



April 8, 2024
Kleinfelder Project No. 20231969.001A

Mr. Chris Patterson
Scout Energy Management, LLC
13800 Montfort Drive
Dallas, TX 75240

**SUBJECT: Site Investigation Report
 Scout Energy Management, LLC
 Orphan Location Closure
 Remediation Project Number: 22646
 Emerald 143 Pad
 Rio Blanco County, Colorado**

Dear Mr. Patterson:

Kleinfelder Inc. (Kleinfelder) performed soil sampling activities at the Emerald 143 Pad in Rio Blanco County, Colorado under contract by Scout Energy Management LLC (Scout). Enclosed is the site investigation report for this effort.

Please do not hesitate to contact me at (970) 309-6553 or by email at JVeith@Kleinfelder.com should you have questions or concerns.

Respectfully submitted,
KLEINFELDER, INC.

A handwritten signature in black ink that reads "Jordan Veith". The signature is written in a cursive, flowing style.

Jordan Veith
Project Manager I



**SITE INVESTIGATION REPORT
SCOUT ENERGY MANAGEMENT, LLC
ORPHAN LOCATION CLOSURE
REMEDATION PROJECT NUMBER: 22646
EMERALD 143 PAD
RIO BLANCO COUNTY, COLORADO**

KLEINFELDER PROJECT NO. 20231969.001A

April 8, 2024

**Copyright 2024 Kleinfelder
All Rights Reserved**

**ONLY THE CLIENT OR ITS DESIGNATED REPRESENTATIVES MAY USE THIS DOCUMENT AND ONLY FOR THE SPECIFIC PROJECT FOR WHICH THIS
REPORT WAS PREPARED.**

A Report Prepared for:

Scout Energy Management, LLC
13800 Montfort Drive
Dallas, TX 75240

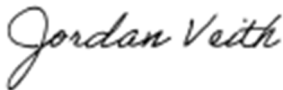
**SITE INVESTIGATION REPORT
SCOUT ENERGY MANAGEMENT, LLC
ORPHAN LOCATION CLOSURE
REMEDATION PROJECT NUMBER: 22646
EMERALD 143 PAD
RIO BLANCO COUNTY, COLORADO**

Prepared by:



Trevor Lakin
Environmental Scientist

Reviewed by:



Jordan Veith
Project Manager I

KLEINFELDER
707 17th Street, Suite 3000
Denver, Colorado 80202
P|303.237.6601
F|303.237.6602

April 8, 2024
Kleinfelder Project No. 20231969.001A

Contents		<u>Page</u>
1	INTRODUCTION	1
2	SITE LOCATION AND GEOLOGIC SETTING	2
3	FIELD ACTIVITIES.....	3
4	RESULTS	5
5	CONCLUSIONS AND RECOMMENDATIONS	6
6	LIMITATIONS	7

FIGURES

- 1 Topographical Map
- 2 Sample Location Map

TABLES

- 1 Soil Sample Summary
- 2 Soil Analytical Results

APPENDICES

- A Approved ECMC Form 27 Site Investigation and Remediation Workplan (Initial)
- B Laboratory Analytical Results
- C Rangely Area Background Sampling Report

**SITE INVESTIGATION REPORT
SCOUT ENERGY MANAGEMENT, LLC
ORPHAN LOCATION CLOSURE
REMEDIATION PROJECT NUMBER: 22646
EMERALD 143 PAD
RIO BLANCO COUNTY, COLORADO**

1 INTRODUCTION

This document was prepared by Kleinfelder Inc. (Kleinfelder) on behalf of Scout Energy Management, LLC (Scout) to provide documentation of recent sampling support services conducted at the Emerald 143 Pad in Rio Blanco County, Colorado (**Figure 1**).

Kleinfelder has been contracted by Scout to perform soil sampling support services to provide necessary information to complete the Colorado Energy and Carbon Management Commission (ECMC) Form 27 for their orphan locations within the Piceance Basin. Scout proposed to collect soil samples from four (4) different locations at the Emerald 143 Pad and to compare them to ECMC Table 915-1 Residential Soil Screening Levels (RSSLs) to determine the extent of the potential impacts prior to abandonment and final reclamation.

In June 2022, Scout acquired the Whiting Oil & Gas Corporation (Whiting) assets in this area and took ownership of the orphan locations formerly owned and maintained by Whiting. Prior to Scout's acquisition of Whiting, Whiting submitted approved ECMC Form 27 (Site Investigation and Remediation Workplan – Document # 402981077) as an initial notification to abandon the Emerald 143 (API #103-07292) orphan wellhead (refer to **Appendix A**). Scout proposed field screening and the collection of samples at the area of concern (AOC), the wellhead, and the tailings pile. Soil samples were analyzed by Pace Analytical National Laboratory (Pace) and the results are reported herein.

2 SITE LOCATION AND GEOLOGIC SETTING

The Emerald 143 Pad is located within the Piceance Basin in Rio Blanco County, Colorado (NWNE, Section 26, Township 2 North, Range 103 West) (**Figure 1**). The Piceance Basin is a geologic structural basin consisting of sandstones and siltstones, containing reserves of coal, natural gas, and oil shale.

No surface water or groundwater were encountered during Kleinfelder's soil sampling activities. Adjacent land was observed to be rangeland. The general soil type within the project area was classified based on Kleinfelder's field observations using the Unified Soil Classification System (USCS) and were observed to be silty gravels, gravel-sand-silt mixtures. Topographical information is provided on **Figure 1**.

3 FIELD ACTIVITIES

As prescribed within the approved ECMC Form 27 Site Investigation and Remediation Workplan, Kleinfelder performed the following field activities at the Emerald 143 Pad on November 1, 2022:

- Field screened all soil sample locations using olfactory and visual observations and photoionization detector (PID);
- Collected one (1) grab soil sample from the excavated AOC footprint at 6 feet below ground surface (bgs);
- Collected one (1) grab soil sample adjacent to the Emerald 143 wellhead at 2 feet bgs;
- Collected one (1) grab soil sample from the tailings pile associated with the AOC and wellhead;
- Collected one (1) 5-point composite soil sample from the tailings pile associated with the AOC and wellhead; and
- Shipped soil samples to Pace to analyze for the ECMC Table 915-1 contaminants of concern, excluding polycyclic aromatic hydrocarbon (PAHs) analytes. As per the initial Form 27 (**Appendix A**), ECMC approved Whiting's request to exclude PAHs from the analyte suite.

Prior to Kleinfelder's soil screening and sampling activities, Scout identified all soil sample locations. Soil samples were collected from a stainless-steel hand trowel and placed into two laboratory-supplied, 9-ounce jars with Teflon lids per sample. Each sample was collected directly from the hand trowel from the appropriate depth and placed into the glass jars. The samples were immediately placed on ice in a cooler. Standard chain-of-custody (COC) procedures were used during sampling and transportation to Pace in Mount Juliet, Tennessee (via FEDEX). Site soil samples were analyzed for contaminants of concern listed in ECMC Table 915-1, excluding PAHs. Kleinfelder used an EOS Arrow 100 Submeter Global Navigation Satellite System (GNSS) receiver to record latitude and longitude at the sample location. Sample locations are shown on **Figure 2**.

Sampling equipment (i.e., stainless-steel hand trowel, soil sampler, etc.) was washed with a solution of Liquinox® detergent, rinsed with tap water, and then distilled water between samples. During soil sampling activities, Kleinfelder documented staining and/or odor observations, if any, and screened the soil with a PID. Kleinfelder placed the soil into a Ziploc® plastic bag directly from the hand trowel for

screening with the PID. The PID is owned and maintained by Kleinfelder. Prior to use, Kleinfelder calibrated the PID, which passed calibration. Soil sample conditions and locations are provided in **Table 1**.

4 RESULTS

Kleinfelder observed soil conditions within the orphan location areas during the soil sampling activities. Hydrocarbon odors and soil staining were not observed at any of the sample locations. PID readings from all sample locations were below 1 part per million (ppm). **Table 1** summarizes the samples and associated field observations.

While the project was under Whiting ownership, background soil samples were collected by Kleinfelder and HRL Compliance Solutions (HRL) from seventeen (17) different locations within the proximity of the orphan locations, see **Appendix C**. Analytical results are summarized in **Table 2** and were compared to background samples and ECMC Table 915-1 RSSLs as requested by Scout. The sample analytical results did not exceed the ECMC Table 915-1 RSSLs and background levels in the assessment performed on November 1, 2022. Site assessment and background laboratory reports are provided in **Appendix B** and **C**. Sample locations are shown on **Figure 2**.

5 CONCLUSIONS AND RECOMMENDATIONS

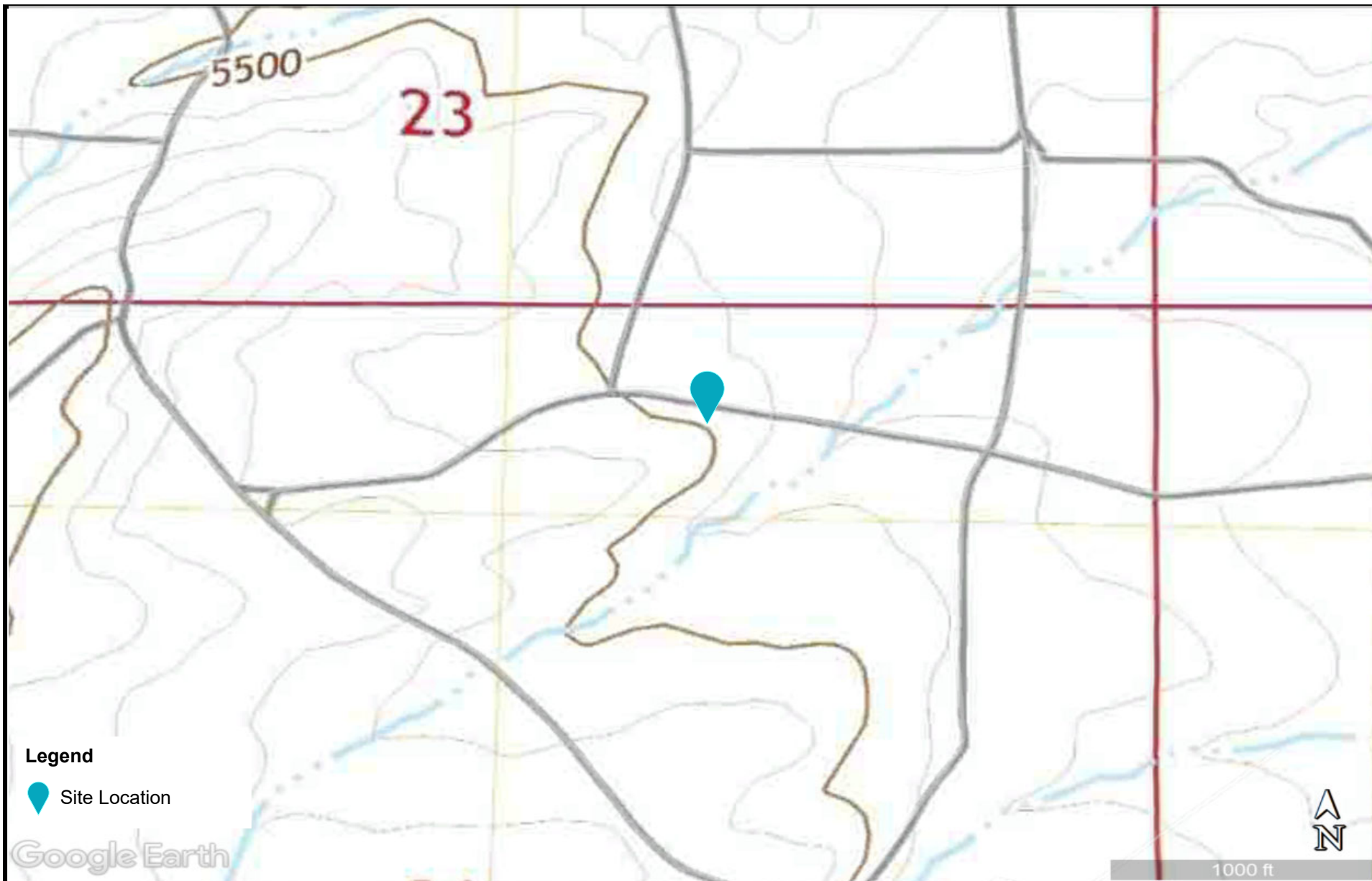
Site soil conditions and soil sample laboratory analytical results are provided in **Table 1** and **Table 2**. Based on the results of the assessment of the soil conditions at the AOC, wellhead, and tailings pile, the location does not demonstrate any exceedances for ECMC Table 915-1 RSSLs. Therefore, Kleinfelder recommends Scout request a No Further Action approval associated with the site investigation or remediation activities at the Emerald 143 Pad.


6 LIMITATIONS

Kleinfelder offers various levels of investigative and engineering services to suit the varying needs of different clients. It should be recognized that definition and evaluation of geologic and environmental conditions are a difficult and inexact science. Judgments leading to conclusions and recommendations are generally made with incomplete knowledge of the subsurface conditions present due to the limitations of data from field studies. Although risk can never be eliminated, more detailed and extensive studies yield more information, which may help understand and manage the level of risk. Since detailed study and analysis involves greater expense, our clients participate in determining levels of service that provide adequate information for their purposes at acceptable levels of risk. More extensive studies, including subsurface studies or field tests, should be performed to reduce uncertainties. Acceptance of this report will indicate that Scout has reviewed the document and determined that it does not need or want a greater level of service than provided.


During the course of the performance of Kleinfelder's services, hazardous materials may have been discovered. Kleinfelder assumes no responsibility or liability whatsoever for any claim, loss of property value, damage, or injury that results from pre-existing hazardous materials being encountered or present on the project site, or from the discovery of such hazardous materials. Nothing contained in this report should be construed or interpreted as requiring Kleinfelder to assume the status of an owner, operator, or generator, or person who arranges for disposal, transport, storage, or treatment of hazardous materials within the meaning of any governmental statute, regulation, or order. Scout is solely responsible for directing notification of all governmental agencies, and the public at large, of the existence, release, treatment, or disposal of any hazardous materials observed at the project site, either before or during performance of Kleinfelder's services. Scout is responsible for directing all arrangements to lawfully store, treat, recycle, dispose, or otherwise handle hazardous materials, including cuttings and samples resulting from Kleinfelder's services.

FIGURES



 <p>KLEINFELDER <i>Bright People. Right Solutions.</i></p> <p>www.kleinfelder.com</p>	PROJECT NO.	20231969.001A	Topographical Map	FIGURE 1
	DRAWN:	3/21/2024		
	DRAWN BY:	T. Lakin		
	CHECKED BY:	J. Veith	Scout Energy Management LLC Remediation Project Number: 22646 Emerald 143 Pad NWNE Sec. 26 T2N R103W Rio Blanco County, Colorado	
	FILE NAME:	Topographical Map.pub		



 <p>KLEINFELDER <i>Bright People. Right Solutions.</i></p> <p>www.kleinfelder.com</p>	PROJECT NO.	20231969.001A	Sample Location Map	FIGURE 2
	DRAWN:	3/21/2024		
	DRAWN BY:	T. Lakin		
	CHECKED BY:	J. Veith	Scout Energy Management, LLC Remediation Project Number: 22646 Emerald 143 Pad NWNE Sec. 26 T2N R103W Rio Blanco County, Colorado	
	FILE NAME:	Sample Map.pub		

TABLES



TABLE 1 - SOIL SAMPLE SUMMARY
SCOUT ENERGY MANAGEMENT, LLC
EMERALD 143 PAD
NWNE SEC. 26 T2N R103W
RIO BLANCO COUNTY, COLORADO

Sample ID	Sample Matrix	Latitude	Longitude	PID Reading (PPM)	Hydrocarbon Odor Detected (Y/N)	Soil Staining Observed (Y/N)	Comments
20221101_Emerald 143_WH@2ft	Soil	40.119881	-108.920372	< 1	N	N	None
20221101_Emerald 143_AOC@6ft	Soil	40.119843	-108.920196	< 1	N	N	None
20221101_Emerald 143_TP_COMP	Soil	40.119758	-108.920301	< 1	N	N	None
20221101_Emerald 143_TP_DIS	Soil	40.119758	-108.920301	< 1	N	N	None

Notes:

PID = Photo-ionization Detector

PPM = Parts per million

TABLE 2- SOIL ANALYTICAL RESULTS
SCOUT ENERGY MANAGEMENT, LLC
REMEDIATION PROJECT #22646
EMERALD 143 PAD
RIO BLANCO COUNTY, COLORADO

Location		Emerald 143			
Sample Date		11/1/2022			
Contaminant of Concern	ECMC Table 915-1 Residential Soil Screening Levels Cleanup Concentration (mg/kg unless otherwise noted)	20221101_Emerald 143_AOC@6ft	20221101_Emerald 143_TP_COMP	20221101_Emerald 143_TP_DIS	20221101_Emerald 143_WH@2ft
Soil TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons)	500	27.095	86.705	138.697	419.487
GRO (C6-C10)		0.405	0.405	0.397	0.487
DRO (C10-C28)		7.69	23.3	42.2	107
MRO (C28-36)		19.0	63.0	96.1	312
Soils and Groundwater - liquid hydrocarbons including condensate and oil	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits
Electrical conductivity (EC) (by saturated paste method)	<4mmhos/cm	3.320	3.750	3.290	3.690
Sodium adsorption ratio (SAR) (by saturated paste method)	<6 SAR units	3.63	4.00	4.04	5.54
pH (by saturated paste method)	6-8.3 pH units	7.48 T8	7.47 T8	7.61 T8	7.57 T8
Boron (hot water soluble soil extract)	2 mg/L	0.992	1.41	1.42	0.927
Organic Compounds in Soils					
benzene	1.2	U	U	U	U
toluene	490	U	U	U	U
ethylbenzene	5.8	U	U	U	U
xylene (sum of o-, m- and p-isomers = total xylenes)	58	U	U	U	U
1,2,4-trimethylbenzene	30	U	U	U	U
1,3,5-trimethylbenzene	27	U	U	U	U
acenaphthene	360	NM	NM	NM	NM
anthracene	1800	NM	NM	NM	NM
benz(a)anthracene	1.1	NM	NM	NM	NM
benzo(b)fluoranthene	1.1	NM	NM	NM	NM
benzo(k)fluoranthene	11	NM	NM	NM	NM
benzo(a)pyrene	0.11	NM	NM	NM	NM
chrysene	110	NM	NM	NM	NM
dibenz(a,h)anthracene	0.11	NM	NM	NM	NM
fluoranthene	240	NM	NM	NM	NM
fluorene	240	NM	NM	NM	NM
indeno(1,2,3-cd)pyrene	1.1	NM	NM	NM	NM
pyrene	180	NM	NM	NM	NM
1-methylnaphthalene	18	NM	NM	NM	NM
2-methylnaphthalene	24	NM	NM	NM	NM
naphthalene	2	NM	NM	NM	NM
Metals in Soils					
arsenic	0.68	6.64	7.00	6.83	7.52
barium	15000	142	176	152	137
cadmium	71	0.683	0.808	0.750	0.939
chromium (VI)	0.3	U	U	U	U
copper	3100	15.8	17.8	16.7	20.5
lead	400	17.2	21.2	19.0 O1	38.4
nickel	1500	21.2	23.7	22.0 O1	25.3
selenium	390	U	0.775 J	U	1.35 J
silver	390	U	U	U	U
zinc	23000	71.8	81.0	77.6 I6 O1	87.9

See next page for additional details on table footnotes



	Greater than ECMC Table 915-1 Standards
	Greater than ECMC Table 915-1 Standards, but less than adjusted standards (Highest background level is the adjusted standard for inorganics; 1.25X highest background level for metals).

AOC = Area of Concern
B = The same analyte is found in the associated blank
COMP = Composite Sample
DIS = Discrete Sample
ft = feet
FWP = Fresh Water Pond
GS = Ground Surface
J = The identification of the analyte is acceptable; the reported value is an estimate
J3 = The associated batch QC was outside the established quality control range for precision
ND = Not Detected
NM = Not Measured
Q1 = The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference
P1 = RPD value not applicable for sample concentrations less than 5 times the reporting limit
U = Not detected at the Reporting Limit (or MDL where applicable)
T8 = Sample(s) received past/too close to holding time expiration
TP = Tailings Pile
WH = Wellhead

APPENDIX A
ECMC FORM 27 SITE INVESTIGATION AND REMEDIATION WORKPLAN (INITIAL)

State of Colorado Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203
Phone: (303) 894-2100 Fax: (303) 894-2109



Document Number:

402981077

Receive Date:

03/10/2022

Report taken by:

John Heil

Site Investigation and Remediation Workplan (Initial Form)

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. However, this shall not preclude the Operator from taking immediate action to protect public health or safety, the environment, wildlife, or livestock.

This Form 27 describes site conditions as currently understood by the Operator; approval of this Form 27 by COGCC is based on the site conditions accurately described herein; any changes in site conditions identified during or subsequent to the performance of the approved workplan may necessitate additional investigation or remediation which shall be described on a supplemental Form 27. This Form 27 is intended to provide basic information regarding the proposed site investigation and remediation actions, but the workplan may be more fully described in attached documentation.

Closure request is not available for an Initial Site Investigation and Remediation Workplan.

OPERATOR INFORMATION

Name of Operator: WHITING OIL & GAS CORPORATION	Operator No: 96155	Phone Numbers Phone: (432) 6616647 Mobile: (432) 6616647
Address: 1700 LINCOLN STREET SUITE 4700		
City: DENVER	State: CO Zip: 80290	
Contact Person: Kyle Waggoner	Email: kyle.waggoner@whiting.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 22646 Initial Form 27 Document #: 402981077

PURPOSE INFORMATION

- ☐ Rule 913.c.(1): Pit or Cuttings Trench closure.
- ☐ Rule 913.c.(2): Buried or partially buried vessel closure, which will be by removal.
- ☐ Rule 913.c.(3): Remediation of Spill and Releases pursuant to Rule 912.
- ☐ Rule 913.c.(4): Land treatment of Oily Waste pursuant to Rule 905.e.
- ☐ Rule 913.c.(5): Closure of Centralized E&P Waste Management Facilities pursuant to Rule 907.h.
- ☐ Rule 913.c.(6): Remediation of impacted Groundwater pursuant to Rule 915.e.(3).D, and the contaminant concentrations in Table 915-1.
- ☐ Rule 913.c.(7): Investigation and remediation of natural gas in soil or Groundwater.
- ☐ Rule 913.c.(8): When requested by the Director due to any potential risk to soil, Groundwater, or surface water.
- ☒ Rule 913.c.(9): Decommissioning of Oil and Gas Facilities.
- ☐ Rule 913.g: Changes of Operator.
- ☐ Rule 915.b: Request to leave elevated inorganics in situ.
- ☐ Other: _____

SITE INFORMATION

No Multiple Facilities

Facility Type: WELL	Facility ID: _____	API #: 103-07292	County Name: RIO BLANCO
Facility Name: EMERALD 143	Latitude: 40.119875	Longitude: -108.920347	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWNE	Sec: 26	Twp: 2N	Range: 103W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications GM Most Sensitive Adjacent Land Use Livestock Grazing

Is domestic water well within 1/4 mile? No Is surface water within 1/4 mile? No

Is groundwater less than 20 feet below ground surface? No

SITE INVESTIGATION PLAN

TYPE OF WASTE:

☒ E&P Waste ☐ Other E&P Waste ☐ Non-E&P Waste

☐ Produced Water

☐ Workover Fluids

☐ Oil

☐ Tank Bottoms

☐ Condensate

☐ Pigging Waste

☐ Drilling Fluids

☐ Rig Wash

☒ Drill Cuttings

☐ Spent Filters

☐ Pit Bottoms

☐ Other (as described by EPA)

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
UNDETERMINED	SOILS	Unknown	Field Screening via PID and visual

INITIAL ACTION SUMMARY

Description of initial action or emergency response measures take to abate, investigate, and/or remediate impacts associated with E&P Waste.

In accordance with Rule 911.a we are submitting this Form 27 to close the orphan well pad. Historically in this area we have occasionally encountered what appears to be historical drill cuttings remaining adjacent to the wells. This Form 27 workplan is being submitted to address the cuttings if encountered.

PROPOSED SAMPLING PLAN

Proposed Soil Sampling

☒ Will soil samples be collected as part of this investigation? (Number, type (grab/composite), analyses, and locations of samples):

Whiting has collected >70 discrete confirmation samples and analyzed them for the full Table 915-1 Cleanup Concentrations during the assessment and remediation at multiple indistinguishable orphan well sites in the same field. Upon review of this data the PAH by EPA Method 8270D results consistently (in over 70+ samples) found impacts from non-detect to significantly lower than Table 915-1 cleanup concentration levels (see attached cumulative Confirmation Sample Result Table). Based upon these results Whiting is proposing a Modified Table 915-1 analysis suite that does not include the PAH analytes as it is not a constituent of concern at these sites. All other Table 915-1 analytes will be included in the Modified Table 915-1 Cleanup Concentrations. (see continued sampling plan under comments...)

Proposed Groundwater Sampling

☐ Will groundwater samples be collected as part of this investigation? (Number, analyses, and locations of samples):

Proposed Surface Water Sampling

☐ Will surface water samples be collected as part of this investigation? (Number, analyses, and locations of samples):

Additional Investigative Actions

☐ Additional alternative investigative actions described in attached Site Investigation Plan (summary):

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected _____ 0
Number of soil samples exceeding 915-1 _____
Was the areal and vertical extent of soil contamination delineated? _____
Approximate areal extent (square feet) _____

NA / ND

_____ Highest concentration of TPH (mg/kg) _____
_____ Highest concentration of SAR _____
_____ BTEX > 915-1 _____
_____ Vertical Extent > 915-1 (in feet) _____

Groundwater

Number of groundwater samples collected _____ 0
Was extent of groundwater contaminated delineated? No _____
Depth to groundwater (below ground surface, in feet) _____
Number of groundwater monitoring wells installed _____
Number of groundwater samples exceeding 915-1 _____

_____ Highest concentration of Benzene (µg/l) _____
_____ Highest concentration of Toluene (µg/l) _____
_____ Highest concentration of Ethylbenzene (µg/l) _____
_____ Highest concentration of Xylene (µg/l) _____
_____ Highest concentration of Methane (mg/l) _____

Surface Water

_____ 0 Number of surface water samples collected
_____ 0 Number of surface water samples exceeding 915-1
If surface water is impacted, other agency notification may be required.

OTHER INVESTIGATION INFORMATION

☐ Were impacts to adjacent property or offsite impacts identified?

☐ Were background samples collected as part of this site investigation?

☐ Was investigation derived waste (IDW) generated as part of this investigation?

Volume of solid waste (cubic yards) _____ Volume of liquid waste (barrels) _____

☐ Is further site investigation required?

REMEDIAL ACTION PLAN

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

If encountered the cuttings will be removed via a combination of mechanical and hand excavation in an effort to minimize disturbing the surrounding vegetation. The removed cuttings will be staged onsite.

REMEDIATION SUMMARY

Describe how remediation of existing impacts to soil and groundwater is to be accomplished (i.e. summarize remedial action plan). Provide a brief narrative description including: technical justification, schedule for implementation, estimated time to attain NFA status, plus plans and specifications for the selected remedial action technology.

If encountered the cuttings (or any impacted material) will be staged and shredded onsite adjacent to the wells. The cuttings will then be processed through a soil shredder with a combination of soil and/or amendments at a ratio necessary to achieve Modified Table 915-1 Cleanup Concentrations.

Soil Remediation Summary

☐ In Situ

☐ Ex Situ

_____ Bioremediation (or enhanced bioremediation)

_____ Excavate and offsite disposal

_____ Chemical oxidation

If Yes: Estimated Volume (Cubic Yards) _____

_____ Air sparge / Soil vapor extraction
_____ Natural Attenuation
_____ Other _____

_____ Name of Licensed Disposal Facility or COGCC Facility ID # _____

_____ Excavate and onsite remediation
_____ Land Treatment
_____ Bioremediation (or enhanced bioremediation)
_____ Chemical oxidation
_____ Other _____

Groundwater Remediation Summary

_____ Bioremediation (or enhanced bioremediation)
_____ Chemical oxidation
_____ Air sparge / Soil vapor extraction
_____ Natural Attenuation
_____ Other _____

GROUNDWATER MONITORING

If groundwater has been impacted, describe proposed monitoring plan, including # of wells or sample points, monitoring schedule, analytical methods, points of compliance. Attach a groundwater monitoring location diagram.

