

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 04, 2022

Vince DeCianne

Whiting Oil & Gas

retail

Denver, CO 80215

RE: AC McLaughlin 93 Closure

Work Order #2204255

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 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

**Reported:**  
05/04/22 12:28

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
20220414_ACMcLaughlin93_WH@6ft	2204255-01	Soil	04/14/22 11:35	04/18/22 10:40
20220414_ACMcLaughlin93_AOC@4ft	2204255-02	Soil	04/14/22 11:45	04/18/22 10:40
20220414_ACMcLaughlin93_TP_Comp	2204255-03	Soil	04/14/22 11:50	04/18/22 10:40
20220414_ACMcLaughlin93_TP_Dis	2204255-04	Soil	04/14/22 11:55	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

2204255

S<sub>2</sub>

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

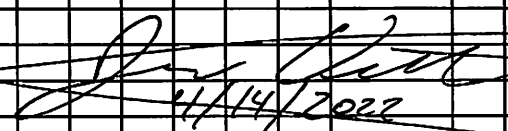
Phone: 970-309-6553

Project Name: AC McLaughlin 93 Closure


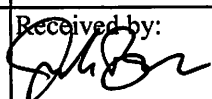
Sampler Name: Jordan Veith

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	COGCC Table 915-1 MINUS PAHs					
1	20220414_AC McLaughlin 93_WHG 6ft	4/14/2022	11:35	1			X			X														
2	20220414_AC McLaughlin 93_AOC	4/14/2022	11:45	3			X			X			X											
3	20220414_AC McLaughlin 93_TP_COMP	4/14/2022	11:50	3			X			X			X											
4	20220414_AC McLaughlin 93_TP_DIS	4/14/2022	11:55	3			X			X			X											
5																								
6																								
7																								
8																								
9																								
10																								



4/14/2022

Relinquished by: 	Date/Time:	Received by:	Date/Time:	Turn Around Time (Check) Same	Notes:
				Day 72 hours 24 hours	
Relinquished by:	Date/Time:	Received by: 	Date/Time: 4/18/22 1040	Standard 48 hours	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity: Temperature Upon Receipt: 2.2 Samples Intact: Yes No	

S<sub>2</sub>

## Sample Receipt Checklist

S2 Work Order# 2204255

Client: Whiting Client Project ID: AL McLaughlin 93 Closure

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) 2.2Thermometer # 02

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6 °C <sup>(1)</sup> ? <b>NOTE:</b> 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 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 <sup>2+</sup> ), Hexavalent Chromium (Cr <sup>6+</sup> , 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 <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? <b>If yes, contact client and note in narrative.</b>	<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

4/18/22

Date/Time



Whiting Oil & Gas  
retail  
Denver CO, 80215

Project: AC McLaughlin 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

**Reported:**  
05/04/22 12:28

**20220414\_ACMcLaughlin93\_WH@6ft**  
**2204255-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **04/14/22 11:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>pH</b>	<b>7.80</b>			pH Units	1	BFD0676	04/29/22	05/02/22	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 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:

05/04/22 12:28

**20220414\_ACMcLaughlin93\_AOC@4ft**  
**2204255-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **04/14/22 11:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0445	04/21/22	04/22/22	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: **04/14/22 11:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		103 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.5 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/14/22 11:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0448	04/21/22	04/22/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/14/22 11:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		98.9 %	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: AC McLaughlin 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

**Reported:**

05/04/22 12:28

**20220414\_ACMcLaughlin93\_AOC@4ft**  
**2204255-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **04/14/22 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFD0457	04/21/22	04/25/22	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: **04/14/22 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		57.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		63.3 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **04/14/22 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.455</b>	0.0100	mg/L	1	BFD0523	04/25/22	04/30/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **04/14/22 11:45**

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: AC McLaughlin 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

**Reported:**

05/04/22 12:28

**20220414\_ACMcLaughlin93\_AOC@4ft  
2204255-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	8.16	0.255	mg/kg dry	1	BFD0468	04/21/22	04/30/22	EPA 6020B
Barium	56.7	0.509	"	"	"	"	"	"
Cadmium	ND	0.255	"	"	"	"	"	"
Copper	11.9	0.509	"	"	"	"	"	"
Lead	13.3	0.255	"	"	"	"	"	"
Nickel	15.6	0.509	"	"	"	"	"	"
Selenium	1.49	0.331	"	"	"	"	"	"
Silver	0.0919	0.0255	"	"	"	"	"	"
Zinc	74.6	0.509	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **04/14/22 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFD0526	04/25/22	04/25/22	EPA 7196A	

