

# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 07, 2022

Vince DeCianne

Whiting Oil & Gas

retail

Denver, CO 80215

RE: McLaughlin 94 Closure

Work Order #2201273

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 "Muri Premier", is displayed on a light purple rectangular background.

Muri Premier For Paul Shrewsbury  
President



Whiting Oil & Gas  
retail  
Denver CO, 80215

Project: McLaughlin 94 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

**Reported:**  
03/07/22 10:31

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
20220118-McLaughlin 94-WH@6ft	2201273-01	Soil	01/18/22 09:10	01/24/22 11:00

Summit Scientific

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# Summit Scientific

S<sub>2</sub>

2201273

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


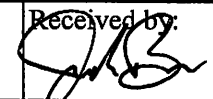
Project Name: McLaughlin 94 Closure

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 <sub>3</sub>	None	Other	Water	Soil	Air-Canister #	Other	COGCC Table 915-1	Arsenic, EC, pH, SAR	EC	SAR	pH	Arsenic			
1	20220118 McLaughlin 94 - WH @ 6ft	1/18/2022	9:10	3			X			X				X							
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by: 	Date/Time: 1/18/2022 1300	Received by: 	Date/Time: 1/24/22 1100	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"/> Integrity: <input checked="" type="checkbox"/> Upon Receipt: 38 Samples Intact: <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:		

S<sub>2</sub>

2201273

## Sample Receipt Checklist

S2 Work Order#

Client: Whiting Oil & Gas

Client Project ID:

McLaughlin 94 ClosureShipped 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 <sup>(1)</sup> ? 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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact <sup>(1)</sup> ?	<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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	<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) <sup>(1)</sup> ? Note the type of preservative in the Comments column – HCl, H <sub>2</sub> SO <sub>4</sub> , NaOH, HNO <sub>3</sub> , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ? 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):

<sup>(1)</sup> 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



Whiting Oil & Gas  
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Denver CO, 80215

Project: McLaughlin 94 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

**Reported:**  
03/07/22 10:31

**20220118-McLaughlin 94-WH@6ft  
2201273-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **01/18/22 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFA0424	01/26/22	01/27/22	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: **01/18/22 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		93.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **01/18/22 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFA0425	01/26/22	01/27/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/18/22 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		148 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project: McLaughlin 94 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

**Reported:**

03/07/22 10:31

**20220118-McLaughlin 94-WH@6ft  
2201273-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **01/18/22 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFA0431	01/26/22	01/27/22	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: **01/18/22 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		56.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		45.6 %	40-150		"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **01/18/22 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFB0070	02/08/22	02/08/22	EPA 7196A	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **01/18/22 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Denver CO, 80215

Project: McLaughlin 94 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

**Reported:**

03/07/22 10:31

**20220118-McLaughlin 94-WH@6ft**  
**2201273-01 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

% Solids	89.7	%	1	BFA0400	01/25/22	01/25/22	Calculation
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Denver CO, 80215

Project: McLaughlin 94 Closure

Project Number: 20221740.001A  
Project Manager: Vince DeCianne

**Reported:**  
03/07/22 10:31

## 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 BFA0424 - EPA 5030 Soil MS

##### Blank (BFA0424-BLK1)

Prepared: 01/26/22 Analyzed: 01/27/22

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	0.0453		"	0.0400		113	23-173			
Surrogate: Toluene-d8	0.0403		"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0402		"	0.0400		100	21-167			

##### LCS (BFA0424-BS1)

Prepared: 01/26/22 Analyzed: 01/27/22

Benzene	0.0708	0.0020	mg/kg	0.0750		94.4	70-130			
Toluene	0.0673	0.0050	"	0.0750		89.7	70-130			
Ethylbenzene	0.0670	0.0050	"	0.0750		89.4	70-130			
m,p-Xylene	0.134	0.010	"	0.150		89.3	70-130			
o-Xylene	0.0694	0.0050	"	0.0750		92.6	70-130			
1,2,4-Trimethylbenzene	0.0687	0.0050	"	0.0750		91.6	70-130			
1,3,5-Trimethylbenzene	0.0681	0.0050	"	0.0750		90.8	70-130			
Naphthalene	0.0912	0.0038	"	0.0750		122	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0421		"	0.0400		105	23-173			
Surrogate: Toluene-d8	0.0389		"	0.0400		97.4	20-170			
Surrogate: 4-Bromofluorobenzene	0.0417		"	0.0400		104	21-167			