REMEDATION PROGRESS UPDATE

PERIODIC REPORTING

Approved Reporting Schedule:

☐ Quarterly ☐ Semi-Annually ☐ Annually ☐ Other _____

☐ **Request Alternative Reporting Schedule:**

☐ Semi-Annually ☐ Annually ☐ Other _____

Rule 913.e:

After initial approval of a Form 27, the Operator will provide quarterly update reports in a Supplemental Form 27 to document progress of site investigation and remediation, unless an alternative reporting schedule has been requested by the Operator and approved by the Director. The Director may request a more frequent reporting schedule based on site-specific conditions.

Report Type: ☐ Groundwater Monitoring ☐ Land Treatment Progress Report ☐ O&M Report
☐ Other _____

WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? _____

Describe beneficial use, if any, of E&P Waste derived from this remediation project:

Volume of E&P Waste (solid) in cubic yards _____

E&P waste (solid) description _____

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: _____

Volume of E&P Waste (liquid) in barrels _____

E&P waste (liquid) description _____

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: _____

RECLAMATION PLAN

RECLAMATION PLANNING

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing.

The location will be reclaimed to the present grade of the location or to the approximate original contour of the landscape and consistent with the 1000-series Rule. Seeding of the disturbed area will be performed in accordance with its intended use. The seed mix will be prescribed by the landowner. There are no known noxious weeds in the immediate area of the disturbance.

Is the described reclamation complete? _____

Does the reclamation described herein constitute interim or final reclamation of the Oil and Gas Location?

☐ Interim ☐ Final

Did the Surface Owner provide the seed mix? _____

If YES, does the seed mix comply with local soil conservation district recommendations? _____

Did the local soil conservation district provide the seed mix? _____

SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. _____

Proposed date of completion of Reclamation. _____

IMPLEMENTATION SCHEDULE

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

PRIOR DATES

Date of Surface Owner notification/consultation, if required. _____

Actual Spill or Release date, or date of discovery. _____

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 06/14/2022

Proposed site investigation commencement. _____

Proposed completion of site investigation. _____

REMEDIAL ACTION DATES

Proposed start date of Remediation. _____

Proposed date of completion of Remediation. _____

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

☐ Change from approved implementation schedule per Rule 913.d.(2).

Basis for change in implementation schedule:

OPERATOR COMMENT

(Sampling plan continued) ... If cuttings or other impacts are discovered via field screening are encountered a minimum of 1 grab sample from below the cuttings after removal will be collected and submitted for laboratory analysis of Modified Table 915-1 to confirm that the extents of the cuttings have been removed to <Table 915-1 Cleanup Concentrations levels. In addition, a minimum of one (1) discrete sample will be collected from the treated cuttings and submitted for laboratory analysis of Modified Table 915-1 to document that any potential residual impacts are <Table 915-1 Cleanup Concentrations. In addition, one sample will be collected at the wellhead and analyzed for Modified Table 915-1.

I hereby certify all statements made in this form are to the best of my knowledge true, correct, and complete.

Signed: Kyle Waggoner

Title: Reclamation Coordinator

Submit Date: 03/10/2022

Email: kyle.waggoner@whiting.com

Based on the information provided herein, this Application for Site Investigation and Remediation Workplan complies with COGCC Rules and applicable orders and is hereby approved.

COGCC Approved: John Heil

Date: 03/31/2022

Remediation Project Number: 22646

Condition of Approval**COA Type****Description**

	Operator shall comply with Rule 913.b.(2) and conduct sampling and analysis of soil and Groundwater (if encountered or a pathway to groundwater is determined) pursuant to Rule 915 to determine the horizontal and vertical extent of any contamination in excess of the cleanup concentrations in Table 915-1 or in WQCC Regulation 41 numeric and narrative Groundwater quality standards and classifications, as incorporated by reference in Rule 901.b.
1 COA	

Attachment Check List

Upon approval, the approved Form 27 and all listed attachments will be indexed to the Remediation Project file. Only the approved Form 27 will also be indexed to the related Facilities.

Att Doc Num**Name**

402981077	FORM 27-INITIAL-SUBMITTED
402981096	ANALYTICAL RESULTS
402981097	ANALYTICAL RESULTS

Total Attach: 3 Files

General Comments**User Group****Comment****Comment Date**

Environmental	Based on the analytical provided, COGCC approves the requested reduced analyte suite of Table 915-1 not including PAHs by EPA Method 8270D.	03/31/2022
---------------	---	------------

Total: 1 comment(s)

APPENDIX B
LABORATORY ANALYTICAL RESULTS

Scout Energy - Rangely, CO

Sample Delivery Group: L1553783
Samples Received: 11/03/2022
Project Number: 20231969.001A
Description: Emerald 143 Closure
Site: EMERALD 143
Report To: Chris Patterson
100 Chevron Road
Rangely, CO 81648

Entire Report Reviewed By:



Chris Ward
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page	1
Tc: Table of Contents	2
Ss: Sample Summary	3
Cn: Case Narrative	5
Sr: Sample Results	6
20221101_EMERALD 143_WH@2FT L1553783-01	6
20221101_EMERALD 143_AOC@6FT L1553783-02	8
20221101_EMERALD 143_TP_DIS L1553783-03	10
20221101_EMERALD 143_TP_COMP L1553783-04	12
Qc: Quality Control Summary	14
Wet Chemistry by Method 7199	14
Wet Chemistry by Method 9045D	15
Wet Chemistry by Method 9050AMod	16
Metals (ICP) by Method 6010B	18
Metals (ICP) by Method 6010B-NE493 Ch 2	20
Metals (ICPMS) by Method 6020	21
Volatile Organic Compounds (GC) by Method 8015D/GRO	22
Volatile Organic Compounds (GC/MS) by Method 8260B	24
Semi-Volatile Organic Compounds (GC) by Method 8015M	26
Gl: Glossary of Terms	27
Al: Accreditations & Locations	28
Sc: Sample Chain of Custody	29

¹ Cp
² Tc
³ Ss
⁴ Cn
⁵ Sr
⁶ Qc
⁷ Gl
⁸ Al
⁹ Sc

SAMPLE SUMMARY

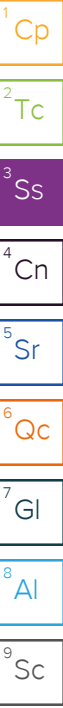
20221101_EMERALD 143_WH@2FT L1553783-01 Solid

Collected by
Jordan Veith

Collected date/time
11/01/22 15:20

Received date/time
11/03/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1960423	1	11/21/22 13:17	11/21/22 13:17	ABL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1955841	1	11/08/22 12:03	11/09/22 14:21	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1955793	1	11/11/22 07:30	11/11/22 09:30	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1958603	1	11/12/22 09:29	11/15/22 09:30	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1957683	1	11/12/22 18:19	11/14/22 13:19	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1954271	1	11/06/22 16:01	11/12/22 00:38	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1957686	5	11/12/22 18:30	11/14/22 19:01	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1954988	1	11/04/22 18:42	11/09/22 09:59	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1956483	1	11/04/22 18:42	11/09/22 07:39	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1955899	1	11/09/22 16:34	11/10/22 10:55	KAP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1955899	10	11/09/22 16:34	11/10/22 11:49	KAP	Mt. Juliet, TN



20221101_EMERALD 143_AOC@6FT L1553783-02 Solid

Collected by
Jordan Veith

Collected date/time
11/01/22 15:30

Received date/time
11/03/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1960423	1	11/21/22 13:19	11/21/22 13:19	ABL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1955841	1	11/08/22 12:03	11/09/22 14:26	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1955793	1	11/11/22 07:30	11/11/22 09:30	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1958133	1	11/11/22 13:42	11/12/22 09:00	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1957683	1	11/12/22 18:19	11/14/22 13:22	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1954271	1	11/06/22 16:01	11/12/22 00:47	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1957686	5	11/12/22 18:30	11/14/22 19:05	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1954988	1	11/04/22 18:42	11/09/22 10:21	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1956483	1	11/04/22 18:42	11/09/22 08:01	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1955899	1	11/09/22 16:34	11/10/22 09:57	KAP	Mt. Juliet, TN

20221101_EMERALD 143_TP_DIS L1553783-03 Solid

Collected by
Jordan Veith

Collected date/time
11/01/22 15:40

Received date/time
11/03/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1960423	1	11/21/22 13:22	11/21/22 13:22	ABL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1955841	1	11/08/22 12:03	11/09/22 14:31	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1955793	1	11/11/22 07:30	11/11/22 09:30	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1958133	1	11/11/22 13:42	11/12/22 09:00	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1957683	1	11/12/22 18:19	11/14/22 12:15	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1957683	1	11/12/22 18:19	11/14/22 16:12	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1954271	1	11/06/22 16:01	11/12/22 00:50	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1957686	5	11/12/22 18:30	11/14/22 17:29	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1956749	1	11/04/22 18:42	11/09/22 20:01	AV	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1956483	1	11/04/22 18:42	11/09/22 08:22	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1955899	1	11/09/22 16:34	11/10/22 10:42	KAP	Mt. Juliet, TN

20221101_EMERALD 143_TP_COMP L1553783-04 Solid

Collected by
Jordan Veith

Collected date/time
11/01/22 15:50

Received date/time
11/03/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1960423	1	11/21/22 13:25	11/21/22 13:25	ABL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1955841	1	11/08/22 12:03	11/09/22 14:37	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1955793	1	11/11/22 07:30	11/11/22 09:30	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1958603	1	11/12/22 09:29	11/15/22 09:30	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1957683	1	11/12/22 18:19	11/14/22 13:24	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1954271	1	11/06/22 16:01	11/12/22 00:53	ABL	Mt. Juliet, TN

SAMPLE SUMMARY

20221101_EMERALD 143_TP_COMP L1553783-04 Solid

Collected by
Jordan Veith

Collected date/time
11/01/22 15:50

Received date/time
11/03/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020	WG1957686	5	11/12/22 18:30	11/14/22 19:08	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1956749	1	11/04/22 18:42	11/09/22 20:24	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1956638	1	11/04/22 18:42	11/09/22 14:32	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1955899	1	11/09/22 16:34	11/10/22 10:11	KAP	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

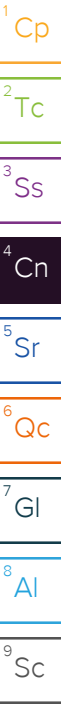
⁹Sc

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Chris Ward
Project Manager



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	5.54		1	11/21/2022 13:17	WG1960423

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	11/09/2022 14:21	WG1955841

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.57	T8	1	11/11/2022 09:30	WG1955793

Sample Narrative:

L1553783-01 WG1955793: 7.57 at 20C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	3690		10.0	1	11/15/2022 09:30	WG1958603

Sample Narrative:

L1553783-01 WG1958603: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	137		0.0852	0.500	1	11/14/2022 13:19	WG1957683
Cadmium	0.939		0.0471	0.500	1	11/14/2022 13:19	WG1957683
Copper	20.5		0.400	2.00	1	11/14/2022 13:19	WG1957683
Lead	38.4		0.208	0.500	1	11/14/2022 13:19	WG1957683
Nickel	25.3		0.132	2.00	1	11/14/2022 13:19	WG1957683
Selenium	1.35	J	0.764	2.00	1	11/14/2022 13:19	WG1957683
Silver	U		0.127	1.00	1	11/14/2022 13:19	WG1957683
Zinc	87.9		0.832	5.00	1	11/14/2022 13:19	WG1957683

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.927		0.0167	0.200	1	11/12/2022 00:38	WG1954271

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	7.52		0.100	1.00	5	11/14/2022 19:01	WG1957686

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.487		0.0217	0.100	1	11/09/2022 09:59	WG1954988
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	94.0			77.0-120		11/09/2022 09:59	WG1954988

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/kg	Qualifier	MDL ug/kg	RDL ug/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.467	1.00	1	11/09/2022 07:39	WG1956483
Toluene	U		1.30	5.00	1	11/09/2022 07:39	WG1956483
Ethylbenzene	U		0.737	2.50	1	11/09/2022 07:39	WG1956483
Xylenes, Total	U		0.880	6.50	1	11/09/2022 07:39	WG1956483
1,2,4-Trimethylbenzene	U		1.58	5.00	1	11/09/2022 07:39	WG1956483
1,3,5-Trimethylbenzene	U		2.00	5.00	1	11/09/2022 07:39	WG1956483
(S) Toluene-d8	107			75.0-131		11/09/2022 07:39	WG1956483
(S) 4-Bromofluorobenzene	99.0			67.0-138		11/09/2022 07:39	WG1956483
(S) 1,2-Dichloroethane-d4	91.1			70.0-130		11/09/2022 07:39	WG1956483

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	107		1.61	4.00	1	11/10/2022 10:55	WG1955899
C28-C36 Motor Oil Range	312		2.74	40.0	10	11/10/2022 11:49	WG1955899
(S) o-Terphenyl	60.4			18.0-148		11/10/2022 11:49	WG1955899
(S) o-Terphenyl	71.7			18.0-148		11/10/2022 10:55	WG1955899

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte					
Sodium Adsorption Ratio	3.63		1	11/21/2022 13:19	WG1960423

Wet Chemistry by Method 7199

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Hexavalent Chromium	U		0.255	1.00	1	11/09/2022 14:26	WG1955841

Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte	su				
pH	7.48	T8	1	11/11/2022 09:30	WG1955793

Sample Narrative:
L1553783-02 WG1955793: 7.48 at 20C

Wet Chemistry by Method 9050AMod

	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Analyte	umhos/cm		umhos/cm			
Specific Conductance	3320		10.0	1	11/12/2022 09:00	WG1958133

Sample Narrative:
L1553783-02 WG1958133: at 25C

Metals (ICP) by Method 6010B

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Barium	142		0.0852	0.500	1	11/14/2022 13:22	WG1957683
Cadmium	0.683		0.0471	0.500	1	11/14/2022 13:22	WG1957683
Copper	15.8		0.400	2.00	1	11/14/2022 13:22	WG1957683
Lead	17.2		0.208	0.500	1	11/14/2022 13:22	WG1957683
Nickel	21.2		0.132	2.00	1	11/14/2022 13:22	WG1957683
Selenium	U		0.764	2.00	1	11/14/2022 13:22	WG1957683
Silver	U		0.127	1.00	1	11/14/2022 13:22	WG1957683
Zinc	71.8		0.832	5.00	1	11/14/2022 13:22	WG1957683

Metals (ICP) by Method 6010B-NE493 Ch 2

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/l		mg/l	mg/l			
Hot Water Sol. Boron	0.992		0.0167	0.200	1	11/12/2022 00:47	WG1954271

Metals (ICPMS) by Method 6020

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Arsenic	6.64		0.100	1.00	5	11/14/2022 19:05	WG1957686

Volatile Organic Compounds (GC) by Method 8015D/GRO

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
TPH (GC/FID) Low Fraction	0.405		0.0217	0.100	1	11/09/2022 10:21	WG1954988
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	96.0			77.0-120		11/09/2022 10:21	WG1954988

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/kg	Qualifier	MDL ug/kg	RDL ug/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.467	1.00	1	11/09/2022 08:01	WG1956483
Toluene	U		1.30	5.00	1	11/09/2022 08:01	WG1956483
Ethylbenzene	U		0.737	2.50	1	11/09/2022 08:01	WG1956483
Xylenes, Total	U		0.880	6.50	1	11/09/2022 08:01	WG1956483
1,2,4-Trimethylbenzene	U		1.58	5.00	1	11/09/2022 08:01	WG1956483
1,3,5-Trimethylbenzene	U		2.00	5.00	1	11/09/2022 08:01	WG1956483
(S) Toluene-d8	107			75.0-131		11/09/2022 08:01	WG1956483
(S) 4-Bromofluorobenzene	97.8			67.0-138		11/09/2022 08:01	WG1956483
(S) 1,2-Dichloroethane-d4	89.4			70.0-130		11/09/2022 08:01	WG1956483

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	7.69		1.61	4.00	1	11/10/2022 09:57	WG1955899
C28-C36 Motor Oil Range	19.0		0.274	4.00	1	11/10/2022 09:57	WG1955899
(S) o-Terphenyl	54.3			18.0-148		11/10/2022 09:57	WG1955899

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	4.04		1	11/21/2022 13:22	WG1960423

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	11/09/2022 14:31	WG1955841

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.61	T8	1	11/11/2022 09:30	WG1955793

Sample Narrative:

L1553783-03 WG1955793: 7.61 at 20C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	3290		10.0	1	11/12/2022 09:00	WG1958133

Sample Narrative:

L1553783-03 WG1958133: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	152		0.0852	0.500	1	11/14/2022 16:12	WG1957683
Cadmium	0.750		0.0471	0.500	1	11/14/2022 12:15	WG1957683
Copper	16.7		0.400	2.00	1	11/14/2022 12:15	WG1957683
Lead	19.0	O1	0.208	0.500	1	11/14/2022 12:15	WG1957683
Nickel	22.0	O1	0.132	2.00	1	11/14/2022 12:15	WG1957683
Selenium	U		0.764	2.00	1	11/14/2022 12:15	WG1957683
Silver	U		0.127	1.00	1	11/14/2022 12:15	WG1957683
Zinc	77.6	J6 O1	0.832	5.00	1	11/14/2022 12:15	WG1957683

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	1.42		0.0167	0.200	1	11/12/2022 00:50	WG1954271

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	6.83		0.100	1.00	5	11/14/2022 17:29	WG1957686

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.397		0.0217	0.100	1	11/09/2022 20:01	WG1956749
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	99.1			77.0-120		11/09/2022 20:01	WG1956749

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/kg	Qualifier	MDL ug/kg	RDL ug/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.467	1.00	1	11/09/2022 08:22	WG1956483
Toluene	U		1.30	5.00	1	11/09/2022 08:22	WG1956483
Ethylbenzene	U		0.737	2.50	1	11/09/2022 08:22	WG1956483
Xylenes, Total	U		0.880	6.50	1	11/09/2022 08:22	WG1956483
1,2,4-Trimethylbenzene	U		1.58	5.00	1	11/09/2022 08:22	WG1956483
1,3,5-Trimethylbenzene	U		2.00	5.00	1	11/09/2022 08:22	WG1956483
(S) Toluene-d8	107			75.0-131		11/09/2022 08:22	WG1956483
(S) 4-Bromofluorobenzene	99.3			67.0-138		11/09/2022 08:22	WG1956483
(S) 1,2-Dichloroethane-d4	89.4			70.0-130		11/09/2022 08:22	WG1956483

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	42.2		1.61	4.00	1	11/10/2022 10:42	WG1955899
C28-C36 Motor Oil Range	96.1		0.274	4.00	1	11/10/2022 10:42	WG1955899
(S) o-Terphenyl	63.2			18.0-148		11/10/2022 10:42	WG1955899

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	4.00		1	11/21/2022 13:25	WG1960423

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	11/09/2022 14:37	WG1955841

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.47	T8	1	11/11/2022 09:30	WG1955793

Sample Narrative:

L1553783-04 WG1955793: 7.47 at 20.1C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	3750		10.0	1	11/15/2022 09:30	WG1958603

Sample Narrative:

L1553783-04 WG1958603: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	176		0.0852	0.500	1	11/14/2022 13:24	WG1957683
Cadmium	0.808		0.0471	0.500	1	11/14/2022 13:24	WG1957683
Copper	17.8		0.400	2.00	1	11/14/2022 13:24	WG1957683
Lead	21.2		0.208	0.500	1	11/14/2022 13:24	WG1957683
Nickel	23.7		0.132	2.00	1	11/14/2022 13:24	WG1957683
Selenium	0.775	J	0.764	2.00	1	11/14/2022 13:24	WG1957683
Silver	U		0.127	1.00	1	11/14/2022 13:24	WG1957683
Zinc	81.0		0.832	5.00	1	11/14/2022 13:24	WG1957683

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	1.41		0.0167	0.200	1	11/12/2022 00:53	WG1954271

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	7.00		0.100	1.00	5	11/14/2022 19:08	WG1957686

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.405		0.0217	0.100	1	11/09/2022 20:24	WG1956749
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	99.9			77.0-120		11/09/2022 20:24	WG1956749

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/kg	Qualifier	MDL ug/kg	RDL ug/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.467	1.00	1	11/09/2022 14:32	WG1956638
Toluene	U		1.30	5.00	1	11/09/2022 14:32	WG1956638
Ethylbenzene	U		0.737	2.50	1	11/09/2022 14:32	WG1956638
Xylenes, Total	U		0.880	6.50	1	11/09/2022 14:32	WG1956638
1,2,4-Trimethylbenzene	U		1.58	5.00	1	11/09/2022 14:32	WG1956638
1,3,5-Trimethylbenzene	U		2.00	5.00	1	11/09/2022 14:32	WG1956638
(S) Toluene-d8	118			75.0-131		11/09/2022 14:32	WG1956638
(S) 4-Bromofluorobenzene	93.4			67.0-138		11/09/2022 14:32	WG1956638
(S) 1,2-Dichloroethane-d4	87.0			70.0-130		11/09/2022 14:32	WG1956638

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	23.3		1.61	4.00	1	11/10/2022 10:11	WG1955899
C28-C36 Motor Oil Range	63.0		0.274	4.00	1	11/10/2022 10:11	WG1955899
(S) o-Terphenyl	47.9			18.0-148		11/10/2022 10:11	WG1955899

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3859037-1 11/09/22 12:56				
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Hexavalent Chromium	U		0.255	1.00

L1553779-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1553779-02 11/09/22 13:14 • (DUP) R3859037-3 11/09/22 13:19					
	Original Result	DUP Result	Dilution	DUP RPD	DUP RPD Limits
Analyte	mg/kg	mg/kg		%	%
Hexavalent Chromium	U	U	1	0.000	20

L1553783-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1553783-04 11/09/22 14:37 • (DUP) R3859037-8 11/09/22 14:42					
	Original Result	DUP Result	Dilution	DUP RPD	DUP RPD Limits
Analyte	mg/kg	mg/kg		%	%
Hexavalent Chromium	U	U	1	0.000	20

Laboratory Control Sample (LCS)

(LCS) R3859037-2 11/09/22 13:03					
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	9.31	93.1	80.0-120	

L1553779-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1553779-03 11/09/22 13:24 • (MS) R3859037-4 11/09/22 13:29 • (MSD) R3859037-5 11/09/22 13:34										
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%		
Hexavalent Chromium	20.0	U	16.7	16.7	83.6	83.3	1	75.0-125		
									RPD	RPD Limits
									%	%
									0.429	20

L1553779-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1553779-03 11/09/22 13:24 • (MS) R3859037-7 11/09/22 13:45							
	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Hexavalent Chromium	643	U	581	90.4	50	75.0-125	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1554259-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1554259-01 11/11/22 09:30 • (DUP) R3859829-3 11/11/22 09:30

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.16	8.12	1	0.491		1

Sample Narrative:

OS: 8.16 at 20.2C

DUP: 8.12 at 20.3C

Laboratory Control Sample (LCS)

(LCS) R3859829-1 11/11/22 09:30

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	9.91	99.1	99.0-101	

Sample Narrative:

LCS: 9.91 at 20.7C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3860256-1 11/12/22 09:00

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

Sample Narrative:
BLANK: at 25C

L1553031-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1553031-06 11/12/22 09:00 • (DUP) R3860256-3 11/12/22 09:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	2420	2420	1	0.124		20

Sample Narrative:
OS: at 25C
DUP: at 25C

L1553653-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1553653-04 11/12/22 09:00 • (DUP) R3860256-4 11/12/22 09:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	84.2	83.5	1	0.835		20

Sample Narrative:
OS: at 25C
DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3860256-2 11/12/22 09:00

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	1120	1120	99.6	85.0-115	

Sample Narrative:
LCS: at 25C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3860993-1 11/15/22 09:30

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

Sample Narrative:

BLANK: at 25C

L1553742-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1553742-01 11/15/22 09:30 • (DUP) R3860993-3 11/15/22 09:30

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	5280	5320	1	0.755		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1553783-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1553783-01 11/15/22 09:30 • (DUP) R3860993-4 11/15/22 09:30

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	3690	3720	1	0.810		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3860993-2 11/15/22 09:30

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	1120	1130	101	85.0-115	

Sample Narrative:

LCS: at 25C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3860693-1 11/14/22 12:10

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Cadmium	U		0.0471	0.500
Copper	U		0.400	2.00
Lead	U		0.208	0.500
Nickel	U		0.132	2.00
Selenium	U		0.764	2.00
Silver	U		0.127	1.00
Zinc	U		0.832	5.00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

Method Blank (MB)

(MB) R3860693-7 11/14/22 16:06

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Barium	U		0.0852	0.500

⁶Qc

⁷Gl

⁸Al

Laboratory Control Sample (LCS)

(LCS) R3860693-2 11/14/22 12:12

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cadmium	100	91.8	91.8	80.0-120	
Copper	100	91.7	91.7	80.0-120	
Lead	100	93.5	93.5	80.0-120	
Nickel	100	101	101	80.0-120	
Selenium	100	95.2	95.2	80.0-120	
Silver	20.0	18.0	90.0	80.0-120	
Zinc	100	94.8	94.8	80.0-120	

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3860693-8 11/14/22 16:09

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	106	106	80.0-120	

L1553783-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1553783-03 11/14/22 12:15 • (MS) R3860693-5 11/14/22 12:23 • (MSD) R3860693-6 11/14/22 12:26

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cadmium	100	0.750	94.5	83.7	93.8	82.9	1	75.0-125			12.2	20
Copper	100	16.7	110	97.8	93.2	81.1	1	75.0-125			11.7	20
Lead	100	19.0	113	100	93.5	81.3	1	75.0-125			11.5	20
Nickel	100	22.0	123	108	101	86.4	1	75.0-125			12.6	20
Selenium	100	U	99.1	86.9	99.1	86.9	1	75.0-125			13.1	20
Silver	20.0	U	18.6	16.6	92.8	83.2	1	75.0-125			10.8	20
Zinc	100	77.6	165	147	87.4	69.8	1	75.0-125		J6	11.2	20

L1553783-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1553783-03 11/14/22 16:12 • (MS) R3860693-11 11/14/22 16:20 • (MSD) R3860693-12 11/14/22 16:22

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	100	152	265	252	113	99.8	1	75.0-125			5.06	20

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3860222-1 11/12/22 00:13

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Hot Water Sol. Boron	U		0.0167	0.200

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3860222-2 11/12/22 00:16 • (LCSD) R3860222-3 11/12/22 00:18

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	1.05	1.09	105	109	80.0-120			3.74	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3860875-1 11/14/22 17:22

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.100	1.00

Laboratory Control Sample (LCS)

(LCS) R3860875-2 11/14/22 17:26

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	96.8	96.8	80.0-120	

L1553783-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1553783-03 11/14/22 17:29 • (MS) R3860875-5 11/14/22 17:39 • (MSD) R3860875-6 11/14/22 17:43

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	6.83	97.7	98.1	90.8	91.2	5	75.0-125			0.430	20

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3858643-2 11/09/22 00:52

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.0224	⬇	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	99.6			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3858643-1 11/08/22 23:37

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.69	85.3	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			99.7	77.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3859121-2 11/09/22 15:08

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.0241	⬇	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	100			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3859121-1 11/09/22 12:20

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.94	108	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			106	77.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3859266-3 11/08/22 23:42

Analyte	MB Result ug/kg	MB Qualifier	MB MDL ug/kg	MB RDL ug/kg
Benzene	U		0.467	1.00
Toluene	U		1.30	5.00
Ethylbenzene	U		0.737	2.50
Xylenes, Total	U		0.880	6.50
1,2,4-Trimethylbenzene	U		1.58	5.00
1,3,5-Trimethylbenzene	U		2.00	5.00
(S) Toluene-d8	109			75.0-131
(S) 4-Bromofluorobenzene	97.2			67.0-138
(S) 1,2-Dichloroethane-d4	83.3			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3859266-1 11/08/22 22:17 • (LCSD) R3859266-2 11/08/22 22:38

Analyte	Spike Amount ug/kg	LCS Result ug/kg	LCSD Result ug/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	125	122	130	97.6	104	70.0-123			6.35	20
Toluene	125	126	131	101	105	75.0-121			3.89	20
Ethylbenzene	125	127	137	102	110	74.0-126			7.58	20
Xylenes, Total	375	374	390	99.7	104	72.0-127			4.19	20
1,2,4-Trimethylbenzene	125	129	137	103	110	70.0-126			6.02	20
1,3,5-Trimethylbenzene	125	112	124	89.6	99.2	73.0-127			10.2	20
(S) Toluene-d8					102	75.0-131				
(S) 4-Bromofluorobenzene					108	67.0-138				
(S) 1,2-Dichloroethane-d4					95.0	98.9				

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3860724-3 11/09/22 03:38

Analyte	MB Result ug/kg	MB Qualifier	MB MDL ug/kg	MB RDL ug/kg
Benzene	U		0.467	1.00
Toluene	U		1.30	5.00
Ethylbenzene	U		0.737	2.50
Xylenes, Total	U		0.880	6.50
1,2,4-Trimethylbenzene	U		1.58	5.00
1,3,5-Trimethylbenzene	U		2.00	5.00
(S) Toluene-d8	113			75.0-131
(S) 4-Bromofluorobenzene	97.8			67.0-138
(S) 1,2-Dichloroethane-d4	91.3			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3860724-1 11/09/22 02:22 • (LCSD) R3860724-2 11/09/22 02:41

Analyte	Spike Amount ug/kg	LCS Result ug/kg	LCSD Result ug/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	125	110	113	88.0	90.4	70.0-123			2.69	20
Toluene	125	118	123	94.4	98.4	75.0-121			4.15	20
Ethylbenzene	125	129	133	103	106	74.0-126			3.05	20
Xylenes, Total	375	415	431	111	115	72.0-127			3.78	20
1,2,4-Trimethylbenzene	125	134	142	107	114	70.0-126			5.80	20
1,3,5-Trimethylbenzene	125	136	143	109	114	73.0-127			5.02	20
(S) Toluene-d8				107	107	75.0-131				
(S) 4-Bromofluorobenzene				102	104	67.0-138				
(S) 1,2-Dichloroethane-d4				95.0	97.1	70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3859292-1 11/10/22 02:39

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	U		0.274	4.00
(S) o-Terphenyl	74.6			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3859292-2 11/10/22 02:52

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	37.8	75.6	50.0-150	
(S) o-Terphenyl			88.9	18.0-148	

L1553779-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1553779-02 11/10/22 10:42 • (MS) R3859417-1 11/10/22 10:55 • (MSD) R3859417-2 11/10/22 11:07

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	50.0	50.3	109	117	117	133	1	50.0-150			7.08	20
(S) o-Terphenyl					69.8	70.0		18.0-148				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

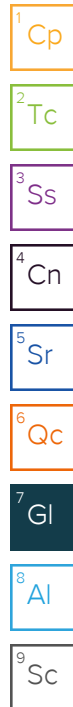
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
T8	Sample(s) received past/too close to holding time expiration.