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

Date Sampled: **04/14/22 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	378	0.0637	mg/L dry	1	BFD0562	04/26/22	05/02/22	EPA 6020B	
Magnesium	60.7	0.0637	"	"	"	"	"	"	
Sodium	74.3	0.0637	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **04/14/22 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.936	0.00100	units	1	BFE0018	05/02/22	05/02/22	Calculation	

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

Date Sampled: **04/14/22 11:45**

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: AC McLaughlin 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

**Reported:**

05/04/22 12:28

**20220414\_ACMcLaughlin93\_AOC@4ft  
2204255-02 (Soil)**

**Summit Scientific**

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

% Solids	78.5	%	1	BFD0495	04/22/22	04/26/22	Calculation
----------	------	---	---	---------	----------	----------	-------------

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **04/14/22 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.24	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 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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: AC McLaughlin 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:

05/04/22 12:28

**20220414\_ACMcLaughlin93\_TP\_Comp**  
**2204255-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **04/14/22 11:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0445	04/21/22	04/22/22	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: **04/14/22 11:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		102 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.7 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/14/22 11:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0448	04/21/22	04/22/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/14/22 11:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		104 %	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: AC McLaughlin 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

**Reported:**

05/04/22 12:28

**20220414\_ACMcLaughlin93\_TP\_Comp**  
**2204255-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **04/14/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFD0457	04/21/22	04/25/22	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: **04/14/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		67.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		68.8 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **04/14/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.332</b>	0.0100	mg/L	1	BFD0523	04/25/22	04/30/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **04/14/22 11:50**

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: AC McLaughlin 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

**Reported:**  
05/04/22 12:28

**20220414\_ACMcLaughlin93\_TP\_Comp**  
**2204255-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	9.68	0.236	mg/kg dry	1	BFD0468	04/21/22	04/30/22	EPA 6020B
Barium	36.8	0.472	"	"	"	"	"	"
Cadmium	0.238	0.236	"	"	"	"	"	"
Copper	13.5	0.472	"	"	"	"	"	"
Lead	17.1	0.236	"	"	"	"	"	"
Nickel	25.8	0.472	"	"	"	"	"	"
Selenium	1.78	0.307	"	"	"	"	"	"
Silver	0.117	0.0236	"	"	"	"	"	"
Zinc	87.2	0.472	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **04/14/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFD0526	04/25/22	04/25/22	EPA 7196A	

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

Date Sampled: **04/14/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	329	0.0590	mg/L dry	1	BFD0562	04/26/22	05/02/22	EPA 6020B	
Magnesium	72.8	0.0590	"	"	"	"	"	"	
Sodium	104	0.0590	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **04/14/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.35	0.00100	units	1	BFE0018	05/02/22	05/02/22	Calculation	

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

Date Sampled: **04/14/22 11:50**

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: AC McLaughlin 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

**Reported:**

05/04/22 12:28

**20220414\_ACMcLaughlin93\_TP\_Comp  
2204255-03 (Soil)**

**Summit Scientific**

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

% Solids	84.8	%	1	BFD0495	04/22/22	04/26/22	Calculation
----------	------	---	---	---------	----------	----------	-------------

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **04/14/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.53	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 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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: AC McLaughlin 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:

05/04/22 12:28

**20220414\_ACMcLaughlin93\_TP\_Dis**  
**2204255-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **04/14/22 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0445	04/21/22	04/22/22	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: **04/14/22 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		101 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		100 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.8 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/14/22 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0448	04/21/22	04/22/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/14/22 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		106 %	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: AC McLaughlin 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

**Reported:**

05/04/22 12:28

**20220414\_ACMcLaughlin93\_TP\_Dis  
2204255-04 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **04/14/22 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFD0457	04/21/22	04/25/22	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: **04/14/22 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		41.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		47.0 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **04/14/22 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.639</b>	0.0100	mg/L	1	BFD0523	04/25/22	04/30/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **04/14/22 11:55**

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: AC McLaughlin 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