##### Matrix Spike (BFA0424-MS1)

Source: 2201239-01

Prepared: 01/26/22 Analyzed: 01/27/22

Benzene	0.0714	0.0020	mg/kg	0.0750	ND	95.2	70-130			
Toluene	0.0734	0.0050	"	0.0750	ND	97.8	70-130			
Ethylbenzene	0.0693	0.0050	"	0.0750	ND	92.4	70-130			
m,p-Xylene	0.139	0.010	"	0.150	ND	92.9	70-130			
o-Xylene	0.0726	0.0050	"	0.0750	ND	96.8	70-130			
1,2,4-Trimethylbenzene	0.0770	0.0050	"	0.0750	ND	103	70-130			
1,3,5-Trimethylbenzene	0.0738	0.0050	"	0.0750	ND	98.4	70-130			
Naphthalene	0.0736	0.0038	"	0.0750	ND	98.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0476		"	0.0400		119	23-173			
Surrogate: Toluene-d8	0.0420		"	0.0400		105	20-170			
Surrogate: 4-Bromofluorobenzene	0.0430		"	0.0400		108	21-167			

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Project Number: 20221740.001A

Project Manager: Vince DeCianne

**Reported:**  
03/07/22 10:31

## 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 BFA0424 - EPA 5030 Soil MS

Matrix Spike Dup (BFA0424-MSD1)	Source: 2201239-01			Prepared: 01/26/22 Analyzed: 01/27/22						
Benzene	0.0702	0.0020	mg/kg	0.0750	ND	93.6	70-130	1.65	30	
Toluene	0.0680	0.0050	"	0.0750	ND	90.7	70-130	7.56	30	
Ethylbenzene	0.0692	0.0050	"	0.0750	ND	92.3	70-130	0.173	30	
m,p-Xylene	0.137	0.010	"	0.150	ND	91.2	70-130	1.93	30	
o-Xylene	0.0713	0.0050	"	0.0750	ND	95.1	70-130	1.75	30	
1,2,4-Trimethylbenzene	0.0728	0.0050	"	0.0750	ND	97.0	70-130	5.61	30	
1,3,5-Trimethylbenzene	0.0703	0.0050	"	0.0750	ND	93.7	70-130	4.87	30	
Naphthalene	0.0807	0.0038	"	0.0750	ND	108	70-130	9.21	30	
Surrogate: 1,2-Dichloroethane-d4	0.0443		"	0.0400		111	23-173			
Surrogate: Toluene-d8	0.0393		"	0.0400		98.3	20-170			
Surrogate: 4-Bromofluorobenzene	0.0405		"	0.0400		101	21-167			

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Project Number: 20221740.001A

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**Reported:**  
03/07/22 10:31

**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 BFA0425 - EPA 3550A**

**Blank (BFA0425-BLK1)**

Prepared: 01/26/22 Analyzed: 01/27/22

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

**LCS (BFA0425-BS1)**

Prepared: 01/26/22 Analyzed: 01/27/22

C10-C28 (DRO)	454	50	mg/kg	500	90.8	70-130
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**Matrix Spike (BFA0425-MS1)**

Source: 2201239-01

Prepared: 01/26/22 Analyzed: 01/27/22

C10-C28 (DRO)	508	50	mg/kg	500	41.1	93.5	70-130
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**Matrix Spike Dup (BFA0425-MSD1)**

