

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

January 03, 2025

AJ Engelhardt

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Chevron - Orr State 40-36 Pad

Work Order #2412359

Enclosed are the results of analyses for samples received by Summit Scientific on 12/17/24 17:58. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Jacob Wood". The signature is written in a cursive style with a large initial "J" and a distinct "W".

Jacob Wood For Paul Shrewsbury
President



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Chevron - Orr State 40-36 Pad

Project Number: [none]
Project Manager: AJ Engelhardt

Reported:
01/03/25 10:24

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FS01@6'	2412359-01	Soil	12/17/24 11:18	12/17/24 17:58
FS01@7-8'	2412359-02	Soil	12/17/24 12:05	12/17/24 17:58

Summit Scientific

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4653 Table Mountain Drive
Golden, CO 80403
303-277-9310

Lab ID	Page	of
24 12359		

		Send Data To:	Send Invoice To:
Client: Chevron/Tasman	Project Manager: AJ Engelhardt		Company: Chevron
Address: 6855 W. 119th Avenue	E-Mail: tas-chevron-3@tasman-geo.com		Project Name/Location: Orr State 40-36 Pad
City/State/Zip: Broomfield, CO 80020	Rbueuf27@chevron.com		AFE#:
Phone: 479 966 5192	Project Name: Orr State 40-36 Pad		PO/Billing Codes:
Sampler Name: Jess Groh	Project Number:		Contact: Karen Olson

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested						Special Instructions	
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	915-VOC	915-PAH	915-TPH	pH, EC, SAR	Boron		915-Metals
1	FS01@ 6'	12/17/24	1118	2			X			X			X	X	X	X	X	X	
2	FS01@ 7-8'	12/17/24	1205	2			X			X			X	X	X	X	X	X	
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			

Relinquished by: Jess Groh	Date/Time: 12/17/24 1430	Received by: Tasman Lockbox	Date/Time: 12/17/24 1430	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: Tasman Lockbox	Date/Time: 12/17/24 1758	Received by: [Signature]	Date/Time: 12/17/24 1758	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: (C.)	Corrected Temperature	IR gun #:	HNO3 lot #:			

S₂

Sample Receipt Checklist

S2 Work Order# 2412359

Client: Chevron/Tasman Client Project ID: Orv state 40-3e Pad

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

-

Matrix (Check all that apply) Air Soil/Solid Water Other

Temp (°C) Thermometer #

	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"/>	ON ICE
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same day
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 type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NO Page of
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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"/>	
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 checked="" type="checkbox"/>	AS
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.				

AS
Custodian Printed Name

12/17/24
Date/Time



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Chevron - Orr State 40-36 Pad

Project Number: [none]
Project Manager: AJ Engelhardt

Reported:
01/03/25 10:24

FS01@6'
2412359-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/17/24 11:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHL0775	12/17/24	12/17/24	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.083	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	0.044	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	19	0.50		"	"	"	"	"	"	

Date Sampled: **12/17/24 11:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0482	120 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0482	121 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0536	134 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/17/24 11:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	260	50		mg/kg	1	BHL0784	12/17/24	12/17/24	EPA 8015M	
C28-C36 (ORO)	920	50		"	"	"	"	"	"	

Date Sampled: **12/17/24 11:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	11.1	88.6 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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FS01@6'
2412359-01 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **12/17/24 11:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHL1274	12/29/24	01/01/25	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	0.0106	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.0670	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.0929	0.00500	"	"	"	"	"	"	

Date Sampled: **12/17/24 11:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0241	72.2 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0269	80.6 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **12/17/24 11:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHL0801	12/18/24	12/18/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **12/17/24 11:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project Number: [none]
Project Manager: AJ Engelhardt

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FS01@6'
2412359-01 (Soil)

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Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.44	0.200	mg/kg dry	1	BHL0807	12/18/24	12/19/24	EPA 6020B	
Barium	60.6	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	5.01	0.400	"	"	"	"	"	"	
Lead	3.83	0.200	"	"	"	"	"	"	
Nickel	4.32	0.400	"	"	"	"	"	"	
Silver	0.0301	0.0200	"	"	"	"	"	"	
Zinc	16.1	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **12/17/24 11:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHL0813	12/18/24	12/18/24	EPA 7196A	

