeqNo: <b>3466483</b>		Units: <b>mg/Kg</b>				
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	0.82		1.000		82.4	70	130			

Sample ID: <b>LCS-74070</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>74070</b>			RunNo: <b>95767</b>						
Prep Date: <b>3/31/2023</b>	Analysis Date: <b>4/4/2023</b>			SeqNo: <b>3467390</b>		Units: <b>%Rec</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.90		1.000		90.1	70	130			

Sample ID: <b>mb-74070</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>PBS</b>	Batch ID: <b>74070</b>			RunNo: <b>95767</b>						
Prep Date: <b>3/31/2023</b>	Analysis Date: <b>4/4/2023</b>			SeqNo: <b>3467391</b>		Units: <b>%Rec</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.88		1.000		87.8	70	130			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit



Hall Environmental Analysis Laboratory  
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: 2304085

RcptNo: 1

Received By: Juan Rojas

4/4/2023 7:25:00 AM

*Juan Rojas*

Completed By: Juan Rojas

4/4/2023 7:40:18 AM

*Juan Rojas*Reviewed By: *CME*

4/4/23

### Chain of Custody

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

### Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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: *jr24/4/23*

### Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

Client missing mailing address, phone number and email address. JR 4/4/23

### 17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	No	Morty		

## Chain-of-Custody Record

Client: VERLUX/EOG

Mailing Address: 800 Field

Phone #:                     

email or Fax#:                     

QA/QC Package:                     

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance ☐ NELAC ☐ Other

☐ EDD (Type)                     

Turn-Around Time: Same-Day

☐ Standard ☒ Rush

Project Name: IRISH HILLS PIPELINE

Project #: 22E-00716-02

Project Manager: Charles Dixon

Sampler: CD

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp (including CFI): 1 - 0.1 = 1.0 (°C)

Container Type and # 4 02

Preservative Type ICE

HEAL No. 23040850

-001

-002

-003

-004

-005

-006

-007

Date: 4/3 Time: 1045

Date: 4/3/23 Time: 1900

Relinquished by: [Signature]

Relinquished by: [Signature]

Received by: [Signature] Date: 4/3/23 Time: 1045

Received by: [Signature] Date: 4/4/23 Time: 7:25

## Analysis Request

BTX / MTBE / TMBs (8021) ✓

TPH:8015D(GRO / DRO / MRO) ✓

8081 Pesticides/8082 PCBs ✓

EDB (Method 504.1) ✓

PAHs by 8310 or 8270SIMS ✓

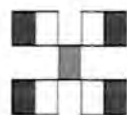
RCRA 8 Metals ✓

Cl<sup>-</sup>, Br<sup>-</sup>, NO<sub>3</sub><sup>-</sup>, NO<sub>2</sub><sup>-</sup>, PO<sub>4</sub><sup>3-</sup>, SO<sub>4</sub><sup>2-</sup> ✓

8260 (VOA) ✓

8270 (Semi-VOA) ✓

Total Coliform (Present/Absent) ✓



# HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

**From:** Chase Settle  
**To:** Hamlet, Robert, EMNRD; Michael Moffitt  
**Subject:** RE: [EXTERNAL] RE: NAB1811529351 IRISH HILLS YESO NM FEDERAL #001 @ 30-015-23326  
**Date:** Friday, September 15, 2023 9:49:35 AM  
**Attachments:** image002.png  
image003.png

Yes sir, glad I could help clear it up.

Chase

---

**From:** Hamlet, Robert, EMNRD <Robert.Hamlet@emnrd.nm.gov>  
**Sent:** Friday, September 15, 2023 9:48 AM  
**To:** Chase Settle <Chase\_Settle@eogresources.com>; Michael Moffitt <MMoffitt@vertex.ca>  
**Subject:** RE: [EXTERNAL] RE: NAB1811529351 IRISH HILLS YESO NM FEDERAL #001 @ 30-015-23326

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

The coordinates in OCD Permitting put the incident in "High Karst", which didn't agree with the report. Figured something wasn't quite right. I'll change the location in OCD Permitting, so there's no confusion in the future. Thanks Chase!