**Reported:**  
05/04/22 12:28

**20220414\_ACMcLaughlin93\_TP\_Dis  
2204255-04 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	8.02	0.245	mg/kg dry	1	BFD0468	04/21/22	04/30/22	EPA 6020B
Barium	53.8	0.489	"	"	"	"	"	"
Cadmium	0.291	0.245	"	"	"	"	"	"
Copper	13.7	0.489	"	"	"	"	"	"
Lead	16.7	0.245	"	"	"	"	"	"
Nickel	16.7	0.489	"	"	"	"	"	"
Selenium	1.62	0.318	"	"	"	"	"	"
Silver	0.126	0.0245	"	"	"	"	"	"
Zinc	84.7	0.489	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **04/14/22 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFD0526	04/25/22	04/25/22	EPA 7196A	

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

Date Sampled: **04/14/22 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	295	0.0612	mg/L dry	1	BFD0562	04/26/22	05/02/22	EPA 6020B	
Magnesium	134	0.0612	"	"	"	"	"	"	
Sodium	182	0.0612	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **04/14/22 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.21	0.00100	units	1	BFE0018	05/02/22	05/02/22	Calculation	

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

Date Sampled: **04/14/22 11:55**

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: AC McLaughlin 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

**Reported:**

05/04/22 12:28

**20220414\_ACMcLaughlin93\_TP\_Dis  
2204255-04 (Soil)**

**Summit Scientific**

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

% Solids	81.7	%	1	BFD0495	04/22/22	04/26/22	Calculation
----------	------	---	---	---------	----------	----------	-------------

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **04/14/22 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	3.03	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 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.80		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 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

**Reported:**  
05/04/22 12:28

## 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 BFD0445 - EPA 5030 Soil MS

##### Blank (BFD0445-BLK1)

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

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	0.0414		"	0.0400		103	50-150			
Surrogate: Toluene-d8	0.0409		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0383		"	0.0400		95.7	50-150			

##### LCS (BFD0445-BS1)

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

Benzene	0.0583	0.0020	mg/kg	0.0750		77.7	70-130			
Toluene	0.0611	0.0050	"	0.0750		81.4	70-130			
Ethylbenzene	0.0586	0.0050	"	0.0750		78.2	70-130			
m,p-Xylene	0.123	0.010	"	0.150		81.8	70-130			
o-Xylene	0.0702	0.0050	"	0.0750		93.6	70-130			
1,2,4-Trimethylbenzene	0.0666	0.0050	"	0.0750		88.8	70-130			
1,3,5-Trimethylbenzene	0.0626	0.0050	"	0.0750		83.4	70-130			
Naphthalene	0.0867	0.0038	"	0.0750		116	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0399		"	0.0400		99.8	50-150			
Surrogate: Toluene-d8	0.0404		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0405		"	0.0400		101	50-150			

##### Matrix Spike (BFD0445-MS1)

Source: 2204254-01

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

Benzene	0.0589	0.0020	mg/kg	0.0750	ND	78.5	70-130			
Toluene	0.0619	0.0050	"	0.0750	ND	82.5	70-130			
Ethylbenzene	0.0568	0.0050	"	0.0750	ND	75.8	70-130			
m,p-Xylene	0.121	0.010	"	0.150	ND	80.4	70-130			
o-Xylene	0.0681	0.0050	"	0.0750	ND	90.8	70-130			
1,2,4-Trimethylbenzene	0.0656	0.0050	"	0.0750	ND	87.5	70-130			
1,3,5-Trimethylbenzene	0.0600	0.0050	"	0.0750	ND	80.0	70-130			
Naphthalene	0.0891	0.0038	"	0.0750	ND	119	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0426		"	0.0400		106	50-150			
Surrogate: Toluene-d8	0.0417		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0402		"	0.0400		101	50-150			

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: AC McLaughlin 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

**Reported:**  
05/04/22 12:28

## 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 BFD0445 - EPA 5030 Soil MS

Matrix Spike Dup (BFD0445-MSD1)		Source: 2204254-01			Prepared: 04/21/22 Analyzed: 04/22/22					
Benzene	0.0571	0.0020	mg/kg	0.0750	ND	76.1	70-130	3.16	30	
Toluene	0.0613	0.0050	"	0.0750	ND	81.8	70-130	0.877	30	
Ethylbenzene	0.0576	0.0050	"	0.0750	ND	76.8	70-130	1.31	30	
m,p-Xylene	0.123	0.010	"	0.150	ND	81.8	70-130	1.75	30	
o-Xylene	0.0700	0.0050	"	0.0750	ND	93.4	70-130	2.78	30	
1,2,4-Trimethylbenzene	0.0655	0.0050	"	0.0750	ND	87.4	70-130	0.137	30	
1,3,5-Trimethylbenzene	0.0618	0.0050	"	0.0750	ND	82.4	70-130	2.96	30	
Naphthalene	0.0937	0.0038	"	0.0750	ND	125	70-130	5.09	30	
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	0.0404		"	0.0400		101	50-150			
Surrogate: Toluene-d8	0.0406		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.6	50-150			