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

Date Sampled: **12/17/24 11:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	28.3	0.0500	mg/L dry	1	BHL0783	12/17/24	12/18/24	EPA 6020B	
Magnesium	9.64	0.0500	"	"	"	"	"	"	
Sodium	35.8	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **12/17/24 11:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.48	0.00100	units	1	BHL0906	12/19/24	12/19/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/17/24 11:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	80.3			%	1	BHL0822	12/18/24	12/19/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **12/17/24 11:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.301	0.0100		mmhos/cm	1	BHL0785	12/17/24	12/18/24	EPA 120.1	

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

Date Sampled: **12/17/24 11:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.16			pH Units	1	BHL0786	12/17/24	12/18/24	EPA 9045D	

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Project: Chevron - Orr State 40-36 Pad

Project Number: [none]
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Reported:
01/03/25 10:24

FS01@7-8'
2412359-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/17/24 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHL0775	12/17/24	12/17/24	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	0.015	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	2.1	0.50	"	"	"	"	"	"	

Date Sampled: **12/17/24 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0487	122 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0450	112 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0430	108 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/17/24 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHL0784	12/17/24	12/18/24	EPA 8015M	
C28-C36 (ORO)	110	50	"	"	"	"	"	"	

Date Sampled: **12/17/24 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	10.8	86.6 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project Number: [none]
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FS01@7-8'
2412359-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **12/17/24 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHL1274	12/29/24	01/01/25	EPA 8270D SIM	
Anthracene	0.0183	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	0.0118	0.00500	"	"	"	"	"	"	"
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	"
Pyrene	ND	0.00500	"	"	"	"	"	"	"
1-Methylnaphthalene	0.0490	0.00500	"	"	"	"	"	"	"
2-Methylnaphthalene	0.0442	0.00500	"	"	"	"	"	"	"

Date Sampled: **12/17/24 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0243	72.8 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0282	84.7 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **12/17/24 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHL0801	12/18/24	12/18/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **12/17/24 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project Number: [none]
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01/03/25 10:24

FS01@7-8'
2412359-02 (Soil)

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Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	5.30	0.200	mg/kg dry	1	BHL0807	12/18/24	12/19/24	EPA 6020B	
Barium	162	0.400	"	"	"	"	"	"	
Cadmium	0.327	0.200	"	"	"	"	"	"	
Copper	7.69	0.400	"	"	"	"	"	"	
Lead	9.45	0.200	"	"	"	"	"	"	
Nickel	8.20	0.400	"	"	"	"	"	"	
Silver	0.0649	0.0200	"	"	"	"	"	"	
Zinc	28.1	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: 12/17/24 12:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHL0813	12/18/24	12/18/24	EPA 7196A	

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

Date Sampled: 12/17/24 12:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	28.2	0.0500	mg/L dry	1	BHL0783	12/17/24	12/18/24	EPA 6020B	
Magnesium	11.4	0.0500	"	"	"	"	"	"	
Sodium	23.8	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 12/17/24 12:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.956	0.00100	units	1	BHL0906	12/19/24	12/19/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 12/17/24 12:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Chevron - Orr State 40-36 Pad

Project Number: [none]
Project Manager: AJ Engelhardt

Reported:
01/03/25 10:24

FS01@7-8'
2412359-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	80.0	%	1	BHL0822	12/18/24	12/19/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **12/17/24 12:05**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.264	0.0100	mmhos/cm	1	BHL0785	12/17/24	12/18/24	EPA 120.1	

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

Date Sampled: **12/17/24 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.02		pH Units	1	BHL0786	12/17/24	12/18/24	EPA 9045D	

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6855 W. 119th Ave.
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Project: Chevron - Orr State 40-36 Pad

Project Number: [none]
Project Manager: AJ Engelhardt

Reported:
01/03/25 10:24

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BHL0775 - EPA 5030 Soil MS

Blank (BHL0775-BLK1)

Prepared: 12/17/24 Analyzed: 12/18/24

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	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0461		"	0.0400		115	50-150			
<i>Surrogate: Toluene-d8</i>	0.0410		"	0.0400		103	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0416		"	0.0400		104	50-150			

LCS (BHL0775-BS1)

Prepared: 12/17/24 Analyzed: 12/18/24

Benzene	0.105	0.0020	mg/kg	0.100		105	70-130			
Toluene	0.104	0.0050	"	0.100		104	70-130			
Ethylbenzene	0.0995	0.0050	"	0.100		99.5	70-130			
m,p-Xylene	0.196	0.010	"	0.200		97.8	70-130			
o-Xylene	0.0968	0.0050	"	0.100		96.8	70-130			
1,2,4-Trimethylbenzene	0.102	0.0050	"	0.100		102	70-130			
1,3,5-Trimethylbenzene	0.0973	0.0050	"	0.100		97.3	70-130			
Naphthalene	0.109	0.0038	"	0.100		109	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0484		"	0.0400		121	50-150			
<i>Surrogate: Toluene-d8</i>	0.0410		"	0.0400		102	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0418		"	0.0400		104	50-150			

Matrix Spike (BHL0775-MS1)

Source: 2412357-01

Prepared: 12/17/24 Analyzed: 12/18/24

Benzene	0.0934	0.0020	mg/kg	0.100	ND	93.4	70-130			
Toluene	0.0948	0.0050	"	0.100	ND	94.8	70-130			
Ethylbenzene	0.0923	0.0050	"	0.100	ND	92.3	70-130			
m,p-Xylene	0.182	0.010	"	0.200	ND	91.0	70-130			
o-Xylene	0.0891	0.0050	"	0.100	ND	89.1	70-130			
1,2,4-Trimethylbenzene	0.0947	0.0050	"	0.100	ND	94.7	70-130			
1,3,5-Trimethylbenzene	0.0921	0.0050	"	0.100	ND	92.1	70-130			
Naphthalene	0.101	0.0038	"	0.100	ND	101	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0470		"	0.0400		118	50-150			
<i>Surrogate: Toluene-d8</i>	0.0412		"	0.0400		103	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0432		"	0.0400		108	50-150			

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Project: Chevron - Orr State 40-36 Pad

Project Number: [none]
Project Manager: AJ Engelhardt

Reported:
01/03/25 10:24

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BHL0775 - EPA 5030 Soil MS

Matrix Spike Dup (BHL0775-MSD1)	Source: 2412357-01			Prepared: 12/17/24 Analyzed: 12/18/24						
Benzene	0.0986	0.0020	mg/kg	0.100	ND	98.6	70-130	5.41	30	
Toluene	0.100	0.0050	"	0.100	ND	100	70-130	5.75	30	
Ethylbenzene	0.0973	0.0050	"	0.100	ND	97.3	70-130	5.25	30	
m,p-Xylene	0.191	0.010	"	0.200	ND	95.3	70-130	4.62	30	
o-Xylene	0.0929	0.0050	"	0.100	ND	92.9	70-130	4.15	30	
1,2,4-Trimethylbenzene	0.0965	0.0050	"	0.100	ND	96.5	70-130	1.82	30	
1,3,5-Trimethylbenzene	0.0958	0.0050	"	0.100	ND	95.8	70-130	3.96	30	
Naphthalene	0.104	0.0038	"	0.100	ND	104	70-130	3.11	30	
Surrogate: 1,2-Dichloroethane-d4	0.0491		"	0.0400		123	50-150			
Surrogate: Toluene-d8	0.0407		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0417		"	0.0400		104	50-150			

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Project: Chevron - Orr State 40-36 Pad

Project Number: [none]
Project Manager: AJ Engelhardt

Reported:
01/03/25 10:24

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BHL0784 - EPA 3550A

Blank (BHL0784-BLK1)

Prepared: 12/17/24 Analyzed: 12/18/24

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	11.4		"	12.5		91.3	30-150				

LCS (BHL0784-BS1)

Prepared: 12/17/24 Analyzed: 12/18/24

C10-C28 (DRO)	547	50	mg/kg	500		109	70-130				
Surrogate: <i>o</i> -Terphenyl	13.4		"	12.5		107	30-150				

Matrix Spike (BHL0784-MS1)

Source: 2412357-01

Prepared: 12/17/24 Analyzed: 12/18/24

C10-C28 (DRO)	518	50	mg/kg	500	ND	104	70-130				
Surrogate: <i>o</i> -Terphenyl	8.15		"	12.5		65.2	30-150				

Matrix Spike Dup (BHL0784-MSD1)

Source: 2412357-01

Prepared: 12/17/24 Analyzed: 12/18/24

C10-C28 (DRO)	512	50	mg/kg	500	ND	102	70-130	1.01	20		
Surrogate: <i>o</i> -Terphenyl	8.76		"	12.5		70.1	30-150				

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Project: Chevron - Orr State 40-36 Pad

Project Number: [none]
Project Manager: AJ Engelhardt

Reported:
01/03/25 10:24

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BHL1274 - EPA 5030 Soil MS

Blank (BHL1274-BLK1)

Prepared: 12/29/24 Analyzed: 12/31/24

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	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0306</i>		"	<i>0.0333</i>		<i>91.8</i>	<i>40-140</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0326</i>		"	<i>0.0333</i>		<i>97.9</i>	<i>40-140</i>			

LCS (BHL1274-BS1)

Prepared: 12/29/24 Analyzed: 12/31/24

Acenaphthene	0.0262	0.00500	mg/kg	0.0333		78.7	40-140			
Anthracene	0.0279	0.00500	"	0.0333		83.6	40-140			
Benzo (a) anthracene	0.0254	0.00500	"	0.0333		76.3	40-140			
Benzo (a) pyrene	0.0258	0.00500	"	0.0333		77.5	40-140			
Benzo (b) fluoranthene	0.0244	0.00500	"	0.0333		73.1	40-140			
Benzo (k) fluoranthene	0.0267	0.00500	"	0.0333		80.1	40-140			
Chrysene	0.0278	0.00500	"	0.0333		83.5	40-140			
Dibenz (a,h) anthracene	0.0234	0.00500	"	0.0333		70.2	40-140			
Fluoranthene	0.0269	0.00500	"	0.0333		80.8	40-140			
Fluorene	0.0262	0.00500	"	0.0333		78.7	40-140			
Indeno (1,2,3-cd) pyrene	0.0265	0.00500	"	0.0333		79.5	40-140			
Pyrene	0.0283	0.00500	"	0.0333		84.9	40-140			
1-Methylnaphthalene	0.0287	0.00500	"	0.0333		86.0	40-140			
2-Methylnaphthalene	0.0285	0.00500	"	0.0333		85.6	40-140			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0296</i>		"	<i>0.0333</i>		<i>88.7</i>	<i>40-140</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0281</i>		"	<i>0.0333</i>		<i>84.3</i>	<i>40-140</i>			

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Project: Chevron - Orr State 40-36 Pad

Project Number: [none]
Project Manager: AJ Engelhardt

Reported:
01/03/25 10:24

PAH by EPA Method 8270D SIM - Quality Control

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

Batch BHL1274 - EPA 5030 Soil MS

Matrix Spike (BHL1274-MS1)	Source: 2412359-01			Prepared: 12/29/24 Analyzed: 12/31/24							
Acenaphthene	0.0407	0.00500	mg/kg	0.0333	ND	122	40-140				
Anthracene	0.0349	0.00500	"	0.0333	ND	105	40-140				
Benzo (a) anthracene	0.0355	0.00500	"	0.0333	ND	107	40-140				
Benzo (a) pyrene	0.0352	0.00500	"	0.0333	ND	106	40-140				
Benzo (b) fluoranthene	0.0352	0.00500	"	0.0333	ND	106	40-140				
Benzo (k) fluoranthene	0.0336	0.00500	"	0.0333	ND	101	40-140				
Chrysene	0.0402	0.00500	"	0.0333	ND	120	40-140				
Dibenz (a,h) anthracene	0.0188	0.00500	"	0.0333	ND	56.4	40-140				
Fluoranthene	0.0377	0.00500	"	0.0333	ND	113	40-140				
Fluorene	0.0495	0.00500	"	0.0333	0.0106	117	40-140				
Indeno (1,2,3-cd) pyrene	0.0254	0.00500	"	0.0333	ND	76.1	40-140				
Pyrene	0.0310	0.00500	"	0.0333	ND	93.1	40-140				
1-Methylnaphthalene	0.181	0.00500	"	0.0333	0.0670	342	40-140				QM-01
2-Methylnaphthalene	0.239	0.00500	"	0.0333	0.0929	438	40-140				QM-01
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0344</i>		<i>"</i>	<i>0.0333</i>		<i>103</i>	<i>40-140</i>				
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0389</i>		<i>"</i>	<i>0.0333</i>		<i>117</i>	<i>40-140</i>				

Matrix Spike Dup (BHL1274-MSD1)	Source: 2412359-01			Prepared: 12/29/24 Analyzed: 12/31/24							
Acenaphthene	0.0420	0.00500	mg/kg	0.0333	ND	126	40-140	3.05	30		
Anthracene	0.0349	0.00500	"	0.0333	ND	105	40-140	0.0697	30		
Benzo (a) anthracene	0.0354	0.00500	"	0.0333	ND	106	40-140	0.193	30		
Benzo (a) pyrene	0.0325	0.00500	"	0.0333	ND	97.6	40-140	7.88	30		
Benzo (b) fluoranthene	0.0353	0.00500	"	0.0333	ND	106	40-140	0.139	30		
Benzo (k) fluoranthene	0.0294	0.00500	"	0.0333	ND	88.2	40-140	13.4	30		
Chrysene	0.0317	0.00500	"	0.0333	ND	95.0	40-140	23.7	30		
Dibenz (a,h) anthracene	0.0173	0.00500	"	0.0333	ND	51.9	40-140	8.18	30		
Fluoranthene	0.0385	0.00500	"	0.0333	ND	115	40-140	2.11	30		
Fluorene	0.0570	0.00500	"	0.0333	0.0106	139	40-140	14.1	30		
Indeno (1,2,3-cd) pyrene	0.0256	0.00500	"	0.0333	ND	76.9	40-140	1.03	30		
Pyrene	0.0395	0.00500	"	0.0333	ND	118	40-140	24.0	30		
1-Methylnaphthalene	0.267	0.00500	"	0.0333	0.0670	602	40-140	38.6	30		QM-01
2-Methylnaphthalene	0.372	0.00500	"	0.0333	0.0929	837	40-140	43.5	30		QM-01
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0328</i>		<i>"</i>	<i>0.0333</i>		<i>98.5</i>	<i>40-140</i>				
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0384</i>		<i>"</i>	<i>0.0333</i>		<i>115</i>	<i>40-140</i>				

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Project: Chevron - Orr State 40-36 Pad

Project Number: [none]
Project Manager: AJ Engelhardt

Reported:
01/03/25 10:24

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

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

Batch BHL0801 - EPA 3050B

Blank (BHL0801-BLK1)

Prepared & Analyzed: 12/18/24

Boron ND 2.00 mg/L

LCS (BHL0801-BS1)

Prepared & Analyzed: 12/18/24

Boron 4.68 2.00 mg/L 5.00 93.6 80-120

Duplicate (BHL0801-DUP1)

Source: 2411420-01

Prepared & Analyzed: 12/18/24

Boron 0.149 2.00 mg/L 0.187 22.5 20 QR-01

Matrix Spike (BHL0801-MS1)

Source: 2411420-01

Prepared & Analyzed: 12/18/24

Boron 4.61 2.00 mg/L 5.00 0.187 88.5 75-125

Matrix Spike Dup (BHL0801-MSD1)

Source: 2411420-01

Prepared & Analyzed: 12/18/24

Boron 4.79 2.00 mg/L 5.00 0.187 92.0 75-125 3.73 25

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Project: Chevron - Orr State 40-36 Pad

Project Number: [none]
Project Manager: AJ Engelhardt

Reported:
01/03/25 10:24

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHL0807 - EPA 3050B

Blank (BHL0807-BLK1)

Prepared: 12/18/24 Analyzed: 12/19/24

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	"							
Silver	ND	0.0200	"							
Zinc	ND	0.400	"							
Selenium	ND	0.260	"							

LCS (BHL0807-BS1)

Prepared: 12/18/24 Analyzed: 12/19/24

Arsenic	40.6	0.200	mg/kg wet	41.3	98.3	80-120
Barium	40.3	0.400	"	41.3	97.5	80-120
Cadmium	1.99	0.200	"	2.07	96.5	80-120
Copper	39.3	0.400	"	41.3	95.0	80-120
Lead	19.4	0.200	"	20.7	93.8	80-120
Nickel	39.3	0.400	"	41.3	95.0	80-120
Silver	2.01	0.0200	"	2.07	97.1	80-120
Zinc	39.1	0.400	"	41.3	94.7	80-120
Selenium	4.35	0.260	"	4.13	105	80-120

Duplicate (BHL0807-DUP1)

Source: 2412357-02

Prepared: 12/18/24 Analyzed: 12/19/24

Arsenic	0.704	0.200	mg/kg dry	0.627		11.6	20
Barium	41.4	0.400	"	41.6		0.437	20
Cadmium	0.118	0.200	"	0.105		12.4	20
Copper	3.41	0.400	"	3.06		10.8	20
Lead	4.19	0.200	"	3.79		9.88	20
Nickel	4.07	0.400	"	3.72		9.04	20
Silver	0.0117	0.0200	"	0.0118		0.334	20
Zinc	16.4	0.400	"	15.1		8.52	20
Selenium	ND	0.260	"	ND			20

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Project: Chevron - Orr State 40-36 Pad

Project Number: [none]
Project Manager: AJ Engelhardt

Reported:
01/03/25 10:24

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHL0807 - EPA 3050B

Matrix Spike (BHL0807-MS1)

Source: 2412357-02

Prepared: 12/18/24 Analyzed: 12/19/24

Arsenic	49.2	0.200	mg/kg dry	48.6	0.627	99.9	75-125				
Barium	92.8	0.400	"	48.6	41.6	105	75-125				
Cadmium	2.60	0.200	"	2.43	0.105	102	75-125				
Copper	37.9	0.400	"	48.6	3.06	71.5	75-125				QM-05
Lead	28.3	0.200	"	24.3	3.79	101	75-125				
Nickel	38.8	0.400	"	48.6	3.72	72.1	75-125				QM-05
Silver	2.44	0.0200	"	2.43	0.0118	99.8	75-125				
Zinc	52.4	0.400	"	48.6	15.1	76.7	75-125				
Selenium	5.19	0.260	"	4.86	ND	107	75-125				

Matrix Spike Dup (BHL0807-MSD1)

Source: 2412357-02

Prepared: 12/18/24 Analyzed: 12/19/24

Arsenic	49.1	0.200	mg/kg dry	51.1	0.627	95.0	75-125	0.173	25		
Barium	91.0	0.400	"	51.1	41.6	96.9	75-125	1.93	25		
Cadmium	2.57	0.200	"	2.55	0.105	96.7	75-125	0.827	25		
Copper	38.3	0.400	"	51.1	3.06	69.0	75-125	1.20	25		QM-05
Lead	27.8	0.200	"	25.5	3.79	94.1	75-125	1.69	25		
Nickel	39.4	0.400	"	51.1	3.72	69.8	75-125	1.43	25		QM-05
Silver	2.44	0.0200	"	2.55	0.0118	95.0	75-125	0.0139	25		
Zinc	52.5	0.400	"	51.1	15.1	73.3	75-125	0.169	25		QM-05
Selenium	5.23	0.260	"	5.11	ND	102	75-125	0.707	25		

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Project: Chevron - Orr State 40-36 Pad

Project Number: [none]
Project Manager: AJ Engelhardt

Reported:
01/03/25 10:24

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BHL0813 - 3060A Mod

Blank (BHL0813-BLK1)

Prepared & Analyzed: 12/18/24

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BHL0813-BS1)

Prepared & Analyzed: 12/18/24

Chromium, Hexavalent 25.8 0.30 mg/kg wet 25.0 103 80-120

Duplicate (BHL0813-DUP1)

Source: 2412354-01

Prepared & Analyzed: 12/18/24

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BHL0813-MS1)

Source: 2412354-01

Prepared & Analyzed: 12/18/24

Chromium, Hexavalent 29.0 0.30 mg/kg dry 28.8 ND 101 75-125

Matrix Spike Dup (BHL0813-MSD1)

Source: 2412354-01

Prepared & Analyzed: 12/18/24

Chromium, Hexavalent 28.6 0.30 mg/kg dry 28.2 ND 101 75-125 1.35 20

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Project: Chevron - Orr State 40-36 Pad

Project Number: [none]
Project Manager: AJ Engelhardt

Reported:
01/03/25 10:24

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

Summit Scientific

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

Batch BHL0783 - General Preparation

Blank (BHL0783-BLK1)

Prepared: 12/17/24 Analyzed: 12/18/24

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

LCS (BHL0783-BS1)

Prepared: 12/17/24 Analyzed: 12/18/24

Calcium	5.34	0.0500	mg/L wet	5.00		107	70-130			
Magnesium	4.79	0.0500	"	5.00		95.7	70-130			
Sodium	4.83	0.0500	"	5.00		96.6	70-130			

Summit Scientific

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Tasman Geosciences
 6855 W. 119th Ave.
 Broomfield CO, 80020

Project: Chevron - Orr State 40-36 Pad

Project Number: [none]
 Project Manager: AJ Engelhardt

Reported:
 01/03/25 10:24

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

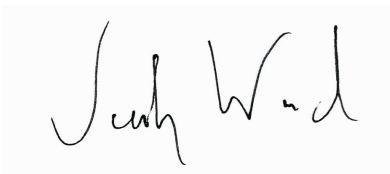
Summit Scientific

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

Batch BHL0822 - General Preparation

Duplicate (BHL0822-DUP1)	Source: 2412041-01		Prepared: 12/18/24 Analyzed: 12/19/24		
% Solids	93.0	%	93.8	0.833	20

Summit Scientific



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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Chevron - Orr State 40-36 Pad

Project Number: [none]
Project Manager: AJ Engelhardt

Reported:
01/03/25 10:24

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

Summit Scientific

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

Batch BHL0785 - General Preparation

Blank (BHL0785-BLK1)

Prepared: 12/17/24 Analyzed: 12/18/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BHL0785-BS1)

Prepared: 12/17/24 Analyzed: 12/18/24

Specific Conductance (EC) 0.151 0.0100 mmhos/cm 0.150 101 95-105

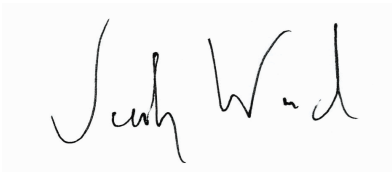
Duplicate (BHL0785-DUP1)

Source: 2412353-01

Prepared: 12/17/24 Analyzed: 12/18/24

Specific Conductance (EC) 0.602 0.0100 mmhos/cm 0.612 1.71 20

Summit Scientific



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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Chevron - Orr State 40-36 Pad

Project Number: [none]
Project Manager: AJ Engelhardt

Reported:
01/03/25 10:24

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

Summit Scientific

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

Batch BHL0786 - General Preparation

LCS (BHL0786-BS1)

Prepared: 12/17/24 Analyzed: 12/18/24

pH	9.18		pH Units	9.18		100	95-105			
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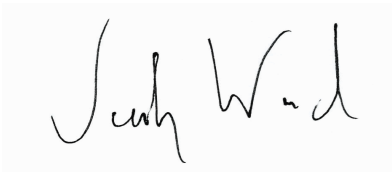
Duplicate (BHL0786-DUP1)

Source: 2412353-01

Prepared: 12/17/24 Analyzed: 12/18/24

pH	8.85		pH Units	8.90		0.563	20			
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Summit Scientific



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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Chevron - Orr State 40-36 Pad

Project Number: [none]
Project Manager: AJ Engelhardt

Reported:
01/03/25 10:24

Notes and Definitions

- QR-01 Analyses are not controlled on RPD values from sample concentrations below the reporting limit. Sample results were accepted based on LCS and/or LCSD recoveries and/or RPD values.
- QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. Sample results were accepted based on LCS and/or LCSD recoveries and/or RPD values.
- QM-01 The spike recovery for this QC sample is outside of established control limits due to sample matrix interference. Sample results were accepted based on LCS and/or LCSD recoveries and/or RPD values.
- 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