TABLE 1
FORMER WILLIAMSON 44-12 WELLHEAD
SOIL ANALYTICAL RESULTS SUMMARY TABLE

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[4] (mg/kg)
Residential SSL [1,2]			**1.2**	**490**	**5.8**	**58**	**30**	**27**	**2**	**500**
Protection of Groundwater SSL [1,2,3]			**0.0026**	**0.69**	**0.78**	**9.9**	**0.0081**	**0.0087**	**0.0038**	**500**
FLR01 @ 4'	5/10/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
SB01 @ 6-7'	7/12/2022	6-7 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 extactable petroleum hydrocarbons - oil range organics
mg/kg = Milligrams per kilogram
TMB = Trimethylbenzene
ft. = Feet
bgs = Below ground surface

TABLE 2
FORMER WILLIAMSON 44-12 WELLHEAD
SOIL ANALYTICAL RESULTS SUMMARY TABLE
INORGANIC COMPOUNDS

Sample ID	Date Sampled	Depth	pH (units)	EC (mmhos/cm)	SAR (units)	Boron (mg/L)
Soil Suitabilty for Reclamation Standard [1]			**6-8.3**	**<4**	**<6**	**2**
WH01 @ 2.5'	5/10/2021	2.5 ft. bgs	**8.32**	2.06	3.72	0.201
BKG02 @ 2.5'	7/12/2022	2.5 ft. bgs	7.95	NA	NA	NA
BKG02 @ 6-7'	7/12/2022	6-7 ft. bgs	8.08	NA	NA	NA
SB01 @ 6-7'	7/12/2022	6-7 ft. bgs	7.83	0.766	3.12	0.206

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 = millgram per liter
ft. = Feet
bgs = Below ground surface
NA = Constituent not analyzed
BOLD = Analytical result is in exceedance of applicable standard.

TABLE 3
FORMER WILLIAMSON 44-12 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)
Residential SSL [1,2]			**360**	**1,800**	**1.1**	**0.11**	**1.1**	**11**	**110**	**0.11**	**240**	**240**	**1.1**	**180**	**18**	**24**
Protection of Groundwater SSL [1,2,3]			**0.55**	**5.8**	**0.011**	**0.24**	**0.3**	**2.9**	**9**	**0.096**	**8.9**	**0.54**	**0.98**	**1.3**	**0.006**	**0.019**
SB01 @ 6-7'	7/12/2022	6-7 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

COGCC = Colorado Oil and Gas Conservation Commission
(<) = Analytical result is less than the indicated laboratory reporting limit.
PAHs = Polycyclic aromatic hydrocarbons
Benz(a) = Benzanthracene
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 WILLIAMSON 44-12 WELLHEAD
FIELD DATA SUMMARY TABLE

Sample ID	Date Sampled	Depth	GPS Data [1] Latitude / Longitude		PDOP Value	VOC Concentration [2] (ppm)
FLR01 @ 4'	5/10/2021	4 ft. bgs	40.494406	-104.603991	1.3	0.1
WH01 @ 2.5'	5/10/2021	2.5 ft. bgs	40.494389	-104.603986	1.2	0.0
WHS01-N @ 0-6"	5/10/2021	0-6 in. bgs	40.494449	-104.604008	1.3	0.0
WHS01-W @ 0-6"	5/10/2021	0-6 in. bgs	40.494410	-104.604048	1.2	0.0
WHS01-S @ 0-6"	5/10/2021	0-6 in. bgs	40.494372	-104.603979	1.2	0.2
WHS01-E @ 0-6"	5/10/2021	0-6 in. bgs	40.494393	-104.603962	1.2	0.0
FL01-01 @ 4'	5/10/2021	4 ft. bgs	40.494105	-104.603932	1.2	0.0
FL01-02 @ 4'	5/10/2021	4 ft. bgs	40.493696	-104.603896	1.3	0.2
BKG01 @ 2.5'	5/10/2021	2.5 ft. bgs	40.494544	-104.603976	1.3	0.0
BKG02 @ 2.5'	7/12/2022	2.5 ft. bgs	40.494545	-104.603851	NC	0.1
BKG02 @ 6-7'	7/12/2022	6-7 ft. bgs	40.494545	-104.603851	NC	0.0
SB01 @ 6-7'	7/12/2022	6-7 ft. bgs	40.494404	-104.603987	NC	0.4