**Robert Hamlet** • Environmental Specialist - Advanced  
Environmental Bureau  
EMNRD - Oil Conservation Division  
506 W. Texas Ave. | Artesia, NM 88210  
575.909.0302 | [robert.hamlet@state.nm.us](mailto:robert.hamlet@state.nm.us)  
<http://www.emnrd.state.nm.us/OCD/>



---

**From:** Chase Settle <[Chase\\_Settle@eogresources.com](mailto:Chase_Settle@eogresources.com)>  
**Sent:** Friday, September 15, 2023 9:41 AM  
**To:** Hamlet, Robert, EMNRD <[Robert.Hamlet@emnrd.nm.gov](mailto:Robert.Hamlet@emnrd.nm.gov)>; Michael Moffitt <[MMoffitt@vertex.ca](mailto:MMoffitt@vertex.ca)>  
**Subject:** [EXTERNAL] RE: NAB1811529351 IRISH HILLS YESO NM FEDERAL #001 @ 30-015-23326

**CAUTION:** This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Mr. Hamlet,

When the original C-141 for the release was submitted it was tied to the closest well thought to provide fluids to the line since at that time all releases were being required to be associated to a well with an API for tracking. I've attached the original email from the NMOC Specialist at the time. The information on the Vertex report is correct as far as the actual remediation location. If you have any further questions please don't hesitate to contact me.

Thank you,

Chase

---

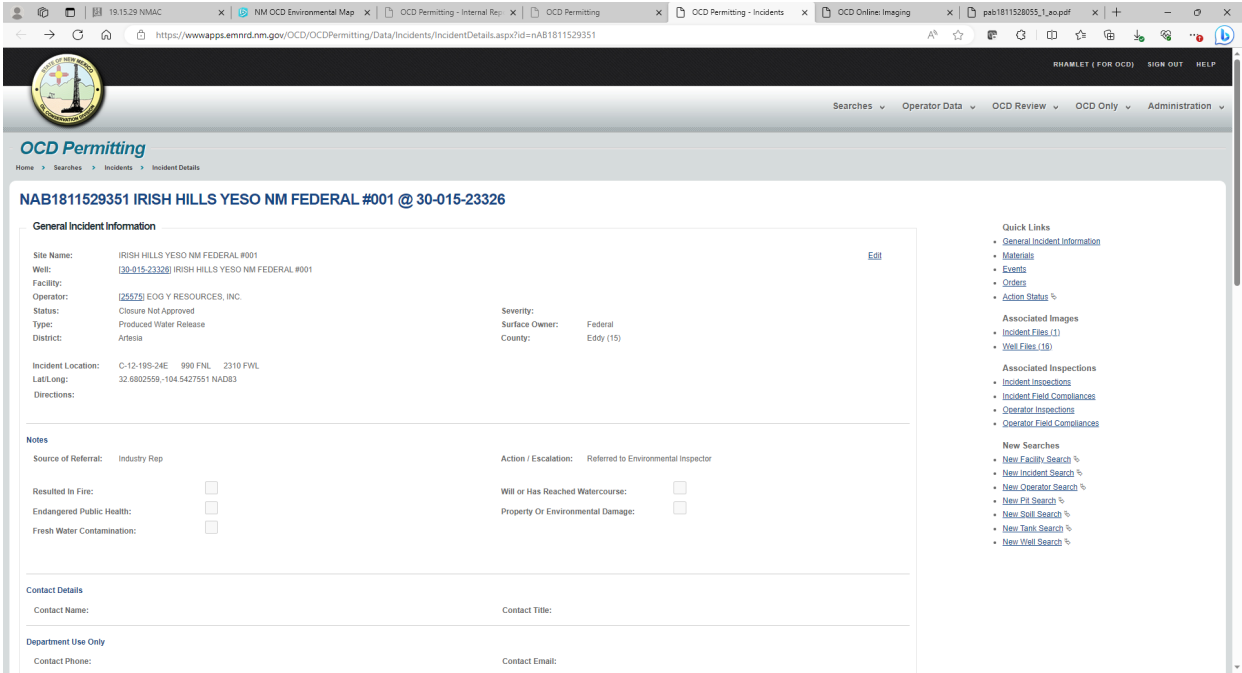
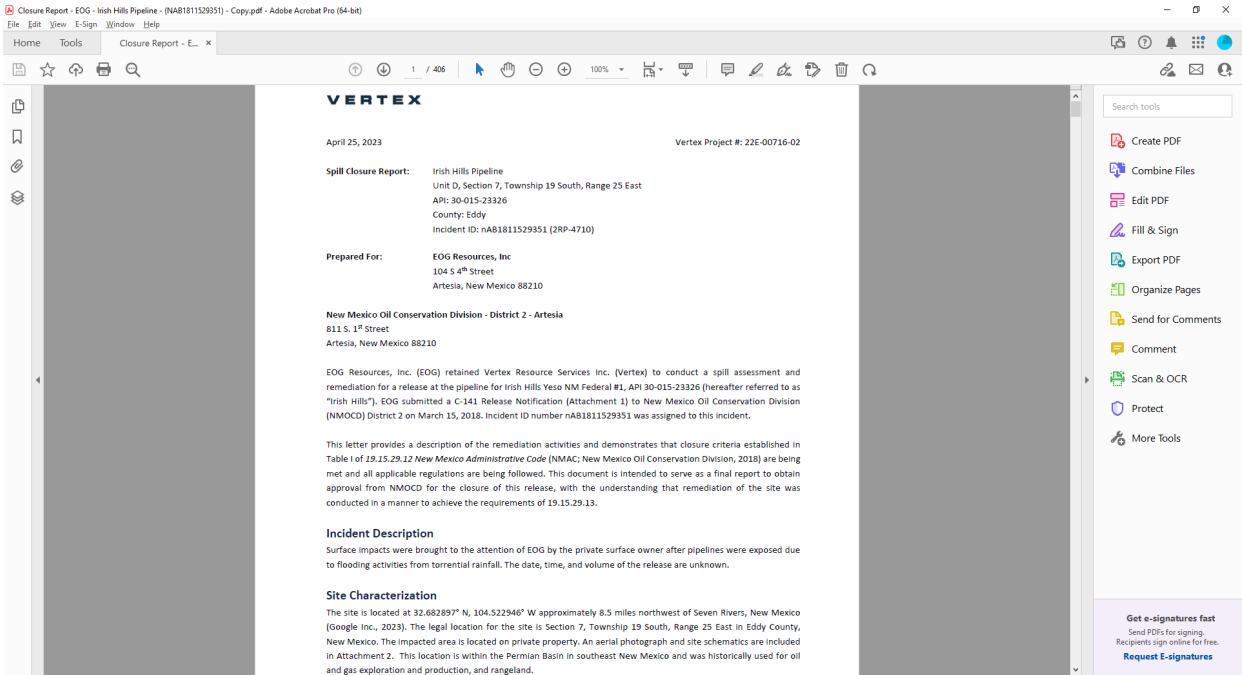
**From:** Hamlet, Robert, EMNRD <[Robert.Hamlet@emnrd.nm.gov](mailto:Robert.Hamlet@emnrd.nm.gov)>  
**Sent:** Friday, September 15, 2023 9:29 AM  
**To:** Chase Settle <[Chase\\_Settle@eogresources.com](mailto:Chase_Settle@eogresources.com)>; Michael Moffitt <[MMoffitt@vertex.ca](mailto:MMoffitt@vertex.ca)>  
**Subject:** NAB1811529351 IRISH HILLS YESO NM FEDERAL #001 @ 30-015-23326

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good Morning,

I was wondering if you could tell me which location is correct for this incident? The section township range and lat long are completely different from what OCD Permitting website has and what was submitted by Vertex on the corresponding report.

Thank you



**Robert Hamlet** • Environmental Specialist - Advanced  
Environmental Bureau  
EMNRD - Oil Conservation Division  
506 W. Texas Ave. | Artesia, NM 88210  
575.909.0302 | [robert.hamlet@state.nm.us](mailto:robert.hamlet@state.nm.us)  
<http://www.emnrd.state.nm.us/OCD/>





**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 212535

CONDITIONS

Operator: EOG RESOURCES INC P.O. Box 2267 Midland, TX 79702	OGRID: 7377
	Action Number: 212535
	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 #NAB1811529351 IRISH HILLS YESO NM FEDERAL #001, thank you. This closure is approved.	9/15/2023