

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

February 10, 2025

Andy Sagen

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: PDC - Pettinger 43-2 FL

Work Order #2412314

Enclosed are the results of analyses for samples received by Summit Scientific on 12/13/24 18:08. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in blue ink that reads "Jacob Wood". The signature is written in a cursive style with a large initial "J" and a long horizontal stroke at the end.

Jacob Wood For Paul Shrewsbury
President



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

Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL01-01@4'	2412314-01	Soil	12/13/24 14:16	12/13/24 18:08
FL01-04@4'	2412314-02	Soil	12/13/24 13:57	12/13/24 18:08
FL01-05@4'	2412314-03	Soil	12/13/24 13:49	12/13/24 18:08
FL01-06@4'	2412314-04	Soil	12/13/24 13:14	12/13/24 18:08
FL01-10@4'	2412314-05	Soil	12/13/24 12:01	12/13/24 18:08
FL01-11@4'	2412314-06	Soil	12/13/24 11:38	12/13/24 18:08
FL01R-W@4'	2412314-07	Soil	12/13/24 14:29	12/13/24 18:08
FL01R-S@4'	2412314-08	Soil	12/13/24 15:05	12/13/24 18:08
BKG01@4'	2412314-09	Soil	12/13/24 14:51	12/13/24 18:08
GW01@4'	2412314-10	Water	12/13/24 11:44	12/13/24 18:08
FL01-13@4'	2412314-11	Soil	12/13/24 11:30	12/13/24 18:08

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

Lab ID	Page 1 of 2
2412314.1	

		Send Data To:	Send Invoice To:
Client: PDC/Tasman	Project Manager: Andy Sagen		Company: PDC Energy
Address: 6855 W. 119th Ave.	E-Mail: tas-chevron-1@tasman-geo.com		Project Name/Location: <i>Pettinger 43-2 FL</i>
City/State/Zip: Broomfield/CO/ 80020	<i>BBUEUF27@Chevron.com</i>		AFE#: <i>PX-900316</i>
Phone: <i>860.830.3839</i>	Project Name: <i>Pettinger 43-2 FL</i>		PO/Billing Codes:
Sampler Name: <i>Sylvie Bousquet</i>	Project Number: <i>36965</i>		Contact: Karen Olson

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix		Analysis Requested							Special Instructions				
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	Metals - 915	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH		Boron - HWS	HOLD		
1	<i>FLO1-01@4'</i>	<i>12-13-24</i>	<i>14:16</i>	<i>2</i>			<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		SAR, EC, pH by saturated paste	
2	<i>FLO1-04@4'</i>		<i>13:57</i>																			
3	<i>FLO1-05@4'</i>		<i>13:49</i>																			
4	<i>FLO1-06@4'</i>		<i>13:14</i>																			
5	<i>FLO1-10@4'</i>		<i>12:02</i>																			
6	<i>FLO1-11@4'</i>		<i>11:38</i>																			
7	<i>FLO2R-W@4'</i>		<i>14:29</i>																			
8	<i>FLO2R-S@4'</i>		<i>15:05</i>																			
9	<i>BKG01@4'</i>		<i>14:51</i>																			
10																						
11																						
12																						
13																						
14																						
15																						

Relinquished by: <i>Sylvie B</i>	Date/Time: <i>12-13-24 17:30</i>	Received by: Tasman Lock Box	Date/Time: <i>17:00 12-13-24</i>	TAT Business Days	Field DO	Notes:
Relinquished by: Tasman Lock Box	Date/Time: <i>12/30/24 18:08</i>	Received by: <i>[Signature]</i>	Date/Time: <i>12/30/24 18:08</i>	Same Day	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day	Field ORP	
Relinquished by:	Date/Time:	Received by:	Date/Time:	2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
Temperature Upon Receipt: <i>4.4</i>	Corrected Temperature: <i>8</i>	IR gun #: <i>1</i>	HNO3 lot #:	Standard	<input checked="" type="checkbox"/>	Field Turb.

S₂

2/2

Sample Receipt Checklist

S2 Work Order# 2412314

Client: POC Uzman Client Project ID: Pettinger 43-2 FL

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

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

Temp (°C) Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	an zce
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	sent extra sample
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	HCl
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):
FL01-130 11:30

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

AS
Custodian Printed Name

12/13/24
Date/Time



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

Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

FL01-01@4'
2412314-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/13/24 14:16**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHL1212	12/26/24	12/31/24	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **12/13/24 14:16**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0368	91.9 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0393	98.3 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0387	96.7 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/13/24 14:16**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHL1214	12/26/24	01/03/25	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **12/13/24 14:16**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	4.22	33.7 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: PDC - Pettinger 43-2 FL

Project Number: [none]
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02/10/25 13:35

FL01-01@4'
2412314-01 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **12/13/24 14:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHL1210	12/26/24	12/30/24	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: **12/13/24 14:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0152	45.5 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0177	53.2 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **12/13/24 14:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BIB0298	02/06/25	02/08/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **12/13/24 14:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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FL01-01@4'
2412314-01 (Soil)

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Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	6.23	0.200	mg/kg dry	1	BIA0374	01/09/25	01/18/25	EPA 6020B
Barium	105	0.400	"	"	"	"	"	"
Cadmium	0.253	0.200	"	"	"	"	"	"
Copper	5.90	0.400	"	"	"	"	"	"
Lead	12.7	0.200	"	"	"	"	"	"
Nickel	5.07	0.400	"	"	"	"	"	"
Silver	0.0411	0.0200	"	"	"	"	"	"
Zinc	24.2	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 12/13/24 14:16

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIA0442	01/10/25	01/16/25	EPA 7196A	

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

Date Sampled: 12/13/24 14:16

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	113	0.0500	mg/L dry	1	BIA0358	01/09/25	01/16/25	EPA 6020B	
Magnesium	78.0	0.0500	"	"	"	"	"	"	
Sodium	168	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 12/13/24 14:16

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.98	0.00100	units	1	BIA0816	01/17/25	01/17/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 12/13/24 14:16

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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02/10/25 13:35