ACCREDITATIONS & LOCATIONS

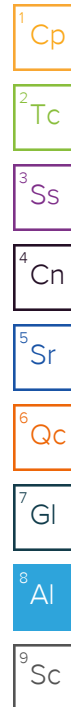
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



Company Name/Address: Scout Energy Partners 13800 Monfort Drive Suite 100 Dallas, TX 75240		Billing Information: Same as Left		Chain of Custody Page 1 of 1							
Report to: Chris Patterson		Email To: chris.patterson@scoutep.com		Analysis / Container / Preservative							
Project Description: Emerald 143 Closure		City/State Collected: Piceance Creek, CO		Please Circle: PT <input checked="" type="checkbox"/> MT <input type="checkbox"/> CT <input type="checkbox"/> ET							
Client Project # (970) 620-3456		Lab Project # 20231969.001A		Pres Chk							
Collected by (print): Jordan Veith		Site/Facility ID # Emerald 143		P.O. #							
Collected by (signature): 		Rush? (Lab MUST Be Notified) Same Day <input type="checkbox"/> Five Day <input type="checkbox"/> Next Day <input type="checkbox"/> 5 Day (Rad Only) <input type="checkbox"/> Two Day <input type="checkbox"/> 10 Day (Rad Only) <input type="checkbox"/> Three Day <input type="checkbox"/>		Quote # KLEINFELDER Date Results Needed Standard TAT							
Sample ID		Comp/Grab	Matrix*	Depth	Date	Time	Cntrs	COGCC Table 915-1		COGCC Table 915-1 minus PAHs	
20221101_Emerald 143_WH@2ft	GRAB	SS	2ft	11/1/2022	15:20	2		X			
20221101_Emerald 143_AOC@6ft	GRAB	SS	6ft	11/1/2022	15:30	2		X			
20221101_Emerald 143_TP_DIS	GRAB	SS	GS	11/1/2022	15:40	2		X			
20221101_Emerald 143_TP_COMP	COMP	SS	GS	11/1/2022	15:50	2		X			
Remarks: * Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - Waste Water DW - Drinking Water OT - Other											
Samples returned via: UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Courier <input type="checkbox"/>											
Tracking # 5755 8085 1359											
Relinquished by: (Signature) 		Date: 11/2/22	Time: 1230	Received by: (Signature) 		Trip Blank Received: Yes / No HCL / MeOH TBR		Sample Receipt Checklist COC Seal Present/Intact: <input checked="" type="checkbox"/> NP <input type="checkbox"/> COC Signed/Accurate: <input checked="" type="checkbox"/> Bottles arrive intact: <input checked="" type="checkbox"/> Correct bottles used: <input checked="" type="checkbox"/> Sufficient volume sent: <input checked="" type="checkbox"/> If Applicable VOA Zero Headspace: <input checked="" type="checkbox"/> Preservation Correct/Checked: <input checked="" type="checkbox"/> RAD Screen <0.5 mR/hr: <input checked="" type="checkbox"/>			
Relinquished by: (Signature) 		Date: 11/2/22	Time: 1300	Received by: (Signature) 		Temperature: 60.47 °C Bottles Received: 2.210-2.2 8		If preservation required by Login: Date/Time			
Relinquished by: (Signature) 		Date:	Time:	Received for lab by: (Signature) 		Date: 11/3		Time: 0900		Hold: Condition: NCF 10K	

APPENDIX C
RANGELY AREA BACKGROUND SAMPLING REPORT



January 29, 2024
Kleinfelder Project No. 20231969.001A

Mr. Chris Patterson
Scout Energy Management, LLC
13800 Montfort Drive
Dallas, TX 75240

**SUBJECT: RANGELY AREA BACKGROUND SAMPLING
 SCOUT ENERGY MANAGEMENT, LLC
 ORPHAN LOCATION CLOSURES
 RIO BLANCO COUNTY, COLORADO**

Dear Mr. Patterson:

Kleinfelder Inc. (Kleinfelder) performed background soil sampling activities in the general vicinity of the Orphan Location Closures in Rio Blanco County, Colorado under contract by Scout Energy Management LLC (Scout). Enclosed is the site investigation report for this effort.

Please do not hesitate to contact me at (970) 309-6553 or by email at JVeith@Kleinfelder.com should you have questions or concerns.

Respectfully submitted,
KLEINFELDER, INC.

A handwritten signature in black ink that reads "Jordan Veith". The signature is written in a cursive, flowing style.

Jordan Veith
Project Manager I



**RANGELY AREA BACKGROUND SAMPLING
SCOUT ENERGY MANAGEMENT, LLC
ORPHAN LOCATION CLOSURES
RIO BLANCO COUNTY, COLORADO**

KLEINFELDER PROJECT NO. 20231969.001A

January 29, 2024

**Copyright 2024 Kleinfelder
All Rights Reserved**

**ONLY THE CLIENT OR ITS DESIGNATED REPRESENTATIVES MAY USE THIS DOCUMENT AND ONLY FOR THE SPECIFIC PROJECT FOR WHICH THIS
REPORT WAS PREPARED.**

A Report Prepared for:

Scout Energy Management, LLC
13800 Montfort Drive
Dallas, TX 75240

**RANGELY AREA BACKGROUND SAMPLING
SCOUT ENERGY MANAGEMENT, LLC
ORPHAN LOCATION CLOSURES
RIO BLANCO COUNTY, COLORADO**

Prepared by:



Isabel Rowland
Environmental Scientist

Reviewed by:



Vince DeCianne
VP, Senior Principal Professional

KLEINFELDER
707 17th Street, Suite 3000
Denver, Colorado 80202
P|303.237.6601
F|303.237.6602

January 29, 2024
Kleinfelder Project No. 20231969.001A

Contents		<u>Page</u>
1	INTRODUCTION	1
2	SITE LOCATION AND GEOLOGIC SETTING	2
3	FIELD ACTIVITIES.....	3
4	RESULTS	4
5	CONCLUSIONS AND RECOMMENDATIONS	5
6	LIMITATIONS	6

FIGURES

- 1 Topographical Map
- 2 Sample Location Map

TABLES

- 1 Sample Summary
- 2 Soil Analytical Results

APPENDICES

- A Laboratory Analytical Results

**RANGELY AREA BACKGROUND SAMPLING
SCOUT ENERGY MANAGEMENT, LLC
ORPHAN LOCATION CLOSURES
RIO BLANCO COUNTY, COLORADO**

1 INTRODUCTION

This document was prepared by Kleinfelder Inc. (Kleinfelder) on behalf of Scout Energy Management, LLC (Scout) to provide documentation of background soil sampling support services conducted in Rio Blanco County, Colorado (**Figure 1**).

Kleinfelder was historically contracted by Whiting Oil and Gas Corporation (Whiting) to assist with the closure of orphan locations owned and maintained by Whiting in Rio Blanco County near Rangely, Colorado. During Whiting's management and operation of this project, Whiting completed a robust background sampling effort to better characterize background and native soil conditions within the area of the orphan locations. While the project was under Whiting ownership, background soil samples were collected by Kleinfelder and HRL Compliance Solutions (HRL) from seventeen (17) different locations within the proximity of the orphan locations. The analytical results of these background samples were compared to Colorado Energy and Carbon Management Commission (ECMC) Table 915-1 Residential Soil Screening Levels (RSSLs) to determine which contaminants listed on ECMC Table 915-1 occur at naturally high concentrations in the project area.

In June 2022, Scout acquired the Whiting assets in this area and took ownership of the orphan locations formerly owned and maintained by Whiting. As part of the transfer of operatorship process, Scout took ownership of the background soil sampling reports and analytical data from Whiting. Scout intends to apply the analytical data from the background soil sampling effort to future orphan location closures to determine whether contaminants of concerns identified through future soil sampling are naturally occurring in the area, or are due to potentially historic impacts at the orphan locations. Kleinfelder has been contracted by Scout to continue soil sampling support services to provide necessary information to complete the ECMC Form 27 for their orphan locations located in Rio Blanco County, Colorado.

Soil samples were analyzed by Pace Analytical National (Pace) and Summit Scientific (Summit) Laboratories and the results are reported herein. Whiting has previously submitted this background soil sample data in historic ECMC Form 27s to successfully close many orphan locations.

2 SITE LOCATION AND GEOLOGIC SETTING

The background soil samples were collected within the Piceance Basin in Rio Blanco County, Colorado. Location descriptions are provided in **Table 1** and are mapped on **Figure 1**. The Piceance Basin is a geologic structural basin consisting of sandstones and siltstones, containing reserves of coal, natural gas, and oil shale.

Land in the sampling area was observed to be rangeland. The general soil type within the orphan location area was classified based on Kleinfelder's field observations using the Unified Soil Classification System (USCS) and were observed to primarily be silty gravels, gravel-sand-silt mixtures. Topographical information is provided on **Figure 1**.

3 FIELD ACTIVITIES

Under contract by Whiting, HRL and Kleinfelder performed background soil sampling field activities at multiple locations within proximity to the orphan locations.

Prior to HRL and Kleinfelder's soil screening and sampling activities, Whiting identified all background soil sample locations. Whiting mechanically augered to representative depths at the background sample locations to allow soil samples to be collected. Thirty-three (33) total background soil samples were collected from a stainless-steel hand trowel and placed into laboratory-supplied jars with Teflon lids. Each sample was collected directly from the hand trowel from the appropriate depth and placed into the glass jars. The samples were immediately placed on ice in a cooler. Standard chain-of-custody (COC) procedures were used during sampling and transportation to either Pace in Mount Juliet, Tennessee (via FEDEX) or Summit in Golden, Colorado (via FEDEX). Site soil samples were primarily analyzed for electrical conductivity (EC), sodium adsorption ratio (SAR), pH, and arsenic. Kleinfelder used an EOS Arrow 100 Submeter Global Navigation Satellite System (GNSS) receiver to record latitude and longitude at the sample location. Sample locations are shown on **Figure 2**.

Sampling equipment (i.e., stainless-steel hand trowel, soil sampler, etc.) was washed with a solution of Liquinox® detergent, rinsed with tap water, and then distilled water between samples. The background soil samples are summarized in **Table 1**.

4 RESULTS

The background soil sample analytical results exceeded the ECMC Table 915-1 RSSLs for EC, SAR, pH, and arsenic.

- EC was detected at concentrations above the ECMC Table 915-1 cleanup concentrations in twelve (12) of the thirty-three (33) background soil samples with the highest concentration at sample (20220414_ACMcLaughlin100_BG02@GS) at 14.0 mmhos/cm. The second highest EC concentration was demonstrated at sample (20210908_BG07@7ft6in) at 10.4 mmhos/cm.
- SAR was detected at a concentration above the ECMC Table 915-1 cleanup concentrations in one (1) of the thirty-three (33) samples at sample (20220414_ACMcLaughlin100_BG02@GS) with a concentration of 43.5 SAR units. All other SAR concentrations were below ECMC Table 915-1 cleanup concentrations.
- pH was detected at concentrations above the ECMC Table 915-1 cleanup concentrations at eight (8) of the thirty-three (33) sample locations with concentrations ranging from 7.71 to 9.04 pH units.
- Arsenic was detected at concentrations above the ECMC Table 915-1 cleanup concentrations at all thirty-three (33) sample locations with measurements ranging from 4.16 mg/kg to 8.08 mg/kg.

Analytical results are summarized in **Table 2** and were compared to ECMC Table 915-1 RSSLs as requested by Whiting and Scout. Sample locations are summarized in **Table 1** and shown on **Figure 2**.

5 CONCLUSIONS AND RECOMMENDATIONS

Results from the background sampling performed in Rio Blanco County indicated that soils in the project area have higher levels of naturally occurring EC, pH, and arsenic. SAR concentrations were not widely observed to be elevated in background conditions.

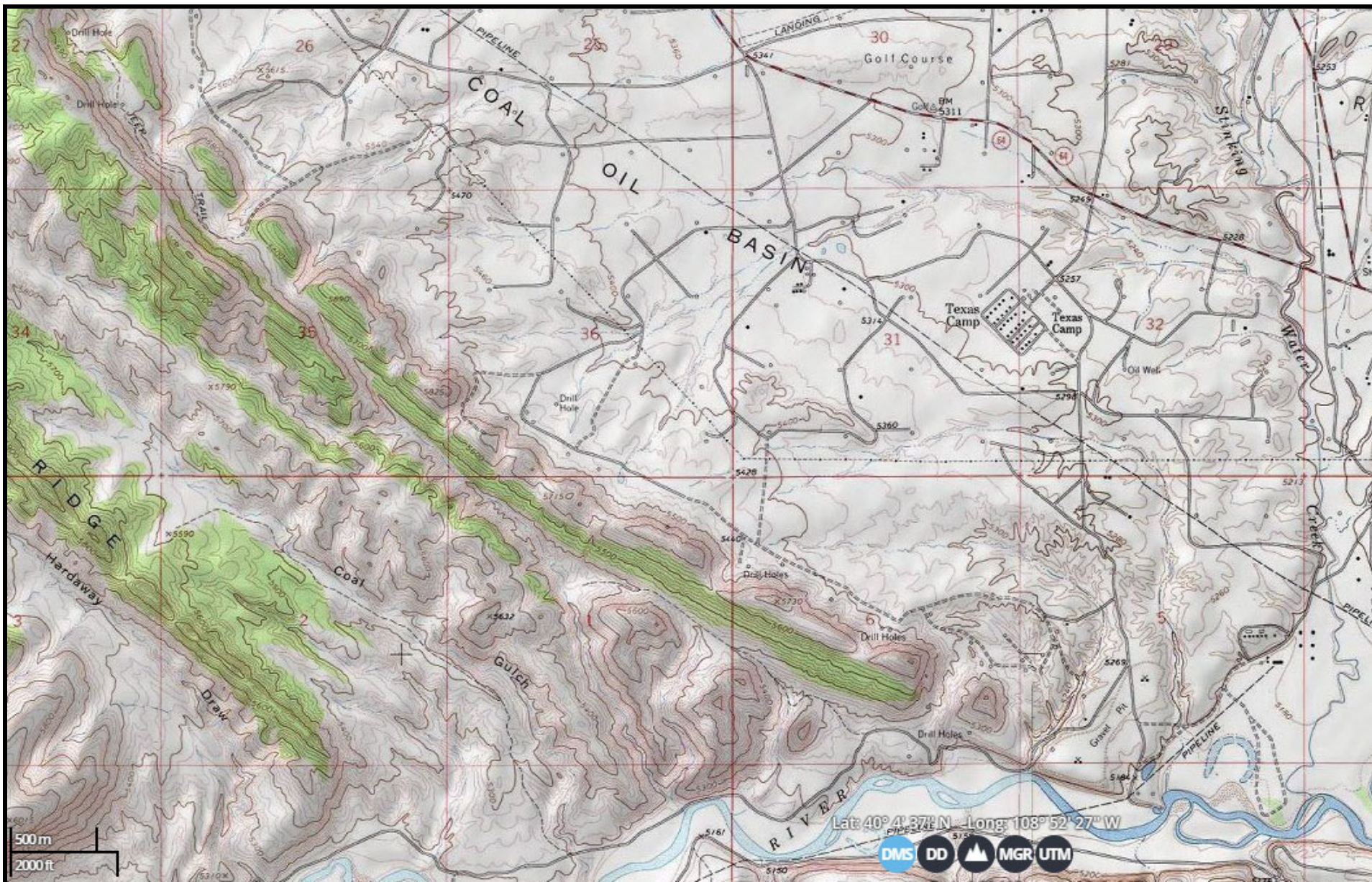
- EC was demonstrated at a maximum concentration of 14.0 mmhos/cm at background sample (20220414_ACMcLaughlin100_BG02@GS). This EC sample result is considerably elevated when compared to the other background data and has been identified as a high value outlier and it would not be used in comparison to site-specific analytical results associated with the orphan locations. The second highest EC concentration was demonstrated at background sample (20210908_BG07@7ft6in) at 10.4 mmhos/cm and is considered representative of background conditions and will be compared to the site-specific analytical results associated with the orphan locations.
- pH was detected at concentrations above the ECMC Table 915-1 cleanup concentrations at eight (8) of the thirty-three (33) background sample locations with concentrations ranging from 7.71 to 9.04 pH units. This range is considered representative of background conditions and will be compared to the site-specific analytical results associated with the orphan locations.
- Arsenic was detected at concentrations above the ECMC Table 915-1 cleanup concentrations at all thirty-three (33) background sample location with measurements ranging from 4.16 mg/kg to 8.08 mg/kg. As allowed in ECMC Table 915-1, the adjusted site-specific background range multiplied by 1.25 for arsenic is 4.16 mg/kg to 10.1 mg/kg. This range is considered representative of background conditions and will be compared to the site-specific analytical results associated with the orphan locations.


6 LIMITATIONS

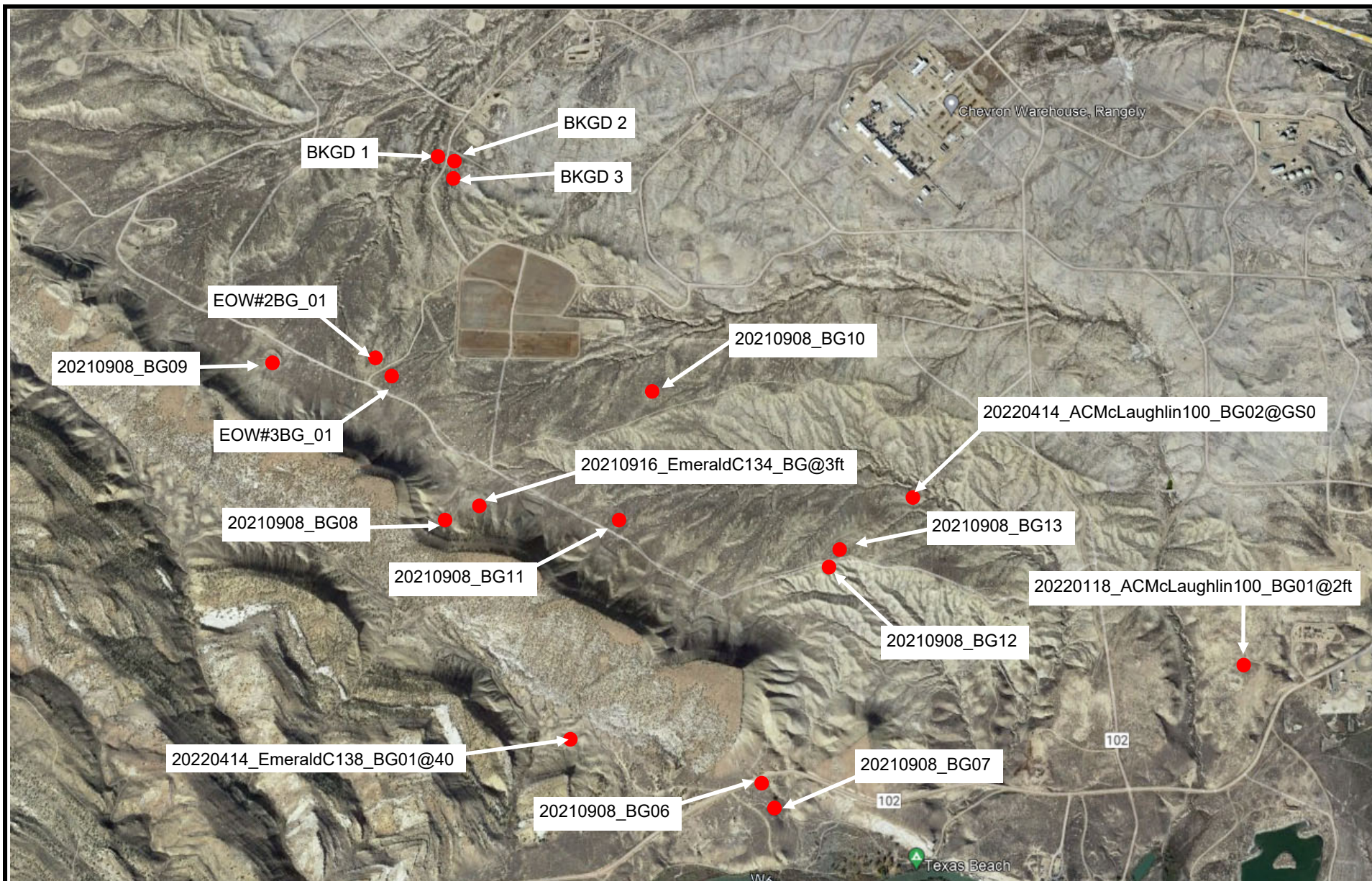
Kleinfelder offers various levels of investigative and engineering services to suit the varying needs of different clients. It should be recognized that definition and evaluation of geologic and environmental conditions are a difficult and inexact science. Judgments leading to conclusions and recommendations are generally made with incomplete knowledge of the subsurface conditions present due to the limitations of data from field studies. Although risk can never be eliminated, more detailed and extensive studies yield more information, which may help understand and manage the level of risk. Since detailed study and analysis involves greater expense, our clients participate in determining levels of service that provide adequate information for their purposes at acceptable levels of risk. More extensive studies, including subsurface studies or field tests, should be performed to reduce uncertainties. Acceptance of this report will indicate that Scout has reviewed the document and determined that it does not need or want a greater level of service than provided.


During the course of the performance of Kleinfelder's services, hazardous materials may have been discovered. Kleinfelder assumes no responsibility or liability whatsoever for any claim, loss of property value, damage, or injury that results from pre-existing hazardous materials being encountered or present on the project site, or from the discovery of such hazardous materials. Nothing contained in this report should be construed or interpreted as requiring Kleinfelder to assume the status of an owner, operator, or generator, or person who arranges for disposal, transport, storage, or treatment of hazardous materials within the meaning of any governmental statute, regulation, or order. Scout is solely responsible for directing notification of all governmental agencies, and the public at large, of the existence, release, treatment, or disposal of any hazardous materials observed at the project site, either before or during performance of Kleinfelder's services. Scout is responsible for directing all arrangements to lawfully store, treat, recycle, dispose, or otherwise handle hazardous materials, including cuttings and samples resulting from Kleinfelder's services.

