

**TABLE 1**  
**FORMER MCWILLIAMS 15-34 WELLHEAD**  
**SOIL ANALYTICAL RESULTS SUMMARY TABLE**  
**ORGANIC COMPOUNDS**

Sample ID	Date Sampled	Depth	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	1, 2, 4-TMB (mg/kg)	1, 3, 5-TMB (mg/kg)	Naphthalene (mg/kg)	TPH <sup>(4)</sup> (mg/kg)
<b>Residential SSL<sup>(1,2)</sup></b>			<b>1.2</b>	<b>490</b>	<b>5.8</b>	<b>58</b>	<b>30</b>	<b>27</b>	<b>2</b>	<b>500</b>
<b>Protection of Groundwater SSL<sup>(1,2,3)</sup></b>			<b>0.0026</b>	<b>0.69</b>	<b>0.78</b>	<b>9.9</b>	<b>0.0081</b>	<b>0.0087</b>	<b>0.0038</b>	<b>500</b>
WH01 @ 6'	12/8/2021	6 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
FLR01 @ 4'	12/8/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
FL01-02 @ 4'	12/8/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50

**Notes:**

1. Compounds referenced from the COGCC 2 CCR 404-1, Table 915-1, effective January 15, 2021.
2. Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.
3. SSLs are applicable if a pathway for communication with groundwater is present.
4. Value calculated by adding TVPH-GRO, TEPH-DRO, and TEPH-ORO concentrations.

COGCC = Colorado Oil and Gas Conservation Commission

(<) = Analytical result is less than the indicated laboratory reporting limit.

TVPH-GRO = Total volatile petroleum hydrocarbons - gasoline range organics

TEPH-DRO = Total extractable petroleum hydrocarbons - diesel range organics

TEPH-ORO = Total extractable petroleum hydrocarbons - oil range organics

mg/kg = Milligrams per kilogram

TMB = Trimethylbenzene

ft. = Feet

bgs = Below ground surface

**TABLE 2**  
**FORMER MCWILLIAMS 15-34 WELLHEAD**  
**SOIL ANALYTICAL RESULTS SUMMARY TABLE**  
**INORGANIC COMPOUNDS**

Sample ID	Date Sampled	Depth	pH (units)	EC (mmhos/cm)	SAR (units)	Boron (mg/L)
<b>Soil Suitability for Reclamation Standard <sup>(1)</sup></b>			<b>6-8.3</b>	<b>&lt;4</b>	<b>&lt;6</b>	<b>2</b>
WH01 @ 6'	12/8/2021	6 ft. bgs	7.96	0.897	2.67	0.294
FLR01 @ 4'	12/8/2021	4 ft. bgs	8.02	0.655	2.26	0.271

**Notes:**

1. Compounds referenced from the COGCC 2 CCR 404-1, Table 915-1, effective January 15, 2021.

COGCC = Colorado Oil and Gas Conservation Commission

EC = Electrical conductivity

SAR = Sodium adsorption ratio

mmhos/cm = Millimhos per centimeter

mg/L = Milligrams per liter

ft. = Feet

bgs = Below ground surface

**TABLE 3**  
**FORMER MCWILLIAMS 15-34 WELLHEAD**  
**SOIL ANALYTICAL RESULTS SUMMARY TABLE**  
**ORGANIC COMPOUNDS - PAHs**

Sample ID	Date Sampled	Depth	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benz(a) (mg/kg)	Benzo(a) (mg/kg)	Benzo(b) (mg/kg)	Benzo(k) (mg/kg)	Chrysene (mg/kg)	A,H (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	1,2,3-CD (mg/kg)	Pyrene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)
<b>Residential SSL <sup>(1,2)</sup></b>			<b>360</b>	<b>1,800</b>	<b>1.1</b>	<b>0.11</b>	<b>1.1</b>	<b>11</b>	<b>110</b>	<b>0.11</b>	<b>240</b>	<b>240</b>	<b>1.1</b>	<b>180</b>	<b>18</b>	<b>24</b>
<b>Protection of Groundwater SSL <sup>(1,2,3)</sup></b>			<b>0.55</b>	<b>5.8</b>	<b>0.011</b>	<b>0.24</b>	<b>0.3</b>	<b>2.9</b>	<b>9</b>	<b>0.096</b>	<b>8.9</b>	<b>0.54</b>	<b>0.98</b>	<b>1.3</b>	<b>0.006</b>	<b>0.019</b>
WH01 @ 6'	12/8/2021	6 ft. bgs	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FLR01 @ 4'	12/8/2021	4 ft. bgs	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500