Source: 2201239-01

Prepared: 01/26/22 Analyzed: 01/27/22

C10-C28 (DRO)	505	50	mg/kg	500	41.1	92.7	70-130	0.719	20
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Project: McLaughlin 94 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

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03/07/22 10:31

## 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 BFA0431 - EPA 5030 Soil MS

##### Blank (BFA0431-BLK1)

Prepared: 01/26/22 Analyzed: 01/27/22

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	0.0202		"	0.0333		60.5	40-150			
Surrogate: Fluoranthene-d10	0.0177		"	0.0333		53.1	40-150			

##### LCS (BFA0431-BS1)

Prepared: 01/26/22 Analyzed: 01/27/22

Acenaphthene	0.0215	0.00500	mg/kg	0.0333		64.4	31-137			
Anthracene	0.0230	0.00500	"	0.0333		68.9	30-120			
Benzo (a) anthracene	0.0213	0.00500	"	0.0333		64.0	30-120			
Benzo (a) pyrene	0.0194	0.00500	"	0.0333		58.1	30-120			
Benzo (b) fluoranthene	0.0200	0.00500	"	0.0333		60.1	30-120			
Benzo (k) fluoranthene	0.0227	0.00500	"	0.0333		68.2	30-120			
Chrysene	0.0231	0.00500	"	0.0333		69.3	30-120			
Dibenz (a,h) anthracene	0.0197	0.00500	"	0.0333		59.1	30-120			
Fluoranthene	0.0233	0.00500	"	0.0333		69.8	30-120			
Fluorene	0.0219	0.00500	"	0.0333		65.8	30-120			
Indeno (1,2,3-cd) pyrene	0.0214	0.00500	"	0.0333		64.2	30-120			
Pyrene	0.0235	0.00500	"	0.0333		70.4	35-142			
1-Methylnaphthalene	0.0247	0.00500	"	0.0333		74.1	35-142			
2-Methylnaphthalene	0.0246	0.00500	"	0.0333		73.9	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0239		"	0.0333		71.6	40-150			
Surrogate: Fluoranthene-d10	0.0232		"	0.0333		69.6	40-150			

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Project Number: 20221740.001A

Project Manager: Vince DeCianne

**Reported:**

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## 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 BFA0431 - EPA 5030 Soil MS

Matrix Spike (BFA0431-MS1)			Source: 2201187-01		Prepared: 01/26/22 Analyzed: 01/27/22						
Acenaphthene	0.0125	0.00500	mg/kg	0.0333	ND	37.4	31-137				
Anthracene	0.0134	0.00500	"	0.0333	ND	40.2	30-120				
Benzo (a) anthracene	0.0142	0.00500	"	0.0333	ND	42.7	30-120				
Benzo (a) pyrene	0.0136	0.00500	"	0.0333	ND	40.8	30-120				
Benzo (b) fluoranthene	0.0139	0.00500	"	0.0333	ND	41.8	30-120				
Benzo (k) fluoranthene	0.0158	0.00500	"	0.0333	ND	47.3	30-120				
Chrysene	0.0156	0.00500	"	0.0333	ND	46.7	30-120				
Dibenz (a,h) anthracene	0.0145	0.00500	"	0.0333	ND	43.4	30-120				
Fluoranthene	0.0132	0.00500	"	0.0333	ND	39.7	30-120				
Fluorene	0.0124	0.00500	"	0.0333	ND	37.3	30-120				
Indeno (1,2,3-cd) pyrene	0.0157	0.00500	"	0.0333	ND	47.0	30-120				
Pyrene	0.0156	0.00500	"	0.0333	ND	46.7	35-142				
1-Methylnaphthalene	0.0176	0.00500	"	0.0333	ND	52.7	15-130				
2-Methylnaphthalene	0.0161	0.00500	"	0.0333	ND	48.2	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0171		"	0.0333		51.2	40-150				
Surrogate: Fluoranthene-d10	0.0155		"	0.0333		46.6	40-150				