FIGURES



 <p>KLEINFELDER <i>Bright People. Right Solutions.</i></p> <p>www.kleinfelder.com</p>	PROJECT NO.	20231969.001A	Topographical Map	FIGURE 1
	DRAWN:	1/22/2023		
	DRAWN BY:	I. Rowland	SCOUT ENERGY MANAGEMENT, LLC RANGELY AREA BACKGROUND SAMPLING ORPHAN LOCATION CLOSURES RIO BLANCO COUNTY, COLORADO	
	CHECKED BY:	J. Veith		
	FILE NAME:	Topographical Map.pub		



 <p>KLEINFELDER <i>Bright People. Right Solutions.</i></p> <p>www.kleinfelder.com</p>	PROJECT NO.	20231969.001A	Sample Locations	FIGURE 2
	DRAWN:	1/15/2024		
	DRAWN BY:	I. Rowland	SCOUT ENERGY MANAGEMENT, LLC RANGELY AREA BACKGROUND SAMPLING ORPHAN LOCATION CLOSURES RIO BLANCO COUNTY, COLORADO	
	CHECKED BY:	J. Veith		
	FILE NAME:	Background Sample Map.pub		

TABLES



TABLE 1 - SAMPLE SUMMARY
SCOUT ENERGY MANAGEMENT, LLC
RANGELY AREA BACKGROUND SAMPLING
RIO BLANCO COUNTY, COLORADO

Sample ID	Collected By	Latitude	Longitude	Legal Description
BKGD 1	HRL	40.098478	-108.896565	NESE, Section 36, Township 2 North, Range 103 West
BKGD 2	HRL	40.098590	-108.895877	NESE, Section 36, Township 2 North, Range 103 West
BKGD 3	HRL	40.097618	-108.895599	NESE, Section 36, Township 2 North, Range 103 West
20210908_BG06	Kleinfelder	40.079499	-108.882823	SWSE, Section 6, Township 1 North, Range 102 West
20210908_BG07	Kleinfelder	40.079070	-108.882744	SWSE, Section 6, Township 1 North, Range 102 West
20210908_BG08	Kleinfelder	40.087282	-108.895985	SENE, Section 1, Township 1 North, Range 103 West
20210908_BG09	Kleinfelder	40.091837	-108.902727	NWNE, Section 1, Township 1 North, Range 103 West
20210908_BG10	Kleinfelder	40.091029	-108.887703	NENW, Section 6, Township 1 North, Range 102 West
20210908_BG11	Kleinfelder	40.087292	-108.888536	SENE, Section 6, Township 1 North, Range 102 West
20210908_BG12	Kleinfelder	40.086091	-108.880501	SENE, Section 6, Township 1 North, Range 102 West
20210908_BG13	Kleinfelder	40.086774	-108.880004	SENE, Section 6, Township 1 North, Range 102 West
EOW#2BG_01	Kleinfelder	40.092252	-108.898605	SESE, Section 36, Township 2 North, Range 103 West
EOW#3BG_01	Kleinfelder	40.091621	-108.897795	NENE, Section 1, Township 1 North, Range 103 West
20210916_Emerald C134_BG@3FT	Kleinfelder	40.087717	-108.894428	L2, Section 6, Township 1 North, Range 102 West
20220414_Emerald C138_BG01@40in	Kleinfelder	40.080785	-108.890262	SESW, Section 6, Township 1 North, Range 102 West
20220118_ACMcLaughlin 100_BG01@2ft	Kleinfelder	40.083384	-108.863926	NWSE, Section 5, Township 1 North, Range 102 West
20220414_AC McLaughlin 100_BG02@GS	Kleinfelder	40.088168	-108.876886	SENE, Section 6, Township 1 North, Range 102 West

TABLE 2 - SOIL ANALYTICAL RESULTS
SCOUT ENERGY MANAGEMENT, LLC
RANGELY AREA BACKGROUND SAMPLING
RIO BLANCO COUNTY, COLORADO

Contaminant of Concern	Cleanup Concentration (mg/kg unless otherwise noted)	BKGD 1 (HRL)	BKGD 2 (HRL)	BKGD 3 (HRL)	20220118_ACMcLaughlin 100_BG01@2 (KLF)	20220414_ACMcLaughlin100_BG02@GS (KLF)	EOW#2BG_01 (KLF)	EOW#3BG_01 (KLF)	20210916_EmeraldC134_BG @3ft (KLF)	20220414_Emerald C138_BG01@40in (KLF)
Soil TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons)	500	NM	NM	NM	NM	NM	ND	ND	NM	NM
GRO (C6-C10)		NM	NM	NM	NM	NM	ND	ND	NM	NM
DRO (C10-C28)		NM	NM	NM	NM	NM	ND	ND	NM	NM
ORO (C35)		NM	NM	NM	NM	NM	ND	ND	NM	NM
Soils and Groundwater - liquid hydrocarbons including condensate and oil	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits
Electrical conductivity (EC) (by saturated paste method)	<4mmhos/cm	0.340	0.178	2.53	NM	14.0	2.11	0.544	0.186	4.69
Sodium adsorption ratio (SAR) (by saturated paste method)	<6 SAR units	0.315	0.158	0.26	2.17	43.5	0.242	3.15	2.48	0.797
pH (by saturated paste method)	6-8.3 pH units	8.35	8.66	7.89	NM	8.10	8.05	8.42	NM	7.71
Boron (hot water soluble soil extract)	2 mg/l	NM	NM	NM	NM	NM	0.185	0.235	NM	NM
Organic Compounds in Soils										
benzene	1.2	NM	NM	NM	NM	NM	ND	ND	NM	NM
toluene	490	NM	NM	NM	NM	NM	ND	ND	NM	NM
ethylbenzene	5.8	NM	NM	NM	NM	NM	ND	ND	NM	NM
xylenes (sum of o-, m- and p-isomers = total xylenes)	58	NM	NM	NM	NM	NM	ND	ND	NM	NM
1,2,4-trimethylbenzene	30	NM	NM	NM	NM	NM	ND	ND	NM	NM
1,3,5-trimethylbenzene	27	NM	NM	NM	NM	NM	ND	ND	NM	NM
acenaphthene	360	NM	NM	NM	NM	NM	ND	ND	NM	NM
anthracene	1800	NM	NM	NM	NM	NM	ND	ND	NM	NM
benz(a)anthracene	1.1	NM	NM	NM	NM	NM	ND	ND	NM	NM
benzo(b)fluoranthene	1.1	NM	NM	NM	NM	NM	ND	ND	NM	NM
benzo(k)fluoranthene	11	NM	NM	NM	NM	NM	ND	ND	NM	NM
benzo(a)pyrene	0.11	NM	NM	NM	NM	NM	ND	ND	NM	NM
chrysene	110	NM	NM	NM	NM	NM	ND	ND	NM	NM
dibenzo(a,h)anthracene	0.11	NM	NM	NM	NM	NM	ND	ND	NM	NM
fluoranthene	240	NM	NM	NM	NM	NM	ND	ND	NM	NM
fluorene	240	NM	NM	NM	NM	NM	ND	ND	NM	NM
indeno(1,2,3-cd)pyrene	1.1	NM	NM	NM	NM	NM	ND	ND	NM	NM
pyrene	180	NM	NM	NM	NM	NM	ND	ND	NM	NM
1-methylnaphthalene	18	NM	NM	NM	NM	NM	ND	ND	NM	NM
2-methylnaphthalene	24	NM	NM	NM	NM	NM	ND	ND	NM	NM
naphthalene	2	NM	NM	NM	NM	NM	ND	ND	NM	NM
Metals in Soils										
arsenic	0.68	8.08	6.41	5.56	NM	NM	6.18	4.67	NM	8.34
barium	15000	NM	NM	NM	NM	NM	66.1	101	NM	NM
cadmium	71	NM	NM	NM	NM	NM	ND	0.252	NM	NM
chromium (VI)	0.3	NM	NM	NM	NM	NM	ND	ND	NM	NM
copper	3100	NM	NM	NM	NM	NM	12.0	12.5	NM	NM
lead	400	NM	NM	NM	NM	NM	13.8	13.4	NM	NM
nickel	1500	NM	NM	NM	NM	NM	16.9	14.5	NM	NM
selenium	390	NM	NM	NM	NM	NM	1.84	1.33	NM	NM
silver	390	NM	NM	NM	NM	NM	0.0872	0.0939	NM	NM
zinc	23000	NM	NM	NM	NM	NM	71.8	59.2	NM	NM

Greater than
ECMC Table 915-1
Standards

ND = not detected
NM = not measured

TABLE 2 - SOIL ANALYTICAL RESULTS
SCOUT ENERGY MANAGEMENT, LLC
RANGELY AREA BACKGROUND SAMPLING
RIO BLANCO COUNTY, COLORADO

Contaminant of Concern	Cleanup Concentration (mg/kg unless otherwise noted)	20210908_BG06@1ft (KLF)	20210908_BG06@3ft (KLF)	20210908_BG06@6ft10in (KLF)	20210908_BG07@1ft (KLF)	20210908_BG07@3ft (KLF)	20210908_BG07@7ft6in (KLF)	20210908_BG08@1ft (KLF)	20210908_BG08@3ft (KLF)	20210908_BG08@7ft1in (KLF)
Soil TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons)	500	ND	ND	ND	ND	ND	ND	ND	ND	ND
GRO (C6-C10)		ND	ND	ND	ND	ND	ND	ND	ND	ND
DRO (C10-C28)		ND	ND	ND	ND	ND	ND	ND	ND	ND
ORO (C35)		ND	ND	ND	ND	ND	ND	ND	ND	ND
Soils and Groundwater - liquid hydrocarbons including condensate and oil	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits
Electrical conductivity (EC) (by saturated paste method)	<4mmhos/cm	1.56	3.61	5.88	2.28	5.36	10.4	2.00	3.08	4.92
Sodium adsorption ratio (SAR) (by saturated paste method)	<6 SAR units	0.299	0.551	2.45	0.466	1.35	1.88	0.0876	0.206	0.286
pH (by saturated paste method)	6-8.3 pH units	8.52	8.29	8.47	9.04	8.34	8.41	7.94	8.12	8.16
Boron (hot water soluble soil extract)	2 mg/l	NM	NM	NM	NM	NM	NM	NM	NM	NM
Organic Compounds in Soils										
benzene	1.2	NM	NM	NM	NM	NM	NM	NM	NM	NM
toluene	490	NM	NM	NM	NM	NM	NM	NM	NM	NM
ethylbenzene	5.8	NM	NM	NM	NM	NM	NM	NM	NM	NM
xylenes (sum of o-, m- and p-isomers = total xylenes)	58	NM	NM	NM	NM	NM	NM	NM	NM	NM
1,2,4-trimethylbenzene	30	NM	NM	NM	NM	NM	NM	NM	NM	NM
1,3,5-trimethylbenzene	27	NM	NM	NM	NM	NM	NM	NM	NM	NM
acenaphthene	360	NM	NM	NM	NM	NM	NM	NM	NM	NM
anthracene	1800	NM	NM	NM	NM	NM	NM	NM	NM	NM
benz(a)anthracene	1.1	NM	NM	NM	NM	NM	NM	NM	NM	NM
benzo(b)fluoranthene	1.1	NM	NM	NM	NM	NM	NM	NM	NM	NM
benzo(k)fluoranthene	11	NM	NM	NM	NM	NM	NM	NM	NM	NM
benzo(a)pyrene	0.11	NM	NM	NM	NM	NM	NM	NM	NM	NM
chrysene	110	NM	NM	NM	NM	NM	NM	NM	NM	NM
dibenzo(a,h)anthracene	0.11	NM	NM	NM	NM	NM	NM	NM	NM	NM
fluoranthene	240	NM	NM	NM	NM	NM	NM	NM	NM	NM
fluorene	240	NM	NM	NM	NM	NM	NM	NM	NM	NM
indeno(1,2,3-cd)pyrene	1.1	NM	NM	NM	NM	NM	NM	NM	NM	NM
pyrene	180	NM	NM	NM	NM	NM	NM	NM	NM	NM
1-methylnaphthalene	18	NM	NM	NM	NM	NM	NM	NM	NM	NM
2-methylnaphthalene	24	NM	NM	NM	NM	NM	NM	NM	NM	NM
naphthalene	2	NM	NM	NM	NM	NM	NM	NM	NM	NM
Metals in Soils										
arsenic	0.68	5.01	6.33	5.21	4.76	4.72	6.12	6.36	5.99	6.14
barium	15000	NM	NM	NM	NM	NM	NM	NM	NM	NM
cadmium	71	NM	NM	NM	NM	NM	NM	NM	NM	NM
chromium (VI)	0.3	NM	NM	NM	NM	NM	NM	NM	NM	NM
copper	3100	NM	NM	NM	NM	NM	NM	NM	NM	NM
lead	400	NM	NM	NM	NM	NM	NM	NM	NM	NM
nickel	1500	NM	NM	NM	NM	NM	NM	NM	NM	NM
selenium	390	NM	NM	NM	NM	NM	NM	NM	NM	NM
silver	390	NM	NM	NM	NM	NM	NM	NM	NM	NM
zinc	23000	NM	NM	NM	NM	NM	NM	NM	NM	NM

Greater than
ECMC Table 915-1
Standards

ND = not detected
NM = not measured

TABLE 2 - SOIL ANALYTICAL RESULTS
SCOUT ENERGY MANAGEMENT, LLC
RANGELY AREA BACKGROUND SAMPLING
RIO BLANCO COUNTY, COLORADO

Contaminant of Concern	Cleanup Concentration (mg/kg unless otherwise noted)	20210908_BG09@1ft (KLF)	20210908_BG09@3ft (KLF)	20210908_BG09@7ft7in (KLF)	20210908_BG10@1ft (KLF)	20210908_BG10@3ft (KLF)	20210908_BG10@7ft2in (KLF)	20210908_BG11@1ft (KLF)	20210908_BG11@3ft (KLF)	20210908_BG11@6ft8in (KLF)
Soil TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons)	500	ND	ND	ND	ND	ND	ND	ND	ND	ND
GRO (C6-C10)		ND	ND	ND	ND	ND	ND	ND	ND	ND
DRO (C10-C28)		ND	ND	ND	ND	ND	ND	ND	ND	ND
ORO (C35)		ND	ND	ND	ND	ND	ND	ND	ND	ND
Soils and Groundwater - liquid hydrocarbons including condensate and oil	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits
Electrical conductivity (EC) (by saturated paste method)	<4mmhos/cm	2.29	4.22	9.01	0.244	3.24	5.18	1.72	1.64	2.45
Sodium adsorption ratio (SAR) (by saturated paste method)	<6 SAR units	0.182	0.466	0.880	0.120	0.189	0.512	0.00596	0.00951	0.0899
pH (by saturated paste method)	6–8.3 pH units	8.08	8.19	8.05	7.95	7.96	8.11	8.01	7.98	8.05
Boron (hot water soluble soil extract)	2 mg/l	NM	NM	NM	NM	NM	NM	NM	NM	NM
Organic Compounds in Soils										
benzene	1.2	NM	NM	NM	NM	NM	NM	NM	NM	NM
toluene	490	NM	NM	NM	NM	NM	NM	NM	NM	NM
ethylbenzene	5.8	NM	NM	NM	NM	NM	NM	NM	NM	NM
xylenes (sum of o-, m- and p-isomers = total xylenes)	58	NM	NM	NM	NM	NM	NM	NM	NM	NM
1,2,4-trimethylbenzene	30	NM	NM	NM	NM	NM	NM	NM	NM	NM
1,3,5-trimethylbenzene	27	NM	NM	NM	NM	NM	NM	NM	NM	NM
acenaphthene	360	NM	NM	NM	NM	NM	NM	NM	NM	NM
anthracene	1800	NM	NM	NM	NM	NM	NM	NM	NM	NM
benz(a)anthracene	1.1	NM	NM	NM	NM	NM	NM	NM	NM	NM
benzo(b)fluoranthene	1.1	NM	NM	NM	NM	NM	NM	NM	NM	NM
benzo(k)fluoranthene	11	NM	NM	NM	NM	NM	NM	NM	NM	NM
benzo(a)pyrene	0.11	NM	NM	NM	NM	NM	NM	NM	NM	NM
chrysene	110	NM	NM	NM	NM	NM	NM	NM	NM	NM
dibenzo(a,h)anthracene	0.11	NM	NM	NM	NM	NM	NM	NM	NM	NM
fluoranthene	240	NM	NM	NM	NM	NM	NM	NM	NM	NM
fluorene	240	NM	NM	NM	NM	NM	NM	NM	NM	NM
indeno(1,2,3-cd)pyrene	1.1	NM	NM	NM	NM	NM	NM	NM	NM	NM
pyrene	180	NM	NM	NM	NM	NM	NM	NM	NM	NM
1-methylnaphthalene	18	NM	NM	NM	NM	NM	NM	NM	NM	NM
2-methylnaphthalene	24	NM	NM	NM	NM	NM	NM	NM	NM	NM
naphthalene	2	NM	NM	NM	NM	NM	NM	NM	NM	NM
Metals in Soils										
arsenic	0.68	5.43	5.67	5.11	5.06	6.46	6.50	5.76	5.52	5.41
barium	15000	NM	NM	NM	NM	NM	NM	NM	NM	NM
cadmium	71	NM	NM	NM	NM	NM	NM	NM	NM	NM
chromium (VI)	0.3	NM	NM	NM	NM	NM	NM	NM	NM	NM
copper	3100	NM	NM	NM	NM	NM	NM	NM	NM	NM
lead	400	NM	NM	NM	NM	NM	NM	NM	NM	NM
nickel	1500	NM	NM	NM	NM	NM	NM	NM	NM	NM
selenium	390	NM	NM	NM	NM	NM	NM	NM	NM	NM
silver	390	NM	NM	NM	NM	NM	NM	NM	NM	NM
zinc	23000	NM	NM	NM	NM	NM	NM	NM	NM	NM

Greater than
ECMC Table 915-1
Standards

ND = not detected
NM = not measured

TABLE 2 - SOIL ANALYTICAL RESULTS
SCOUT ENERGY MANAGEMENT, LLC
RANGELY AREA BACKGROUND SAMPLING
RIO BLANCO COUNTY, COLORADO

Contaminant of Concern	Cleanup Concentration (mg/kg unless otherwise noted)	20210908_BG12@1ft (KLF)	20210908_BG12@3ft (KLF)	20210908_BG12@7ft8in (KLF)	20210908_BG13@1ft (KLF)	20210908_BG13@3ft (KLF)	20210908_BG13@7ft4in (KLF)
Soil TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons)	500	ND	ND	ND	ND	ND	ND
GRO (C6-C10)		ND	ND	ND	ND	ND	ND
DRO (C10-C28)		ND	ND	ND	ND	ND	ND
ORO (C35)		ND	ND	ND	ND	ND	ND
Soils and Groundwater - liquid hydrocarbons including condensate and oil	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits
Electrical conductivity (EC) (by saturated paste method)	<4mmhos/cm	2.05	2.48	5.41	2.36	4.31	5.85
Sodium adsorption ratio (SAR) (by saturated paste method)	<6 SAR units	0.0198	0.0654	0.681	0.0472	0.327	0.736
pH (by saturated paste method)	6-8.3 pH units	8.06	8.08	8.29	8.06	8.23	8.29
Boron (hot water soluble soil extract)	2 mg/l	NM	NM	NM	NM	NM	NM
Organic Compounds in Soils							
benzene	1.2	NM	NM	NM	NM	NM	NM
toluene	490	NM	NM	NM	NM	NM	NM
ethylbenzene	5.8	NM	NM	NM	NM	NM	NM
xylene (sum of o-, m- and p-isomers = total xylenes)	58	NM	NM	NM	NM	NM	NM
1,2,4-trimethylbenzene	30	NM	NM	NM	NM	NM	NM
1,3,5-trimethylbenzene	27	NM	NM	NM	NM	NM	NM
acenaphthene	360	NM	NM	NM	NM	NM	NM
anthracene	1800	NM	NM	NM	NM	NM	NM
benz(a)anthracene	1.1	NM	NM	NM	NM	NM	NM
benzo(b)fluoranthene	1.1	NM	NM	NM	NM	NM	NM
benzo(k)fluoranthene	11	NM	NM	NM	NM	NM	NM
benzo(a)pyrene	0.11	NM	NM	NM	NM	NM	NM
chrysene	110	NM	NM	NM	NM	NM	NM
dibenzo(a,h)anthracene	0.11	NM	NM	NM	NM	NM	NM
fluoranthene	240	NM	NM	NM	NM	NM	NM
fluorene	240	NM	NM	NM	NM	NM	NM
indeno(1,2,3-cd)pyrene	1.1	NM	NM	NM	NM	NM	NM
pyrene	180	NM	NM	NM	NM	NM	NM
1-methylnaphthalene	18	NM	NM	NM	NM	NM	NM
2-methylnaphthalene	24	NM	NM	NM	NM	NM	NM
naphthalene	2	NM	NM	NM	NM	NM	NM
Metals in Soils							
arsenic	0.68	5.71	4.97	4.16	6.60	6.05	7.19
barium	15000	NM	NM	NM	NM	NM	NM
cadmium	71	NM	NM	NM	NM	NM	NM
chromium (VI)	0.3	NM	NM	NM	NM	NM	NM
copper	3100	NM	NM	NM	NM	NM	NM
lead	400	NM	NM	NM	NM	NM	NM
nickel	1500	NM	NM	NM	NM	NM	NM
selenium	390	NM	NM	NM	NM	NM	NM
silver	390	NM	NM	NM	NM	NM	NM
zinc	23000	NM	NM	NM	NM	NM	NM

Greater than
ECMC Table 915-1
Standards

ND = not detected
NM = not measured

APPENDIX A
LABORATORY ANALYTICAL RESULTS

January 04, 2021

HRL Compliance Solutions- CO

Sample Delivery Group: L1298013
Samples Received: 12/17/2020
Project Number: WHITING-EMERALD (BKG)
Description: Whitig Oil & Gas-Emerald Field(BKGDS)
Site: EMERALD FIELD
Report To: Kris Rowe
2385 F ½ Road
Grand Junction, CO 81505

Entire Report Reviewed By:

Chris Ward

Chris Ward
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com



Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	4	
Sr: Sample Results	5	³ Ss
BKGD 1 L1298013-01	5	
BKGD 2 L1298013-02	6	⁴ Cn
BKGD 3 L1298013-03	7	⁵ Sr
Qc: Quality Control Summary	8	
Wet Chemistry by Method 9045D	8	⁶ Qc
Wet Chemistry by Method 9050AMod	9	
Metals (ICPMS) by Method 6020	10	⁷ Gl
Gl: Glossary of Terms	11	⁸ Al
Al: Accreditations & Locations	12	
Sc: Sample Chain of Custody	13	⁹ Sc

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



BKGD 1 L1298013-01 Solid

Collected by
Matt Smith

Collected date/time
12/16/20 10:30

Received date/time
12/17/20 10:20

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1596610	1	12/29/20 10:28	12/29/20 10:28	KMG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1596673	1	12/31/20 14:00	12/31/20 19:46	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1597020	1	12/24/20 10:00	12/24/20 20:00	JRB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1596935	5	12/23/20 19:05	12/23/20 22:22	LD	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

BKGD 2 L1298013-02 Solid

Collected by
Matt Smith

Collected date/time
12/16/20 11:30

Received date/time
12/17/20 10:20

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1596610	1	12/29/20 10:31	12/29/20 10:31	KMG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1596673	1	12/31/20 14:00	12/31/20 19:46	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1597020	1	12/24/20 10:00	12/24/20 20:00	JRB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1596935	5	12/23/20 19:05	12/23/20 22:38	LD	Mt. Juliet, TN

BKGD 3 L1298013-03 Solid

Collected by
Matt Smith

Collected date/time
12/16/20 12:15

Received date/time
12/17/20 10:20

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1596610	1	12/29/20 10:34	12/29/20 10:34	KMG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1596673	1	12/31/20 14:00	12/31/20 19:46	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1597020	1	12/24/20 10:00	12/24/20 20:00	JRB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1596935	5	12/23/20 19:05	12/23/20 22:41	LD	Mt. Juliet, TN

ACCOUNT:

HRL Compliance Solutions- CO

PROJECT:

WHITING-EMERALD (BKG

SDG:

L1298013

DATE/TIME:

01/04/21 13:52

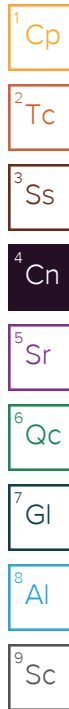
PAGE:

3 of 13



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Chris Ward
Project Manager





Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.315		1	12/29/2020 10:28	WG1596610

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.35	<u>T8</u>	1	12/31/2020 19:46	WG1596673

Sample Narrative:

L1298013-01 WG1596673: 8.35 at 19.2C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
Specific Conductance	340		10.0	1	12/24/2020 20:00	WG1597020

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	mg/kg		mg/kg			
Arsenic	8.08		1.00	5	12/23/2020 22:22	WG1596935

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.158		1	12/29/2020 10:31	WG1596610

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.66	<u>T8</u>	1	12/31/2020 19:46	WG1596673

Sample Narrative:

L1298013-02 WG1596673: 8.66 at 19.7C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
Specific Conductance	178		10.0	1	12/24/2020 20:00	WG1597020

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	mg/kg		mg/kg			
Arsenic	6.41		1.00	5	12/23/2020 22:38	WG1596935

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.260		1	12/29/2020 10:34	WG1596610

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.89	T8	1	12/31/2020 19:46	WG1596673

Sample Narrative:

L1298013-03 WG1596673: 7.89 at 19.7C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
Specific Conductance	2530		10.0	1	12/24/2020 20:00	WG1597020

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	mg/kg		mg/kg			
Arsenic	5.56		1.00	5	12/23/2020 22:41	WG1596935

L1298001-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1298001-01 12/31/20 19:46 • (DUP) R3608876-2 12/31/20 19:46

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.92	7.92	1	0.000		1

Sample Narrative:
OS: 7.92 at 19.6C
DUP: 7.92 at 19.2C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1298013-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1298013-01 12/31/20 19:46 • (DUP) R3608876-3 12/31/20 19:46

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.35	8.38	1	0.359		1

Sample Narrative:
OS: 8.35 at 19.2C
DUP: 8.38 at 19.3C

Laboratory Control Sample (LCS)

(LCS) R3608876-1 12/31/20 19:46

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	10.1	101	99.0-101	

Sample Narrative:
LCS: 10.06 at 18.7C

Method Blank (MB)

(MB) R3607214-1 12/24/20 20:00

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Laboratory Control Sample (LCS)

(LCS) R3607214-2 12/24/20 20:00

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	483	486	101	85.0-115	



Method Blank (MB)

(MB) R3606850-1 12/23/20 22:15

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Arsenic	U		0.100	1.00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

Laboratory Control Sample (LCS)

(LCS) R3606850-2 12/23/20 22:18

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Arsenic	100	93.5	93.5	80.0-120	

⁷Gl

⁸Al

⁹Sc

L1298013-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1298013-01 12/23/20 22:22 • (MS) R3606850-5 12/23/20 22:31 • (MSD) R3606850-6 12/23/20 22:35

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Arsenic	20.0	8.08	97.6	96.6	89.6	88.5	5	75.0-125			1.06	20



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

T8	Sample(s) received past/too close to holding time expiration.
----	---

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	KY90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA

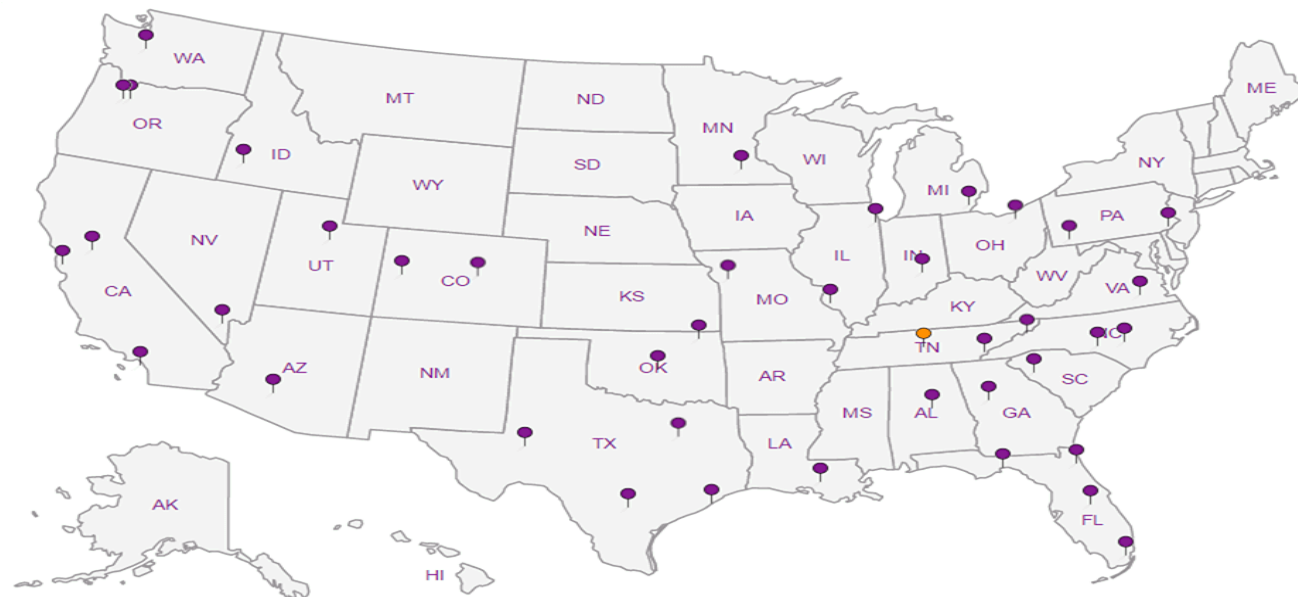
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

August 09, 2021

Vince DeCianne

Whiting Oil & Gas

retail

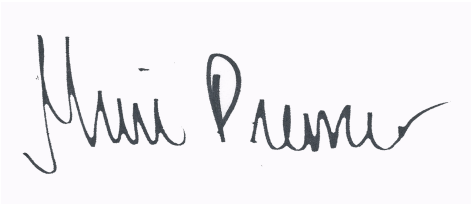
Denver, CO 80215

RE: Rangely Sampling

Work Order #2107461

Enclosed are the results of analyses for samples received by Summit Scientific on 07/30/21 11:25. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Muri Premer", is displayed on a light purple rectangular background.