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: AC McLaughlin 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

**Reported:**  
05/04/22 12:28

**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 BFD0448 - EPA 3550A**

**Blank (BFD0448-BLK1)**

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

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

**LCS (BFD0448-BS1)**

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

C10-C28 (DRO)	450	50	mg/kg	500	90.0	70-130
---------------	-----	----	-------	-----	------	--------

**Matrix Spike (BFD0448-MS1)**

Source: 2204254-01

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

C10-C28 (DRO)	405	50	mg/kg	500	9.41	79.1	70-130
---------------	-----	----	-------	-----	------	------	--------

**Matrix Spike Dup (BFD0448-MSD1)**

Source: 2204254-01

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

C10-C28 (DRO)	388	50	mg/kg	500	9.41	75.8	70-130	4.17	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 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

**Reported:**

05/04/22 12:28

## 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 BFD0457 - EPA 5030 Soil MS

##### Blank (BFD0457-BLK1)

Prepared: 04/21/22 Analyzed: 04/23/22

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	0.0265		"	0.0333		79.6	40-150			
Surrogate: Fluoranthene-d10	0.0236		"	0.0333		70.9	40-150			

##### LCS (BFD0457-BS1)

Prepared: 04/21/22 Analyzed: 04/23/22

Acenaphthene	0.0264	0.00500	mg/kg	0.0333		79.1	31-137			
Anthracene	0.0289	0.00500	"	0.0333		86.6	30-120			
Benzo (a) anthracene	0.0248	0.00500	"	0.0333		74.4	30-120			
Benzo (a) pyrene	0.0272	0.00500	"	0.0333		81.5	30-120			
Benzo (b) fluoranthene	0.0282	0.00500	"	0.0333		84.5	30-120			
Benzo (k) fluoranthene	0.0350	0.00500	"	0.0333		105	30-120			
Chrysene	0.0353	0.00500	"	0.0333		106	30-120			
Dibenz (a,h) anthracene	0.0293	0.00500	"	0.0333		87.9	30-120			
Fluoranthene	0.0326	0.00500	"	0.0333		97.7	30-120			
Fluorene	0.0305	0.00500	"	0.0333		91.4	30-120			
Indeno (1,2,3-cd) pyrene	0.0195	0.00500	"	0.0333		58.6	30-120			
Pyrene	0.0277	0.00500	"	0.0333		83.0	35-142			
1-Methylnaphthalene	0.0300	0.00500	"	0.0333		89.9	35-142			
2-Methylnaphthalene	0.0292	0.00500	"	0.0333		87.7	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0300		"	0.0333		90.1	40-150			
Surrogate: Fluoranthene-d10	0.0310		"	0.0333		93.1	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: AC McLaughlin 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

**Reported:**

05/04/22 12:28

## 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 BFD0457 - EPA 5030 Soil MS

##### Matrix Spike (BFD0457-MS1)

Source: 2203402-01

Prepared: 04/21/22 Analyzed: 04/23/22

Acenaphthene	0.0185	0.00500	mg/kg	0.0333	ND	55.6	31-137				
Anthracene	0.0250	0.00500	"	0.0333	ND	74.9	30-120				
Benzo (a) anthracene	0.0209	0.00500	"	0.0333	ND	62.6	30-120				
Benzo (a) pyrene	0.0209	0.00500	"	0.0333	ND	62.7	30-120				
Benzo (b) fluoranthene	0.0226	0.00500	"	0.0333	ND	67.8	30-120				
Benzo (k) fluoranthene	0.0272	0.00500	"	0.0333	ND	81.7	30-120				
Chrysene	0.0259	0.00500	"	0.0333	ND	77.6	30-120				
Dibenz (a,h) anthracene	0.0242	0.00500	"	0.0333	ND	72.6	30-120				
Fluoranthene	0.0259	0.00500	"	0.0333	ND	77.7	30-120				
Fluorene	0.0194	0.00500	"	0.0333	ND	58.1	30-120				
Indeno (1,2,3-cd) pyrene	0.0155	0.00500	"	0.0333	ND	46.4	30-120				
Pyrene	0.0221	0.00500	"	0.0333	ND	66.4	35-142				
1-Methylnaphthalene	0.0250	0.00500	"	0.0333	ND	75.0	15-130				
2-Methylnaphthalene	0.0247	0.00500	"	0.0333	ND	74.0	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0248		"	0.0333		74.3	40-150				
Surrogate: Fluoranthene-d10	0.0261		"	0.0333		78.4	40-150				