**Notes:**

1. Compounds referenced from the COGCC 2 CCR 404-1, Table 915-1, effective January 15, 2021.
2. Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.
3. SSLs are applicable if a pathway for communication with groundwater is present.

COGCC = Colorado Oil and Gas Conservation Commission

(<) = Analytical result is less than the indicated laboratory reporting limit.

PAHs = Polycyclic aromatic hydrocarbons

Benzo(a) = Benzantracene

Benzo(a) = Benzopyrene

Benzo(b) = Benzofluoranthene

Benzo(k) = Benzofluoranthene

A,H = Dibenzoanthracene

1,2,3-CD = Indenopyrene

M = Methylnaphthalene

mg/kg = Milligrams per kilogram

ft. = Feet

bgs = Below ground surface

**TABLE 4**  
**FORMER MCWILLIAMS 15-34 WELLHEAD**  
**FIELD DATA SUMMARY TABLE**

Sample ID	Date Sampled	Depth	GPS Data <sup>(1)</sup>		PDOP Value	VOC Concentration <sup>(2)</sup> (ppm)
			Latitude	Longitude		
WH01 @ 6'	12/8/2021	6 ft. bgs	40.306631	-104.765566	1.2	0.9
WHS01-N @ 0-6"	12/8/2021	0-6 in. bgs	40.306702	-104.765597	1.4	0.5
WHS01-W @ 0-6"	12/8/2021	0-6 in. bgs	40.306633	-104.765709	1.2	0.1
WHS01-S @ 0-6"	12/8/2021	0-6 in. bgs	40.306555	-104.765601	1.2	0.6
WHS01-E @ 0-6'	12/8/2021	0-6 in. bgs	40.306640	-104.765479	1.2	0.7
FLR01 @ 4'	12/8/2021	4 ft. bgs	40.306630	-104.765595	1.2	1.7
FL01-01 @ 4'	12/8/2021	4 ft. bgs	40.306708	-104.766277	1.1	1.3
FL01-02 @ 4'	12/8/2021	4 ft. bgs	40.306813	-104.767148	1.2	1.3
FL01-03 @ 4'	12/8/2021	4 ft. bgs	40.306937	-104.768039	1.2	1.9
BKG01 @ 4'	12/8/2021	4 ft. bgs	40.306751	-104.765806	1.3	0.8
BKG01 @ 6'	12/8/2021	6 ft. bgs	40.306751	-104.765806	1.3	1.6

**Notes:**

1. Global Positioning System (GPS) data is provided in decimal degrees using World Geodetic System (WGS) 84 UTM Zone 13 North.
2. Volatile organic compound (VOC) concentrations are measured in the field using a photoionization detector (PID).

PDOP = Position Dilution of Precision

ppm = Parts per million

ft. = Feet

in. = Inches

bgs = Below ground surface

## Attachment A

# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

December 22, 2021

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: McWilliams 15-34 Wellhead

Work Order #2112153

Enclosed are the results of analyses for samples received by Summit Scientific on 12/08/21 13:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury

President



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: McWilliams 15-34 Wellhead

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
12/22/21 09:40

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH01@6'	2112153-01	Soil	12/08/21 09:45	12/08/21 13:50
FLR01@4'	2112153-02	Soil	12/08/21 09:50	12/08/21 13:50
FL01-02@4'	2112153-03	Soil	12/08/21 12:40	12/08/21 13:50