FL01-01@4'
2412314-01 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

% Solids	82.9	%	1	BIA0366	01/09/25	01/10/25	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **12/13/24 14:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.46	0.0100	mmhos/cm	1	BIA0351	01/09/25	01/14/25	EPA 120.1	

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

Date Sampled: **12/13/24 14:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.30		pH Units	1	BIA0347	01/09/25	01/14/25	EPA 9045D	

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Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

FL01-04@4'
2412314-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/13/24 13:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHL1212	12/26/24	12/31/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **12/13/24 13:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0388	97.0 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0397	99.3 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0385	96.2 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/13/24 13:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHL1214	12/26/24	12/30/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **12/13/24 13:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	8.33	66.7 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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FL01-04@4'
2412314-02 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **12/13/24 13:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHL1210	12/26/24	12/30/24	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: **12/13/24 13:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0193	57.9 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0186	55.9 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **12/13/24 13:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BIB0298	02/06/25	02/08/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **12/13/24 13:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

FL01-04@4'
2412314-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	3.27	0.200	mg/kg dry	1	BIA0374	01/09/25	01/18/25	EPA 6020B
Barium	58.3	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	3.47	0.400	"	"	"	"	"	"
Lead	4.98	0.200	"	"	"	"	"	"
Nickel	3.59	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	13.0	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 12/13/24 13:57

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIA0442	01/10/25	01/16/25	EPA 7196A	

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

Date Sampled: 12/13/24 13:57

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	139	0.0500	mg/L dry	1	BIA0358	01/09/25	01/16/25	EPA 6020B	
Magnesium	39.1	0.0500	"	"	"	"	"	"	
Sodium	84.7	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 12/13/24 13:57

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.64	0.00100	units	1	BIA0816	01/17/25	01/17/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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

Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

FL01-04@4'
2412314-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/13/24 13:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	94.5			%	1	BIA0366	01/09/25	01/10/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **12/13/24 13:57**

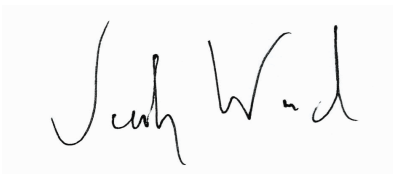
Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	1.21	0.0100		mmhos/cm	1	BIA0351	01/09/25	01/14/25	EPA 120.1	

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

Date Sampled: **12/13/24 13:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.17			pH Units	1	BIA0347	01/09/25	01/14/25	EPA 9045D	

Summit Scientific



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Broomfield CO, 80020

Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

FL01-05@4'
2412314-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/13/24 13:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHL1212	12/26/24	12/31/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **12/13/24 13:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0351	87.8 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0394	98.5 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0383	95.8 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/13/24 13:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHL1214	12/26/24	12/30/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **12/13/24 13:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	7.04	56.3 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

FL01-05@4'
2412314-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **12/13/24 13:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHL1210	12/26/24	12/30/24	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: **12/13/24 13:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0161	48.3 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0159	47.7 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **12/13/24 13:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BIB0298	02/06/25	02/08/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **12/13/24 13:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
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Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

FL01-05@4'
2412314-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.48	0.200	mg/kg dry	1	BIA0374	01/09/25	01/18/25	EPA 6020B	
Barium	60.5	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	3.87	0.400	"	"	"	"	"	"	
Lead	4.35	0.200	"	"	"	"	"	"	
Nickel	3.60	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	14.7	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: 12/13/24 13:49

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIA0442	01/10/25	01/16/25	EPA 7196A	

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

Date Sampled: 12/13/24 13:49

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	61.1	0.0500	mg/L dry	1	BIA0358	01/09/25	01/16/25	EPA 6020B	
Magnesium	21.7	0.0500	"	"	"	"	"	"	
Sodium	68.0	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 12/13/24 13:49

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.90	0.00100	units	1	BIA0816	01/17/25	01/17/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

FL01-05@4'
2412314-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/13/24 13:49**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	88.8			%	1	BIA0366	01/09/25	01/10/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **12/13/24 13:49**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.703	0.0100		mmhos/cm	1	BIA0351	01/09/25	01/14/25	EPA 120.1	

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

Date Sampled: **12/13/24 13:49**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.33			pH Units	1	BIA0347	01/09/25	01/14/25	EPA 9045D	

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Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

FL01-06@4'
2412314-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/13/24 13:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHL1212	12/26/24	12/31/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **12/13/24 13:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0370	92.4 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0394	98.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0380	94.9 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/13/24 13:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHL1214	12/26/24	12/30/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **12/13/24 13:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	8.14	65.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Project Number: [none]
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02/10/25 13:35

FL01-06@4'
2412314-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **12/13/24 13:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHL1210	12/26/24	12/30/24	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: **12/13/24 13:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0196	58.8 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0176	52.7 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **12/13/24 13:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BIB0298	02/06/25	02/08/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **12/13/24 13:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: PDC - Pettinger 43-2 FL

Project Number: [none]
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02/10/25 13:35

FL01-06@4'
2412314-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.34	0.200	mg/kg dry	1	BIA0374	01/09/25	01/18/25	EPA 6020B	
Barium	50.0	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.99	0.400	"	"	"	"	"	"	
Lead	4.08	0.200	"	"	"	"	"	"	
Nickel	3.42	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	13.2	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **12/13/24 13:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIA0442	01/10/25	01/16/25	EPA 7196A	

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

Date Sampled: **12/13/24 13:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	87.4	0.0500	mg/L dry	1	BIA0358	01/09/25	01/16/25	EPA 6020B	
Magnesium	33.1	0.0500	"	"	"	"	"	"	
Sodium	95.9	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **12/13/24 13:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.22	0.00100	units	1	BIA0816	01/17/25	01/17/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

FL01-06@4'
2412314-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/13/24 13:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	93.4			%	1	BIA0366	01/09/25	01/10/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **12/13/24 13:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	1.03	0.0100		mmhos/cm	1	BIA0351	01/09/25	01/14/25	EPA 120.1	

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

Date Sampled: **12/13/24 13:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.28			pH Units	1	BIA0347	01/09/25	01/14/25	EPA 9045D	

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Project Number: [none]
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Reported:
02/10/25 13:35

FL01-10@4'
2412314-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/13/24 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHL1212	12/26/24	12/31/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **12/13/24 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0374	93.4 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0394	98.6 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0380	95.0 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/13/24 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHL1214	12/26/24	12/30/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **12/13/24 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	9.57	76.6 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

FL01-10@4'
2412314-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **12/13/24 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHL1210	12/26/24	12/30/24	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: **12/13/24 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0161	48.2 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0172	51.5 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **12/13/24 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BIB0298	02/06/25	02/08/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **12/13/24 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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6855 W. 119th Ave.
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Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

FL01-10@4'
2412314-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	4.71	0.200	mg/kg dry	1	BIA0374	01/09/25	01/18/25	EPA 6020B
Barium	61.5	0.400	"	"	"	"	"	"
Cadmium	0.447	0.200	"	"	"	"	"	"
Copper	10.3	0.400	"	"	"	"	"	"
Lead	15.9	0.200	"	"	"	"	"	"
Nickel	8.24	0.400	"	"	"	"	"	"
Silver	0.0751	0.0200	"	"	"	"	"	"
Zinc	36.6	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **12/13/24 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIA0442	01/10/25	01/16/25	EPA 7196A	

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

Date Sampled: **12/13/24 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	24.6	0.0500	mg/L dry	1	BIA0358	01/09/25	01/16/25	EPA 6020B	
Magnesium	29.5	0.0500	"	"	"	"	"	"	
Sodium	110	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **12/13/24 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.54	0.00100	units	1	BIA0816	01/17/25	01/17/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/13/24 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

FL01-10@4'
2412314-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	80.5	%	1	BIA0366	01/09/25	01/10/25	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **12/13/24 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.670	0.0100	mmhos/cm	1	BIA0351	01/09/25	01/14/25	EPA 120.1	

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

Date Sampled: **12/13/24 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.38		pH Units	1	BIA0347	01/09/25	01/14/25	EPA 9045D	

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Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

FL01-11@4'
2412314-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/13/24 11:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHL1212	12/26/24	12/31/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **12/13/24 11:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0374	93.5 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0387	96.7 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0381	95.2 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/13/24 11:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHL1214	12/26/24	12/30/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **12/13/24 11:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	7.18	57.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

FL01-11@4'
2412314-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **12/13/24 11:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHL1210	12/26/24	12/30/24	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: **12/13/24 11:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0154	46.2 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0164	49.2 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **12/13/24 11:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BIB0298	02/06/25	02/08/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **12/13/24 11:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

FL01-11@4'
2412314-06 (Soil)

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Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	2.38	0.200	mg/kg dry	1	BIA0374	01/09/25	01/18/25	EPA 6020B
Barium	22.2	0.400	"	"	"	"	"	"
Cadmium	0.239	0.200	"	"	"	"	"	"
Copper	6.79	0.400	"	"	"	"	"	"
Lead	8.72	0.200	"	"	"	"	"	"
Nickel	4.82	0.400	"	"	"	"	"	"
Silver	0.0338	0.0200	"	"	"	"	"	"
Zinc	30.9	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 12/13/24 11:38

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIA0442	01/10/25	01/16/25	EPA 7196A	

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

Date Sampled: 12/13/24 11:38

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	141	0.0500	mg/L dry	1	BIA0358	01/09/25	01/16/25	EPA 6020B	
Magnesium	208	0.0500	"	"	"	"	"	"	
Sodium	273	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 12/13/24 11:38

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.42	0.00100	units	1	BIA0816	01/17/25	01/17/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 12/13/24 11:38

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

FL01-11@4'
2412314-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	80.6	%	1	BIA0366	01/09/25	01/10/25	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **12/13/24 11:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.50	0.0100	mmhos/cm	1	BIA0351	01/09/25	01/14/25	EPA 120.1	

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

Date Sampled: **12/13/24 11:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.19		pH Units	1	BIA0347	01/09/25	01/14/25	EPA 9045D	

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Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

FL01R-W@4'
2412314-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/13/24 14:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHL1212	12/26/24	12/31/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **12/13/24 14:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0382	95.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0394	98.6 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0380	94.9 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/13/24 14:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHL1214	12/26/24	12/31/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **12/13/24 14:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	8.55	68.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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6855 W. 119th Ave.
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Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

FL01R-W@4'
2412314-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **12/13/24 14:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHL1210	12/26/24	01/01/25	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	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: **12/13/24 14:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0128	38.5 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0148	44.3 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **12/13/24 14:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BIB0298	02/06/25	02/08/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **12/13/24 14:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

FL01R-W@4'
2412314-07 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	3.34	0.200	mg/kg dry	1	BIA0374	01/09/25	01/18/25	EPA 6020B
Barium	54.1	0.400	"	"	"	"	"	"
Cadmium	0.472	0.200	"	"	"	"	"	"
Copper	7.44	0.400	"	"	"	"	"	"
Lead	11.4	0.200	"	"	"	"	"	"
Nickel	6.66	0.400	"	"	"	"	"	"
Silver	0.0504	0.0200	"	"	"	"	"	"
Zinc	27.0	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 12/13/24 14:29

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIA0442	01/10/25	01/16/25	EPA 7196A	

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

Date Sampled: 12/13/24 14:29

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	38.3	0.0500	mg/L dry	1	BIA0358	01/09/25	01/16/25	EPA 6020B	
Magnesium	14.0	0.0500	"	"	"	"	"	"	
Sodium	31.1	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 12/13/24 14:29

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.09	0.00100	units	1	BIA0816	01/17/25	01/17/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 12/13/24 14:29

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

FL01R-W@4'
2412314-07 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	81.6	%	1	BIA0366	01/09/25	01/10/25	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **12/13/24 14:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.359	0.0100	mmhos/cm	1	BIA0351	01/09/25	01/14/25	EPA 120.1	

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

Date Sampled: **12/13/24 14:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.46		pH Units	1	BIA0347	01/09/25	01/14/25	EPA 9045D	

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Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

FL01R-S@4'
2412314-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/13/24 15:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHL1212	12/26/24	12/31/24	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **12/13/24 15:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0365	91.3 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0398	99.6 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0385	96.2 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/13/24 15:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	340	50		mg/kg	1	BHL1214	12/26/24	12/31/24	EPA 8015M	
C28-C36 (ORO)	290	50		"	"	"	"	"	"	

Date Sampled: **12/13/24 15:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	8.72	69.8 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

FL01R-S@4'
2412314-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **12/13/24 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHL1210	12/26/24	01/01/25	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	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: **12/13/24 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0266	79.8 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0274	82.3 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **12/13/24 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BIB0298	02/06/25	02/08/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **12/13/24 15:05**

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

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

Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

FL01R-S@4'
2412314-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	2.18	0.200	mg/kg dry	1	BIA0374	01/09/25	01/18/25	EPA 6020B
Barium	44.2	0.400	"	"	"	"	"	"
Cadmium	0.409	0.200	"	"	"	"	"	"
Copper	12.7	0.400	"	"	"	"	"	"
Lead	5.18	0.200	"	"	"	"	"	"
Nickel	3.48	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	20.2	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 12/13/24 15:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIA0442	01/10/25	01/16/25	EPA 7196A	

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

Date Sampled: 12/13/24 15:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	39.4	0.0500	mg/L dry	1	BIA0358	01/09/25	01/16/25	EPA 6020B	
Magnesium	5.41	0.0500	"	"	"	"	"	"	
Sodium	8.00	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 12/13/24 15:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.317	0.00100	units	1	BIA0816	01/17/25	01/17/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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

Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

FL01R-S@4'
2412314-08 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/13/24 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.0		%	1	BIA0366	01/09/25	01/10/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **12/13/24 15:05**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.192	0.0100	mmhos/cm	1	BIA0351	01/09/25	01/14/25	EPA 120.1	

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

Date Sampled: **12/13/24 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.24		pH Units	1	BIA0347	01/09/25	01/14/25	EPA 9045D	

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Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

BKG01@4'
2412314-09 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **12/13/24 14:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	2.69	2.00	mg/L	1	BIB0298	02/06/25	02/08/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **12/13/24 14:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	4.30	0.200	mg/kg dry	1	BIA0374	01/09/25	01/18/25	EPA 6020B	
Barium	25.2	0.400	"	"	"	"	"	"	
Cadmium	1.54	0.200	"	"	"	"	"	"	
Copper	18.3	0.400	"	"	"	"	"	"	
Lead	22.8	0.200	"	"	"	"	"	"	
Nickel	9.78	0.400	"	"	"	"	"	"	
Silver	0.195	0.0200	"	"	"	"	"	"	
Zinc	8.61	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **12/13/24 14:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIA0442	01/10/25	01/16/25	EPA 7196A	

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

Date Sampled: **12/13/24 14:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	38.3	0.0500	mg/L dry	1	BIA0358	01/09/25	01/16/25	EPA 6020B	
Magnesium	41.3	0.0500	"	"	"	"	"	"	
Sodium	202	0.0500	"	"	"	"	"	"	

Calculated Analysis

Summit Scientific

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

Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

BKG01@4'
2412314-09 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **12/13/24 14:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	5.39	0.00100	units	1	BIA0816	01/17/25	01/17/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/13/24 14:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	77.3		%	1	BIA0366	01/09/25	01/10/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **12/13/24 14:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.10	0.0100	mmhos/cm	1	BIA0351	01/09/25	01/14/25	EPA 120.1	

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

Date Sampled: **12/13/24 14:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.56		pH Units	1	BIA0347	01/09/25	01/14/25	EPA 9045D	

Summit Scientific

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

Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

GW01@4'
2412314-10 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/13/24 11:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BHL0767	12/17/24	12/18/24	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **12/13/24 11:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	12.4	93.4 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	13.2	99.2 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	12.9	97.0 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **12/13/24 11:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	466	0.0600		mg/L	50	BIA0262	01/08/25	01/14/25	EPA 300.0	
Sulfate	4110	0.300		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **12/13/24 11:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	7730	10.0		mg/L	1	BHL0760	12/17/24	12/19/24	SM2540C	

Summit Scientific

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Broomfield CO, 80020

Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

FL01-13@4'
2412314-11 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/13/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHL1212	12/26/24	12/31/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **12/13/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0371	92.8 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0395	98.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0388	97.0 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/13/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHL1214	12/26/24	12/31/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **12/13/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	7.62	61.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

FL01-13@4'
2412314-11 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **12/13/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHL1210	12/26/24	01/01/25	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	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: **12/13/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0171	51.3 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0173	51.9 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **12/13/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BIB0298	02/06/25	02/08/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **12/13/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

FL01-13@4'
2412314-11 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.76	0.200	mg/kg dry	1	BIA0374	01/09/25	01/18/25	EPA 6020B	
Barium	60.9	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	5.63	0.400	"	"	"	"	"	"	
Lead	6.64	0.200	"	"	"	"	"	"	
Nickel	4.53	0.400	"	"	"	"	"	"	
Silver	0.0326	0.0200	"	"	"	"	"	"	
Zinc	20.8	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **12/13/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIA0442	01/10/25	01/16/25	EPA 7196A	

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

Date Sampled: **12/13/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	49.8	0.0500	mg/L dry	1	BIA0358	01/09/25	01/16/25	EPA 6020B	
Magnesium	13.9	0.0500	"	"	"	"	"	"	
Sodium	39.5	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **12/13/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.28	0.00100	units	1	BIA0816	01/17/25	01/17/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

FL01-13@4'
2412314-11 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/13/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.5		%	1	BIA0366	01/09/25	01/10/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **12/13/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.499	0.0100	mmhos/cm	1	BIA0351	01/09/25	01/14/25	EPA 120.1	

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

Date Sampled: **12/13/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.20		pH Units	1	BIA0347	01/09/25	01/14/25	EPA 9045D	

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6855 W. 119th Ave.
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Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BHL0767 - EPA 5030 Water MS

Blank (BHL0767-BLK1)

Prepared & Analyzed: 12/17/24

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Naphthalene	ND	1.0	"							
1,2,4-Trimethylbenzene	ND	1.0	"							
1,3,5-Trimethylbenzene	ND	1.0	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	12.4		"	13.3		92.6	23-173			
<i>Surrogate: Toluene-d8</i>	13.2		"	13.3		98.7	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	13.0		"	13.3		97.8	21-167			

LCS (BHL0767-BS1)

Prepared & Analyzed: 12/17/24

Benzene	31.4	1.0	ug/l	33.3		94.1	51-132			
Toluene	31.6	1.0	"	33.3		94.7	51-138			
Ethylbenzene	31.2	1.0	"	33.3		93.6	58-146			
m,p-Xylene	63.8	2.0	"	66.7		95.7	57-144			
o-Xylene	31.7	1.0	"	33.3		95.0	53-146			
Naphthalene	31.8	1.0	"	33.3		95.3	70-130			
1,2,4-Trimethylbenzene	32.2	1.0	"	33.3		96.7	70-130			
1,3,5-Trimethylbenzene	31.8	1.0	"	33.3		95.3	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	12.9		"	13.3		96.7	23-173			
<i>Surrogate: Toluene-d8</i>	13.2		"	13.3		99.3	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	13.2		"	13.3		99.0	21-167			

LCS Dup (BHL0767-BSD1)

Prepared & Analyzed: 12/17/24

Benzene	31.5	1.0	ug/l	33.3		94.4	51-132	0.350	20	
Toluene	31.6	1.0	"	33.3		94.9	51-138	0.222	20	
Ethylbenzene	32.1	1.0	"	33.3		96.2	58-146	2.72	20	
m,p-Xylene	65.0	2.0	"	66.7		97.5	57-144	1.89	20	
o-Xylene	31.6	1.0	"	33.3		94.7	53-146	0.285	20	
Naphthalene	32.4	1.0	"	33.3		97.1	70-130	1.93	20	
1,2,4-Trimethylbenzene	32.7	1.0	"	33.3		98.2	70-130	1.51	20	
1,3,5-Trimethylbenzene	32.2	1.0	"	33.3		96.7	70-130	1.44	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	12.5		"	13.3		93.5	23-173			
<i>Surrogate: Toluene-d8</i>	13.1		"	13.3		98.0	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	13.1		"	13.3		98.4	21-167			

Summit Scientific

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

Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

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 BHL1212 - EPA 5030 Soil MS

Blank (BHL1212-BLK1)

Prepared: 12/26/24 Analyzed: 12/31/24

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0353		"	0.0400		88.4	50-150			
<i>Surrogate: Toluene-d8</i>	0.0389		"	0.0400		97.3	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0386		"	0.0400		96.5	50-150			

LCS (BHL1212-BS1)

Prepared: 12/26/24 Analyzed: 12/31/24

Benzene	0.113	0.0020	mg/kg	0.100		113	70-130			
Toluene	0.111	0.0050	"	0.100		111	70-130			
Ethylbenzene	0.110	0.0050	"	0.100		110	70-130			
m,p-Xylene	0.222	0.010	"	0.200		111	70-130			
o-Xylene	0.111	0.0050	"	0.100		111	70-130			
1,2,4-Trimethylbenzene	0.103	0.0050	"	0.100		103	70-130			
1,3,5-Trimethylbenzene	0.103	0.0050	"	0.100		103	70-130			
Naphthalene	0.106	0.0038	"	0.100		106	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0359		"	0.0400		89.7	50-150			
<i>Surrogate: Toluene-d8</i>	0.0393		"	0.0400		98.2	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0388		"	0.0400		97.0	50-150			

Matrix Spike (BHL1212-MS1)

Source: 2412314-01

Prepared: 12/26/24 Analyzed: 12/31/24

Benzene	0.100	0.0020	mg/kg	0.100	ND	100	70-130			
Toluene	0.0977	0.0050	"	0.100	ND	97.7	70-130			
Ethylbenzene	0.0967	0.0050	"	0.100	ND	96.7	70-130			
m,p-Xylene	0.196	0.010	"	0.200	ND	98.1	70-130			
o-Xylene	0.0965	0.0050	"	0.100	ND	96.5	70-130			
1,2,4-Trimethylbenzene	0.0856	0.0050	"	0.100	ND	85.6	70-130			
1,3,5-Trimethylbenzene	0.0873	0.0050	"	0.100	ND	87.3	70-130			
Naphthalene	0.0829	0.0038	"	0.100	ND	82.9	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0366		"	0.0400		91.6	50-150			
<i>Surrogate: Toluene-d8</i>	0.0389		"	0.0400		97.2	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0389		"	0.0400		97.4	50-150			

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Broomfield CO, 80020

Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

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 BHL1212 - EPA 5030 Soil MS

Matrix Spike Dup (BHL1212-MSD1)	Source: 2412314-01			Prepared: 12/26/24 Analyzed: 12/31/24						
Benzene	0.0984	0.0020	mg/kg	0.100	ND	98.4	70-130	1.84	30	
Toluene	0.0961	0.0050	"	0.100	ND	96.1	70-130	1.70	30	
Ethylbenzene	0.0962	0.0050	"	0.100	ND	96.2	70-130	0.529	30	
m,p-Xylene	0.193	0.010	"	0.200	ND	96.7	70-130	1.43	30	
o-Xylene	0.0957	0.0050	"	0.100	ND	95.7	70-130	0.843	30	
1,2,4-Trimethylbenzene	0.0876	0.0050	"	0.100	ND	87.6	70-130	2.29	30	
1,3,5-Trimethylbenzene	0.0875	0.0050	"	0.100	ND	87.5	70-130	0.309	30	
Naphthalene	0.0786	0.0038	"	0.100	ND	78.6	70-130	5.35	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0361</i>		<i>"</i>	<i>0.0400</i>		<i>90.2</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0392</i>		<i>"</i>	<i>0.0400</i>		<i>98.1</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0387</i>		<i>"</i>	<i>0.0400</i>		<i>96.8</i>	<i>50-150</i>			

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BHL1214 - EPA 3550A

Blank (BHL1214-BLK1)

Prepared: 12/26/24 Analyzed: 12/30/24

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: <i>o</i> -Terphenyl	8.52		"	12.5		68.1	30-150			

LCS (BHL1214-BS1)

Prepared: 12/26/24 Analyzed: 12/30/24

C10-C28 (DRO)	416	50	mg/kg	500		83.2	70-130			
Surrogate: <i>o</i> -Terphenyl	7.22		"	12.5		57.7	30-150			

Matrix Spike (BHL1214-MS1)

Source: 2412314-01

Prepared: 12/26/24 Analyzed: 12/30/24

C10-C28 (DRO)	367	50	mg/kg	500	8.25	71.7	70-130			QM-05
Surrogate: <i>o</i> -Terphenyl	8.05		"	12.5		64.4	30-150			

Matrix Spike Dup (BHL1214-MSD1)

Source: 2412314-01

Prepared: 12/26/24 Analyzed: 12/30/24

C10-C28 (DRO)	410	50	mg/kg	500	8.25	80.4	70-130	11.2	20	
Surrogate: <i>o</i> -Terphenyl	8.32		"	12.5		66.5	30-150			

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Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

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 BHL1210 - EPA 5030 Soil MS

Blank (BHL1210-BLK1)

Prepared: 12/26/24 Analyzed: 12/30/24

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	0.0226		"	0.0333		67.8	40-140			
<i>Surrogate: Fluoranthene-d10</i>	0.0247		"	0.0333		74.2	40-140			

LCS (BHL1210-BS1)

Prepared: 12/26/24 Analyzed: 12/30/24

Acenaphthene	0.0297	0.00500	mg/kg	0.0333		89.0	40-140			
Anthracene	0.0298	0.00500	"	0.0333		89.3	40-140			
Benzo (a) anthracene	0.0332	0.00500	"	0.0333		99.7	40-140			
Benzo (a) pyrene	0.0293	0.00500	"	0.0333		88.0	40-140			
Benzo (b) fluoranthene	0.0279	0.00500	"	0.0333		83.8	40-140			
Benzo (k) fluoranthene	0.0223	0.00500	"	0.0333		66.9	40-140			
Chrysene	0.0228	0.00500	"	0.0333		68.5	40-140			
Dibenz (a,h) anthracene	0.0405	0.00500	"	0.0333		122	40-140			
Fluoranthene	0.0306	0.00500	"	0.0333		91.9	40-140			
Fluorene	0.0267	0.00500	"	0.0333		80.1	40-140			
Indeno (1,2,3-cd) pyrene	0.0394	0.00500	"	0.0333		118	40-140			
Pyrene	0.0192	0.00500	"	0.0333		57.6	40-140			
1-Methylnaphthalene	0.0222	0.00500	"	0.0333		66.7	40-140			
2-Methylnaphthalene	0.0235	0.00500	"	0.0333		70.4	40-140			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	0.0198		"	0.0333		59.3	40-140			
<i>Surrogate: Fluoranthene-d10</i>	0.0219		"	0.0333		65.7	40-140			

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Broomfield CO, 80020

Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

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 BHL1210 - EPA 5030 Soil MS

Matrix Spike (BHL1210-MS1)

Source: 2412314-01

Prepared: 12/26/24 Analyzed: 12/30/24

Acenaphthene	0.0190	0.00500	mg/kg	0.0333	ND	56.9	40-140			
Anthracene	0.0196	0.00500	"	0.0333	ND	58.7	40-140			
Benzo (a) anthracene	0.0200	0.00500	"	0.0333	ND	60.1	40-140			
Benzo (a) pyrene	0.0184	0.00500	"	0.0333	ND	55.1	40-140			
Benzo (b) fluoranthene	0.0167	0.00500	"	0.0333	ND	50.1	40-140			
Benzo (k) fluoranthene	0.0141	0.00500	"	0.0333	ND	42.3	40-140			
Chrysene	0.0152	0.00500	"	0.0333	ND	45.8	40-140			
Dibenz (a,h) anthracene	0.0243	0.00500	"	0.0333	ND	72.8	40-140			
Fluoranthene	0.0192	0.00500	"	0.0333	ND	57.6	40-140			
Fluorene	0.0174	0.00500	"	0.0333	ND	52.2	40-140			
Indeno (1,2,3-cd) pyrene	0.0235	0.00500	"	0.0333	ND	70.6	40-140			
Pyrene	0.0191	0.00500	"	0.0333	ND	57.3	40-140			
1-Methylnaphthalene	0.0147	0.00500	"	0.0333	ND	44.2	40-140			
2-Methylnaphthalene	0.0164	0.00500	"	0.0333	ND	49.3	40-140			
Surrogate: 2-Methylnaphthalene-d10	0.0134		"	0.0333		40.3	40-140			
Surrogate: Fluoranthene-d10	0.0147		"	0.0333		44.1	40-140			

Matrix Spike Dup (BHL1210-MSD1)

Source: 2412314-01

Prepared: 12/26/24 Analyzed: 12/30/24

Acenaphthene	0.0190	0.00500	mg/kg	0.0333	ND	56.9	40-140	0.0316	30
Anthracene	0.0189	0.00500	"	0.0333	ND	56.6	40-140	3.62	30
Benzo (a) anthracene	0.0195	0.00500	"	0.0333	ND	58.6	40-140	2.45	30
Benzo (a) pyrene	0.0177	0.00500	"	0.0333	ND	53.2	40-140	3.48	30
Benzo (b) fluoranthene	0.0161	0.00500	"	0.0333	ND	48.4	40-140	3.45	30
Benzo (k) fluoranthene	0.0136	0.00500	"	0.0333	ND	40.7	40-140	3.80	30
Chrysene	0.0147	0.00500	"	0.0333	ND	44.2	40-140	3.42	30
Dibenz (a,h) anthracene	0.0243	0.00500	"	0.0333	ND	73.0	40-140	0.254	30
Fluoranthene	0.0188	0.00500	"	0.0333	ND	56.3	40-140	2.20	30
Fluorene	0.0185	0.00500	"	0.0333	ND	55.6	40-140	6.23	30
Indeno (1,2,3-cd) pyrene	0.0232	0.00500	"	0.0333	ND	69.6	40-140	1.37	30
Pyrene	0.0186	0.00500	"	0.0333	ND	55.8	40-140	2.62	30
1-Methylnaphthalene	0.0148	0.00500	"	0.0333	ND	44.4	40-140	0.264	30
2-Methylnaphthalene	0.0153	0.00500	"	0.0333	ND	45.9	40-140	7.25	30
Surrogate: 2-Methylnaphthalene-d10	0.0156		"	0.0333		46.8	40-140		
Surrogate: Fluoranthene-d10	0.0145		"	0.0333		43.5	40-140		

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

Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

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 BIB0298 - EPA 3050B

Blank (BIB0298-BLK1)

Prepared: 02/06/25 Analyzed: 02/08/25

Boron ND 2.00 mg/L

LCS (BIB0298-BS1)

Prepared: 02/06/25 Analyzed: 02/08/25

Boron 4.92 2.00 mg/L 5.00 98.5 80-120

Duplicate (BIB0298-DUP1)

Source: 2412314-01

Prepared: 02/06/25 Analyzed: 02/08/25

Boron 1.14 2.00 mg/L 1.11 2.95 20

Matrix Spike (BIB0298-MS1)

Source: 2412314-01

Prepared: 02/06/25 Analyzed: 02/08/25

Boron 6.62 2.00 mg/L 5.00 1.11 110 75-125

Matrix Spike Dup (BIB0298-MSD1)

Source: 2412314-01

Prepared: 02/06/25 Analyzed: 02/08/25

Boron 6.69 2.00 mg/L 5.00 1.11 112 75-125 0.956 25

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BIA0374 - EPA 3050B

Blank (BIA0374-BLK1)

Prepared: 01/09/25 Analyzed: 01/18/25

Arsenic	ND	0.200	mg/kg wet							
Barium	ND	0.400	"							
Cadmium	ND	0.200	"							
Copper	ND	0.400	"							
Lead	ND	0.200	"							
Nickel	ND	0.400	"							
Silver	ND	0.0200	"							
Zinc	ND	0.400	"							
Selenium	ND	0.260	"							

LCS (BIA0374-BS1)

Prepared: 01/09/25 Analyzed: 01/18/25

Arsenic	38.2	0.200	mg/kg wet	41.3	92.5	80-120
Barium	41.1	0.400	"	41.3	99.4	80-120
Cadmium	1.96	0.200	"	2.07	94.9	80-120
Copper	40.4	0.400	"	41.3	97.9	80-120
Lead	19.7	0.200	"	20.7	95.1	80-120
Nickel	40.6	0.400	"	41.3	98.3	80-120
Silver	2.00	0.0200	"	2.07	96.7	80-120
Zinc	40.3	0.400	"	41.3	97.6	80-120
Selenium	4.05	0.260	"	4.13	98.0	80-120

Duplicate (BIA0374-DUP1)

Source: 2412308-01

Prepared: 01/09/25 Analyzed: 01/18/25

Arsenic	1.76	0.200	mg/kg dry	2.18	21.2	20	QR-01
Barium	49.3	0.400	"	60.4	20.2	20	QR-04
Cadmium	0.111	0.200	"	0.200	57.2	20	QR-01
Copper	2.81	0.400	"	3.57	23.8	20	QR-01
Lead	4.00	0.200	"	5.81	36.9	20	QR-04
Nickel	2.68	0.400	"	3.59	29.1	20	QR-01
Silver	0.0144	0.0200	"	0.0446	102	20	QR-01
Zinc	12.3	0.400	"	15.7	24.4	20	QR-04
Selenium	ND	0.260	"	ND		20	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BIA0374 - EPA 3050B

Matrix Spike (BIA0374-MS1)

Source: 2412308-01

Prepared: 01/09/25 Analyzed: 01/18/25

Arsenic	39.4	0.200	mg/kg dry	43.0	2.18	86.6	75-125				
Barium	94.2	0.400	"	43.0	60.4	78.6	75-125				
Cadmium	2.13	0.200	"	2.15	0.200	89.8	75-125				
Copper	34.7	0.400	"	43.0	3.57	72.3	75-125				QM-05
Lead	23.9	0.200	"	21.5	5.81	84.1	75-125				
Nickel	34.6	0.400	"	43.0	3.59	72.2	75-125				QM-05
Silver	1.98	0.0200	"	2.15	0.0446	90.0	75-125				
Zinc	46.3	0.400	"	43.0	15.7	71.1	75-125				QM-05
Selenium	3.62	0.260	"	4.30	ND	84.1	75-125				

Matrix Spike Dup (BIA0374-MSD1)

Source: 2412308-01

Prepared: 01/09/25 Analyzed: 01/18/25

Arsenic	41.1	0.200	mg/kg dry	43.7	2.18	89.0	75-125	4.10	25		
Barium	98.2	0.400	"	43.7	60.4	86.5	75-125	4.16	25		
Cadmium	2.26	0.200	"	2.19	0.200	94.0	75-125	5.67	25		
Copper	35.9	0.400	"	43.7	3.57	73.9	75-125	3.33	25		QM-05
Lead	25.1	0.200	"	21.9	5.81	88.0	75-125	4.66	25		
Nickel	35.8	0.400	"	43.7	3.59	73.6	75-125	3.28	25		QM-05
Silver	2.11	0.0200	"	2.19	0.0446	94.2	75-125	6.04	25		
Zinc	48.1	0.400	"	43.7	15.7	74.2	75-125	3.92	25		QM-05
Selenium	3.69	0.260	"	4.37	ND	84.4	75-125	1.92	25		

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BIA0442 - 3060A Mod

Blank (BIA0442-BLK1)

Prepared: 01/10/25 Analyzed: 01/16/25

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BIA0442-BS1)

Prepared: 01/10/25 Analyzed: 01/16/25

Chromium, Hexavalent 26.4 0.30 mg/kg wet 25.8 103 80-120

Duplicate (BIA0442-DUP1)

Source: 2412314-01

Prepared: 01/10/25 Analyzed: 01/16/25

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BIA0442-MS1)

Source: 2412314-01

Prepared: 01/10/25 Analyzed: 01/16/25

Chromium, Hexavalent 31.7 0.30 mg/kg dry 29.8 ND 106 75-125

Matrix Spike Dup (BIA0442-MSD1)

Source: 2412314-01

Prepared: 01/10/25 Analyzed: 01/16/25

Chromium, Hexavalent 31.6 0.30 mg/kg dry 30.1 ND 105 75-125 0.332 20

Summit Scientific

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

Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

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 BIA0358 - General Preparation

Blank (BIA0358-BLK1)

Prepared: 01/09/25 Analyzed: 01/16/25

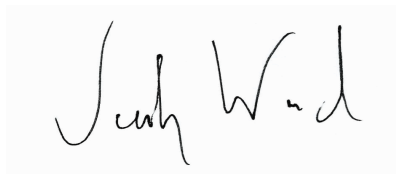
Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							

LCS (BIA0358-BS1)

Prepared: 01/09/25 Analyzed: 01/16/25

Calcium	5.84	0.0500	mg/L wet	5.00		117	70-130			
Magnesium	5.26	0.0500	"	5.00		105	70-130			
Sodium	5.54	0.0500	"	5.00		111	70-130			

Summit Scientific



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

Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

Anions by EPA Method 300.0 - Quality Control
Summit Scientific

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

Batch BIA0262 - General Preparation

Blank (BIA0262-BLK1)

Prepared: 01/08/25 Analyzed: 01/14/25

Chloride	ND	0.0600	mg/L						
Sulfate	ND	0.300	"						

LCS (BIA0262-BS1)

Prepared: 01/08/25 Analyzed: 01/14/25

Chloride	2.97	0.0600	mg/L	3.00	99.0	90-110		
Sulfate	15.0	0.300	"	15.0	99.7	90-110		

Duplicate (BIA0262-DUP1)

Source: 2412297-01

Prepared: 01/08/25 Analyzed: 01/14/25

Chloride	851	0.0600	mg/L		803		5.78	20
Sulfate	1930	0.300	"		1820		5.67	20

Matrix Spike (BIA0262-MS1)

Source: 2412297-01

Prepared: 01/08/25 Analyzed: 01/16/25

Chloride	990	0.0600	mg/L	150	803	124	80-120		QM-05
Sulfate	2780	0.300	"	750	1820	127	80-120		QM-05

Summit Scientific

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

Project: PDC - Pettinger 43-2 FL

Project Number: [none]
 Project Manager: Andy Sagen

Reported:
 02/10/25 13:35

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 BIA0366 - General Preparation

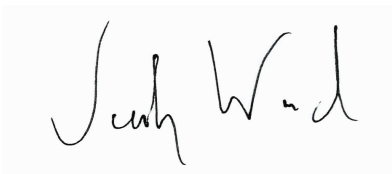
Duplicate (BIA0366-DUP1)

Source: 2412309-01

Prepared: 01/09/25 Analyzed: 01/10/25

% Solids	94.0		%		93.7			0.289		20	
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Summit Scientific



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

Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

Total Dissolved Solids by SM2540C - Quality Control
Summit Scientific

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

Batch BHL0760 - General Preparation

Blank (BHL0760-BLK1)

Prepared: 12/17/24 Analyzed: 12/19/24

Total Dissolved Solids ND 10.0 mg/L

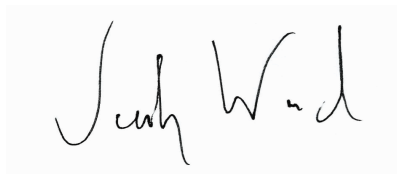
Duplicate (BHL0760-DUP1)

Source: 2412297-12

Prepared: 12/17/24 Analyzed: 12/19/24

Total Dissolved Solids 5760 10.0 mg/L 5870 1.89 20

Summit Scientific



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

Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

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

Summit Scientific

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

Batch BIA0351 - General Preparation

Blank (BIA0351-BLK1)

Prepared: 01/09/25 Analyzed: 01/14/25

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BIA0351-BS1)

Prepared: 01/09/25 Analyzed: 01/14/25

Specific Conductance (EC) 1.38 0.0100 mmhos/cm 1.41 97.4 95-105

Duplicate (BIA0351-DUP1)

Source: 2412313-01

Prepared: 01/09/25 Analyzed: 01/14/25

Specific Conductance (EC) 0.860 0.0100 mmhos/cm 0.864 0.438 20

Summit Scientific

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

Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

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

Summit Scientific

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

Batch BIA0347 - General Preparation

LCS (BIA0347-BS1)

Prepared: 01/09/25 Analyzed: 01/14/25

pH	9.03	pH Units	9.18	98.4	95-105
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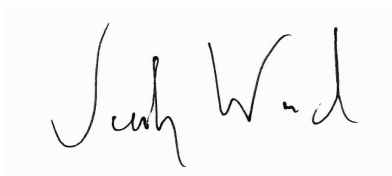
Duplicate (BIA0347-DUP1)

Source: 2412313-01

Prepared: 01/09/25 Analyzed: 01/14/25

pH	8.05	pH Units	8.04	0.0435	20
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Summit Scientific



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

Project: PDC - Pettinger 43-2 FL

Project Number: [none]
Project Manager: Andy Sagen

Reported:
02/10/25 13:35

Notes and Definitions

- QR-04 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits. Sample results were accepted based on LCS and/or LCSD recoveries and/or RPD values.
- QR-01 Analyses are not controlled on RPD values from sample concentrations below the reporting limit. Sample results were accepted based on LCS and/or LCSD recoveries and/or RPD values.
- QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. Sample results were accepted based on LCS and/or LCSD recoveries and/or RPD values.
- 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