##### Matrix Spike Dup (BFD0457-MSD1)

Source: 2203402-01

Prepared: 04/21/22 Analyzed: 04/23/22

Acenaphthene	0.0221	0.00500	mg/kg	0.0333	ND	66.2	31-137	17.5	30		
Anthracene	0.0264	0.00500	"	0.0333	ND	79.2	30-120	5.60	30		
Benzo (a) anthracene	0.0263	0.00500	"	0.0333	ND	78.9	30-120	23.0	30		
Benzo (a) pyrene	0.0192	0.00500	"	0.0333	ND	57.5	30-120	8.71	30		
Benzo (b) fluoranthene	0.0205	0.00500	"	0.0333	ND	61.6	30-120	9.64	30		
Benzo (k) fluoranthene	0.0266	0.00500	"	0.0333	ND	79.7	30-120	2.50	30		
Chrysene	0.0226	0.00500	"	0.0333	ND	67.7	30-120	13.6	30		
Dibenz (a,h) anthracene	0.0183	0.00500	"	0.0333	ND	54.9	30-120	27.7	30		
Fluoranthene	0.0236	0.00500	"	0.0333	ND	70.8	30-120	9.28	30		
Fluorene	0.0190	0.00500	"	0.0333	ND	57.0	30-120	1.92	30		
Indeno (1,2,3-cd) pyrene	0.0189	0.00500	"	0.0333	ND	56.7	30-120	20.0	30		
Pyrene	0.0201	0.00500	"	0.0333	ND	60.4	35-142	9.48	30		
1-Methylnaphthalene	0.0180	0.00500	"	0.0333	ND	54.0	15-130	32.5	50		
2-Methylnaphthalene	0.0168	0.00500	"	0.0333	ND	50.3	15-130	38.1	50		
Surrogate: 2-Methylnaphthalene-d10	0.0143		"	0.0333		42.8	40-150				
Surrogate: Fluoranthene-d10	0.0175		"	0.0333		52.5	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: AC McLaughlin 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

**Reported:**  
05/04/22 12:28

**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 BFD0523 - EPA 3050B**

**Blank (BFD0523-BLK1)**

Prepared: 04/25/22 Analyzed: 04/30/22

Boron ND 0.0100 mg/L

**LCS (BFD0523-BS1)**

Prepared: 04/25/22 Analyzed: 04/30/22

Boron 4.54 0.0100 mg/L 5.00 90.8 80-120

**Duplicate (BFD0523-DUP1)**

**Source: 2204253-01**

Prepared: 04/25/22 Analyzed: 04/30/22

Boron 0.675 0.0100 mg/L 0.709 4.81 20

**Matrix Spike (BFD0523-MS1)**

**Source: 2204253-01**

Prepared: 04/25/22 Analyzed: 04/30/22

Boron 5.48 0.0100 mg/L 5.00 0.709 95.5 75-125

**Matrix Spike Dup (BFD0523-MSD1)**

**Source: 2204253-01**

Prepared: 04/25/22 Analyzed: 04/30/22

Boron 5.39 0.0100 mg/L 5.00 0.709 93.6 75-125 1.68 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: AC McLaughlin 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

**Reported:**

05/04/22 12:28

### 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
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 (BFD0468-BS1)

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

Arsenic	35.0	0.200	mg/kg wet	20.0	175	80-120
Barium	33.4	0.400	"	20.0	167	80-120
Cadmium	1.90	0.200	"	1.00	190	80-120
Copper	33.8	0.400	"	20.0	169	80-120
Lead	19.5	0.200	"	10.0	195	80-120
Nickel	33.7	0.400	"	20.0	168	80-120
Selenium	3.48	0.260	"	2.00	174	80-120
Silver	1.87	0.0200	"	1.00	187	80-120
Zinc	34.8	0.400	"	20.0	174	80-120