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

2112153

S<sub>2</sub>

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

Page 1 of 1

Client: PDC / Tasman Project Manager: Mark Longhurst  
 Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com  
 City/State/Zip: Broomfield/ CO/ 80020  
 Phone: 303-487-1228 Project Name: McWilliams 15-34 Wellhead  
 Sampler Name: David Wgi' Project Number:

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	BTEXN - 8260B	TPH - (C6 - C36)	pH, EC, SAR	Boron - HWS	TMBS (1,2,4)&(1,3,5)	PAH - 915	Metals - 915	
1	WH01 @ 6'	12/4/12	0945	3			X			X			X	X	X	X	X	X		pH, EC, SAR by saturated paste  Hold
2	FLR01 @ 4'		0950	3			X			X			X	X	X	X	X			
3	FL01-02 @ 4'		1240	2			X			X			X							
4	BK01 @ 4'		1250	1			X			X									X	
5	BK01 @ 6'		1255	1			X			X									X	
6																				
7																				
8																				
9																				
10																				

Relinquished by: <i>David Wgi'</i>	Date/Time: 12/4/12 1350	Received by: Tasman's Lock Box	Date/Time:	Turn Around Time (Check)	Notes:
Relinquished by: Tasman's Lock Box	Date/Time:	Received by: <i>[Signature]</i>	Date/Time: 12/8/12 1350	Same Day <input type="checkbox"/> 72 hours <input type="checkbox"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/>	
				48 hours <input type="checkbox"/>	Sample Integrity:
				Temperature Upon Receipt: 11.1	
				Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

S<sub>2</sub>

2112153

Sample Receipt Checklist

S2 Work Order#

Client: Pro/Tosman

Client Project ID: McWilliams 15-34 wellhead

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

Matrix (check all that apply):  Air  Soil/Solid  Water  Other: \_\_\_\_\_  
(Describe)

Temp (°C) 11.1

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"/>	<u>on ICE</u>
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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.

[Signature]  
Custodian Printed Name or Initials

12-8-21  
Date/Time



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: McWilliams 15-34 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/22/21 09:40

**WH01@6'**  
**2112153-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **12/08/21 09:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BEL0299	12/14/21	12/15/21	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **12/08/21 09:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		87.1 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		87.6 %		21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/08/21 09:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BEL0300	12/14/21	12/15/21	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **12/08/21 09:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		65.5 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: McWilliams 15-34 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/22/21 09:40

**WH01@6'**  
**2112153-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **12/08/21 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEL0360	12/16/21	12/20/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **12/08/21 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		41.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		68.4 %	40-150		"	"	"	"	

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

Date Sampled: **12/08/21 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.294</b>	0.0100	mg/L	1	BEL0319	12/15/21	12/20/21	EPA 6020B	

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

Date Sampled: **12/08/21 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: McWilliams 15-34 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/22/21 09:40

**WH01@6'**  
**2112153-01 (Soil)**

**Summit Scientific**

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	47.1	0.0571	mg/L dry	1	BEL0316	12/14/21	12/20/21	EPA 6020B	
Magnesium	8.84	0.0571	"	"	"	"	"	"	
Sodium	76.2	0.0571	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **12/08/21 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.67	0.00100	units	1	BEL0440	12/20/21	12/20/21	Calculation	

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

Date Sampled: **12/08/21 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.5		%	1	BEL0416	12/20/21	12/20/21	Calculation	

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

Date Sampled: **12/08/21 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.897	0.0100	mmhos/cm	1	BEL0349	12/15/21	12/15/21	EPA 120.1	

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

Date Sampled: **12/08/21 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.96		pH Units	1	BEL0348	12/15/21	12/15/21	EPA 9045D	

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: McWilliams 15-34 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/22/21 09:40

**FLR01@4'**  
**2112153-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **12/08/21 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEL0299	12/14/21	12/15/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **12/08/21 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		94.6 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/08/21 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEL0300	12/14/21	12/15/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **12/08/21 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		84.4 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: McWilliams 15-34 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/22/21 09:40

**FLR01@4'**  
**2112153-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **12/08/21 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEL0360	12/16/21	12/20/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **12/08/21 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		59.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		62.1 %	40-150		"	"	"	"	