Muri Premer For Paul Shrewsbury
President



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Rangely Sampling

Project Number: [none]

Project Manager: Vince DeCianne

Reported:
08/09/21 12:29

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
EOW#2BG_01	2107461-01	Soil	07/27/21 14:15	07/30/21 11:25
EOW#3BG_01	2107461-02	Soil	07/27/21 14:55	07/30/21 11:25

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Summit Scientific

S₂

2107461

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 1

Client: Whiting Oil + Gas (from Kleinfelder)

Project Manager: Vince DeCianne

Address: 707 17th St Suite 3000

E-Mail: jveith@kleinfelder.com

City/State/Zip: Denver CO 80202

kyle.waggoner@whiting.com

Phone: 970 309 6553

Project Name: Ramply Sampling

Sampler Name: JORDAN VEITH

Project Number: Pending

					Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	CAGCC 915-1								
1	ECW#2 BG-01	7/27/2021	1415	3			X			X			X								
2	ECW#3 BG-01	7/27/2021	1455	3			X			X			X								
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time (Check) Same Day _____ 72 hours _____ 24 hours _____ Standard <u>X</u> 48 hours _____ Sample Integrity: Temperature Upon Receipt: <u>5</u> Samples Intact: <u>(Yes)</u> No	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time:		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

2107461

Sample Receipt Checklist

S2 Work Order _____

Client: Whiting Oil & Gas Client Project ID: Rangely SamplingShipped Via: ☐ H.D./P.U./FedEx/UPS/USPS/Other _____ Airbill #: 2819 2500 1200Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)Temp (°C) 5

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>On ice.</u>
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , ect	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.JB

Custodian Printed Name or Initials

Josh Ben

Signature of Custodian

7/30/21

Date/Time



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Rangely Sampling

Project Number: [none]
Project Manager: Vince DeCianne

Reported:
08/09/21 12:29

EOW#2BG_01
2107461-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/27/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEH0009	08/02/21	08/05/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **07/27/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.6 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/27/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEH0010	08/02/21	08/05/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/27/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		86.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Rangely Sampling
Project Number: [none]
Project Manager: Vince DeCianne

Reported:
08/09/21 12:29

EOW#2BG_01
2107461-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/27/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEH0001	08/02/21	08/03/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **07/27/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		61.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		46.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/27/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.185	0.0100	mg/L	1	BEH0004	08/02/21	08/03/21	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/27/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Rangely Sampling

Project Number: [none]
Project Manager: Vince DeCianne

Reported:
08/09/21 12:29

EOW#2BG_01
2107461-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	6.18	0.210	mg/kg dry	1	BEH0003	08/02/21	08/03/21	EPA 6020B
Barium	66.1	0.419	"	"	"	"	"	"
Cadmium	ND	0.210	"	"	"	"	"	"
Copper	12.0	0.419	"	"	"	"	"	"
Lead	13.8	0.210	"	"	"	"	"	"
Nickel	16.9	0.419	"	"	"	"	"	"
Selenium	1.84	0.273	"	"	"	"	"	"
Silver	0.0872	0.0210	"	"	"	"	"	"
Zinc	71.8	0.419	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/27/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEH0080	08/05/21	08/06/21	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **07/27/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	381	0.0524	mg/L dry	1	BEH0008	08/02/21	08/03/21	EPA 6020B	
Magnesium	84.0	0.0524	"	"	"	"	"	"	
Sodium	20.0	0.0524	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/27/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.242	0.00100	units	1	BEH0077	08/05/21	08/05/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/27/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Rangely Sampling

Project Number: [none]

Project Manager: Vince DeCianne

Reported:
08/09/21 12:29

EOW#2BG_01
2107461-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	95.4	%	1	BEH0005	08/02/21	08/03/21	Calculation
----------	------	---	---	---------	----------	----------	-------------

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/27/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.11	0.0100	mmhos/cm	1	BEH0032	08/03/21	08/03/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **07/27/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.05		pH Units	1	BEH0031	08/03/21	08/03/21	EPA 9045D	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Rangely Sampling

Project Number: [none]

Project Manager: Vince DeCianne

Reported:

08/09/21 12:29

EOW#3BG_01

2107461-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 07/27/21 14:55

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEH0009	08/02/21	08/05/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 07/27/21 14:55

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.5 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 07/27/21 14:55

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEH0010	08/02/21	08/05/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 07/27/21 14:55

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		82.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Rangely Sampling

Project Number: [none]
Project Manager: Vince DeCianne

Reported:
08/09/21 12:29

EOW#3BG_01
2107461-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/27/21 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEH0001	08/02/21	08/03/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **07/27/21 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		59.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		50.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/27/21 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.235	0.0100	mg/L	1	BEH0004	08/02/21	08/03/21	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/27/21 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Rangely Sampling

Project Number: [none]

Project Manager: Vince DeCianne

Reported:
08/09/21 12:29

EOW#3BG_01
2107461-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	4.67	0.211	mg/kg dry	1	BEH0003	08/02/21	08/03/21	EPA 6020B
Barium	101	0.423	"	"	"	"	"	"
Cadmium	0.252	0.211	"	"	"	"	"	"
Copper	12.5	0.423	"	"	"	"	"	"
Lead	13.4	0.211	"	"	"	"	"	"
Nickel	14.5	0.423	"	"	"	"	"	"
Selenium	1.33	0.275	"	"	"	"	"	"
Silver	0.0939	0.0211	"	"	"	"	"	"
Zinc	59.2	0.423	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/27/21 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEH0080	08/05/21	08/06/21	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **07/27/21 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	22.0	0.0528	mg/L dry	1	BEH0008	08/02/21	08/03/21	EPA 6020B	
Magnesium	7.83	0.0528	"	"	"	"	"	"	
Sodium	67.5	0.0528	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/27/21 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.15	0.00100	units	1	BEH0077	08/05/21	08/05/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/27/21 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Rangely Sampling

Project Number: [none]

Project Manager: Vince DeCianne

Reported:

08/09/21 12:29

EOW#3BG_01

2107461-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	94.7	%	1	BEH0005	08/02/21	08/03/21	Calculation
----------	------	---	---	---------	----------	----------	-------------

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/27/21 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.544	0.0100	mmhos/cm	1	BEH0032	08/03/21	08/03/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **07/27/21 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.42		pH Units	1	BEH0031	08/03/21	08/03/21	EPA 9045D	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Rangely Sampling

Project Number: [none]
Project Manager: Vince DeCianne

Reported:
08/09/21 12:29

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEH0009 - EPA 5030 Soil MS

Blank (BEH0009-BLK1)

Prepared: 08/02/21 Analyzed: 08/05/21

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0421		"	0.0400		105	23-173			
Surrogate: Toluene-d8	0.0391		"	0.0400		97.6	20-170			
Surrogate: 4-Bromofluorobenzene	0.0368		"	0.0400		91.9	21-167			

LCS (BEH0009-BS1)

Prepared: 08/02/21 Analyzed: 08/05/21

Benzene	0.0651	0.0020	mg/kg	0.0750		86.8	70-130			
Toluene	0.0661	0.0050	"	0.0750		88.2	70-130			
Ethylbenzene	0.0819	0.0050	"	0.0750		109	70-130			
m,p-Xylene	0.162	0.010	"	0.150		108	70-130			
o-Xylene	0.0835	0.0050	"	0.0750		111	70-130			
1,2,4-Trimethylbenzene	0.0833	0.0050	"	0.0750		111	70-130			
1,3,5-Trimethylbenzene	0.0815	0.0050	"	0.0750		109	70-130			
Naphthalene	0.0778	0.0038	"	0.0750		104	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0429		"	0.0400		107	23-173			
Surrogate: Toluene-d8	0.0398		"	0.0400		99.4	20-170			
Surrogate: 4-Bromofluorobenzene	0.0361		"	0.0400		90.2	21-167			

Matrix Spike (BEH0009-MS1)

Source: 2107462-01

Prepared: 08/02/21 Analyzed: 08/05/21

Benzene	0.0561	0.0020	mg/kg	0.0750	ND	74.8	70-130			
Toluene	0.0553	0.0050	"	0.0750	ND	73.8	70-130			
Ethylbenzene	0.0659	0.0050	"	0.0750	ND	87.8	70-130			
m,p-Xylene	0.129	0.010	"	0.150	ND	85.7	70-130			
o-Xylene	0.0677	0.0050	"	0.0750	ND	90.3	70-130			
1,2,4-Trimethylbenzene	0.0628	0.0050	"	0.0750	ND	83.7	70-130			
1,3,5-Trimethylbenzene	0.0621	0.0050	"	0.0750	ND	82.8	70-130			
Naphthalene	0.0833	0.0038	"	0.0750	ND	111	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0451		"	0.0400		113	23-173			
Surrogate: Toluene-d8	0.0394		"	0.0400		98.6	20-170			
Surrogate: 4-Bromofluorobenzene	0.0364		"	0.0400		90.9	21-167			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Rangely Sampling

Project Number: [none]

Project Manager: Vince DeCianne

Reported:

08/09/21 12:29

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEH0009 - EPA 5030 Soil MS

Matrix Spike Dup (BEH0009-MSD1)	Source: 2107462-01			Prepared: 08/02/21 Analyzed: 08/05/21						
Benzene	0.0551	0.0020	mg/kg	0.0750	ND	73.5	70-130	1.83	30	
Toluene	0.0536	0.0050	"	0.0750	ND	71.4	70-130	3.20	30	
Ethylbenzene	0.0640	0.0050	"	0.0750	ND	85.4	70-130	2.86	30	
m,p-Xylene	0.126	0.010	"	0.150	ND	83.8	70-130	2.29	30	
o-Xylene	0.0662	0.0050	"	0.0750	ND	88.3	70-130	2.19	30	
1,2,4-Trimethylbenzene	0.0609	0.0050	"	0.0750	ND	81.2	70-130	3.11	30	
1,3,5-Trimethylbenzene	0.0605	0.0050	"	0.0750	ND	80.7	70-130	2.59	30	
Naphthalene	0.0797	0.0038	"	0.0750	ND	106	70-130	4.42	30	
Surrogate: 1,2-Dichloroethane-d4	0.0440		"	0.0400		110	23-173			
Surrogate: Toluene-d8	0.0392		"	0.0400		98.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0368		"	0.0400		92.1	21-167			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Rangely Sampling

Project Number: [none]

Project Manager: Vince DeCianne

Reported:

08/09/21 12:29

Extractable Petroleum Hydrocarbons by 8015 - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BEH0010 - EPA 3550A

Blank (BEH0010-BLK1)

Prepared: 08/02/21 Analyzed: 08/05/21

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

LCS (BEH0010-BS1)

Prepared: 08/02/21 Analyzed: 08/05/21

C10-C28 (DRO)	533	50	mg/kg	500	107	70-130
---------------	-----	----	-------	-----	-----	--------

Matrix Spike (BEH0010-MS1)

Source: 2107462-01

Prepared: 08/02/21 Analyzed: 08/05/21

C10-C28 (DRO)	545	50	mg/kg	500	16.9	106	70-130
---------------	-----	----	-------	-----	------	-----	--------

Matrix Spike Dup (BEH0010-MSD1)

Source: 2107462-01

Prepared: 08/02/21 Analyzed: 08/05/21

C10-C28 (DRO)	617	50	mg/kg	500	16.9	120	70-130	12.4	20
---------------	-----	----	-------	-----	------	-----	--------	------	----

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Rangely Sampling

Project Number: [none]
Project Manager: Vince DeCianne

Reported:
08/09/21 12:29

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Reporting				Spike	Source	%REC			RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEH0001 - EPA 5030 Soil MS

Blank (BEH0001-BLK1)

Prepared: 08/02/21 Analyzed: 08/03/21

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0180		"	0.0333		54.1	40-150			
Surrogate: Fluoranthene-d10	0.0189		"	0.0333		56.6	40-150			

LCS (BEH0001-BS1)

Prepared: 08/02/21 Analyzed: 08/03/21

Acenaphthene	0.0235	0.00500	mg/kg	0.0333		70.5	31-137			
Anthracene	0.0247	0.00500	"	0.0333		74.2	30-120			
Benzo (a) anthracene	0.0259	0.00500	"	0.0333		77.6	30-120			
Benzo (a) pyrene	0.0210	0.00500	"	0.0333		63.0	30-120			
Benzo (b) fluoranthene	0.0211	0.00500	"	0.0333		63.2	30-120			
Benzo (k) fluoranthene	0.0207	0.00500	"	0.0333		62.1	30-120			
Chrysene	0.0259	0.00500	"	0.0333		77.6	30-120			
Dibenz (a,h) anthracene	0.0221	0.00500	"	0.0333		66.4	30-120			
Fluoranthene	0.0250	0.00500	"	0.0333		74.9	30-120			
Fluorene	0.0240	0.00500	"	0.0333		72.1	30-120			
Indeno (1,2,3-cd) pyrene	0.0225	0.00500	"	0.0333		67.4	30-120			
Pyrene	0.0253	0.00500	"	0.0333		75.9	35-142			
1-Methylnaphthalene	0.0261	0.00500	"	0.0333		78.2	35-142			
2-Methylnaphthalene	0.0223	0.00500	"	0.0333		67.0	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0262		"	0.0333		78.5	40-150			
Surrogate: Fluoranthene-d10	0.0255		"	0.0333		76.5	40-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Rangely Sampling

Project Number: [none]
Project Manager: Vince DeCianne

Reported:
08/09/21 12:29

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike		Source		%REC		RPD	
	Result	Limit	Units	Level		Result	%REC	Limits	RPD	Limit	Notes

Batch BEH0001 - EPA 5030 Soil MS

Matrix Spike (BEH0001-MS1)

Source: 2107453-01

Prepared: 08/02/21 Analyzed: 08/03/21

Acenaphthene	0.0215	0.00500	mg/kg	0.0333	ND	64.4	31-137		
Anthracene	0.0218	0.00500	"	0.0333	ND	65.3	30-120		
Benzo (a) anthracene	0.0217	0.00500	"	0.0333	ND	65.0	30-120		
Benzo (a) pyrene	0.0176	0.00500	"	0.0333	ND	52.9	30-120		
Benzo (b) fluoranthene	0.0180	0.00500	"	0.0333	ND	54.1	30-120		
Benzo (k) fluoranthene	0.0179	0.00500	"	0.0333	ND	53.7	30-120		
Chrysene	0.0217	0.00500	"	0.0333	ND	65.0	30-120		
Dibenz (a,h) anthracene	0.0188	0.00500	"	0.0333	ND	56.4	30-120		
Fluoranthene	0.0227	0.00500	"	0.0333	ND	68.0	30-120		
Fluorene	0.0220	0.00500	"	0.0333	ND	65.9	30-120		
Indeno (1,2,3-cd) pyrene	0.0189	0.00500	"	0.0333	ND	56.7	30-120		
Pyrene	0.0210	0.00500	"	0.0333	ND	63.1	35-142		
1-Methylnaphthalene	0.0221	0.00500	"	0.0333	ND	66.4	15-130		
2-Methylnaphthalene	0.0219	0.00500	"	0.0333	ND	65.6	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0224		"	0.0333		67.3	40-150		
Surrogate: Fluoranthene-d10	0.0228		"	0.0333		68.4	40-150		

Matrix Spike Dup (BEH0001-MSD1)

Source: 2107453-01

Prepared: 08/02/21 Analyzed: 08/03/21

Acenaphthene	0.0219	0.00500	mg/kg	0.0333	ND	65.8	31-137	2.15	30
Anthracene	0.0230	0.00500	"	0.0333	ND	69.1	30-120	5.68	30
Benzo (a) anthracene	0.0235	0.00500	"	0.0333	ND	70.6	30-120	8.29	30
Benzo (a) pyrene	0.0193	0.00500	"	0.0333	ND	57.8	30-120	8.76	30
Benzo (b) fluoranthene	0.0196	0.00500	"	0.0333	ND	58.8	30-120	8.38	30
Benzo (k) fluoranthene	0.0194	0.00500	"	0.0333	ND	58.1	30-120	7.94	30
Chrysene	0.0235	0.00500	"	0.0333	ND	70.5	30-120	8.25	30
Dibenz (a,h) anthracene	0.0209	0.00500	"	0.0333	ND	62.6	30-120	10.5	30
Fluoranthene	0.0240	0.00500	"	0.0333	ND	72.1	30-120	5.97	30
Fluorene	0.0226	0.00500	"	0.0333	ND	67.8	30-120	2.74	30
Indeno (1,2,3-cd) pyrene	0.0209	0.00500	"	0.0333	ND	62.7	30-120	10.2	30
Pyrene	0.0235	0.00500	"	0.0333	ND	70.5	35-142	11.1	30
1-Methylnaphthalene	0.0234	0.00500	"	0.0333	ND	70.1	15-130	5.49	50
2-Methylnaphthalene	0.0227	0.00500	"	0.0333	ND	68.0	15-130	3.50	50
Surrogate: 2-Methylnaphthalene-d10	0.0242		"	0.0333		72.6	40-150		
Surrogate: Fluoranthene-d10	0.0238		"	0.0333		71.4	40-150		

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Rangely Sampling

Project Number: [none]

Project Manager: Vince DeCianne

Reported:

08/09/21 12:29

Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEH0004 - EPA 3050B

Blank (BEH0004-BLK1)

Prepared: 08/02/21 Analyzed: 08/03/21

Boron ND 0.0100 mg/L

LCS (BEH0004-BS1)

Prepared: 08/02/21 Analyzed: 08/03/21

Boron 4.52 0.0100 mg/L 5.00 90.5 80-120

Duplicate (BEH0004-DUP1)

Source: 2107456-01

Prepared: 08/02/21 Analyzed: 08/03/21

Boron 0.100 0.0100 mg/L 0.0975 2.61 20

Matrix Spike (BEH0004-MS1)

Source: 2107456-01

Prepared: 08/02/21 Analyzed: 08/03/21

Boron 4.05 0.0100 mg/L 5.00 0.0975 79.0 75-125

Matrix Spike Dup (BEH0004-MSD1)

Source: 2107456-01

Prepared: 08/02/21 Analyzed: 08/03/21

Boron 4.17 0.0100 mg/L 5.00 0.0975 81.4 75-125 2.93 25

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Rangely Sampling

Project Number: [none]

Project Manager: Vince DeCianne

Reported:

08/09/21 12:29

Total Metals by EPA 6020B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEH0003 - EPA 3050B

Blank (BEH0003-BLK1)

Prepared: 08/02/21 Analyzed: 08/03/21

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	ND	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

LCS (BEH0003-BS1)

Prepared: 08/02/21 Analyzed: 08/03/21

Arsenic	43.0	0.200	mg/kg wet	40.0	108	80-120
Barium	41.2	0.400	"	40.0	103	80-120
Cadmium	2.10	0.200	"	2.00	105	80-120
Copper	40.9	0.400	"	40.0	102	80-120
Lead	20.5	0.200	"	20.0	103	80-120
Nickel	39.5	0.400	"	40.0	98.7	80-120
Selenium	4.07	0.260	"	4.00	102	80-120
Silver	2.00	0.0200	"	2.00	99.8	80-120
Zinc	43.1	0.400	"	40.0	108	80-120

Duplicate (BEH0003-DUP1)

Source: 2107456-01

Prepared: 08/02/21 Analyzed: 08/03/21

Arsenic	1.16	0.276	mg/kg dry	1.19	2.79	20
Barium	107	0.552	"	96.6	10.1	20
Cadmium	0.120	0.276	"	0.119	0.336	20
Copper	4.52	0.552	"	4.53	0.255	20
Lead	6.74	0.276	"	5.55	19.5	20
Nickel	4.34	0.552	"	4.38	0.834	20
Selenium	0.643	0.359	"	0.725	12.1	20
Silver	0.0207	0.0276	"	0.0216	4.09	20
Zinc	18.5	0.552	"	19.3	3.99	20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Rangely Sampling

Project Number: [none]

Project Manager: Vince DeCianne

Reported:

08/09/21 12:29

Total Metals by EPA 6020B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEH0003 - EPA 3050B

Matrix Spike (BEH0003-MS1)

Source: 2107456-01

Prepared: 08/02/21 Analyzed: 08/03/21

Arsenic	57.9	0.276	mg/kg dry	55.2	1.19	103	75-125
Barium	159	0.552	"	55.2	96.6	113	75-125
Cadmium	2.87	0.276	"	2.76	0.119	99.8	75-125
Copper	58.3	0.552	"	55.2	4.53	97.3	75-125
Lead	31.3	0.276	"	27.6	5.55	93.1	75-125
Nickel	56.6	0.552	"	55.2	4.38	94.5	75-125
Selenium	5.60	0.359	"	5.52	0.725	88.3	75-125
Silver	2.62	0.0276	"	2.76	0.0216	94.0	75-125
Zinc	77.4	0.552	"	55.2	19.3	105	75-125

Matrix Spike Dup (BEH0003-MSD1)

Source: 2107456-01

Prepared: 08/02/21 Analyzed: 08/03/21

Arsenic	55.6	0.276	mg/kg dry	55.2	1.19	98.6	75-125	4.01	25
Barium	147	0.552	"	55.2	96.6	90.6	75-125	7.96	25
Cadmium	2.76	0.276	"	2.76	0.119	95.7	75-125	3.95	25
Copper	55.0	0.552	"	55.2	4.53	91.3	75-125	5.81	25
Lead	30.2	0.276	"	27.6	5.55	89.3	75-125	3.36	25
Nickel	53.5	0.552	"	55.2	4.38	88.9	75-125	5.59	25
Selenium	5.51	0.359	"	5.52	0.725	86.7	75-125	1.62	25
Silver	2.50	0.0276	"	2.76	0.0216	89.7	75-125	4.69	25
Zinc	74.0	0.552	"	55.2	19.3	99.1	75-125	4.42	25

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Rangely Sampling

Project Number: [none]

Project Manager: Vince DeCianne

Reported:

08/09/21 12:29

Hexavalent Chromium by EPA Method 7196 - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEH0080 - 3060A Mod

Blank (BEH0080-BLK1)

Prepared: 08/05/21 Analyzed: 08/06/21

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BEH0080-BS1)

Prepared: 08/05/21 Analyzed: 08/06/21

Chromium, Hexavalent 26.2 0.30 mg/kg wet 25.0 105 80-120

Duplicate (BEH0080-DUP1)

Source: 2108053-05

Prepared: 08/05/21 Analyzed: 08/06/21

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BEH0080-MS1)

Source: 2108053-05

Prepared: 08/05/21 Analyzed: 08/06/21

Chromium, Hexavalent 30.2 0.30 mg/kg dry 29.6 ND 102 75-125

Matrix Spike Dup (BEH0080-MSD1)

Source: 2108053-05

Prepared: 08/05/21 Analyzed: 08/06/21

Chromium, Hexavalent 30.2 0.30 mg/kg dry 29.6 ND 102 75-125 0.196 20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Rangely Sampling

Project Number: [none]

Project Manager: Vince DeCianne

Reported:

08/09/21 12:29

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BEH0008 - General Preparation

Blank (BEH0008-BLK1)

Prepared: 08/02/21 Analyzed: 08/03/21

Calcium	ND	0.0500	mg/L wet
Magnesium	ND	0.0500	"
Sodium	ND	0.0500	"

LCS (BEH0008-BS1)

Prepared: 08/02/21 Analyzed: 08/03/21

Calcium	5.62	0.0500	mg/L wet	5.00	112	70-130
Magnesium	5.06	0.0500	"	5.00	101	70-130
Sodium	5.05	0.0500	"	5.00	101	70-130

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Rangely Sampling

Project Number: [none]

Project Manager: Vince DeCianne

Reported:

08/09/21 12:29

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BEH0005 - General Preparation

Duplicate (BEH0005-DUP1)		Source: 2107333-07		Prepared: 08/02/21 Analyzed: 08/03/21	
% Solids	93.1		%	92.7	0.444 20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Rangely Sampling

Project Number: [none]

Project Manager: Vince DeCianne

Reported:

08/09/21 12:29

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BEH0032 - General Preparation

Blank (BEH0032-BLK1)

Prepared & Analyzed: 08/03/21

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BEH0032-BS1)

Prepared & Analyzed: 08/03/21

Specific Conductance (EC) 0.139 0.0100 mmhos/cm 0.150 92.5 90-110

Duplicate (BEH0032-DUP1)

Source: 2107456-01

Prepared & Analyzed: 08/03/21

Specific Conductance (EC) 0.461 0.0100 mmhos/cm 0.461 0.0651 20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Rangely Sampling

Project Number: [none]

Project Manager: Vince DeCianne

Reported:

08/09/21 12:29

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BEH0031 - General Preparation

LCS (BEH0031-BS1)

Prepared & Analyzed: 08/03/21

pH	9.33	pH Units	9.21	101	95-105
----	------	----------	------	-----	--------

Duplicate (BEH0031-DUP1)

Source: 2107456-01

Prepared & Analyzed: 08/03/21

pH	8.24	pH Units	8.23	0.121	20
----	------	----------	------	-------	----

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Rangely Sampling

Project Number: [none]

Project Manager: Vince DeCianne

Reported:
08/09/21 12:29

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 14, 2022

Vince DeCianne

Whiting Oil & Gas

retail

Denver, CO 80215

RE: AC McLaughlin 100 Background

Work Order #2201271

Enclosed are the results of analyses for samples received by Summit Scientific on 01/24/22 11:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury

President

Summit Scientific

S₂

2201271

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Page: 1 of 1

Client: Whiting Oil & Gas

Project Manager: Vince DeCianne

Address: 707 17th Street, Suite 3000

E-Mail: jveith@kleinfelder.com

City/State/Zip: Denver, CO 80202

kyle.waggoner@whiting.com

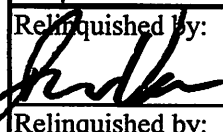
Phone: 970-309-6553

Project Name: AC McLaughlin 100 Background

Sampler Name: Jordan Veith

Project Number: 20221740.001A

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions		
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	COGCC Table 915-1	Arsenic, EC, pH, SAR	EC	SAR	pH	Arsenic					
1	20220118 - AC McLaughlin RD - Box 10 2 ft (1st) 10:30			3			X			X								X					
2																							
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							

Relinquished by: 


Relinquished by: _____

Relinquished by: _____

Date/Time: 1/14/2022 1700

Date/Time: _____

Date/Time: _____

Received by: 

Received by: _____

Received by: _____

Date/Time: 1/24/22 1100

Date/Time: _____

Date/Time: _____

Turn Around Time (Check)
Same Day _____ 72 hours _____ 24 hours _____
_____ Standard _____ 48 hours _____
Integrity: _____ Temperature _____
Upon Receipt: 3.8 Samples Intact: _____
Yes No

Notes:

S₂

2201271

Sample Receipt Checklist

S2 Work Order#

Client: Whiting Oil & GasClient Project ID: AL McLaughlin 100 BackgroundShipped Via: H.D./P.U./FedEx/UPS/USPS/Other

Airbill #:

☐ ☐ ☒ ☐ ☐

Matrix (check all that apply):

☐ Air☒ Soil/Solid☐ Water☐ Other:

(Describe)

Temp (°C)

3.8

Thermometer ID: G86A9201901378

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	On ice.
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

JB

Custodian Printed Name or Initials

1/24/22

Date/Time



Fremont
Analytical

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Summit Scientific
Paul Shrewsbury
4653 Table Mountain Dr
Golden, CO 80403

RE: 2201271
Work Order Number: 2201467

March 11, 2022

Attention Paul Shrewsbury:

Fremont Analytical, Inc. received 1 sample(s) on 1/28/2022 for the analyses presented in the following report.

Conductivity by SM 2510B
pH by SM 4500H+B
Sample Moisture (Percent Moisture)
Sodium Adsorption Ratio
Total Metals by EPA Method 6020B

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

CC:
Muri Premer

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original

www.fremontanalytical.com

CLIENT: Summit Scientific
Project: 2201271
Work Order: 2201467

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2201467-001	20220118_AC McLaughlin 100BG01@2	01/18/2022 12:00 AM	01/28/2022 11:59 AM
2201467-001	20220118_AC McLaughlin 100BG01@2	01/18/2022 12:00 AM	01/28/2022 11:59 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

CLIENT: Summit Scientific**Project:** 2201271

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

The following preparation methods were performed per client request:

Boron was prepared using Hot Water Soluble Method provided by client.

Conductivity, Sodium Adsorption Ratio, and pH were prepared using Saturated Paste Method provided by client.