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
NC = Data not collected

Attachment A

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

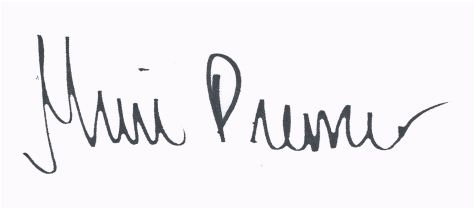
May 17, 2021

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

RE: Williamson 44-12 Wellhead
Work Order #2105102

Enclosed are the results of analyses for samples received by Summit Scientific on 05/10/21 17:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Muri Premer For Paul Shrewsbury
President

S2

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Williamson 44-12 Wellhead Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 05/17/21 14:55

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FLR01@4'	2105102-01	Soil	05/10/21 09:30	05/10/21 17:15
WH01@2.5'	2105102-02	Soil	05/10/21 09:35	05/10/21 17:15

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.

2105102

Summit Scientific

S2

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:	970-481-6909	Project Name:	Williamson 44-12 Wellhead
Sampler Name:	Max Dahlgren	Project Number:	

					Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other ____	Water	Soil	Air-Canister #	Other ____	BTEX	TPH - (C6 - C36)	Naphthalene	624.1 / 8260 TMB's 915	pH, EC, SAR 915	Boron - HWS 915		HOLD	pH, EC, SAR by Saturated Paste
1	FLR01 @ 4'	5/10/21	930	3			X			X			X	X	X	X					
2	WH01 @ 2.5'	"	935	1			X			X		ND	~~X~~				X	X			
3	BKG01 @ 2.5'	"	1010	1			X			X										X	
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by:	Date/Time:	Received by:	Date/Time:
[signature]	5/10/21 1415	Tasman Lock Box	5/10/21 1415
Tasman Lockbox	5/10/21 1715	[signature]	5/10/21 1715
Relinquished by:	Date/Time:	Received by:	Date/Time:

Turn Around Time (Check)

Same Day	___	72 hours	___
24 hours	___	Standard	X
48 hours	___		

Sample Integrity:

Temperature Upon Receipt: 3

Samples Intact: (Yes) No

Notes:

No BTEX analysis for sample WH01

Sample Receipt Checklist

S2 Work Order 2105102

Client: PDC / Tasman Client Project ID: Williamson 44-12 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)	3

Thermometer ID: 61857155-K

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

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

JB — **Custodian Printed Name or Initials**

Signature of Custodian

5/10/21 — **Date/Time**

S2

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Williamson 44-12 Wellhead Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 05/17/21 14:55

FLR01@4'

2105102-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/10/21 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEE0173	05/11/21	05/11/21	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: **05/10/21 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*141 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*101 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*96.3 %*	*21-167*		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/10/21 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEE0174	05/11/21	05/11/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/10/21 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*106 %*	*30-150*		"	"	"	"	

Summit Scientific

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S2

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Williamson 44-12 Wellhead Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 05/17/21 14:55

WH01@2.5'

2105102-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **05/10/21 09:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	**0.201**	0.0100	mg/L	1	BEE0158	05/11/21	05/12/21	EPA 6020B	

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

Date Sampled: **05/10/21 09:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**156**	0.0639	mg/L dry	1	BEE0171	05/11/21	05/13/21	EPA 6020B	
Magnesium	**70.4**	0.0639	"	"	"	"	"	"	
Sodium	**223**	0.0639	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **05/10/21 09:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**3.72**	0.00100	units	1	BEE0229	05/13/21	05/13/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/10/21 09:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**78.3**		%	1	BEE0180	05/12/21	05/12/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/10/21 09:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**2.06**	0.0100	mmhos/cm	1	BEE0202	05/12/21	05/12/21	EPA 120.1	

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

Summit Scientific

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

S2

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Williamson 44-12 Wellhead Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 05/17/21 14:55

WH01@2.5'

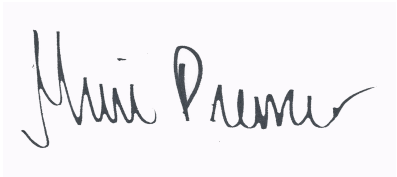
2105102-02 (Soil)

Summit Scientific

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

Date Sampled: **05/10/21 09:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.32**		pH Units	1	BEE0203	05/12/21	05/12/21	EPA 9045D	



S2

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Williamson 44-12 Wellhead Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 05/17/21 14:55