Matrix Spike Dup (BFA0431-MSD1)			Source: 2201187-01		Prepared: 01/26/22 Analyzed: 01/27/22						
Acenaphthene	0.0147	0.00500	mg/kg	0.0333	ND	44.0	31-137	16.1	30		
Anthracene	0.0165	0.00500	"	0.0333	ND	49.5	30-120	20.7	30		
Benzo (a) anthracene	0.0160	0.00500	"	0.0333	ND	47.9	30-120	11.5	30		
Benzo (a) pyrene	0.0162	0.00500	"	0.0333	ND	48.5	30-120	17.4	30		
Benzo (b) fluoranthene	0.0160	0.00500	"	0.0333	ND	48.1	30-120	13.9	30		
Benzo (k) fluoranthene	0.0185	0.00500	"	0.0333	ND	55.6	30-120	16.0	30		
Chrysene	0.0174	0.00500	"	0.0333	ND	52.3	30-120	11.2	30		
Dibenz (a,h) anthracene	0.0170	0.00500	"	0.0333	ND	51.1	30-120	16.3	30		
Fluoranthene	0.0153	0.00500	"	0.0333	ND	45.8	30-120	14.2	30		
Fluorene	0.0153	0.00500	"	0.0333	ND	45.8	30-120	20.4	30		
Indeno (1,2,3-cd) pyrene	0.0179	0.00500	"	0.0333	ND	53.6	30-120	13.1	30		
Pyrene	0.0179	0.00500	"	0.0333	ND	53.6	35-142	13.7	30		
1-Methylnaphthalene	0.0164	0.00500	"	0.0333	ND	49.1	15-130	7.05	50		
2-Methylnaphthalene	0.0163	0.00500	"	0.0333	ND	48.9	15-130	1.26	50		
Surrogate: 2-Methylnaphthalene-d10	0.0169		"	0.0333		50.8	40-150				
Surrogate: Fluoranthene-d10	0.0169		"	0.0333		50.7	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: McLaughlin 94 Closure

Project Number: 20221740.001A  
Project Manager: Vince DeCianne

**Reported:**  
03/07/22 10:31

**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 BFB0070 - 3060A Mod**

**Blank (BFB0070-BLK1)**

Prepared & Analyzed: 02/08/22

Chromium, Hexavalent ND 0.30 mg/kg wet

**LCS (BFB0070-BS1)**

Prepared & Analyzed: 02/08/22

Chromium, Hexavalent 27.9 0.30 mg/kg wet 25.0 112 80-120

**Duplicate (BFB0070-DUP1)**

**Source: 2201215-01**

Prepared & Analyzed: 02/08/22

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

**Matrix Spike (BFB0070-MS1)**

**Source: 2201215-01**

Prepared & Analyzed: 02/08/22

Chromium, Hexavalent 33.9 0.30 mg/kg dry 31.2 ND 109 75-125

**Matrix Spike Dup (BFB0070-MSD1)**

**Source: 2201215-01**

Prepared & Analyzed: 02/08/22

Chromium, Hexavalent 31.7 0.30 mg/kg dry 31.2 ND 102 75-125 6.46 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: McLaughlin 94 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

**Reported:**  
03/07/22 10:31

**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 BFA0400 - General Preparation**

**Duplicate (BFA0400-DUP1)**

**Source: 2201244-01**

Prepared & Analyzed: 01/25/22

% Solids	81.1	%	81.2	0.129	20
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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.*



**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: 2201273**  
**Work Order Number: 2201487**

March 04, 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](http://www.fremontanalytical.com)

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**CLIENT:** Summit Scientific  
**Project:** 2201273  
**Work Order:** 2201487

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**Work Order Sample Summary**

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Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2201487-001	20220118_McLaughlin94_WH@6ft	01/18/2022 12:00 AM	01/28/2022 11:10 AM
2201487-001	20220118_McLaughlin94_WH@6ft	01/18/2022 12:00 AM	01/28/2022 11:10 AM

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



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**CLIENT:** Summit Scientific  
**Project:** 2201273

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**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.

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**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: 2201487  
Date Reported: 3/4/2022

Client: Summit Scientific

Collection Date: 1/18/2022

Project: 2201273

Lab ID: 2201487-001

Matrix: Soil

Client Sample ID: 20220118\_McLaughlin94\_WH@6ft

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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### Total Metals by EPA Method 6020B

Batch ID: 35312 Analyst: EH

Arsenic	7.32	0.101		mg/Kg-dry	1	2/9/2022 3:25:27 PM
Barium	88.0	0.504		mg/Kg-dry	1	2/9/2022 3:25:27 PM
Cadmium	ND	0.168		mg/Kg-dry	1	2/9/2022 3:25:27 PM
Copper	11.1	0.841		mg/Kg-dry	1	2/9/2022 3:25:27 PM
Lead	15.1	0.168		mg/Kg-dry	1	2/9/2022 3:25:27 PM
Nickel	15.7	0.420		mg/Kg-dry	1	2/9/2022 3:25:27 PM
Selenium	2.61	0.168		mg/Kg-dry	1	2/9/2022 3:25:27 PM
Silver	ND	0.126		mg/Kg-dry	1	2/9/2022 3:25:27 PM
Zinc	66.5	1.47		mg/Kg-dry	1	2/9/2022 3:25:27 PM

### Total Metals by EPA Method 6020B

Batch ID: 35266 Analyst: EH

Boron	0.114	0.00992		mg/L	1	2/10/2022 11:48:27 AM
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### Sodium Adsorption Ratio

Batch ID: 35565 Analyst: SG

Sodium Adsorption Ratio (SAR)	0.0227	0		mEq/L	1	2/18/2022 7:34:00 PM
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### Sample Moisture (Percent Moisture)

Batch ID: R72968 Analyst: CB

Percent Moisture	11.2	0.500		wt%	1	2/2/2022 1:32:07 PM
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### Conductivity by SM 2510B

Batch ID: R73469 Analyst: ALT

Specific Conductance (Conductivity)	843	1.00		µS/cm	1	2/21/2022 3:48:00 PM
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### pH by SM 4500H+B

Batch ID: R73472 Analyst: SS

Hydrogen Ion (pH)	7.24		H	pH	1	2/21/2022 2:45:00 PM
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**Work Order:** 2201487  
**CLIENT:** Summit Scientific  
**Project:** 2201273

## QC SUMMARY REPORT

### Conductivity by SM 2510B

Sample ID: <b>MB-R73469</b>		SampType: <b>MBLK</b>			Units: <b>µS/cm</b>		Prep Date: <b>2/21/2022</b>			RunNo: <b>73469</b>		
Client ID: <b>MBLKW</b>		Batch ID: <b>R73469</b>						Analysis Date: <b>2/21/2022</b>			SeqNo: <b>1501230</b>	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Specific Conductance (Conductivity) ND 1.00

Sample ID: <b>LCS-R73469</b>		SampType: <b>LCS</b>			Units: <b>µS/cm</b>		Prep Date: <b>2/21/2022</b>			RunNo: <b>73469</b>		
Client ID: <b>LCSW</b>		Batch ID: <b>R73469</b>			Analysis Date: <b>2/21/2022</b>			SeqNo: <b>1501231</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Specific Conductance (Conductivity) 983 1.00 1,000 0 98.3 92.2 107

Sample ID: <b>2201479-001ADUP</b>		SampType: <b>DUP</b>			Units: <b>µS/cm</b>		Prep Date: <b>2/21/2022</b>			RunNo: <b>73469</b>		
Client ID: <b>BATCH</b>		Batch ID: <b>R73469</b>			Analysis Date: <b>2/21/2022</b>					SeqNo: <b>1501233</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Specific Conductance (Conductivity) 52.1 1.00 54.50 4.50 20

Sample ID: <b>LCSD-R73469</b>		SampType: <b>LCSD</b>			Units: <b>µS/cm</b>		Prep Date: <b>2/21/2022</b>			RunNo: <b>73469</b>		
Client ID: <b>LCSW02</b>		Batch ID: <b>R73469</b>			Analysis Date: <b>2/21/2022</b>			SeqNo: <b>1501252</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Specific Conductance (Conductivity) 987 1.00 1,000 0 98.7 92.2 107 983.0 0.406 20



Work Order: 2201487  
CLIENT: Summit Scientific  
Project: 2201273

## QC SUMMARY REPORT

pH by SM 4500H+B

Sample ID: <b>MB-R73472</b>		SampType: <b>MBLK</b>		Units: <b>pH</b>		Prep Date: <b>2/21/2022</b>			RunNo: <b>73472</b>		
Client ID: <b>MBLKW</b>		Batch ID: <b>R73472</b>					Analysis Date: <b>2/21/2022</b>			SeqNo: <b>1501334</b>	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hydrogen Ion (pH)		7.55									

Sample ID: <b>LCS-R73472</b>		SampType: <b>LCS</b>		Units: <b>pH</b>		Prep Date: <b>2/21/2022</b>			RunNo: <b>73472</b>		
Client ID: <b>LCSW</b>		Batch ID: <b>R73472</b>					Analysis Date: <b>2/21/2022</b>			SeqNo: <b>1501335</b>	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hydrogen Ion (pH)		7.04		7.000		0		101		95 105	

Sample ID: <b>2201479-001ADUP</b>		SampType: <b>DUP</b>		Units: <b>pH</b>		Prep Date: <b>2/21/2022</b>			RunNo: <b>73472</b>		
Client ID: <b>BATCH</b>		Batch ID: <b>R73472</b>					Analysis Date: <b>2/21/2022</b>			SeqNo: <b>1501337</b>	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hydrogen Ion (pH)		7.84						7.730		1.41 10 H	

Sample ID: <b>LCSD-R73472</b>		SampType: <b>LCSD</b>		Units: <b>pH Units</b>		Prep Date: <b>2/21/2022</b>			RunNo: <b>73472</b>		
Client ID: <b>LCSW02</b>		Batch ID: <b>R73472</b>					Analysis Date: <b>2/21/2022</b>			SeqNo: <b>1501356</b>	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hydrogen Ion (pH)		7.03		7.000		0		100		95 105 7.040 0.142 10	

**Work Order:** 2201487  
**CLIENT:** Summit Scientific  
**Project:** 2201273

## QC SUMMARY REPORT

### Total Metals by EPA Method 6020B

Sample ID: <b>MB-35312</b>		SampType: <b>MBLK</b>		Units: <b>mg/Kg</b>		Prep Date: <b>2/9/2022</b>			RunNo: <b>73174</b>		
Client ID: <b>MBLKS</b>		Batch ID: <b>35312</b>					Analysis Date: <b>2/9/2022</b>			SeqNo: <b>1494537</b>	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.0960									
Barium	ND	0.480									
Cadmium	ND	0.160									
Copper	ND	0.800									
Lead	ND	0.160									
Nickel	ND	0.400									
Selenium	ND	0.160									
Silver	ND	0.120									
Zinc	ND	1.40									

Sample ID: <b>LCS-35312</b>		SampType: <b>LCS</b>		Units: <b>mg/Kg</b>		Prep Date: <b>2/9/2022</b>			RunNo: <b>73174</b>		
Client ID: <b>LCSS</b>		Batch ID: <b>35312</b>					Analysis Date: <b>2/9/2022</b>			SeqNo: <b>1494538</b>	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	38.7	0.0960	40.00	0	96.7	80	120				
Barium	45.4	0.480	40.00	0	113	80	120				
Cadmium	1.99	0.160	2.000	0	99.4	80	120				
Copper	39.5	0.800	40.00	0	98.8	80	120				
Lead	21.1	0.160	20.00	0	106	80	120				
Nickel	39.1	0.400	40.00	0	97.7	80	120				
Selenium	4.28	0.160	4.000	0	107	80	120				
Silver	2.13	0.120	2.000	0	107	80	120				
Zinc	37.5	1.40	40.00	0	93.8	80	120				

Sample ID: <b>2202188-001AMS</b>		SampType: <b>MS</b>		Units: <b>mg/Kg-dry</b>		Prep Date: <b>2/9/2022</b>		RunNo: <b>73174</b>			
Client ID: <b>BATCH</b>		Batch ID: <b>35312</b>				Analysis Date: <b>2/9/2022</b>		SeqNo: <b>1494541</b>			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	56.1	0.134	56.00	3.159	94.6	75	125				

**Work Order:** 2201487  
**CLIENT:** Summit Scientific  
**Project:** 2201273

## QC SUMMARY REPORT

### Total Metals by EPA Method 6020B

Sample ID: <b>2202188-001AMS</b>		SampType: <b>MS</b>		Units: <b>mg/Kg-dry</b>		Prep Date: <b>2/9/2022</b>			RunNo: <b>73174</b>		
Client ID: <b>BATCH</b>		Batch ID: <b>35312</b>					Analysis Date: <b>2/9/2022</b>			SeqNo: <b>1494541</b>	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	78.1	0.672	56.00	17.54	108	75	125				
Cadmium	2.90	0.224	2.800	0.03846	102	75	125				
Copper	76.1	1.12	56.00	23.43	94.0	75	125				
Lead	28.3	0.224	28.00	1.095	97.2	75	125				
Nickel	66.4	0.560	56.00	10.78	99.4	75	125				
Selenium	6.13	0.224	5.600	0.4424	102	75	125				
Silver	2.41	0.168	2.800	0	86.2	75	125				
Zinc	104	1.96	56.00	46.54	103	75	125				

Sample ID: <b>2202188-001AMSD</b>		SampType: <b>MSD</b>		Units: <b>mg/Kg-dry</b>		Prep Date: <b>2/9/2022</b>			RunNo: <b>73174</b>		
Client ID: <b>BATCH</b>		Batch ID: <b>35312</b>		Analysis Date: <b>2/9/2022</b>					SeqNo: <b>1494542</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	46.3	0.129	53.88	3.159	80.0	75	125	56.13	19.2	20	
Barium	64.7	0.647	53.88	17.54	87.5	75	125	78.06	18.8	20	
Cadmium	2.33	0.216	2.694	0.03846	85.0	75	125	2.901	21.9	20	R
Copper	64.4	1.08	53.88	23.43	76.1	75	125	76.07	16.6	20	
Lead	23.4	0.216	26.94	1.095	82.9	75	125	28.31	18.9	20	
Nickel	55.9	0.539	53.88	10.78	83.7	75	125	66.43	17.2	20	
Selenium	4.67	0.216	5.388	0.4424	78.5	75	125	6.133	27.0	20	R
Silver	1.88	0.162	2.694	0	69.8	75	125	2.415	25.0	20	RS
Zinc	87.4	1.89	53.88	46.54	75.8	75	125	104.3	17.7	20	

**NOTES:**

S - Outlying spike recovery(ies) observed. A duplicate analysis was performed and recovered within range.

R - High RPD observed.

**Work Order:** 2201487  
**CLIENT:** Summit Scientific  
**Project:** 2201273

## QC SUMMARY REPORT

### Total Metals by EPA Method 6020B

Sample ID: <b>MB-35266</b>		SampType: <b>MBLK</b>			Units: <b>mg/L</b>		Prep Date: <b>2/4/2022</b>			RunNo: <b>73210</b>		
Client ID: <b>MBLKS</b>		Batch ID: <b>35266</b>			Analysis Date: <b>2/10/2022</b>			SeqNo: <b>1495570</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Boron	ND	0.00994									
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Sample ID: <b>LCS-35266</b>		SampType: <b>LCS</b>			Units: <b>mg/L</b>		Prep Date: <b>2/4/2022</b>			RunNo: <b>73210</b>		
Client ID: <b>LCSS</b>		Batch ID: <b>35266</b>			Analysis Date: <b>2/10/2022</b>					SeqNo: <b>1495571</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Boron	4.50	0.00998	4.990	0	90.2	80	120				
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Sample ID: <b>2201479-001BDUP</b>		SampType: <b>DUP</b>			Units: <b>mg/L</b>		Prep Date: <b>2/4/2022</b>			RunNo: <b>73210</b>		
Client ID: <b>BATCH</b>		Batch ID: <b>35266</b>			Analysis Date: <b>2/10/2022</b>			SeqNo: <b>1495573</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Boron	0.143	0.00983						0.1316	8.08	20	
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Sample ID: <b>2201479-001BMS</b>		SampType: <b>MS</b>			Units: <b>mg/L</b>		Prep Date: <b>2/4/2022</b>			RunNo: <b>73210</b>		
Client ID: <b>BATCH</b>		Batch ID: <b>35266</b>			Analysis Date: <b>2/10/2022</b>			SeqNo: <b>1495574</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Boron	0.905	0.00992	4.960	0.1316	15.6	75	125				S
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**NOTES:**

S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: <b>2201479-001BMSD</b>		SampType: <b>MSD</b>			Units: <b>mg/L</b>		Prep Date: <b>2/4/2022</b>			RunNo: <b>73210</b>		
Client ID: <b>BATCH</b>		Batch ID: <b>35266</b>			Analysis Date: <b>2/10/2022</b>					SeqNo: <b>1495575</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Boron	0.919	0.00995	4.975	0.1316	15.8	75	125	0.9051	1.55	20	S
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**NOTES:**

S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.



**Work Order:** 2201487  
**CLIENT:** Summit Scientific  
**Project:** 2201273

## QC SUMMARY REPORT

### Sodium Adsorption Ratio

Sample ID: <b>MB-35565</b>		SampType: <b>MBLK</b>			Units: <b>µg/L</b>		Prep Date: <b>3/2/2022</b>			RunNo: <b>73697</b>		
Client ID: <b>MBLKW</b>		Batch ID: <b>35565</b>			Analysis Date: <b>2/18/2022</b>					SeqNo: <b>1507667</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

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

Sample ID: <b>LCS-35565</b>		SampType: <b>LCS</b>			Units: <b>µg/L</b>		Prep Date: <b>3/2/2022</b>			RunNo: <b>73697</b>		
Client ID: <b>LCSW</b>		Batch ID: <b>35565</b>			Analysis Date: <b>2/18/2022</b>			SeqNo: <b>1507668</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Calcium	5,090	1,000	5,000	0	102	50	150				
Magnesium	4,700	1,000	5,000	0	94.0	50	150				
Sodium	5,010	500	5,000	0	100	50	150				

Sample ID: <b>2201479-001ADUP</b>		SampType: <b>DUP</b>			Units: <b>mEq/L</b>		Prep Date: <b>3/2/2022</b>			RunNo: <b>73697</b>		
Client ID: <b>BATCH</b>		Batch ID: <b>35565</b>			Analysis Date: <b>2/18/2022</b>			SeqNo: <b>1508678</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Sodium Adsorption Ratio (SAR)	0.0546	0						0.04990	9.00	30	
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Client Name: **SUMSCI**

Work Order Number: **2201487**

Logged by: **Brianna Barnes**

Date Received: **1/28/2022 11:10:00 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 ☐
7. Were all items received at a temperature of >2°C to 6°C \* Unknown prior to receipt. 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:

Date:

By Whom:

Via:

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

19. Additional remarks:

### Item Information

Item #	Temp °C
Sample	14.2

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





Whiting Oil & Gas  
retail  
Denver CO, 80215

Project: McLaughlin 94 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

**Reported:**  
03/07/22 10:31

### 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