Qualifiers:

- * - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- DUP - Sample Duplicate
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MCL - Maximum Contaminant Level
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- REP - Sample Replicate
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



Analytical Report

Work Order: 2201467
Date Reported: 3/11/2022

Client: Summit Scientific

Collection Date: 1/18/2022

Project: 2201271

Lab ID: 2201467-001

Matrix: Soil

Client Sample ID: 20220118_AC McLaughlin 100BG01@2ft

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
----------	--------	----	------	-------	----	---------------

Sodium Adsorption Ratio

Batch ID: 35568

Analyst: AK

Sodium Adsorption Ratio (SAR)	2.17	0		mEq/L	1	2/17/2022 1:16:00 PM
-------------------------------	------	---	--	-------	---	----------------------

Work Order: 2201467
CLIENT: Summit Scientific
Project: 2201271

QC SUMMARY REPORT

Sodium Adsorption Ratio

Sample ID: MB-35568		SampType: MBLK		Units: µg/L		Prep Date: 3/2/2022			RunNo: 73700			
Client ID: MBLKW		Batch ID: 35568					Analysis Date: 2/15/2022			SeqNo: 1508123		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Calcium	ND	1,000									
Magnesium	ND	500									
Sodium	ND	1,000									

Sample ID: LCS-35568		SampType: LCS			Units: µg/L		Prep Date: 3/2/2022			RunNo: 73700		
Client ID: LCSW		Batch ID: 35568			Analysis Date: 2/15/2022			SeqNo: 1508124				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Calcium	5,700	1,000	5,000	0	114	50	150				
Magnesium	5,100	500	5,000	0	102	50	150				
Sodium	5,240	1,000	5,000	0	105	50	150				

Sample ID: 2201452-005ADUP		SampType: DUP		Units: mEq/L		Prep Date: 3/2/2022			RunNo: 73700		
Client ID: BATCH		Batch ID: 35568					Analysis Date: 2/15/2022			SeqNo: 1508783	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sodium Adsorption Ratio (SAR)	0.0414	0						0.06270	40.9	30	R
-------------------------------	--------	---	--	--	--	--	--	---------	------	----	---

Client Name: **SUMSCI**
 Logged by: **Clare Griggs**

Work Order Number: **2201467**
 Date Received: **1/28/2022 11:59:00 AM**

Chain of Custody

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

Log In

3. Coolers are present? Yes ☒ No ☐ NA ☐
 4. Shipping container/cooler in good condition? Yes ☒ No ☐
 5. Custody Seals present on shipping container/cooler?
 (Refer to comments for Custody Seals not intact) Yes ☐ No ☐ Not Present ☒
 6. Was an attempt made to cool the samples? Yes ☐ No ☒ NA ☐
Unknown prior to receipt.
 7. Were all items received at a temperature of >2°C to 6°C * Yes ☐ No ☐ NA ☒
 8. Sample(s) in proper container(s)? Yes ☒ No ☐
 9. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
 10. Are samples properly preserved? Yes ☒ No ☐
 11. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
 12. Is there headspace in the VOA vials? Yes ☐ No ☐ NA ☒
 13. Did all samples containers arrive in good condition(unbroken)? Yes ☒ No ☐
 14. Does paperwork match bottle labels? Yes ☒ No ☐
 15. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
 16. Is it clear what analyses were requested? Yes ☒ No ☐
 17. Were all holding times able to be met? Yes ☒ No ☐

Special Handling (if applicable)

18. 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"/>		

19. Additional remarks:

Item Information

Item #	Temp °C
Sample	11.6

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C



3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: 11/76/22

Page: 1 of 1

Laboratory Project No (internal):

2201467

Special Remarks:

Summit Scientific

Address: 4653 Table Mountain Drive

City, State, Zip: Golden, CO. 80403

Telephone: 303-277-9310

PM Email:	mpierre@szsciencellinc.com , psil@ewsbury@szsciencellinc.com
Fax:	

Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	SAR	EC	pH	Metals	Comments
1 20020118 - Kc. McCaughlin 100B6010 2ft			X	X	X			SAR, EC, pH by sedimental paste B by hot water soluble Metals As, Bc, Cd, Cu, Pb, Ni, Se, Ag, Zn
2								
3								
4								
5								
6								
7								
8								
9								
10								

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SI = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

****Metals (Circle):**

Individual:

***Anions (Circle): ☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ O-Phosphate ☐ Fluoride ☐ Nitrate+Nitrite

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished / 1	Date/Time

1

Date/Time

delinquished Date/Time

.....

Date/Time

Reinigungs- und

1

RECEIVED

bars/min

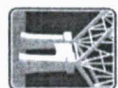
Same D:

ay

1

COG 12-22217

www.fremontanalytical.com



Fremont
Analytical

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: 1/26/22 Page: 1 of 1

Laboratory Project No (Internal):

22061467

Special Remarks:

Report SAR only per PS 3/9/22 -CG

Client: Summit Scientific

Project No:

Address: 4653 Table Mountain Drive

Collected by:

City, State, Zip: Golden, CO. 80403

Location:

Telephone: 303-277-9310

Report To (PM):

Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)

Fax:

PM Email: mpremer@ss2scientific.com, pshrewsbury@ss2scientific.com

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	Comments
-------------	-------------	-------------	-----------------------	----------

1 2020118 - AC McCaslin 100B5010 2A			X X X	SAR, EC, pH by solubility tests B by hot water soluble Metals As, Bc, Cd, Cu, Pb, Ni, Se, Hg, Zn
-------------------------------------	--	--	-------	--

2				
---	--	--	--	--

3				
---	--	--	--	--

4				
---	--	--	--	--

5				
---	--	--	--	--

6				
---	--	--	--	--

7				
---	--	--	--	--

8				
---	--	--	--	--

9				
---	--	--	--	--

10				
----	--	--	--	--

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle):

Individual:

**Anions (Circle): ☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ O-Phosphate ☐ Fluoride ☐ Nitrate+Nitrite

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished Date/Time

Received

Date/Time

Relinquished Date/Time

Received

Date/Time

Same Day ☐ Next Day ☐ 2 Day ☐ 3 Day ☐ Turn-around Time: (specify)

Project:

Project Number:

Project Manager:

Reported:**Notes and Definitions**

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference



Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 02, 2022

Vince DeCianne

Whiting Oil & Gas

retail

Denver, CO 80215

RE: AC McLaughlin 100 Background #2

Work Order #2204264

Enclosed are the results of analyses for samples received by Summit Scientific on 04/18/22 10:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury

President



Whiting Oil & Gas
retail
Denver CO, 80215

Project: AC McLaughlin 100 Background #2

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
05/02/22 12:57

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
20220414_ACMcLoughlin100_BG02@GS	2204264-01	Soil	04/14/22 12:20	04/18/22 10:40

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Summit Scientific

S₂

2204264

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 1

Client: Whiting Oil + Gas

Project Manager: Vince DeCiarne

Address: 707 17th St Ste 3000

E-Mail: jweath@kleinfelder.com

City/State/Zip: Denver, CO 80202

kyle.wassoner@whiting.com

Phone: 970-309-16553

Project Name: AC McLaughlin 100 Background 2

Sampler Name: Jordan Keith

Project Number: 20221740.001A

					Preservative				Matrix				Analysis Requested								Special Instructions							
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	H ₂	EC	SAR													
1	20220414 AC McLaughlin 100 Background 2	4/14/22	12:20	1			X			X			X															
2																												
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												

Relinquished by: <u>[Signature]</u>	Date/Time:	Received by: <u>[Signature]</u>	Date/Time:	Turn Around Time (Check) <u>Same Day</u> _____ 24 hours _____ 48 hours _____ Sample Integrity: Temperature Upon Receipt: <u>0.7</u> Samples Intact: <u>Yes</u> No	Notes:
Relinquished by:	Date/Time:	Received by: <u>[Signature]</u>	Date/Time: <u>4/18/22 1040</u>		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

S₂

Sample Receipt Checklist

S2 Work Order# 2204264

Client: Whiting Client Project ID: AL McLaughlin 100 Background 2

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other _____ Airbill #: _____

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 0.7Thermometer # Ø2

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6 °C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>On ice.</u>
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any): 				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

JB

Custodian Printed Name

4/18/22

Date/Time



Whiting Oil & Gas
retail
Denver CO, 80215

Project: AC McLaughlin 100 Background #2

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
05/02/22 12:57

20220414_ACMcLoughlin100_BG02@GS
2204264-01 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/14/22 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	124	0.0541	mg/L dry	1	BFD0562	04/26/22	05/02/22	EPA 6020B	
Magnesium	30.8	0.0541	"	"	"	"	"	"	
Sodium	2090	0.0541	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/14/22 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	43.5	0.00100	units	1	BFE0018	05/02/22	05/02/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/14/22 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.4		%	1	BFD0495	04/22/22	04/26/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/14/22 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	14.0	0.0100	mmhos/cm	1	BFD0591	04/27/22	04/27/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/14/22 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.10		pH Units	1	BFD0589	04/27/22	04/27/22	EPA 9045D	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: AC McLaughlin 100 Background #2

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
05/02/22 12:57

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD	Limit	Notes
		Limit	Units			%REC	Limits			

Batch BFD0562 - General Preparation

Blank (BFD0562-BLK1)

Prepared: 04/26/22 Analyzed: 05/02/22

Calcium	ND	0.0500	mg/L wet
Magnesium	ND	0.0500	"
Sodium	ND	0.0500	"

LCS (BFD0562-BS1)

Prepared: 04/26/22 Analyzed: 05/02/22

Calcium	4.99	0.0500	mg/L wet	5.00	99.7	70-130
Magnesium	5.39	0.0500	"	5.00	108	70-130
Sodium	5.27	0.0500	"	5.00	105	70-130

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: AC McLaughlin 100 Background #2

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:

05/02/22 12:57

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BFD0495 - General Preparation

Duplicate (BFD0495-DUP1)

Source: 2204254-01

Prepared: 04/22/22 Analyzed: 04/26/22

% Solids	79.3	%	79.1	0.239	20
----------	------	---	------	-------	----

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: AC McLaughlin 100 Background #2

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
05/02/22 12:57

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BFD0591 - General Preparation

Blank (BFD0591-BLK1)

Prepared & Analyzed: 04/27/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFD0591-BS1)

Prepared & Analyzed: 04/27/22

Specific Conductance (EC) 0.153 0.0100 mmhos/cm 0.150 102 95-105

Duplicate (BFD0591-DUP1)

Source: 2204254-01

Prepared & Analyzed: 04/27/22

Specific Conductance (EC) 2.40 0.0100 mmhos/cm 2.43 1.24 20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: AC McLaughlin 100 Background #2

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
05/02/22 12:57

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD		Notes
		Limit	Units			%REC	Limits	RPD	Limit	

Batch BFD0589 - General Preparation

LCS (BFD0589-BS1)

Prepared & Analyzed: 04/27/22

pH	9.12	pH Units	9.18	99.3	95-105
----	------	----------	------	------	--------

Duplicate (BFD0589-DUP1)

Source: 2204254-01

Prepared & Analyzed: 04/27/22

pH	7.68	pH Units	7.66	0.261	20
----	------	----------	------	-------	----

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: AC McLaughlin 100 Background #2

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:

05/02/22 12:57

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

September 27, 2021

Vince DeCianne

Whiting Oil & Gas

retail

Denver, CO 80215

RE: Emerald C134 Closure

Work Order #2109288

Enclosed are the results of analyses for samples received by Summit Scientific on 09/17/21 10:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury

President



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Emerald C134 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/27/21 13:46

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
20210916_EmeraldC134_WH@5ft	2109288-01	Soil	09/16/21 07:30	09/17/21 10:45
20210916_EmeraldC134_BG@3ft	2109288-02	Soil	09/16/21 07:45	09/17/21 10:45

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Summit Scientific

S₂

2109288

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Page: 1 of 1

Client: Whiting Oil & Gas

Project Manager: Vince DeCianne

Address: 707 17th Street, Suite 3000

E-Mail: jveith@kleinfelder.com

City/State/Zip: Denver, CO 80202

kyle.waggoner@whiting.com

Phone: 970-309-6553

Project Name: Emerald C134 Closure

Sampler Name: Jordan Veith

Project Number: 20221740.001A

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions	
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	COGCC Table 915-1	Arsenic, EC, pH, SAR	EC	SAR	pH	Arsenic		
1	70710916 - Emerald C134 - 1st @ 9/16/21	9/16/21	7:30	1			X			X						X	X			
2	70710916 - Emerald C134 - 2nd @ 9/16/21	9/16/21	7:45	1			X			X						X	X			
3	<p><i>Jordan Veith</i> 9/16/2021</p>																			
4																				
5																				
6																				
7																				
8																				
9																				
10																				
Relinquished by: <i>Jordan Veith</i>		Date/Time: 9/16/2021 14:30		Received by:		Date/Time:		Turn Around Time (Check) Same Day _____ 72 hours _____ 24 hours _____ <u>Standard</u> _____ 48 hours						Notes:						
Relinquished by:		Date/Time:		Received by: <i>John B...</i>		Date/Time: 9/17/21 1045		Integrity: <u>4.2</u> Sample Temperature												
Relinquished by:		Date/Time:		Received by:		Date/Time:		Upon Receipt: <u>Yes</u> No												

2109288

Sample Receipt Checklist

S2 Work Order _____

Client: WhitingClient Project ID: Emerald C134 closureShipped Via: ☐ H.D./P.U./FedEx/UPS/USPS/Other _____ Airbill #: _____
☐ ☐ ☒ ☐ ☐
Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)

Temp (°C)	4.2
-----------	-----

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	On ice.
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

JB
 Custodian Printed Name or Initials

John B...
 Signature of Custodian

9/17/21
 Date/Time



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Emerald C134 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/27/21 13:46

20210916_EmeraldC134_WH@5ft
2109288-01 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/16/21 07:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	25.7	0.0538	mg/L dry	1	BEI0469	09/22/21	09/25/21	EPA 6020B	
Magnesium	12.2	0.0538	"	"	"	"	"	"	
Sodium	18.5	0.0538	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/16/21 07:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	0.753	0.00100	units	1	BEI0553	09/26/21	09/26/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/16/21 07:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	92.9		%	1	BEI0487	09/22/21	09/23/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/16/21 07:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Specific Conductance (EC)	5.42	0.0100	mmhos/cm	1	BEI0474	09/22/21	09/22/21	EPA 120.1	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Emerald C134 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/27/21 13:46

20210916_EmeraldC134_BG@3ft
2109288-02 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/16/21 07:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	18.4	0.0539		mg/L dry	1	BEI0469	09/22/21	09/25/21	EPA 6020B	
Magnesium	6.05	0.0539		"	"	"	"	"	"	
Sodium	3.59	0.0539		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/16/21 07:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Sodium Adsorption Ratio	0.186	0.00100		units	1	BEI0553	09/26/21	09/26/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/16/21 07:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	92.8			%	1	BEI0487	09/22/21	09/23/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/16/21 07:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	2.48	0.0100		mmhos/cm	1	BEI0474	09/22/21	09/22/21	EPA 120.1	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Emerald C134 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/27/21 13:46

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD	Limit	Notes
		Limit	Units			%REC	Limits			

Batch BEI0469 - General Preparation

Blank (BEI0469-BLK1)

Prepared: 09/22/21 Analyzed: 09/25/21

Calcium	ND	0.0500	mg/L wet
Magnesium	ND	0.0500	"
Sodium	ND	0.0500	"

LCS (BEI0469-BS1)

Prepared: 09/22/21 Analyzed: 09/25/21

Calcium	5.39	0.0500	mg/L wet	5.00	108	70-130
Magnesium	5.49	0.0500	"	5.00	110	70-130
Sodium	5.24	0.0500	"	5.00	105	70-130

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Emerald C134 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/27/21 13:46

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD	Limit	Notes
		Limit	Units			%REC	Limits			

Batch BEI0487 - General Preparation

Duplicate (BEI0487-DUP1)

Source: 2109283-01

Prepared: 09/22/21 Analyzed: 09/23/21

% Solids	88.9	%	88.5	0.461	20
----------	------	---	------	-------	----

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Emerald C134 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/27/21 13:46

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BEI0474 - General Preparation

Blank (BEI0474-BLK1)

Prepared & Analyzed: 09/22/21

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BEI0474-BS1)

Prepared & Analyzed: 09/22/21

Specific Conductance (EC) 0.155 0.0100 mmhos/cm 0.150 104 90-110

Duplicate (BEI0474-DUP1)

Source: 2109288-01

Prepared & Analyzed: 09/22/21

Specific Conductance (EC) 5.43 0.0100 mmhos/cm 5.42 0.0553 20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Emerald C134 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/27/21 13:46

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 02, 2022

Vince DeCianne

Whiting Oil & Gas

retail

Denver, CO 80215

RE: Emerald C138 Background

Work Order #2204262

Enclosed are the results of analyses for samples received by Summit Scientific on 04/18/22 10:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury

President



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Emerald C138 Background

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
05/02/22 12:55

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
20220414_EmeraldC138_BG01@40in	2204262-01	Soil	04/14/22 08:40	04/18/22 10:40

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Summit Scientific

2204262

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 1

Client: Whiting Oil and Gas

Project Manager: Vince DeCianne

Address: 707 17th St Ste 3000

E-Mail: jveith@kleinfelder.com

City/State/Zip: Denver, CO 80202

kyle.waggoner@whiting.com

Phone: 970-309-6553

Project Name: Emerald C138 Background

Sampler Name: Jordan Veith

Project Number: 2022/740.001A

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested				Special Instructions	
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	Arsenic	pth, SAR, EC				
1	<u>2022/4/14 Emerald C138 80401040m</u>	<u>4/14/2022</u>	<u>8:40</u>	<u>3</u>			<u>X</u>			<u>X</u>				<u>X</u>	<u>X</u>			
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Relinquished by: [Signature] Date/Time: _____

Relinquished by: _____ Date/Time: _____

Relinquished by: _____ Date/Time: _____

Received by: [Signature] Date/Time: 4/15/22 1040

Received by: _____ Date/Time: _____

Received by: _____ Date/Time: _____

Turn Around Time (Check)

Same Day _____ 72 hours _____

24 hours _____ Standard _____

48 hours _____

Sample Integrity: Temperature Upon Receipt: 0.7

Samples Intact: Yes No

Notes:

S₂

2204262

Sample Receipt Checklist

S2 Work Order#

Client: Whiting Client Project ID: Emerald C138 Background

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other _____ Airbill #: _____

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 0.7Thermometer # Ø2

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6 °C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>On ice.</u>
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any): 				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

JB

Custodian Printed Name

4/18/22

Date/Time



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Emerald C138 Background

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
05/02/22 12:55

20220414_EmeraldC138_BG01@40in
2204262-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **04/14/22 08:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	8.34	0.200	mg/kg dry	1	BFD0468	04/21/22	04/30/22	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/14/22 08:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	217	0.0546	mg/L dry	1	BFD0562	04/26/22	05/02/22	EPA 6020B	
Magnesium	412	0.0546	"	"	"	"	"	"	
Sodium	86.6	0.0546	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/14/22 08:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.797	0.00100	units	1	BFE0018	05/02/22	05/02/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/14/22 08:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.6		%	1	BFD0495	04/22/22	04/26/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/14/22 08:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	4.69	0.0100	mmhos/cm	1	BFD0591	04/27/22	04/27/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Emerald C138 Background

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
05/02/22 12:55

20220414_EmeraldC138_BG01@40in
2204262-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/14/22 08:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.71			pH Units	1	BFD0589	04/27/22	04/27/22	EPA 9045D	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Emerald C138 Background

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
05/02/22 12:55

Total Metals by EPA 6020B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BFD0468 - EPA 3050B

Blank (BFD0468-BLK1)

Prepared: 04/21/22 Analyzed: 04/29/22

Arsenic ND 0.200 mg/kg wet

LCS (BFD0468-BS1)

Prepared: 04/21/22 Analyzed: 04/29/22

Arsenic 35.0 0.200 mg/kg wet 40.0 87.4 80-120

Duplicate (BFD0468-DUP1)

Source: 2204241-21

Prepared: 04/21/22 Analyzed: 04/29/22

Arsenic 2.71 0.200 mg/kg dry 2.97 9.24 20

Matrix Spike (BFD0468-MS1)

Source: 2204241-21

Prepared: 04/21/22 Analyzed: 04/29/22

Arsenic 42.8 0.200 mg/kg dry 46.5 2.97 85.6 75-125

Matrix Spike Dup (BFD0468-MSD1)

Source: 2204241-21

Prepared: 04/21/22 Analyzed: 04/29/22

Arsenic 41.9 0.200 mg/kg dry 46.5 2.97 83.7 75-125 2.03 25

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Emerald C138 Background

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
05/02/22 12:55

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BFD0562 - General Preparation

Blank (BFD0562-BLK1)

Prepared: 04/26/22 Analyzed: 05/02/22

Calcium	ND	0.0500	mg/L wet
Magnesium	ND	0.0500	"
Sodium	ND	0.0500	"

LCS (BFD0562-BS1)

Prepared: 04/26/22 Analyzed: 05/02/22

Calcium	4.99	0.0500	mg/L wet	5.00	99.7	70-130
Magnesium	5.39	0.0500	"	5.00	108	70-130
Sodium	5.27	0.0500	"	5.00	105	70-130

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Emerald C138 Background

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
05/02/22 12:55

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BFD0495 - General Preparation

Duplicate (BFD0495-DUP1)

Source: 2204254-01

Prepared: 04/22/22 Analyzed: 04/26/22

% Solids	79.3	%	79.1	0.239	20
----------	------	---	------	-------	----

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Emerald C138 Background

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
05/02/22 12:55

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BFD0591 - General Preparation

Blank (BFD0591-BLK1)

Prepared & Analyzed: 04/27/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFD0591-BS1)

Prepared & Analyzed: 04/27/22

Specific Conductance (EC) 0.153 0.0100 mmhos/cm 0.150 102 95-105

Duplicate (BFD0591-DUP1)

Source: 2204254-01

Prepared & Analyzed: 04/27/22

Specific Conductance (EC) 2.40 0.0100 mmhos/cm 2.43 1.24 20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Emerald C138 Background

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
05/02/22 12:55

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BFD0589 - General Preparation

LCS (BFD0589-BS1)

Prepared & Analyzed: 04/27/22

pH	9.12	pH Units	9.18	99.3	95-105
----	------	----------	------	------	--------

Duplicate (BFD0589-DUP1)

Source: 2204254-01

Prepared & Analyzed: 04/27/22

pH	7.68	pH Units	7.66	0.261	20
----	------	----------	------	-------	----

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Emerald C138 Background

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
05/02/22 12:55

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

September 20, 2021

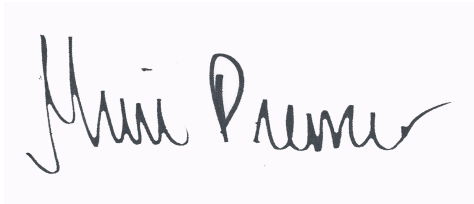
Vince DeCianne
Whiting Oil & Gas
retail
Denver, CO 80215

RE: Background 6

Work Order #2109132

Enclosed are the results of analyses for samples received by Summit Scientific on 09/09/21 10:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Muri Premier", is displayed on a light purple rectangular background.

Muri Premier For Paul Shrewsbury
President



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 6

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:54

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
20210908_BG06@1ft	2109132-01	Soil	09/08/21 10:00	09/09/21 10:20
20210908_BG06@3ft	2109132-02	Soil	09/08/21 10:02	09/09/21 10:20
20210908_BG06@6ft10in	2109132-03	Soil	09/08/21 10:04	09/09/21 10:20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Summit Scientific

2109132

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310 ♦ 303-374-5933 (f)

Page: 1 of 1

Client: Whiting Oil & Gas

Project Manager: Vince DeCianne

Address: 707 17th Street, Suite 3000

E-Mail: jveith@kleinfelder.com

City/State/Zip: Denver, CO 80202

kyle.waggoner@whiting.com

Phone: 970-309-6553

Project Name: Background 6

Sampler Name: Jordan Veith

Project Number: 20221740.001A

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	COGCC Table 915-1	Arsenic, EC, pH, SAR	EC	SAR	pH	Arsenic		
1	20210908_BG06@05 1ft	9/8/2021	10:00	1			X			X				X						
2	20210908_BG06@05 3ft	9/8/2021	10:02	1			X			X				X						
3	20210908_BG06@05 10ft	9/8/2021	10:04	1			X			X				X						
4	20210908_BG06@6ft																			
5	20210908_BG06@8ft																			
6																				
7																				
8																				
9																				
10																				

Jordan Veith
9/8/2021

Relinquished by: <i>Jordan Veith</i>	Date/Time: 9/8/2021 1730	Received by:	Date/Time:	Turn Around Time (Check) Same Day <input type="checkbox"/> 72 hours <input type="checkbox"/> 24 hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 hours <input type="checkbox"/>	Notes:
Relinquished by:	Date/Time:	Received by: <i>John Brown</i>	Date/Time: 9/9/21 1020	Integrity: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Upon Receipt: 6.7 Samples Intact: <input type="checkbox"/>	

2109132

Sample Receipt Checklist

S2 Work Order _____

Client: Whiting Client Project ID: Background 6

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other _____ Airbill #: _____

☐ ☐ ☒ ☐ ☐
Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)

Temp (°C)

6.7

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	On ice.
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , ect	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.
JB
 Custodian Printed Name or Initials

John Br
 Signature of Custodian

9/9/21
 Date/Time



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 6
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:54

20210908_BG06@1ft
2109132-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 10:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	5.01	0.200	mg/kg dry	1	BEI0371	09/16/21	09/19/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 10:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	76.7	0.0521	mg/L dry	1	BEI0319	09/15/21	09/17/21	EPA 6020B	
Magnesium	10.3	0.0521	"	"	"	"	"	"	
Sodium	10.5	0.0521	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 10:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	0.299	0.00100	units	1	BEI0397	09/19/21	09/19/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 10:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	96.0		%	1	BEI0282	09/14/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 10:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Specific Conductance (EC)	1.56	0.0100	mmhos/cm	1	BEI0317	09/15/21	09/15/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 6
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:54

20210908_BG06@1ft
2109132-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.52			pH Units	1	BEI0318	09/15/21	09/15/21	EPA 9045D	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 6
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:54

20210908_BG06@3ft
2109132-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 10:02**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	6.33	0.200	mg/kg dry	1	BEI0371	09/16/21	09/19/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 10:02**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	54.3	0.0534	mg/L dry	1	BEI0319	09/15/21	09/17/21	EPA 6020B	
Magnesium	2.58	0.0534	"	"	"	"	"	"	
Sodium	15.3	0.0534	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 10:02**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	0.551	0.00100	units	1	BEI0397	09/19/21	09/19/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 10:02**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	93.6		%	1	BEI0282	09/14/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 10:02**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Specific Conductance (EC)	3.61	0.0100	mmhos/cm	1	BEI0317	09/15/21	09/15/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 6
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:54

20210908_BG06@3ft
2109132-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 10:02**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.29			pH Units	1	BEI0318	09/15/21	09/15/21	EPA 9045D	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 6
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:54

20210908_BG06@6ft10in
2109132-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 10:04**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	5.21	0.200	mg/kg dry	1	BEI0371	09/16/21	09/19/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 10:04**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	226	0.0535	mg/L dry	1	BEI0319	09/15/21	09/17/21	EPA 6020B	
Magnesium	8.40	0.0535	"	"	"	"	"	"	
Sodium	138	0.0535	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 10:04**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	2.45	0.00100	units	1	BEI0397	09/19/21	09/19/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 10:04**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	93.4		%	1	BEI0282	09/14/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 10:04**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Specific Conductance (EC)	5.88	0.0100	mmhos/cm	1	BEI0317	09/15/21	09/15/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 6
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:54

20210908_BG06@6ft10in
2109132-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 10:04**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.47			pH Units	1	BEI0318	09/15/21	09/15/21	EPA 9045D	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 6

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:54

Total Metals by EPA 6020B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEI0371 - EPA 3050B

Blank (BEI0371-BLK1)

Prepared: 09/16/21 Analyzed: 09/19/21

Arsenic ND 0.200 mg/kg wet

LCS (BEI0371-BS1)

Prepared: 09/16/21 Analyzed: 09/19/21

Arsenic 44.7 0.200 mg/kg wet 40.0 112 80-120

Duplicate (BEI0371-DUP1)

Source: 2109131-01

Prepared: 09/16/21 Analyzed: 09/19/21

Arsenic 4.32 0.200 mg/kg dry 4.76 9.81 20

Matrix Spike (BEI0371-MS1)

Source: 2109131-01

Prepared: 09/16/21 Analyzed: 09/19/21

Arsenic 53.8 0.200 mg/kg dry 42.1 4.76 116 75-125

Matrix Spike Dup (BEI0371-MSD1)

Source: 2109131-01

Prepared: 09/16/21 Analyzed: 09/19/21

Arsenic 55.3 0.200 mg/kg dry 42.1 4.76 120 75-125 2.77 25

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 6

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:

09/20/21 12:54

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BEI0319 - General Preparation

Blank (BEI0319-BLK1)

Prepared: 09/15/21 Analyzed: 09/17/21

Calcium	ND	0.0500	mg/L wet
Magnesium	ND	0.0500	"
Sodium	ND	0.0500	"

LCS (BEI0319-BS1)

Prepared: 09/15/21 Analyzed: 09/17/21

Calcium	4.93	0.0500	mg/L wet	5.00	98.6	70-130
Magnesium	4.87	0.0500	"	5.00	97.4	70-130
Sodium	4.77	0.0500	"	5.00	95.4	70-130

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 6

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:54

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BEI0282 - General Preparation

Duplicate (BEI0282-DUP1)

Source: 2107097-07

Prepared & Analyzed: 09/14/21

% Solids	84.8	%	84.4	0.434	20
----------	------	---	------	-------	----

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 6

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:

09/20/21 12:54

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BEI0317 - General Preparation

Blank (BEI0317-BLK1)

Prepared & Analyzed: 09/15/21

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BEI0317-BS1)

Prepared & Analyzed: 09/15/21

Specific Conductance (EC) 0.165 0.0100 mmhos/cm 0.150 110 90-110

Duplicate (BEI0317-DUP1)

Source: 2109131-01

Prepared & Analyzed: 09/15/21

Specific Conductance (EC) 2.25 0.0100 mmhos/cm 2.28 1.41 20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 6

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:

09/20/21 12:54

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD		Notes
		Limit	Units			%REC	Limits	RPD	Limit	

Batch BEI0318 - General Preparation

LCS (BEI0318-BS1)

Prepared & Analyzed: 09/15/21

pH	9.28	pH Units	9.21	101	95-105
----	------	----------	------	-----	--------

Duplicate (BEI0318-DUP1)

Source: 2109131-01

Prepared & Analyzed: 09/15/21

pH	9.04	pH Units	9.04	0.00	20
----	------	----------	------	------	----

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 6

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:54

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

September 20, 2021

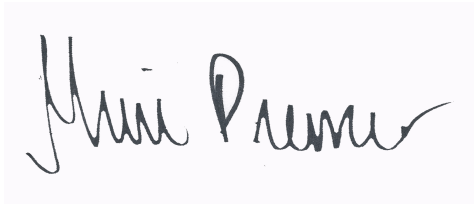
Vince DeCianne
Whiting Oil & Gas
retail
Denver, CO 80215

RE: Background 7

Work Order #2109131

Enclosed are the results of analyses for samples received by Summit Scientific on 09/09/21 10:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Muri Premier", is displayed on a light purple rectangular background.