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEE0173 - EPA 5030 Soil MS										
Blank (BEE0173-BLK1)				Prepared & Analyzed: 05/11/21						
Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	*0.0526*		*"*	*0.0400*		*131*	*23-173*			
Surrogate: Toluene-d8	*0.0428*		*"*	*0.0400*		*107*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0402*		*"*	*0.0400*		*101*	*21-167*			
LCS (BEE0173-BS1)				Prepared & Analyzed: 05/11/21						
Benzene	0.0874	0.0020	mg/kg	0.100		87.4	70-130			
Toluene	0.0968	0.0050	"	0.100		96.8	70-130			
Ethylbenzene	0.0973	0.0050	"	0.100		97.3	70-130			
m,p-Xylene	0.191	0.010	"	0.200		95.5	70-130			
o-Xylene	0.0962	0.0050	"	0.100		96.2	70-130			
1,2,4-Trimethylbenzene	0.0963	0.0050	"	0.100		96.3	70-130			
1,3,5-Trimethylbenzene	0.0951	0.0050	"	0.100		95.1	70-130			
Naphthalene	0.0801	0.0038	"	0.100		80.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.0420*		*"*	*0.0400*		*105*	*23-173*			
Surrogate: Toluene-d8	*0.0424*		*"*	*0.0400*		*106*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0406*		*"*	*0.0400*		*102*	*21-167*			
Matrix Spike (BEE0173-MS1)		**Source: 2105081-01**		Prepared & Analyzed: 05/11/21						
Benzene	0.0789	0.0020	mg/kg	0.100	ND	78.9	70-130			
Toluene	0.0839	0.0050	"	0.100	ND	83.9	70-130			
Ethylbenzene	0.0938	0.0050	"	0.100	ND	93.8	70-130			
m,p-Xylene	0.182	0.010	"	0.200	ND	90.8	70-130			
o-Xylene	0.0919	0.0050	"	0.100	ND	91.9	70-130			
1,2,4-Trimethylbenzene	0.0898	0.0050	"	0.100	ND	89.8	70-130			
1,3,5-Trimethylbenzene	0.0887	0.0050	"	0.100	ND	88.7	70-130			
Naphthalene	0.0862	0.0038	"	0.100	ND	86.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.0384*		*"*	*0.0400*		*95.9*	*23-173*			
Surrogate: Toluene-d8	*0.0394*		*"*	*0.0400*		*98.5*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0381*		*"*	*0.0400*		*95.2*	*21-167*			

Summit Scientific

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

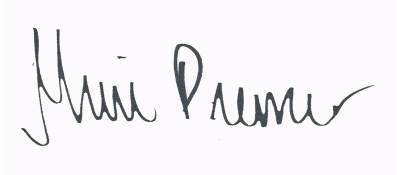
S2

PDC Energy	Project: Williamson 44-12 Wellhead	
1775 Sherman St. STE. 3000	Project Number: [none]	**Reported:**
Denver CO, 80203	Project Manager: Mark Longhurst	05/17/21 14:55

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEE0173 - EPA 5030 Soil MS										
Matrix Spike Dup (BEE0173-MSD1)		**Source: 2105081-01**		Prepared & Analyzed: 05/11/21						
Benzene	0.0890	0.0020	mg/kg	0.100	ND	89.0	70-130	12.0	30	
Toluene	0.0937	0.0050	"	0.100	ND	93.7	70-130	10.9	30	
Ethylbenzene	0.105	0.0050	"	0.100	ND	105	70-130	10.8	30	
m,p-Xylene	0.202	0.010	"	0.200	ND	101	70-130	10.7	30	
o-Xylene	0.101	0.0050	"	0.100	ND	101	70-130	9.90	30	
1,2,4-Trimethylbenzene	0.0990	0.0050	"	0.100	ND	99.0	70-130	9.76	30	
1,3,5-Trimethylbenzene	0.0984	0.0050	"	0.100	ND	98.4	70-130	10.3	30	
Naphthalene	0.0832	0.0038	"	0.100	ND	83.2	70-130	3.61	30	
Surrogate: 1,2-Dichloroethane-d4	*0.0395*		*"*	*0.0400*		*98.7*	*23-173*			
Surrogate: Toluene-d8	*0.0388*		*"*	*0.0400*		*96.9*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0384*		*"*	*0.0400*		*96.1*	*21-167*			



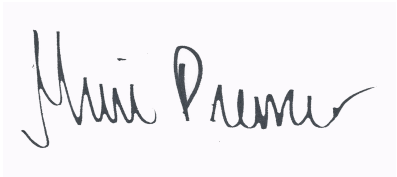
S2

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Williamson 44-12 Wellhead Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 05/17/21 14:55

Extractable Petroleum Hydrocarbons by 8015 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEE0174 - EPA 3550A										
Blank (BEE0174-BLK1)				Prepared & Analyzed: 05/11/21						
C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
LCS (BEE0174-BS1)				Prepared & Analyzed: 05/11/21						
C10-C28 (DRO)	413	50	mg/kg	500		82.5	70-130			
Matrix Spike (BEE0174-MS1)	**Source: 2105081-01**			Prepared & Analyzed: 05/11/21						
C10-C28 (DRO)	478	50	mg/kg	500	13.1	93.0	70-130			
Matrix Spike Dup (BEE0174-MSD1)	**Source: 2105081-01**			Prepared & Analyzed: 05/11/21						
C10-C28 (DRO)	409	50	mg/kg	500	13.1	79.2	70-130	15.6	20	



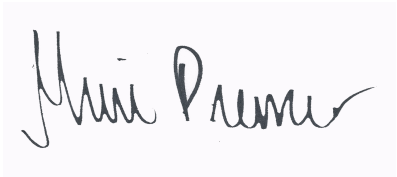
S2

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Williamson 44-12 Wellhead Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 05/17/21 14:55

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

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEE0158 - EPA 3050B										
Blank (BEE0158-BLK1)				Prepared: 05/11/21 Analyzed: 05/12/21						
Boron	ND	0.0100	mg/L							
LCS (BEE0158-BS1)				Prepared: 05/11/21 Analyzed: 05/12/21						
Boron	5.61	0.0100	mg/L	5.00		112	80-120			
Duplicate (BEE0158-DUP1)		**Source: 2105071-01**		Prepared: 05/11/21 Analyzed: 05/12/21						
Boron	0.417	0.0100	mg/L		0.427			2.42	20	
Matrix Spike (BEE0158-MS1)		**Source: 2105071-01**		Prepared: 05/11/21 Analyzed: 05/12/21						
Boron	5.69	0.0100	mg/L	5.00	0.427	105	75-125			
Matrix Spike Dup (BEE0158-MSD1)		**Source: 2105071-01**		Prepared: 05/11/21 Analyzed: 05/12/21						
Boron	5.73	0.0100	mg/L	5.00	0.427	106	75-125	0.794	25	



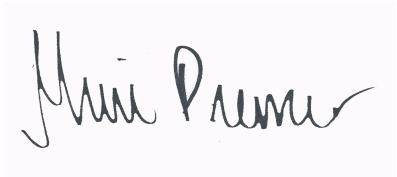
S2

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Williamson 44-12 Wellhead Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 05/17/21 14:55

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

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEE0171 - General Preparation										
Blank (BEE0171-BLK1)				Prepared: 05/11/21 Analyzed: 05/13/21						
Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							
LCS (BEE0171-BS1)				Prepared: 05/11/21 Analyzed: 05/13/21						
Calcium	5.29	0.0500	mg/L wet	5.00		106	70-130			
Magnesium	5.02	0.0500	"	5.00		100	70-130			
Sodium	5.21	0.0500	"	5.00		104	70-130			



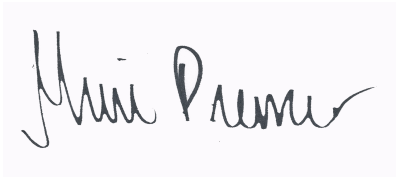
S2

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Williamson 44-12 Wellhead Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 05/17/21 14:55

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

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEE0180 - General Preparation										
Duplicate (BEE0180-DUP1)		**Source: 2105098-01**		Prepared & Analyzed: 05/12/21						
% Solids	81.6		%		81.8			0.251	20	



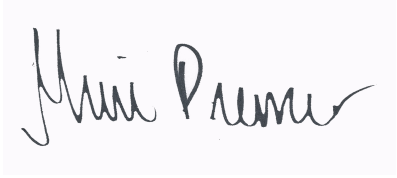
S2

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Williamson 44-12 Wellhead Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 05/17/21 14:55

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

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEE0202 - General Preparation										
Blank (BEE0202-BLK1)				Prepared & Analyzed: 05/12/21						
Specific Conductance (EC)	ND	0.0100	mmhos/cm							
LCS (BEE0202-BS1)				Prepared & Analyzed: 05/12/21						
Specific Conductance (EC)	0.156	0.0100	mmhos/cm	0.150		104	90-110			
Duplicate (BEE0202-DUP1)		**Source: 2105098-01**		Prepared & Analyzed: 05/12/21						
Specific Conductance (EC)	2.26	0.0100	mmhos/cm		2.28			0.484	20	



S2

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Williamson 44-12 Wellhead Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 05/17/21 14:55

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

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEE0203 - General Preparation										
LCS (BEE0203-BS1)				Prepared & Analyzed: 05/12/21						
pH	9.29		pH Units	9.21		101	95-105			
Duplicate (BEE0203-DUP1)		**Source: 2105098-01**		Prepared & Analyzed: 05/12/21						
pH	7.04		pH Units		7.05			0.142	20	

S2

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Williamson 44-12 Wellhead Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 05/17/21 14:55

Notes and Definitions

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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 19, 2022

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

RE: Williamson 44-12 Wellhead
Work Order #2207159

Enclosed are the results of analyses for samples received by Summit Scientific on 07/12/22 17:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Mikayla Axtell For Paul Shrewsbury
President

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Williamson 44-12 Wellhead Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 07/19/22 12:38

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB01@6-7'	2207159-01	Soil	07/12/22 09:34	07/12/22 17:20
BKG02@2.5'	2207159-02	Soil	07/12/22 10:20	07/12/22 17:20
BKG02@6-7'	2207159-03	Soil	07/12/22 10:25	07/12/22 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.

Summit Scientific

S_2

2207159

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

Client: PDC / Tasman
Address: 6855 W 119th Ave
City/State/Zip: Broomfield/ CO/ 80020
Phone: 303-487-1228
Sampler Name: Sam Anderson

Project Manager: Mark Longhurst
E-Mail: mark.longhurst@PDCE.com
Project Name: Williamson 44-12 Well head
Project Number:

					Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other ____	Water	Soil	Air-Canister #	Other ____	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR	PAH's	Just PH		pH, EC, SAR by saturated paste
1	SB01 e6-7'	934	7/12/22	3			X			X			X	X	X	X	X	X			
2	BK602 e 2.5'	1020	↓	1			↓			↓									X		
3	BK602 e 6-7'	1025	↓	1			↓			↓									X		
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by:	Date/Time:	Received by:	Date/Time:
	7/12/22 1500	Tasman's Lock Box	7/12/22 1500
Relinquished by: Tasman's Lock Box	Date/Time: 71222 1720	Received by:	Date/Time: 71222 1720
Relinquished by:	Date/Time:	Received by:	Date/Time:

Turn Around Time (Check)
Same Day ___ 72 hours ___
24 hours ___ Standard X
48 hours ___

Sample Integrity:
Temperature Upon Receipt: 5.5
Samples Intact: Yes No

Notes:

S2

S2 Work Order# 2207159

Sample Receipt Checklist

Client: PDC Tasman Client Project ID: Williamson 44-12 Wellhead

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

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

Temp (°C) [5.5] Thermometer # [1]

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6 °C [1]? **NOTE:** If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	–			on ice
Were all samples received intact [1]?	–			
Was adequate sample volume provided [1]?	–			
If custody seals are present, are they intact [1]?	–			
Are samples due within 48 hours present?		–		
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe^{2+}), Hexavalent Chromium (Cr^{6+}, Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen			–	
Is a chain-of-custody (COC) form present and filled out completely [1]?	–			
Does the COC agree with the number and type of sample bottles received [1]?	–			
Do the sample IDs on the bottle labels match the COC [1]?	–			
Is the COC properly relinquished by the client w/ date and time recorded [1]?	–			
For volatiles in water – is there headspace present? **If yes, contact client and note in narrative.**			–	
Are samples preserved that require preservation **(excluding cooling)** [1]? Note the type of preservative in the comments column – HCl, H_2SO_4, NaOH, HNO_3, etc.			–	
If samples are acid preserved for metals, is the pH ≤ 2[1]? Record the pH in Comments.			–	
If dissolved metals are requested, were samples field filtered?			–	
Additional Comments (if any):				
[1] **If NO, then contact the client before proceeding with analysis and note in case narrative.**				

Custodian Printed Name

RCH 7 1222
Date/Time

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Williamson 44-12 Wellhead Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 07/19/22 12:38

SB01@6-7'

2207159-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/12/22 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFG0270	07/15/22	07/16/22	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: **07/12/22 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*87.8 %*	*50-150*		"	"	"	"	
Surrogate: Toluene-d8		*103 %*	*50-150*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*105 %*	*50-150*		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/12/22 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFG0274	07/15/22	07/15/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/12/22 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*104 %*	*30-150*		"	"	"	"	

PAH by EPA Method 8270D SIM

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Williamson 44-12 Wellhead Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 07/19/22 12:38

SB01@6-7'

2207159-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/12/22 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFG0209	07/13/22	07/14/22	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: **07/12/22 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		*86.7 %*	*40-150*		"	"	"	"	
Surrogate: Fluoranthene-d10		*84.3 %*	*40-150*		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/12/22 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	**0.206**	0.0100	mg/L	1	BFG0292	07/18/22	07/19/22	EPA 6020B	

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

Date Sampled: **07/12/22 09:34**

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.

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Williamson 44-12 Wellhead Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 07/19/22 12:38

SB01@6-7'

2207159-01 (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	**40.6**	0.0610	mg/L dry	1	BFG0215	07/13/22	07/16/22	EPA 6020B	
Magnesium	**13.1**	0.0610	"	"	"	"	"	"	
Sodium	**89.3**	0.0610	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/12/22 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**3.12**	0.00100	units	1	BFG0302	07/18/22	07/18/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/12/22 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**82.0**		%	1	BFG0225	07/13/22	07/14/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/12/22 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**0.766**	0.0100	mmhos/cm	1	BFG0248	07/14/22	07/14/22	EPA 120.1	

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

Date Sampled: **07/12/22 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**7.83**		pH Units	1	BFG0249	07/14/22	07/14/22	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.

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Williamson 44-12 Wellhead Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 07/19/22 12:38

BKG02@2.5'

2207159-02 (Soil)

Summit Scientific

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

Date Sampled: **07/12/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**7.95**		pH Units	1	BFG0216	07/13/22	07/13/22	EPA 9045D	

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Williamson 44-12 Wellhead Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 07/19/22 12:38

BKG02@6-7'

2207159-03 (Soil)

Summit Scientific

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

Date Sampled: **07/12/22 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.08**		pH Units	1	BFG0216	07/13/22	07/13/22	EPA 9045D	

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFG0270 - EPA 5030 Soil MS										
Blank (BFG0270-BLK1)				Prepared: 07/15/22 Analyzed: 07/16/22						
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	*0.0434*		*"*	*0.0400*		*108*	*50-150*			
Surrogate: Toluene-d8	*0.0402*		*"*	*0.0400*		*100*	*50-150*			
Surrogate: 4-Bromofluorobenzene	*0.0441*		*"*	*0.0400*		*110*	*50-150*			
LCS (BFG0270-BS1)				Prepared: 07/15/22 Analyzed: 07/16/22						
Benzene	0.138	0.0020	mg/kg	0.150		91.8	70-130			
Toluene	0.141	0.0050	"	0.150		94.0	70-130			
Ethylbenzene	0.166	0.0050	"	0.150		111	70-130			
m,p-Xylene	0.326	0.010	"	0.300		109	70-130			
o-Xylene	0.149	0.0050	"	0.150		99.3	70-130			
1,2,4-Trimethylbenzene	0.164	0.0050	"	0.150		109	70-130			
1,3,5-Trimethylbenzene	0.163	0.0050	"	0.150		108	70-130			
Naphthalene	0.184	0.0038	"	0.150		123	70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.0380*		*"*	*0.0400*		*94.9*	*50-150*			
Surrogate: Toluene-d8	*0.0389*		*"*	*0.0400*		*97.3*	*50-150*			
Surrogate: 4-Bromofluorobenzene	*0.0454*		*"*	*0.0400*		*114*	*50-150*			

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Williamson 44-12 Wellhead Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 07/19/22 12:38

Extractable Petroleum Hydrocarbons by 8015 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFG0274 - EPA 3550A										
Blank (BFG0274-BLK1)				Prepared & Analyzed: 07/15/22						
C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
LCS (BFG0274-BS1)				Prepared & Analyzed: 07/15/22						
C10-C28 (DRO)	403	50	mg/kg	500		80.6	70-130			
Matrix Spike (BFG0274-MS1)	**Source: 2207111-01**			Prepared & Analyzed: 07/15/22						
C10-C28 (DRO)	485	50	mg/kg	500	92.1	78.7	70-130			
Matrix Spike Dup (BFG0274-MSD1)	**Source: 2207111-01**			Prepared & Analyzed: 07/15/22						
C10-C28 (DRO)	513	50	mg/kg	500	92.1	84.2	70-130	5.61	20	

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Williamson 44-12 Wellhead Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 07/19/22 12:38

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFG0209 - EPA 5030 Soil MS										
Blank (BFG0209-BLK1)				Prepared: 07/13/22 Analyzed: 07/14/22						
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	*0.0402*		*"*	*0.0333*		*121*	*40-150*			
Surrogate: Fluoranthene-d10	*0.0456*		*"*	*0.0333*		*137*	*40-150*			
LCS (BFG0209-BS1)				Prepared: 07/13/22 Analyzed: 07/14/22						
Acenaphthene	0.0285	0.00500	mg/kg	0.0333		85.5	31-137			
Anthracene	0.0346	0.00500	"	0.0333		104	30-120			
Benzo (a) anthracene	0.0353	0.00500	"	0.0333		106	30-120			
Benzo (a) pyrene	0.0323	0.00500	"	0.0333		96.8	30-120			
Benzo (b) fluoranthene	0.0325	0.00500	"	0.0333		97.6	30-120			
Benzo (k) fluoranthene	0.0356	0.00500	"	0.0333		107	30-120			
Chrysene	0.0365	0.00500	"	0.0333		109	30-120			
Dibenz (a,h) anthracene	0.0252	0.00500	"	0.0333		75.6	30-120			
Fluoranthene	0.0329	0.00500	"	0.0333		98.7	30-120			
Fluorene	0.0288	0.00500	"	0.0333		86.3	30-120			
Indeno (1,2,3-cd) pyrene	0.0265	0.00500	"	0.0333		79.4	30-120			
Pyrene	0.0381	0.00500	"	0.0333		114	35-142			
1-Methylnaphthalene	0.0378	0.00500	"	0.0333		113	35-142			
2-Methylnaphthalene	0.0290	0.00500	"	0.0333		86.9	35-142			
Surrogate: 2-Methylnaphthalene-d10	*0.0334*		*"*	*0.0333*		*100*	*40-150*			
Surrogate: Fluoranthene-d10	*0.0327*		*"*	*0.0333*		*98.2*	*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.

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Williamson 44-12 Wellhead Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 07/19/22 12:38

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFG0209 - EPA 5030 Soil MS										
Matrix Spike (BFG0209-MS1)	**Source: 2207136-01**			Prepared: 07/13/22 Analyzed: 07/14/22						
Acenaphthene	0.0171	0.00500	mg/kg	0.0333	ND	51.2	31-137			
Anthracene	0.0232	0.00500	"	0.0333	ND	69.5	30-120			
Benzo (a) anthracene	0.0243	0.00500	"	0.0333	ND	72.9	30-120			
Benzo (a) pyrene	0.0209	0.00500	"	0.0333	ND	62.7	30-120			
Benzo (b) fluoranthene	0.0211	0.00500	"	0.0333	ND	63.4	30-120			
Benzo (k) fluoranthene	0.0226	0.00500	"	0.0333	ND	67.8	30-120			
Chrysene	0.0225	0.00500	"	0.0333	ND	67.6	30-120			
Dibenz (a,h) anthracene	0.0149	0.00500	"	0.0333	ND	44.6	30-120			
Fluoranthene	0.0241	0.00500	"	0.0333	ND	72.2	30-120			
Fluorene	0.0154	0.00500	"	0.0333	ND	46.1	30-120			
Indeno (1,2,3-cd) pyrene	0.0164	0.00500	"	0.0333	ND	49.1	30-120			
Pyrene	0.0242	0.00500	"	0.0333	ND	72.6	35-142			
1-Methylnaphthalene	0.0261	0.00500	"	0.0333	ND	78.2	15-130			
2-Methylnaphthalene	0.0195	0.00500	"	0.0333	ND	58.5	15-130			
Surrogate: 2-Methylnaphthalene-d10	*0.0225*		*"*	*0.0333*		*67.4*	*40-150*			
Surrogate: Fluoranthene-d10	*0.0212*		*"*	*0.0333*		*63.6*	*40-150*			
Matrix Spike Dup (BFG0209-MSD1)	**Source: 2207136-01**			Prepared: 07/13/22 Analyzed: 07/14/22						
Acenaphthene	0.0167	0.00500	mg/kg	0.0333	ND	50.0	31-137	2.40	30	
Anthracene	0.0234	0.00500	"	0.0333	ND	70.1	30-120	0.905	30	
Benzo (a) anthracene	0.0248	0.00500	"	0.0333	ND	74.5	30-120	2.22	30	
Benzo (a) pyrene	0.0211	0.00500	"	0.0333	ND	63.4	30-120	1.16	30	
Benzo (b) fluoranthene	0.0211	0.00500	"	0.0333	ND	63.4	30-120	0.0773	30	
Benzo (k) fluoranthene	0.0214	0.00500	"	0.0333	ND	64.2	30-120	5.41	30	
Chrysene	0.0231	0.00500	"	0.0333	ND	69.3	30-120	2.45	30	
Dibenz (a,h) anthracene	0.0148	0.00500	"	0.0333	ND	44.5	30-120	0.130	30	
Fluoranthene	0.0259	0.00500	"	0.0333	ND	77.7	30-120	7.27	30	
Fluorene	0.0148	0.00500	"	0.0333	ND	44.4	30-120	3.71	30	
Indeno (1,2,3-cd) pyrene	0.0167	0.00500	"	0.0333	ND	50.2	30-120	2.07	30	
Pyrene	0.0239	0.00500	"	0.0333	ND	71.8	35-142	1.12	30	
1-Methylnaphthalene	0.0251	0.00500	"	0.0333	ND	75.4	15-130	3.52	50	
2-Methylnaphthalene	0.0220	0.00500	"	0.0333	ND	66.1	15-130	12.2	50	
Surrogate: 2-Methylnaphthalene-d10	*0.0231*		*"*	*0.0333*		*69.4*	*40-150*			
Surrogate: Fluoranthene-d10	*0.0222*		*"*	*0.0333*		*66.5*	*40-150*			

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PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Williamson 44-12 Wellhead Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 07/19/22 12:38

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

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFG0292 - EPA 3050B										
Blank (BFG0292-BLK1)				Prepared & Analyzed: 07/18/22						
Boron	ND	0.0100	mg/L							
LCS (BFG0292-BS1)				Prepared & Analyzed: 07/18/22						
Boron	5.30	0.0100	mg/L	5.00		106	80-120			
Duplicate (BFG0292-DUP1)	**Source: 2207158-01**			Prepared: 07/18/22 Analyzed: 07/19/22						
Boron	0.276	0.0100	mg/L		0.281			1.87	20	
Matrix Spike (BFG0292-MS1)	**Source: 2207158-01**			Prepared: 07/18/22 Analyzed: 07/19/22						
Boron	5.32	0.0100	mg/L	5.00	0.281	101	75-125			
Matrix Spike Dup (BFG0292-MSD1)	**Source: 2207158-01**			Prepared: 07/18/22 Analyzed: 07/19/22						
Boron	5.35	0.0100	mg/L	5.00	0.281	101	75-125	0.500	25	

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Williamson 44-12 Wellhead Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 07/19/22 12:38

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

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFG0215 - General Preparation										
Blank (BFG0215-BLK1)				Prepared: 07/13/22 Analyzed: 07/16/22						
Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							
LCS (BFG0215-BS1)				Prepared: 07/13/22 Analyzed: 07/16/22						
Calcium	5.92	0.0500	mg/L wet	5.00		118	70-130			
Magnesium	5.22	0.0500	"	5.00		104	70-130			
Sodium	5.13	0.0500	"	5.00		103	70-130			

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Williamson 44-12 Wellhead Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 07/19/22 12:38

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

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFG0225 - General Preparation										
Duplicate (BFG0225-DUP1)		**Source: 2207136-01**		Prepared: 07/13/22 Analyzed: 07/14/22						
% Solids	86.5		%		85.4			1.29	20	

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Williamson 44-12 Wellhead Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 07/19/22 12:38

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

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFG0248 - General Preparation										
Blank (BFG0248-BLK1)				Prepared & Analyzed: 07/14/22						
Specific Conductance (EC)	ND	0.0100	mmhos/cm							
LCS (BFG0248-BS1)				Prepared & Analyzed: 07/14/22						
Specific Conductance (EC)	0.151	0.0100	mmhos/cm	0.150		101	95-105			
Duplicate (BFG0248-DUP1)		**Source: 2207152-02**		Prepared & Analyzed: 07/14/22						
Specific Conductance (EC)	0.293	0.0100	mmhos/cm		0.306			4.14	20	

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Williamson 44-12 Wellhead Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 07/19/22 12:38

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

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFG0216 - General Preparation										
LCS (BFG0216-BS1)				Prepared & Analyzed: 07/13/22						
pH	9.19		pH Units	9.18		100	95-105			
Duplicate (BFG0216-DUP1)		**Source: 2207136-01**		Prepared & Analyzed: 07/13/22						
pH	7.84		pH Units		7.80			0.512	20	
Batch BFG0249 - General Preparation										
LCS (BFG0249-BS1)				Prepared & Analyzed: 07/14/22						
pH	9.21		pH Units	9.18		100	95-105			
Duplicate (BFG0249-DUP1)		**Source: 2207152-02**		Prepared & Analyzed: 07/14/22						
pH	7.79		pH Units		7.83			0.512	20	

S2

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Williamson 44-12 Wellhead Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 07/19/22 12:38

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