##### Duplicate (BFD0468-DUP1)

Source: 2204241-21

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

Arsenic	2.71	0.233	mg/kg dry	2.97	9.24	20
Barium	40.7	0.465	"	40.7	0.150	20
Cadmium	0.101	0.233	"	0.145	35.4	20
Copper	6.54	0.465	"	7.37	11.9	20
Lead	5.64	0.233	"	6.88	19.8	20
Nickel	6.72	0.465	"	7.51	11.1	20
Selenium	0.681	0.302	"	0.718	5.32	20
Silver	0.0325	0.0233	"	0.0387	17.5	20
Zinc	26.2	0.465	"	28.6	9.02	20

QR-01

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 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

**Reported:**  
05/04/22 12:28

### 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

##### Matrix Spike (BFD0468-MS1)

Source: 2204241-21

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

Arsenic	42.8	0.233	mg/kg dry	23.3	2.97	171	75-125
Barium	80.7	0.465	"	23.3	40.7	172	75-125
Cadmium	2.30	0.233	"	1.16	0.145	185	75-125
Copper	46.5	0.465	"	23.3	7.37	168	75-125
Lead	30.6	0.233	"	11.6	6.88	204	75-125
Nickel	45.0	0.465	"	23.3	7.51	161	75-125
Selenium	4.31	0.302	"	2.33	0.718	155	75-125
Silver	2.00	0.0233	"	1.16	0.0387	169	75-125
Zinc	67.5	0.465	"	23.3	28.6	167	75-125

##### Matrix Spike Dup (BFD0468-MSD1)

Source: 2204241-21

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

Arsenic	41.9	0.233	mg/kg dry	23.3	2.97	167	75-125	2.03	25
Barium	78.6	0.465	"	23.3	40.7	163	75-125	2.64	25
Cadmium	2.30	0.233	"	1.16	0.145	185	75-125	0.0493	25
Copper	42.5	0.465	"	23.3	7.37	151	75-125	9.07	25
Lead	29.5	0.233	"	11.6	6.88	194	75-125	3.70	25
Nickel	43.9	0.465	"	23.3	7.51	156	75-125	2.58	25
Selenium	4.37	0.302	"	2.33	0.718	157	75-125	1.29	25
Silver	2.09	0.0233	"	1.16	0.0387	176	75-125	4.33	25
Zinc	74.0	0.465	"	23.3	28.6	195	75-125	9.17	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: AC McLaughlin 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

**Reported:**  
05/04/22 12:28

### 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 BFD0526 - 3060A Mod

##### Blank (BFD0526-BLK1)

Prepared & Analyzed: 04/25/22

Chromium, Hexavalent ND 0.30 mg/kg wet

##### LCS (BFD0526-BS1)

Prepared & Analyzed: 04/25/22

Chromium, Hexavalent 27.8 0.30 mg/kg wet 25.0 111 80-120

##### Duplicate (BFD0526-DUP1)

Source: 2204245-19

Prepared & Analyzed: 04/25/22

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

##### Matrix Spike (BFD0526-MS1)

Source: 2204245-19

Prepared & Analyzed: 04/25/22

Chromium, Hexavalent 32.7 0.30 mg/kg dry 28.0 ND 117 75-125

##### Matrix Spike Dup (BFD0526-MSD1)

Source: 2204245-19

Prepared & Analyzed: 04/25/22

Chromium, Hexavalent 29.1 0.30 mg/kg dry 28.0 ND 104 75-125 11.4 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: AC McLaughlin 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

**Reported:**

05/04/22 12:28

**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: AC McLaughlin 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

**Reported:**

05/04/22 12:28

**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 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

**Reported:**  
05/04/22 12:28

**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 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

**Reported:**

05/04/22 12:28

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

**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	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
----	------	--	----------	------	-------	----

**Batch BFD0676 - General Preparation**

**LCS (BFD0676-BS1)**

Prepared: 04/29/22 Analyzed: 05/02/22

pH	9.07		pH Units	9.18	98.8	95-105
----	------	--	----------	------	------	--------

**Duplicate (BFD0676-DUP1)**

**Source: 2204255-01**

Prepared: 04/29/22 Analyzed: 05/02/22

pH	7.83		pH Units	7.80	0.384	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 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

**Reported:**  
05/04/22 12:28

### Notes and Definitions

QR-01	Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
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