Muri Premier For Paul Shrewsbury
President



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 7

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:48

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
20210908_BG07@1ft	2109131-01	Soil	09/08/21 10:10	09/09/21 10:20
20210908_BG07@3ft	2109131-02	Soil	09/08/21 10:12	09/09/21 10:20
20210908_BG08@7ft6in	2109131-03	Soil	09/08/21 10:14	09/09/21 10:20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Summit Scientific

S₂

2109131

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Page: 1 of 1

Client: Whiting Oil & Gas

Project Manager: Vince DeCianne

Address: 707 17th Street, Suite 3000

E-Mail: jveith@kleinfelder.com

City/State/Zip: Denver, CO 80202

kyle.waggoner@whiting.com

Phone: 970-309-6553

Project Name: Background 7

Sampler Name: Jordan Veith

Project Number: 20221740.001A

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	COGCC Table 915-1	Arsenic, EC, pH, SAR	EC	SAR	pH	Arsenic			
1	20210908_BG07@G-27ft	9/8/2021	10:10	1			X			X					X						
2	20210908_BG07@27ft	9/8/2021	10:12	1			X			X					X						
3	20210908_BG07@47ft	9/8/2021	10:14	1			X			X					X						
4	20210908_BG07@6ft																				
5	20210908_BG07@8ft																				
6																					
7																					
8																					
9																					
10																					

Jordan Veith
9/8/2021

Relinquished by: <i>Jordan Veith</i>	Date/Time: 9/8/2021 1730	Received by:	Date/Time:	Turn Around Time (Check) Same Day _____ 72 hours _____ 24 hours _____ hours _____ <u>Standard</u> _____ 48 hours _____	Notes:
Relinquished by:	Date/Time:	Received by: <i>John Bar</i>	Date/Time: 9/9/21 1020	Integrity: _____ Temperature _____	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Upon Receipt: <u>6.7</u> Samples Intact: _____ <u>Yes</u> No	

Sample Receipt Checklist

2109131

S2 Work Order _____

Client: Whiting Client Project ID: Background 7

Shipped Via: ☐ H.D./P.U./FedEx/UPS/USPS/Other _____ Airbill #: _____

☐ ☐ ☒ ☐ ☐

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)

Temp (°C)	6.7
-----------	-----

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	On ice.
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

JB
Custodian Printed Name or Initials

[Signature]
Signature of Custodian

9/9/21
Date/Time



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 7
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:48

20210908_BG07@1ft
2109131-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.76	0.200	mg/kg dry	1	BEI0371	09/16/21	09/19/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	72.7	0.0526	mg/L dry	1	BEI0319	09/15/21	09/17/21	EPA 6020B	
Magnesium	26.1	0.0526	"	"	"	"	"	"	
Sodium	18.2	0.0526	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.466	0.00100	units	1	BEI0397	09/19/21	09/19/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.0		%	1	BEI0282	09/14/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.28	0.0100	mmhos/cm	1	BEI0317	09/15/21	09/15/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 7

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:48

20210908_BG07@1ft
2109131-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 10:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	9.04			pH Units	1	BEI0318	09/15/21	09/15/21	EPA 9045D	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 7
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:48

20210908_BG07@3ft
2109131-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 10:12**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	4.72	0.200	mg/kg dry	1	BEI0371	09/16/21	09/19/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 10:12**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	72.6	0.0575	mg/L dry	1	BEI0319	09/15/21	09/17/21	EPA 6020B	
Magnesium	3.61	0.0575	"	"	"	"	"	"	
Sodium	43.5	0.0575	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 10:12**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	1.35	0.00100	units	1	BEI0397	09/19/21	09/19/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 10:12**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	87.0		%	1	BEI0282	09/14/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 10:12**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Specific Conductance (EC)	5.36	0.0100	mmhos/cm	1	BEI0317	09/15/21	09/15/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 7

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:

09/20/21 12:48

20210908_BG07@3ft

2109131-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 10:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.34			pH Units	1	BEI0318	09/15/21	09/15/21	EPA 9045D	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 7
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:48

20210908_BG08@7ft6in
2109131-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 10:14**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	6.12	0.200	mg/kg dry	1	BEI0371	09/16/21	09/19/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 10:14**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	84.0	0.0578	mg/L dry	1	BEI0319	09/15/21	09/17/21	EPA 6020B	
Magnesium	5.63	0.0578	"	"	"	"	"	"	
Sodium	66.1	0.0578	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 10:14**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	1.88	0.00100	units	1	BEI0397	09/19/21	09/19/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 10:14**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	86.6		%	1	BEI0282	09/14/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 10:14**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Specific Conductance (EC)	10.4	0.0100	mmhos/cm	1	BEI0317	09/15/21	09/15/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 7

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:48

20210908_BG08@7ft6in
2109131-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 10:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.41			pH Units	1	BEI0318	09/15/21	09/15/21	EPA 9045D	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 7

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:

09/20/21 12:48

Total Metals by EPA 6020B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEI0371 - EPA 3050B

Blank (BEI0371-BLK1)

Prepared: 09/16/21 Analyzed: 09/19/21

Arsenic ND 0.200 mg/kg wet

LCS (BEI0371-BS1)

Prepared: 09/16/21 Analyzed: 09/19/21

Arsenic 44.7 0.200 mg/kg wet 40.0 112 80-120

Duplicate (BEI0371-DUP1)

Source: 2109131-01

Prepared: 09/16/21 Analyzed: 09/19/21

Arsenic 4.32 0.200 mg/kg dry 4.76 9.81 20

Matrix Spike (BEI0371-MS1)

Source: 2109131-01

Prepared: 09/16/21 Analyzed: 09/19/21

Arsenic 53.8 0.200 mg/kg dry 42.1 4.76 116 75-125

Matrix Spike Dup (BEI0371-MSD1)

Source: 2109131-01

Prepared: 09/16/21 Analyzed: 09/19/21

Arsenic 55.3 0.200 mg/kg dry 42.1 4.76 120 75-125 2.77 25

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 7

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:

09/20/21 12:48

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BEI0319 - General Preparation

Blank (BEI0319-BLK1)

Prepared: 09/15/21 Analyzed: 09/17/21

Calcium	ND	0.0500	mg/L wet
Magnesium	ND	0.0500	"
Sodium	ND	0.0500	"

LCS (BEI0319-BS1)

Prepared: 09/15/21 Analyzed: 09/17/21

Calcium	4.93	0.0500	mg/L wet	5.00	98.6	70-130
Magnesium	4.87	0.0500	"	5.00	97.4	70-130
Sodium	4.77	0.0500	"	5.00	95.4	70-130

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 7

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:48

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BEI0282 - General Preparation

Duplicate (BEI0282-DUP1)

Source: 2107097-07

Prepared & Analyzed: 09/14/21

% Solids	84.8	%	84.4	0.434	20
----------	------	---	------	-------	----

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 7

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:

09/20/21 12:48

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BEI0317 - General Preparation

Blank (BEI0317-BLK1)

Prepared & Analyzed: 09/15/21

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BEI0317-BS1)

Prepared & Analyzed: 09/15/21

Specific Conductance (EC) 0.165 0.0100 mmhos/cm 0.150 110 90-110

Duplicate (BEI0317-DUP1)

Source: 2109131-01

Prepared & Analyzed: 09/15/21

Specific Conductance (EC) 2.25 0.0100 mmhos/cm 2.28 1.41 20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 7

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:

09/20/21 12:48

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD		Notes
		Limit	Units			%REC	Limits	RPD	Limit	

Batch BEI0318 - General Preparation

LCS (BEI0318-BS1)

Prepared & Analyzed: 09/15/21

pH	9.28	pH Units	9.21	101	95-105
----	------	----------	------	-----	--------

Duplicate (BEI0318-DUP1)

Source: 2109131-01

Prepared & Analyzed: 09/15/21

pH	9.04	pH Units	9.04	0.00	20
----	------	----------	------	------	----

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 7

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:48

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

September 20, 2021

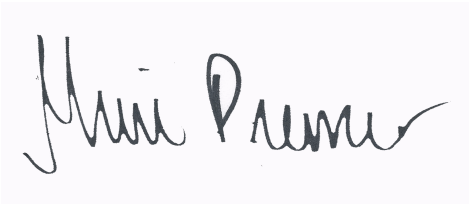
Vince DeCianne
Whiting Oil & Gas
retail
Denver, CO 80215

RE: Background 8

Work Order #2109130

Enclosed are the results of analyses for samples received by Summit Scientific on 09/09/21 10:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Muri Premer", is displayed on a light purple rectangular background.

Muri Premer For Paul Shrewsbury
President



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 8

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:44

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
20210908_BG08@1ft	2109130-01	Soil	09/08/21 11:15	09/09/21 10:20
20210908_BG08@3ft	2109130-02	Soil	09/08/21 11:17	09/09/21 10:20
20210908_BG08@7ft1in	2109130-03	Soil	09/08/21 11:20	09/09/21 10:20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Summit Scientific

S₂

2109130

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Page: 1 of 1

Client: Whiting Oil & Gas

Project Manager: Vince DeCianne

Address: 707 17th Street, Suite 3000

E-Mail: jveith@kleinfelder.com

City/State/Zip: Denver, CO 80202

kyle.waggoner@whiting.com

Phone: 970-309-6553

Project Name: Background 8

Sampler Name: Jordan Veith

Project Number: 20221740.001A

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	COGCC Table 915-1	Arsenic, EC, pH, SAR	EC	SAR	pH	Arsenic		
1	20210908_BG08@05 15ft	9/8/2021	11:15	1			X			X				X						
2	20210908_BG08@2K 3ft	9/8/2021	11:17	1			X			X				X						
3	20210908_BG08@4K 7.1in	9/8/2021	11:20	1			X			X				X						
4	20210908_BG08@6ft																			
5	20210908_BG08@8ft																			
6																				
7																				
8																				
9																				
10																				

Jordan Veith
9/8/2021

Relinquished by: <i>Jordan Veith</i>	Date/Time: 9/8/2021 1730	Received by:	Date/Time:	Turn Around Time (Check) Same Day _____ 72 hours _____ 24 hours _____ hours _____ <u>Standard</u> _____ 48 hours _____	Notes:
Relinquished by:	Date/Time:	Received by: <i>John B</i>	Date/Time: 9/9/21 1020	Integrity: _____ Sample Temperature	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Upon Receipt: <u>7.5</u> Samples Intact: <u>Yes</u> No	

Sample Receipt Checklist

2109130

S2 Work Order _____

Client: Whiting Client Project ID: Background 8

Shipped Via: ☐ H.D./P.U./FedEx/UPS/USPS/Other _____ Airbill #: _____

☐ ☐ ☒ ☐ ☐

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)

Temp (°C)	7.5
-----------	-----

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	On ice.
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any): 				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

JB
Custodian Printed Name or Initials

John B...
Signature of Custodian

9/9/21
Date/Time



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 8
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:44

20210908_BG08@1ft
2109130-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	6.36	0.200	mg/kg dry	1	BEI0354	09/16/21	09/18/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	55.6	0.0529	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	7.38	0.0529	"	"	"	"	"	"	
Sodium	2.62	0.0529	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0876	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.6		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.00	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 8
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:44

20210908_BG08@1ft
2109130-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 11:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.94			pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 8
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:44

20210908_BG08@3ft
2109130-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 11:17**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	5.99	0.200	mg/kg dry	1	BEI0354	09/16/21	09/18/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 11:17**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	38.8	0.0532	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	10.7	0.0532	"	"	"	"	"	"	
Sodium	5.61	0.0532	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 11:17**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	0.206	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 11:17**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	94.0		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 11:17**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Specific Conductance (EC)	3.08	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 8
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:44

20210908_BG08@3ft
2109130-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 11:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.12			pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 8
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:44

20210908_BG08@7ft1in
2109130-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 11:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	6.14	0.200	mg/kg dry	1	BEI0354	09/16/21	09/18/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 11:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	88.4	0.0542	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	20.7	0.0542	"	"	"	"	"	"	
Sodium	11.5	0.0542	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 11:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	0.286	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 11:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	92.2		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 11:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Specific Conductance (EC)	4.92	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 8
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:44

20210908_BG08@7ft1in
2109130-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 11:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.16			pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 8

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:44

Total Metals by EPA 6020B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEI0354 - EPA 3050B

Blank (BEI0354-BLK1)

Prepared: 09/16/21 Analyzed: 09/18/21

Arsenic ND 0.200 mg/kg wet

LCS (BEI0354-BS1)

Prepared: 09/16/21 Analyzed: 09/18/21

Arsenic 44.3 0.200 mg/kg wet 40.0 111 80-120

Duplicate (BEI0354-DUP1)

Source: 2109029-02

Prepared: 09/16/21 Analyzed: 09/18/21

Arsenic 3.54 0.200 mg/kg dry 3.92 10.2 20

Matrix Spike (BEI0354-MS1)

Source: 2109029-02

Prepared: 09/16/21 Analyzed: 09/18/21

Arsenic 50.5 0.200 mg/kg dry 44.7 3.92 104 75-125

Matrix Spike Dup (BEI0354-MSD1)

Source: 2109029-02

Prepared: 09/16/21 Analyzed: 09/18/21

Arsenic 52.8 0.200 mg/kg dry 44.7 3.92 109 75-125 4.43 25

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 8

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:

09/20/21 12:44

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BEI0286 - General Preparation

Blank (BEI0286-BLK1)

Prepared: 09/14/21 Analyzed: 09/16/21

Calcium	ND	0.0500	mg/L wet
Magnesium	ND	0.0500	"
Sodium	ND	0.0500	"

LCS (BEI0286-BS1)

Prepared: 09/14/21 Analyzed: 09/16/21

Calcium	5.19	0.0500	mg/L wet	5.00	104	70-130
Magnesium	4.84	0.0500	"	5.00	96.9	70-130
Sodium	4.89	0.0500	"	5.00	97.7	70-130

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 8

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:44

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BEI0270 - General Preparation

Duplicate (BEI0270-DUP1)

Source: 2108371-03

Prepared: 09/13/21 Analyzed: 09/14/21

% Solids	87.7	%	87.7	0.00	20
----------	------	---	------	------	----

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 8
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:44

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BEI0287 - General Preparation

Blank (BEI0287-BLK1)

Prepared & Analyzed: 09/14/21

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BEI0287-BS1)

Prepared & Analyzed: 09/14/21

Specific Conductance (EC) 0.156 0.0100 mmhos/cm 0.150 104 90-110

Duplicate (BEI0287-DUP1)

Source: 2109121-04

Prepared & Analyzed: 09/14/21

Specific Conductance (EC) 0.217 0.0100 mmhos/cm 0.217 0.0461 20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 8

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:44

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD		Notes
		Limit	Units			%REC	Limits	RPD	Limit	

Batch BEI0288 - General Preparation

LCS (BEI0288-BS1)

Prepared & Analyzed: 09/14/21

pH	9.31	pH Units	9.21	101	95-105
----	------	----------	------	-----	--------

Duplicate (BEI0288-DUP1)

Source: 2109121-04

Prepared & Analyzed: 09/14/21

pH	7.92	pH Units	7.79	1.65	20
----	------	----------	------	------	----

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 8

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:44

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

September 20, 2021

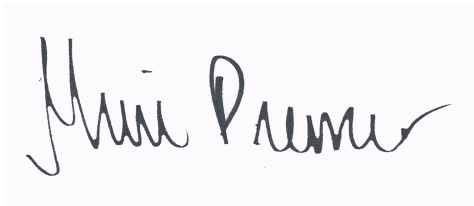
Vince DeCianne
Whiting Oil & Gas
retail
Denver, CO 80215

RE: Background 9

Work Order #2109129

Enclosed are the results of analyses for samples received by Summit Scientific on 09/09/21 10:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Muri Premier", is displayed on a light purple rectangular background.

Muri Premier For Paul Shrewsbury
President



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 9

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:22

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
20210908_BG09@1ft	2109129-01	Soil	09/08/21 11:45	09/09/21 10:20
20210908_BG09@3ft	2109129-02	Soil	09/08/21 11:47	09/09/21 10:20
20210908_BG09@7ft7in	2109129-03	Soil	09/08/21 11:49	09/09/21 10:20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Summit Scientific

S₂

2109129

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Page: 1 of 1

Client: Whiting Oil & Gas

Project Manager: Vince DeCianne

Address: 707 17th Street, Suite 3000

E-Mail: jveith@kleinfelder.com

City/State/Zip: Denver, CO 80202

kyle.waggoner@whiting.com

Phone: 970-309-6553

Project Name: Background 9

Sampler Name: Jordan Veith

Project Number: 20221740.001A

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions	
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	COGCC Table 915-1	Arsenic, EC, pH, SAR	EC	SAR	pH	Arsenic			
1	20210908_BG09@081ft	9/8/2021	11:45	1			X			X					X						
2	20210908_BG09@21ft	9/8/2021	11:47	1			X			X					X						
3	20210908_BG09@41ft	9/8/2021	11:49	1			X			X					X						
4	20210908_BG09@6ft	9/8/2021																			
5	20210908_BG09@8ft	9/8/2021																			
6																					
7																					
8																					
9																					
10																					

Jordan Veith
9/8/2021

Relinquished by: <i>Jordan Veith</i>	Date/Time: 9/8/2021 1730	Received by:	Date/Time:	Turn Around Time (Check) Same Day _____ 72 hours _____ 24 hours _____ Standard _____ 48 hours Sample Integrity: _____ Temperature Upon Receipt: <u>7.5</u> Samples Intact: Yes No	Notes:
Relinquished by:	Date/Time:	Received by: <i>John Brown</i>	Date/Time: 9/9/21 1020		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

Sample Receipt Checklist

2109129

S2 Work Order _____

Client: Whiting Client Project ID: Background 9

Shipped Via: ☐ H.D./P.U./FedEx/UPS/USPS/Other _____ Airbill #: _____

☐ ☐ ☒ ☐ ☐

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)

Temp (°C)	7.5
-----------	-----

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	On ice.
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

JB
Custodian Printed Name or Initials

[Signature]
Signature of Custodian

9/9/21
Date/Time



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 9
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:22

20210908_BG09@1ft
2109129-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 11:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	5.43	0.200	mg/kg dry	1	BEI0354	09/16/21	09/18/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 11:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	21.1	0.0535	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	5.71	0.0535	"	"	"	"	"	"	
Sodium	3.66	0.0535	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 11:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	0.182	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 11:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	93.5		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 11:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Specific Conductance (EC)	2.29	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 9
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:22

20210908_BG09@1ft
2109129-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.08			pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 9
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:22

20210908_BG09@3ft
2109129-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 11:47**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	5.67	0.200	mg/kg dry	1	BEI0354	09/16/21	09/18/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 11:47**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	42.6	0.0539	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	12.2	0.0539	"	"	"	"	"	"	
Sodium	13.4	0.0539	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 11:47**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	0.466	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 11:47**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	92.8		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 11:47**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Specific Conductance (EC)	4.22	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 9
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:22

20210908_BG09@3ft
2109129-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 11:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.19			pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 9
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:22

20210908_BG09@7ft7in
2109129-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 11:49**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	5.11	0.200	mg/kg dry	1	BEI0354	09/16/21	09/18/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 11:49**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	102	0.0576	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	31.3	0.0576	"	"	"	"	"	"	
Sodium	39.6	0.0576	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 11:49**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	0.880	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 11:49**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	86.8		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 11:49**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Specific Conductance (EC)	9.01	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 9
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:22

20210908_BG09@7ft7in
2109129-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 11:49**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.05			pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 9

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:22

Total Metals by EPA 6020B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEI0354 - EPA 3050B

Blank (BEI0354-BLK1)

Prepared: 09/16/21 Analyzed: 09/18/21

Arsenic ND 0.200 mg/kg wet

LCS (BEI0354-BS1)

Prepared: 09/16/21 Analyzed: 09/18/21

Arsenic 44.3 0.200 mg/kg wet 40.0 111 80-120

Duplicate (BEI0354-DUP1)

Source: 2109029-02

Prepared: 09/16/21 Analyzed: 09/18/21

Arsenic 3.54 0.200 mg/kg dry 3.92 10.2 20

Matrix Spike (BEI0354-MS1)

Source: 2109029-02

Prepared: 09/16/21 Analyzed: 09/18/21

Arsenic 50.5 0.200 mg/kg dry 44.7 3.92 104 75-125

Matrix Spike Dup (BEI0354-MSD1)

Source: 2109029-02

Prepared: 09/16/21 Analyzed: 09/18/21

Arsenic 52.8 0.200 mg/kg dry 44.7 3.92 109 75-125 4.43 25

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 9

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:

09/20/21 12:22

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BEI0286 - General Preparation

Blank (BEI0286-BLK1)

Prepared: 09/14/21 Analyzed: 09/16/21

Calcium	ND	0.0500	mg/L wet
Magnesium	ND	0.0500	"
Sodium	ND	0.0500	"

LCS (BEI0286-BS1)

Prepared: 09/14/21 Analyzed: 09/16/21

Calcium	5.19	0.0500	mg/L wet	5.00	104	70-130
Magnesium	4.84	0.0500	"	5.00	96.9	70-130
Sodium	4.89	0.0500	"	5.00	97.7	70-130

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 9

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:

09/20/21 12:22

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Reporting				Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEI0270 - General Preparation

Duplicate (BEI0270-DUP1)

Source: 2108371-03

Prepared: 09/13/21 Analyzed: 09/14/21

% Solids	87.7	%	87.7	0.00	20
----------	------	---	------	------	----

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 9

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:22

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BEI0287 - General Preparation

Blank (BEI0287-BLK1)

Prepared & Analyzed: 09/14/21

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BEI0287-BS1)

Prepared & Analyzed: 09/14/21

Specific Conductance (EC) 0.156 0.0100 mmhos/cm 0.150 104 90-110

Duplicate (BEI0287-DUP1)

Source: 2109121-04

Prepared & Analyzed: 09/14/21

Specific Conductance (EC) 0.217 0.0100 mmhos/cm 0.217 0.0461 20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 9

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:

09/20/21 12:22

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD		Notes
		Limit	Units			%REC	Limits	RPD	Limit	

Batch BEI0288 - General Preparation

LCS (BEI0288-BS1)

Prepared & Analyzed: 09/14/21

pH 9.31 pH Units 9.21 101 95-105

Duplicate (BEI0288-DUP1)

Source: 2109121-04

Prepared & Analyzed: 09/14/21

pH 7.92 pH Units 7.79 1.65 20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 9

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:22

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

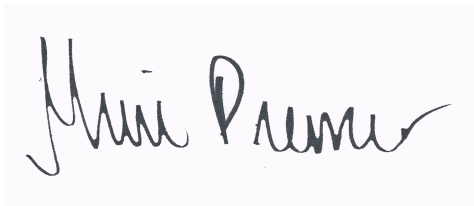
September 20, 2021

Vince DeCianne
Whiting Oil & Gas
retail
Denver, CO 80215

RE: Background 10
Work Order #2109128

Enclosed are the results of analyses for samples received by Summit Scientific on 09/09/21 10:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Muri Premier", is displayed on a light purple rectangular background.