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

Date Sampled: **12/08/21 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.271</b>	0.0100	mg/L	1	BEL0319	12/15/21	12/20/21	EPA 6020B	

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

Date Sampled: **12/08/21 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: McWilliams 15-34 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/22/21 09:40

**FLR01@4'**  
**2112153-02 (Soil)**

**Summit Scientific**

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	42.4	0.0574	mg/L dry	1	BEL0316	12/14/21	12/20/21	EPA 6020B	
Magnesium	8.29	0.0574	"	"	"	"	"	"	
Sodium	61.5	0.0574	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **12/08/21 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.26	0.00100	units	1	BEL0440	12/20/21	12/20/21	Calculation	

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

Date Sampled: **12/08/21 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.2		%	1	BEL0416	12/20/21	12/20/21	Calculation	

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

Date Sampled: **12/08/21 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.655	0.0100	mmhos/cm	1	BEL0349	12/15/21	12/15/21	EPA 120.1	

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

Date Sampled: **12/08/21 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.02		pH Units	1	BEL0348	12/15/21	12/15/21	EPA 9045D	

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: McWilliams 15-34 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/22/21 09:40

**FL01-02@4'**  
**2112153-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **12/08/21 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEL0299	12/14/21	12/15/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **12/08/21 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		126 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/08/21 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEL0300	12/14/21	12/15/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **12/08/21 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		76.0 %	30-150		"	"	"	"	

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: McWilliams 15-34 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/22/21 09:40

### 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 BEL0299 - EPA 5030 Soil MS

##### Blank (BEL0299-BLK1)

Prepared & Analyzed: 12/14/21

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0330</i>		<i>"</i>	<i>0.0400</i>		<i>82.4</i>		<i>23-173</i>		
<i>Surrogate: Toluene-d8</i>	<i>0.0401</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>		<i>20-170</i>		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0408</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>		<i>21-167</i>		

##### LCS (BEL0299-BS1)

Prepared & Analyzed: 12/14/21

Benzene	0.0898	0.0020	mg/kg	0.100		89.8		70-130		
Toluene	0.0725	0.0050	"	0.100		72.5		70-130		
Ethylbenzene	0.0923	0.0050	"	0.100		92.3		70-130		
m,p-Xylene	0.173	0.010	"	0.200		86.3		70-130		
o-Xylene	0.0849	0.0050	"	0.100		84.9		70-130		
1,2,4-Trimethylbenzene	0.107	0.0050	"	0.100		107		70-130		
1,3,5-Trimethylbenzene	0.112	0.0050	"	0.100		112		70-130		
Naphthalene	0.0968	0.0038	"	0.100		96.8		70-130		
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0399</i>		<i>"</i>	<i>0.0400</i>		<i>99.8</i>		<i>23-173</i>		
<i>Surrogate: Toluene-d8</i>	<i>0.0485</i>		<i>"</i>	<i>0.0400</i>		<i>121</i>		<i>20-170</i>		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0389</i>		<i>"</i>	<i>0.0400</i>		<i>97.3</i>		<i>21-167</i>		

##### Matrix Spike (BEL0299-MS1)

Source: 2112149-01

Prepared & Analyzed: 12/14/21

Benzene	0.128	0.0020	mg/kg	0.100	ND	128		70-130		
Toluene	0.103	0.0050	"	0.100	ND	103		70-130		
Ethylbenzene	0.104	0.0050	"	0.100	ND	104		70-130		
m,p-Xylene	0.191	0.010	"	0.200	ND	95.6		70-130		
o-Xylene	0.0887	0.0050	"	0.100	ND	88.7		70-130		
1,2,4-Trimethylbenzene	0.0884	0.0050	"	0.100	ND	88.4		70-130		
1,3,5-Trimethylbenzene	0.0991	0.0050	"	0.100	ND	99.1		70-130		
Naphthalene	0.0893	0.0038	"	0.100	0.00483	84.4		70-130		
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0346</i>		<i>"</i>	<i>0.0400</i>		<i>86.5</i>		<i>23-173</i>		
<i>Surrogate: Toluene-d8</i>	<i>0.0504</i>		<i>"</i>	<i>0.0400</i>		<i>126</i>		<i>20-170</i>		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0392</i>		<i>"</i>	<i>0.0400</i>		<i>98.1</i>		<i>21-167</i>		

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PDC Energy  
 1775 Sherman St. STE. 3000  
 Denver CO, 80203

Project: McWilliams 15-34 Wellhead

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 12/22/21 09:40

**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 BEL0299 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (BEL0299-MSD1)</b>	<b>Source: 2112149-01</b>			<b>Prepared &amp; Analyzed: 12/14/21</b>						
Benzene	0.127	0.0020	mg/kg	0.100	ND	127	70-130	0.847	30	
Toluene	0.114	0.0050	"	0.100	ND	114	70-130	9.57	30	
Ethylbenzene	0.0922	0.0050	"	0.100	ND	92.2	70-130	12.2	30	
m,p-Xylene	0.186	0.010	"	0.200	ND	92.8	70-130	3.01	30	
o-Xylene	0.0880	0.0050	"	0.100	ND	88.0	70-130	0.849	30	
1,2,4-Trimethylbenzene	0.0890	0.0050	"	0.100	ND	89.0	70-130	0.710	30	
1,3,5-Trimethylbenzene	0.0952	0.0050	"	0.100	ND	95.2	70-130	4.01	30	
Naphthalene	0.101	0.0038	"	0.100	0.00483	96.4	70-130	12.5	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0347</i>		<i>"</i>	<i>0.0400</i>		<i>86.7</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0434</i>		<i>"</i>	<i>0.0400</i>		<i>109</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0394</i>		<i>"</i>	<i>0.0400</i>		<i>98.4</i>	<i>21-167</i>			

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PDC Energy  
 1775 Sherman St. STE. 3000  
 Denver CO, 80203

Project: McWilliams 15-34 Wellhead

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 12/22/21 09:40

**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 BEL0300 - EPA 3550A**

**Blank (BEL0300-BLK1)**

Prepared & Analyzed: 12/14/21

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

**LCS (BEL0300-BS1)**

Prepared & Analyzed: 12/14/21

C10-C28 (DRO)	439	50	mg/kg	500	87.7	70-130				
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**Matrix Spike (BEL0300-MS1)**

Source: 2112149-01

Prepared: 12/14/21 Analyzed: 12/15/21

C10-C28 (DRO)	455	50	mg/kg	500	30.8	84.8	70-130			
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**Matrix Spike Dup (BEL0300-MSD1)**

Source: 2112149-01

Prepared: 12/14/21 Analyzed: 12/15/21

C10-C28 (DRO)	442	50	mg/kg	500	30.8	82.3	70-130	2.74	20	
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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: McWilliams 15-34 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/22/21 09:40

**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 BEL0360 - EPA 5030 Soil MS**

**Blank (BEL0360-BLK1)**

Prepared: 12/16/21 Analyzed: 12/20/21

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0306</i>		"	<i>0.0333</i>		<i>91.9</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0279</i>		"	<i>0.0333</i>		<i>83.6</i>	<i>40-150</i>			

**LCS (BEL0360-BS1)**

Prepared: 12/16/21 Analyzed: 12/20/21

Acenaphthene	0.0325	0.00500	mg/kg	0.0333		97.4	31-137			
Anthracene	0.0344	0.00500	"	0.0333		103	30-120			
Benzo (a) anthracene	0.0276	0.00500	"	0.0333		82.9	30-120			
Benzo (a) pyrene	0.0286	0.00500	"	0.0333		85.7	30-120			
Benzo (b) fluoranthene	0.0390	0.00500	"	0.0333		117	30-120			
Benzo (k) fluoranthene	0.0317	0.00500	"	0.0333		95.0	30-120			
Chrysene	0.0321	0.00500	"	0.0333		96.3	30-120			
Dibenz (a,h) anthracene	0.0118	0.00500	"	0.0333		35.5	30-120			
Fluoranthene	0.0352	0.00500	"	0.0333		106	30-120			
Fluorene	0.0279	0.00500	"	0.0333		83.8	30-120			
Indeno (1,2,3-cd) pyrene	0.0129	0.00500	"	0.0333		38.6	30-120			
Pyrene	0.0336	0.00500	"	0.0333		101	35-142			
1-Methylnaphthalene	0.0275	0.00500	"	0.0333		82.6	35-142			
2-Methylnaphthalene	0.0242	0.00500	"	0.0333		72.7	35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0255</i>		"	<i>0.0333</i>		<i>76.6</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0324</i>		"	<i>0.0333</i>		<i>97.2</i>	<i>40-150</i>			

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: McWilliams 15-34 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/22/21 09:40

**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 BEL0360 - EPA 5030 Soil MS**

<b>Matrix Spike (BEL0360-MS1)</b>	<b>Source: 2112153-01</b>			Prepared: 12/16/21 Analyzed: 12/20/21					
Acenaphthene	0.0256	0.00500	mg/kg	0.0333	ND	76.8	31-137		
Anthracene	0.0260	0.00500	"	0.0333	ND	77.9	30-120		
Benzo (a) anthracene	0.0225	0.00500	"	0.0333	ND	67.6	30-120		
Benzo (a) pyrene	0.0237	0.00500	"	0.0333	ND	71.2	30-120		
Benzo (b) fluoranthene	0.0312	0.00500	"	0.0333	ND	93.7	30-120		
Benzo (k) fluoranthene	0.0367	0.00500	"	0.0333	ND	110	30-120		
Chrysene	0.0256	0.00500	"	0.0333	ND	76.8	30-120		
Dibenz (a,h) anthracene	0.0225	0.00500	"	0.0333	ND	67.4	30-120		
Fluoranthene	0.0260	0.00500	"	0.0333	ND	78.0	30-120		
Fluorene	0.0285	0.00500	"	0.0333	ND	85.5	30-120		
Indeno (1,2,3-cd) pyrene	0.0232	0.00500	"	0.0333	ND	69.5	30-120		
Pyrene	0.0328	0.00500	"	0.0333	ND	98.4	35-142		
1-Methylnaphthalene	0.0160	0.00500	"	0.0333	ND	48.1	15-130		
2-Methylnaphthalene	0.0138	0.00500	"	0.0333	ND	41.3	15-130		
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0163</i>		"	<i>0.0333</i>		<i>49.0</i>	<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0242</i>		"	<i>0.0333</i>		<i>72.7</i>	<i>40-150</i>		

<b>Matrix Spike Dup (BEL0360-MSD1)</b>	<b>Source: 2112153-01</b>			Prepared: 12/16/21 Analyzed: 12/20/21					
Acenaphthene	0.0231	0.00500	mg/kg	0.0333	ND	69.2	31-137	10.5	30
Anthracene	0.0245	0.00500	"	0.0333	ND	73.4	30-120	5.90	30
Benzo (a) anthracene	0.0208	0.00500	"	0.0333	ND	62.3	30-120	8.16	30
Benzo (a) pyrene	0.0206	0.00500	"	0.0333	ND	61.7	30-120	14.2	30
Benzo (b) fluoranthene	0.0271	0.00500	"	0.0333	ND	81.3	30-120	14.1	30
Benzo (k) fluoranthene	0.0331	0.00500	"	0.0333	ND	99.3	30-120	10.2	30
Chrysene	0.0243	0.00500	"	0.0333	ND	73.0	30-120	5.08	30
Dibenz (a,h) anthracene	0.0231	0.00500	"	0.0333	ND	69.2	30-120	2.72	30
Fluoranthene	0.0249	0.00500	"	0.0333	ND	74.6	30-120	4.43	30
Fluorene	0.0250	0.00500	"	0.0333	ND	75.0	30-120	13.1	30
Indeno (1,2,3-cd) pyrene	0.0216	0.00500	"	0.0333	ND	64.9	30-120	6.81	30
Pyrene	0.0286	0.00500	"	0.0333	ND	85.7	35-142	13.8	30
1-Methylnaphthalene	0.0225	0.00500	"	0.0333	ND	67.4	15-130	33.4	50
2-Methylnaphthalene	0.0194	0.00500	"	0.0333	ND	58.2	15-130	33.9	50
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0214</i>		"	<i>0.0333</i>		<i>64.2</i>	<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0236</i>		"	<i>0.0333</i>		<i>70.8</i>	<i>40-150</i>		

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PDC Energy  
 1775 Sherman St. STE. 3000  
 Denver CO, 80203

Project: McWilliams 15-34 Wellhead

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 12/22/21 09:40

**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 BEL0319 - EPA 3050B**

**Blank (BEL0319-BLK1)**

Prepared: 12/15/21 Analyzed: 12/20/21

Boron ND 0.0100 mg/L

**LCS (BEL0319-BS1)**

Prepared: 12/15/21 Analyzed: 12/20/21

Boron 4.45 0.0100 mg/L 5.00 89.1 80-120

**Duplicate (BEL0319-DUP1)**

**Source: 2112152-04**

Prepared: 12/15/21 Analyzed: 12/20/21

Boron 0.196 0.0100 mg/L 0.207 5.14 20

**Matrix Spike (BEL0319-MS1)**

**Source: 2112152-04**

Prepared: 12/15/21 Analyzed: 12/20/21

Boron 4.79 0.0100 mg/L 5.00 0.207 91.7 75-125

**Matrix Spike Dup (BEL0319-MSD1)**

**Source: 2112152-04**

Prepared: 12/15/21 Analyzed: 12/20/21

Boron 4.90 0.0100 mg/L 5.00 0.207 93.8 75-125 2.15 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.*



PDC Energy  
 1775 Sherman St. STE. 3000  
 Denver CO, 80203

Project: McWilliams 15-34 Wellhead

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 12/22/21 09:40

**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 BEL0316 - General Preparation**

**Blank (BEL0316-BLK1)**

Prepared: 12/14/21 Analyzed: 12/20/21

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

**LCS (BEL0316-BS1)**

Prepared: 12/14/21 Analyzed: 12/20/21

Calcium	5.80	0.0500	mg/L wet	5.00	116	70-130				
Magnesium	6.02	0.0500	"	5.00	120	70-130				
Sodium	6.23	0.0500	"	5.00	125	70-130				

Summit Scientific

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PDC Energy  
 1775 Sherman St. STE. 3000  
 Denver CO, 80203

Project: McWilliams 15-34 Wellhead

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 12/22/21 09:40

**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 BEL0416 - General Preparation**

<b>Duplicate (BEL0416-DUP1)</b>		<b>Source: 2112139-01</b>			<b>Prepared &amp; Analyzed: 12/20/21</b>			
% Solids	94.3		%		94.8		0.578	20

Summit Scientific

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PDC Energy  
 1775 Sherman St. STE. 3000  
 Denver CO, 80203

Project: McWilliams 15-34 Wellhead

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 12/22/21 09:40

**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 BEL0349 - General Preparation**

**Blank (BEL0349-BLK1)**

Prepared & Analyzed: 12/15/21

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BEL0349-BS1)**

Prepared & Analyzed: 12/15/21

Specific Conductance (EC) 0.155 0.0100 mmhos/cm 0.150 104 95-105

**Duplicate (BEL0349-DUP1)**

**Source: 2112153-01**

Prepared & Analyzed: 12/15/21

Specific Conductance (EC) 0.868 0.0100 mmhos/cm 0.897 3.23 20

Summit Scientific

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PDC Energy  
 1775 Sherman St. STE. 3000  
 Denver CO, 80203

Project: McWilliams 15-34 Wellhead

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
 12/22/21 09:40

**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 BEL0348 - General Preparation**

**LCS (BEL0348-BS1)**

Prepared & Analyzed: 12/15/21

pH 8.98 pH Units 9.18 97.8 95-105

**Duplicate (BEL0348-DUP1)**

Source: 2112153-01

Prepared & Analyzed: 12/15/21

pH 8.02 pH Units 7.96 0.751 20

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: McWilliams 15-34 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/22/21 09:40

### 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