Muri Premier For Paul Shrewsbury
President



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 10

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:19

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
20210908_BG10@1ft	2109128-01	Soil	09/08/21 12:30	09/09/21 10:20
20210908_BG10@3ft	2109128-02	Soil	09/08/21 12:32	09/09/21 10:20
20210908_BG10@7ft2in	2109128-03	Soil	09/08/21 12:34	09/09/21 10:20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Summit Scientific

S₂

2109128

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Page: 1 of 1

Client: Whiting Oil & Gas

Project Manager: Vince DeCianne

Address: 707 17th Street, Suite 3000

E-Mail: jveith@kleinfelder.com

City/State/Zip: Denver, CO 80202

kyle.waggoner@whiting.com

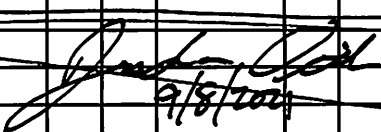
Phone: 970-309-6553

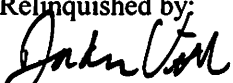
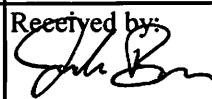
Project Name: Background 10

Sampler Name: Jordan Veith

Project Number: 20221740.001A

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	COGCC Table 915-1	Arsenic, EC, pH, SAR	EC	SAR	pH	Arsenic			
1	20210908_BG10@CS 1ft	9/8/2021	12:30	1			X			X				X							
2	20210908_BG10@2ft 3ft	9/8/2021	12:32	1			X			X				X							
3	20210908_BG10@4ft 7ft	9/8/2021	12:34	1			X			X				X							
4	20210908_BG10@6ft																				
5	20210908_BG10@8ft																				
6																					
7																					
8																					
9																					
10																					


 9/8/2021

Relinquished by: 	Date/Time: 9/8/2021 1730	Received by:	Date/Time:	Turn Around Time (Check) Same Day <input type="checkbox"/> 72 hours <input type="checkbox"/> 24 hours <input type="checkbox"/> hours <input type="checkbox"/> <u>Standard</u> <input checked="" type="checkbox"/> 48 hours	Notes:
Relinquished by:	Date/Time:	Received by: 	Date/Time: 9/9/21 1020	Integrity: <input type="checkbox"/> Sample Temperature	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Upon Receipt: 7.5 Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

2109128

Sample Receipt Checklist

S2 Work Order _____

Client: Whiting Client Project ID: Background 10

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other _____ Airbill #: _____

☐ ☐ ☒ ☐ ☐
Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)

Temp (°C)	7.5
-----------	-----

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	On ice.
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , ect	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.
JB
 Custodian Printed Name or Initials

[Signature]
 Signature of Custodian

9/9/21
 Date/Time



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 10
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:19

20210908_BG10@1ft
2109128-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	5.06	0.200	mg/kg dry	1	BEI0354	09/16/21	09/18/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	34.4	0.0552	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	3.24	0.0552	"	"	"	"	"	"	
Sodium	2.74	0.0552	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.120	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.6		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.244	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 10
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:19

20210908_BG10@1ft
2109128-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.95			pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 10
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:19

20210908_BG10@3ft
2109128-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 12:32**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	6.46	0.200	mg/kg dry	1	BEI0354	09/16/21	09/18/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 12:32**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	69.9	0.0554	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	9.82	0.0554	"	"	"	"	"	"	
Sodium	6.38	0.0554	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 12:32**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	0.189	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 12:32**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	90.3		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 12:32**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Specific Conductance (EC)	3.24	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 10
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:19

20210908_BG10@3ft
2109128-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 12:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.96			pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 10
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:19

20210908_BG10@7ft2in
2109128-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 12:34**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	6.50	0.200	mg/kg dry	1	BEI0354	09/16/21	09/18/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 12:34**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	39.6	0.0558	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	14.9	0.0558	"	"	"	"	"	"	
Sodium	14.9	0.0558	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 12:34**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	0.512	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 12:34**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	89.6		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 12:34**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Specific Conductance (EC)	5.18	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 10
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:19

20210908_BG10@7ft2in
2109128-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 12:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.11			pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 10
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:19

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEI0354 - EPA 3050B

Blank (BEI0354-BLK1)

Prepared: 09/16/21 Analyzed: 09/18/21

Arsenic ND 0.200 mg/kg wet

LCS (BEI0354-BS1)

Prepared: 09/16/21 Analyzed: 09/18/21

Arsenic 44.3 0.200 mg/kg wet 40.0 111 80-120

Duplicate (BEI0354-DUP1)

Source: 2109029-02

Prepared: 09/16/21 Analyzed: 09/18/21

Arsenic 3.54 0.200 mg/kg dry 3.92 10.2 20

Matrix Spike (BEI0354-MS1)

Source: 2109029-02

Prepared: 09/16/21 Analyzed: 09/18/21

Arsenic 50.5 0.200 mg/kg dry 44.7 3.92 104 75-125

Matrix Spike Dup (BEI0354-MSD1)

Source: 2109029-02

Prepared: 09/16/21 Analyzed: 09/18/21

Arsenic 52.8 0.200 mg/kg dry 44.7 3.92 109 75-125 4.43 25

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 10

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:19

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source	%REC		RPD		
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEI0286 - General Preparation

Blank (BEI0286-BLK1)

Prepared: 09/14/21 Analyzed: 09/16/21

Calcium	ND	0.0500	mg/L wet
Magnesium	ND	0.0500	"
Sodium	ND	0.0500	"

LCS (BEI0286-BS1)

Prepared: 09/14/21 Analyzed: 09/16/21

Calcium	5.19	0.0500	mg/L wet	5.00	104	70-130
Magnesium	4.84	0.0500	"	5.00	96.9	70-130
Sodium	4.89	0.0500	"	5.00	97.7	70-130

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 10

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:19

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BEI0270 - General Preparation

Duplicate (BEI0270-DUP1)

Source: 2108371-03

Prepared: 09/13/21 Analyzed: 09/14/21

% Solids	87.7	%	87.7	0.00	20
----------	------	---	------	------	----

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 10

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:19

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BEI0287 - General Preparation

Blank (BEI0287-BLK1)

Prepared & Analyzed: 09/14/21

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BEI0287-BS1)

Prepared & Analyzed: 09/14/21

Specific Conductance (EC) 0.156 0.0100 mmhos/cm 0.150 104 90-110

Duplicate (BEI0287-DUP1)

Source: 2109121-04

Prepared & Analyzed: 09/14/21

Specific Conductance (EC) 0.217 0.0100 mmhos/cm 0.217 0.0461 20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 10

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:19

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD		Notes
		Limit	Units			%REC	Limits	RPD	Limit	

Batch BEI0288 - General Preparation

LCS (BEI0288-BS1)

Prepared & Analyzed: 09/14/21

pH	9.31	pH Units	9.21	101	95-105
----	------	----------	------	-----	--------

Duplicate (BEI0288-DUP1)

Source: 2109121-04

Prepared & Analyzed: 09/14/21

pH	7.92	pH Units	7.79	1.65	20
----	------	----------	------	------	----

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 10

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:19

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

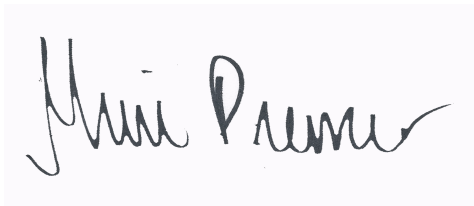
September 20, 2021

Vince DeCianne
Whiting Oil & Gas
retail
Denver, CO 80215

RE: Background 11
Work Order #2109127

Enclosed are the results of analyses for samples received by Summit Scientific on 09/09/21 10:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Muri Premier", is displayed on a light purple rectangular background.

Muri Premier For Paul Shrewsbury
President



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 11

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:13

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
20210908_BG11@1ft	2109127-01	Soil	09/08/21 13:10	09/09/21 10:20
20210908_BG11@3ft	2109127-02	Soil	09/08/21 13:12	09/09/21 10:20
20210908_BG11@6ft8in	2109127-03	Soil	09/08/21 13:14	09/09/21 10:20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Summit Scientific

S₂

2109127

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310 ♦ 303-374-5933 (f)

Page: 1 of 1

Client: Whiting Oil & Gas

Project Manager: Vince DeCianne

Address: 707 17th Street, Suite 3000

E-Mail: jveith@kleinfelder.com

City/State/Zip: Denver, CO 80202

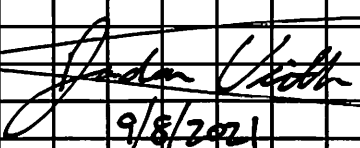
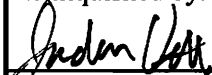
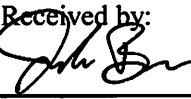
kyle.waggoner@whiting.com

Phone: 970-309-6553

Project Name: Background II

Sampler Name: Jordan Veith

Project Number: 20221740.001A

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	COGCC Table 915-1	Arsenic, EC, pH, SAR	EC	SAR	pH	Arsenic			
1	20210908-BG11 @ 1ft	9/8/2021	13:10	1			X			X				X							
2	20210908-BG11 @ 3ft	9/8/2021	13:12	1			X			X				X							
3	20210908-BG11 @ 6ft 8in	9/8/2021	13:14	1			X			X				X							
4	 9/8/2021																				
5																					
6																					
7																					
8																					
9																					
10																					
Relinquished by: 		Date/Time: 9/8/2021 1730		Received by: 		Date/Time: 9/9/21 1020		Turn Around Time (Check) Same Day <input type="checkbox"/> 72 hours <input type="checkbox"/> 24 hours <input type="checkbox"/> hours <input type="checkbox"/> <u>Standard</u> <input checked="" type="checkbox"/> 48 hours <input type="checkbox"/> Integrity: <input type="checkbox"/> Sample Temperature Upon Receipt: <u>7.5</u> Samples Intact: <input type="checkbox"/> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No												Notes:	
Relinquished by:		Date/Time:		Received by:		Date/Time:															
Relinquished by:		Date/Time:		Received by:		Date/Time:															

Sample Receipt Checklist

2109127

S2 Work Order _____

Client: Whiting Client Project ID: Background II

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other _____ Airbill #: _____

☐ ☐ ☒ ☐ ☐

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)

Temp (°C)	7.5
-----------	-----

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	On ice.
NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

JB
Custodian Printed Name or Initials

[Signature]
Signature of Custodian

9/9/21
Date/Time



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 11
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:13

20210908_BG11@1ft
2109127-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	5.76	0.200	mg/kg dry	1	BEI0354	09/16/21	09/18/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	18.7	0.0517	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	1.60	0.0517	"	"	"	"	"	"	
Sodium	0.0999	0.0517	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.00596	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	96.8		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.72	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 11
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:13

20210908_BG11@1ft
2109127-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 13:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.01			pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 11
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:13

20210908_BG11@3ft
2109127-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 13:12**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	5.52	0.200	mg/kg dry	1	BEI0354	09/16/21	09/18/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 13:12**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	29.8	0.0526	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	2.27	0.0526	"	"	"	"	"	"	
Sodium	0.200	0.0526	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 13:12**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	0.00951	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 13:12**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	95.0		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 13:12**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Specific Conductance (EC)	1.64	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 11
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:13

20210908_BG11@3ft
2109127-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 13:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.98			pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 11
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:13

20210908_BG11@6ft8in
2109127-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 13:14**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	5.41	0.200	mg/kg dry	1	BEI0354	09/16/21	09/18/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 13:14**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	149	0.0536	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	10.5	0.0536	"	"	"	"	"	"	
Sodium	4.21	0.0536	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 13:14**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	0.0899	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 13:14**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	93.3		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 13:14**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Specific Conductance (EC)	2.45	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 11
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:13

20210908_BG11@6ft8in
2109127-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 13:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.05			pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 11

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:13

Total Metals by EPA 6020B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEI0354 - EPA 3050B

Blank (BEI0354-BLK1)

Prepared: 09/16/21 Analyzed: 09/18/21

Arsenic ND 0.200 mg/kg wet

LCS (BEI0354-BS1)

Prepared: 09/16/21 Analyzed: 09/18/21

Arsenic 44.3 0.200 mg/kg wet 40.0 111 80-120

Duplicate (BEI0354-DUP1)

Source: 2109029-02

Prepared: 09/16/21 Analyzed: 09/18/21

Arsenic 3.54 0.200 mg/kg dry 3.92 10.2 20

Matrix Spike (BEI0354-MS1)

Source: 2109029-02

Prepared: 09/16/21 Analyzed: 09/18/21

Arsenic 50.5 0.200 mg/kg dry 44.7 3.92 104 75-125

Matrix Spike Dup (BEI0354-MSD1)

Source: 2109029-02

Prepared: 09/16/21 Analyzed: 09/18/21

Arsenic 52.8 0.200 mg/kg dry 44.7 3.92 109 75-125 4.43 25

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 11

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:13

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source	%REC		RPD		
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEI0286 - General Preparation

Blank (BEI0286-BLK1)

Prepared: 09/14/21 Analyzed: 09/16/21

Calcium	ND	0.0500	mg/L wet
Magnesium	ND	0.0500	"
Sodium	ND	0.0500	"

LCS (BEI0286-BS1)

Prepared: 09/14/21 Analyzed: 09/16/21

Calcium	5.19	0.0500	mg/L wet	5.00	104	70-130
Magnesium	4.84	0.0500	"	5.00	96.9	70-130
Sodium	4.89	0.0500	"	5.00	97.7	70-130

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 11

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:13

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BEI0270 - General Preparation

Duplicate (BEI0270-DUP1)

Source: 2108371-03

Prepared: 09/13/21 Analyzed: 09/14/21

% Solids	87.7	%	87.7	0.00	20
----------	------	---	------	------	----

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 11

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:13

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BEI0287 - General Preparation

Blank (BEI0287-BLK1)

Prepared & Analyzed: 09/14/21

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BEI0287-BS1)

Prepared & Analyzed: 09/14/21

Specific Conductance (EC) 0.156 0.0100 mmhos/cm 0.150 104 90-110

Duplicate (BEI0287-DUP1)

Source: 2109121-04

Prepared & Analyzed: 09/14/21

Specific Conductance (EC) 0.217 0.0100 mmhos/cm 0.217 0.0461 20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 11

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:13

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD		Notes
		Limit	Units			%REC	Limits	RPD	Limit	

Batch BEI0288 - General Preparation

LCS (BEI0288-BS1)

Prepared & Analyzed: 09/14/21

pH	9.31	pH Units	9.21	101	95-105
----	------	----------	------	-----	--------

Duplicate (BEI0288-DUP1)

Source: 2109121-04

Prepared & Analyzed: 09/14/21

pH	7.92	pH Units	7.79	1.65	20
----	------	----------	------	------	----

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 11

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:13

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

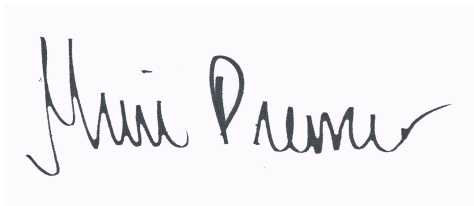
September 20, 2021

Vince DeCianne
Whiting Oil & Gas
retail
Denver, CO 80215

RE: Background 12
Work Order #2109126

Enclosed are the results of analyses for samples received by Summit Scientific on 09/09/21 10:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Muri Premier", is displayed on a light purple rectangular background.

Muri Premier For Paul Shrewsbury
President



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 12

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:04

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
20210908_BG12@1ft	2109126-01	Soil	09/08/21 13:50	09/09/21 10:20
20210908_BG12@3ft	2109126-02	Soil	09/08/21 13:52	09/09/21 10:20
20210908_BG12@7ft8in	2109126-03	Soil	09/08/21 13:54	09/09/21 10:20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Summit Scientific

S₂

2109126

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Page: 1 of 1

Client: Whiting Oil & Gas

Project Manager: Vince DeCianne

Address: 707 17th Street, Suite 3000

E-Mail: jveith@kleinfelder.com

City/State/Zip: Denver, CO 80202

kyle.waggoner@whiting.com

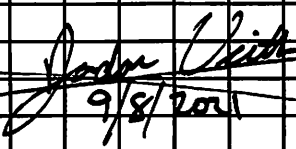
Phone: 970-309-6553

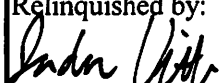
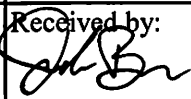
Project Name: Background 12

Sampler Name: Jordan Veith

Project Number: 20221740.001A

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	COGCC Table 915-1	Arsenic, EC, pH, SAR	EC	SAR	pH	Arsenic			
1	20210908-BG12@Ht	9/8/2021	13:50	1			X			X					X						
2	20210908-BG12@3ft	9/8/2021	13:52	1			X			X					X						
3	20210908-BG12@7ft	9/8/2021	13:54	1			X			X					X						
4																					
5																					
6																					
7																					
8																					
9																					
10																					


 9/8/2021

Relinquished by: 	Date/Time: 9/8/2021 1730	Received by: 	Date/Time: 9/9/21 1020	Turn Around Time (Check) Same Day <input type="checkbox"/> 72 hours <input type="checkbox"/> 24 hours <input type="checkbox"/> hours <input type="checkbox"/> <u>standard</u> <input checked="" type="checkbox"/> 48 hours <input type="checkbox"/>	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time:	Integrity: <input type="checkbox"/> Upon Receipt: <u>7.5</u> Samples Intact: <input type="checkbox"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	<input checked="" type="radio"/> Yes <input type="radio"/> No	

Summit Scientific

S₂

2109126

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Page: 1 of 1

Client: Whiting Oil & Gas

Project Manager: Vince DeCianne

Address: 707 17th Street, Suite 3000

E-Mail: jveith@kleinfelder.com

City/State/Zip: Denver, CO 80202

kyle.waggoner@whiting.com

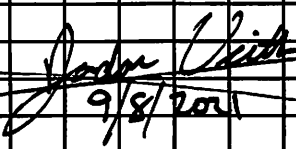
Phone: 970-309-6553

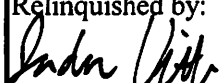
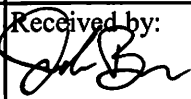
Project Name: Background 12

Sampler Name: Jordan Veith

Project Number: 20221740.001A

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	COGCC Table 915-1	Arsenic, EC, pH, SAR	EC	SAR	pH	Arsenic			
1	20210908-BG12@Ht	9/8/2021	13:50	1			X			X					X						
2	20210908-BG12@3ft	9/8/2021	13:52	1			X			X					X						
3	20210908-BG12@7ft	9/8/2021	13:54	1			X			X					X						
4																					
5																					
6																					
7																					
8																					
9																					
10																					


 9/8/2021

Relinquished by: 	Date/Time: 9/8/2021 1730	Received by: 	Date/Time: 9/9/21 1020	Turn Around Time (Check) Same Day <input type="checkbox"/> 72 hours <input type="checkbox"/> 24 hours <input type="checkbox"/> hours <input type="checkbox"/> <u>standard</u> <input checked="" type="checkbox"/> 48 hours <input type="checkbox"/>	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time:	Integrity: <input type="checkbox"/> Upon Receipt: <u>7.5</u> Samples Intact: <input type="checkbox"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	<input checked="" type="radio"/> Yes <input type="radio"/> No	



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 12
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:04

20210908_BG12@1ft
2109126-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	5.71	0.200	mg/kg dry	1	BEI0354	09/16/21	09/18/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	140	0.0534	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	4.77	0.0534	"	"	"	"	"	"	
Sodium	0.875	0.0534	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0198	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.7		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.05	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 12
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:04

20210908_BG12@1ft
2109126-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.06			pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 12
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:04

20210908_BG12@3ft
2109126-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 13:52**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	4.97	0.200	mg/kg dry	1	BEI0354	09/16/21	09/18/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 13:52**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	90.7	0.0536	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	4.83	0.0536	"	"	"	"	"	"	
Sodium	2.36	0.0536	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 13:52**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	0.0654	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 13:52**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	93.3		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 13:52**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Specific Conductance (EC)	2.48	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 12
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:04

20210908_BG12@3ft
2109126-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 13:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.08			pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 12
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:04

20210908_BG12@7ft8in
2109126-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 13:54**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	4.16	0.200	mg/kg dry	1	BEI0354	09/16/21	09/18/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 13:54**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	61.8	0.0549	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	18.3	0.0549	"	"	"	"	"	"	
Sodium	23.7	0.0549	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 13:54**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	0.681	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 13:54**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	91.0		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 13:54**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Specific Conductance (EC)	5.41	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 12
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 12:04

20210908_BG12@7ft8in
2109126-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 13:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.29			pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 12

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:04

Total Metals by EPA 6020B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEI0354 - EPA 3050B

Blank (BEI0354-BLK1)

Prepared: 09/16/21 Analyzed: 09/18/21

Arsenic ND 0.200 mg/kg wet

LCS (BEI0354-BS1)

Prepared: 09/16/21 Analyzed: 09/18/21

Arsenic 44.3 0.200 mg/kg wet 40.0 111 80-120

Duplicate (BEI0354-DUP1)

Source: 2109029-02

Prepared: 09/16/21 Analyzed: 09/18/21

Arsenic 3.54 0.200 mg/kg dry 3.92 10.2 20

Matrix Spike (BEI0354-MS1)

Source: 2109029-02

Prepared: 09/16/21 Analyzed: 09/18/21

Arsenic 50.5 0.200 mg/kg dry 44.7 3.92 104 75-125

Matrix Spike Dup (BEI0354-MSD1)

Source: 2109029-02

Prepared: 09/16/21 Analyzed: 09/18/21

Arsenic 52.8 0.200 mg/kg dry 44.7 3.92 109 75-125 4.43 25

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 12

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:

09/20/21 12:04

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEI0286 - General Preparation

Blank (BEI0286-BLK1)

Prepared: 09/14/21 Analyzed: 09/16/21

Calcium	ND	0.0500	mg/L wet
Magnesium	ND	0.0500	"
Sodium	ND	0.0500	"

LCS (BEI0286-BS1)

Prepared: 09/14/21 Analyzed: 09/16/21

Calcium	5.19	0.0500	mg/L wet	5.00	104	70-130
Magnesium	4.84	0.0500	"	5.00	96.9	70-130
Sodium	4.89	0.0500	"	5.00	97.7	70-130

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 12

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:04

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BEI0270 - General Preparation

Duplicate (BEI0270-DUP1)

Source: 2108371-03

Prepared: 09/13/21 Analyzed: 09/14/21

% Solids	87.7	%	87.7	0.00	20
----------	------	---	------	------	----

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 12

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:04

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BEI0287 - General Preparation

Blank (BEI0287-BLK1)

Prepared & Analyzed: 09/14/21

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BEI0287-BS1)

Prepared & Analyzed: 09/14/21

Specific Conductance (EC) 0.156 0.0100 mmhos/cm 0.150 104 90-110

Duplicate (BEI0287-DUP1)

Source: 2109121-04

Prepared & Analyzed: 09/14/21

Specific Conductance (EC) 0.217 0.0100 mmhos/cm 0.217 0.0461 20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 12

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:04

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD		Notes
		Limit	Units			%REC	Limits	RPD	Limit	

Batch BEI0288 - General Preparation

LCS (BEI0288-BS1)

Prepared & Analyzed: 09/14/21

pH	9.31	pH Units	9.21	101	95-105
----	------	----------	------	-----	--------

Duplicate (BEI0288-DUP1)

Source: 2109121-04

Prepared & Analyzed: 09/14/21

pH	7.92	pH Units	7.79	1.65	20
----	------	----------	------	------	----

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 12

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 12:04

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

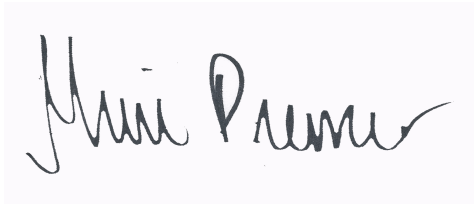
September 20, 2021

Vince DeCianne
Whiting Oil & Gas
retail
Denver, CO 80215

RE: Background 13
Work Order #2109125

Enclosed are the results of analyses for samples received by Summit Scientific on 09/09/21 10:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Muri Premer", is displayed on a light purple rectangular background.

Muri Premer For Paul Shrewsbury
President



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 13

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 11:58

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
20210908_BG13@1ft	2109125-01	Soil	09/08/21 14:20	09/09/21 10:20
20210908_BG13@3ft	2109125-02	Soil	09/08/21 14:22	09/09/21 10:20
20210908_BG13@7ft4in	2109125-03	Soil	09/08/21 14:24	09/09/21 10:20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Summit Scientific

S₂

2109125

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310 ♦ 303-374-5933 (f)

Page: 1 of 1

Client: Whiting Oil & Gas

Project Manager: Vince DeCianne

Address: 707 17th Street, Suite 3000

E-Mail: jveith@kleinfelder.com

City/State/Zip: Denver, CO 80202

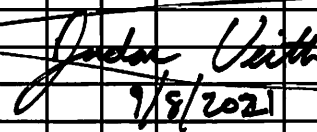
kyle.waggoner@whiting.com

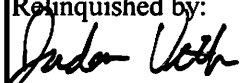
Phone: 970-309-6553

Project Name: Background 13

Sampler Name: Jordan Veith

Project Number: 20224740.001A

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	COGCC Table 915-1	Arsenic, EC, pH, SAR	EC	SAR	pH	Arsenic			
1	20210908-BG13@1ft	9/8/2021	14:20	1			X			X				X							
2	20210908-BG13@3ft	9/8/2021	14:22	1			X			X				X							
3	20210908-BG13@4ft	9/8/2021	14:24	1			X			X				X							
4	<div style="text-align: center;">  9/8/2021 </div>																				
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time (Check)	Notes:
	9/8/2021 1720			Same Day <input type="checkbox"/> 72 hours <input type="checkbox"/> 24 hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 hours <input type="checkbox"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Integrity: <input type="checkbox"/> Upon Receipt: <u>7.5</u> Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Relinquished by:	Date/Time:	Received by:	Date/Time:		

Sample Receipt Checklist

2109125

S2 Work Order _____

Client: Whiting Client Project ID: Background B

Shipped Via: ☐ H.D./P.U./FedEx/UPS/USPS/Other _____ Airbill #: _____

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)

Temp (°C)	7.5
-----------	-----

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	On ice.
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

JB
Custodian Printed Name or Initials

[Signature]
Signature of Custodian

9/9/21
Date/Time



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 13
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 11:58

20210908_BG13@1ft
2109125-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	6.60	0.200	mg/kg dry	1	BEI0251	09/13/21	09/16/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	224	0.0542	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	4.95	0.0542	"	"	"	"	"	"	
Sodium	2.61	0.0542	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0472	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.3		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.36	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 13
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 11:58

20210908_BG13@1ft
2109125-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 14:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.06			pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 13
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 11:58

20210908_BG13@3ft
2109125-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 14:22**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	6.05	0.200	mg/kg dry	1	BEI0251	09/13/21	09/16/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 14:22**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	151	0.0550	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	11.9	0.0550	"	"	"	"	"	"	
Sodium	15.5	0.0550	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 14:22**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	0.327	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 14:22**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	90.9		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 14:22**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Specific Conductance (EC)	4.31	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 13
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 11:58

20210908_BG13@3ft
2109125-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 14:22**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.23			pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 13
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 11:58

20210908_BG13@7ft4in
2109125-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 14:24**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	7.19	0.200	mg/kg dry	1	BEI0251	09/13/21	09/16/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 14:24**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	73.0	0.0548	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	14.5	0.0548	"	"	"	"	"	"	
Sodium	26.3	0.0548	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 14:24**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	0.736	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 14:24**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	91.3		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 14:24**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Specific Conductance (EC)	5.85	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 13
Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
09/20/21 11:58

20210908_BG13@7ft4in
2109125-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 14:24**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.29			pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 13

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 11:58

Total Metals by EPA 6020B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEI0251 - EPA 3050B

Blank (BEI0251-BLK1)

Prepared: 09/13/21 Analyzed: 09/15/21

Arsenic ND 0.200 mg/kg wet

LCS (BEI0251-BS1)

Prepared: 09/13/21 Analyzed: 09/15/21

Arsenic 42.9 0.200 mg/kg wet 40.0 107 80-120

Duplicate (BEI0251-DUP1)

Source: 2108313-01

Prepared: 09/13/21 Analyzed: 09/15/21

Arsenic 0.696 0.200 mg/kg dry 0.623 11.0 20

Matrix Spike (BEI0251-MS1)

Source: 2108313-01

Prepared: 09/13/21 Analyzed: 09/16/21

Arsenic 52.1 0.200 mg/kg dry 49.4 0.623 104 75-125

Matrix Spike Dup (BEI0251-MSD1)

Source: 2108313-01

Prepared: 09/13/21 Analyzed: 09/16/21

Arsenic 52.7 0.200 mg/kg dry 49.4 0.623 105 75-125 1.16 25

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 13

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 11:58

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source	%REC		RPD		
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEI0286 - General Preparation

Blank (BEI0286-BLK1)

Prepared: 09/14/21 Analyzed: 09/16/21

Calcium	ND	0.0500	mg/L wet
Magnesium	ND	0.0500	"
Sodium	ND	0.0500	"

LCS (BEI0286-BS1)

Prepared: 09/14/21 Analyzed: 09/16/21

Calcium	5.19	0.0500	mg/L wet	5.00	104	70-130
Magnesium	4.84	0.0500	"	5.00	96.9	70-130
Sodium	4.89	0.0500	"	5.00	97.7	70-130

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 13

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 11:58

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BEI0270 - General Preparation

Duplicate (BEI0270-DUP1)

Source: 2108371-03

Prepared: 09/13/21 Analyzed: 09/14/21

% Solids	87.7	%	87.7	0.00	20
----------	------	---	------	------	----

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 13

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 11:58

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BEI0287 - General Preparation

Blank (BEI0287-BLK1)

Prepared & Analyzed: 09/14/21

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BEI0287-BS1)

Prepared & Analyzed: 09/14/21

Specific Conductance (EC) 0.156 0.0100 mmhos/cm 0.150 104 90-110

Duplicate (BEI0287-DUP1)

Source: 2109121-04

Prepared & Analyzed: 09/14/21

Specific Conductance (EC) 0.217 0.0100 mmhos/cm 0.217 0.0461 20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 13

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 11:58

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD		Notes
		Limit	Units			%REC	Limits	RPD	Limit	

Batch BEI0288 - General Preparation

LCS (BEI0288-BS1)

Prepared & Analyzed: 09/14/21

pH	9.31	pH Units	9.21	101	95-105
----	------	----------	------	-----	--------

Duplicate (BEI0288-DUP1)

Source: 2109121-04

Prepared & Analyzed: 09/14/21

pH	7.92	pH Units	7.79	1.65	20
----	------	----------	------	------	----

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Whiting Oil & Gas
retail
Denver CO, 80215

Project: Background 13

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
09/20/21 11:58

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference