

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 17, 2025

Andy Sagen

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: PDC - Moody 1-30 Tank Battery

Work Order #2501193

Enclosed are the results of analyses for samples received by Summit Scientific on 01/14/25 18:16. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Natalie Tessier". The signature is written in a cursive, flowing style.

Natalie Tessier For Paul Shrewsbury
President



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

Project: PDC - Moody 1-30 Tank Battery

Project Number: UWRWE-A4387-ABN

Project Manager: Andy Sagen

Reported:
03/17/25 10:39

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AST01@0-6"	2501193-01	Soil	01/14/25 11:39	01/14/25 18:16
PWV01-B@6'	2501193-02	Soil	01/14/25 11:23	01/14/25 18:16
PWV01-E@2.5'	2501193-04	Soil	01/14/25 12:02	01/14/25 18:16
BKG01@0-6"	2501193-07	Soil	01/14/25 13:15	01/14/25 18:16
BKG01@2'	2501193-08	Soil	01/14/25 13:17	01/14/25 18:16
BKG01@2.5'	2501193-09	Soil	01/14/25 13:18	01/14/25 18:16
BKG01@6'	2501193-10	Soil	01/14/25 13:24	01/14/25 18:16

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S2

Sample Receipt Checklist

S2 Work Order# 2501193

Client: Portasman Client Project ID: Maddy 1-30 Tank Battery

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

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

Temp (°C) 5.4

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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	NO time @ lockbox
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 type="checkbox"/>	<input type="checkbox"/>	
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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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):				

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

AS
Custodian Printed Name

1/14/25
Date/Time



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

Project: PDC - Moody 1-30 Tank Battery
Project Number: UWRWE-A4387-ABN
Project Manager: Andy Sagen

Reported:
03/17/25 10:39

AST01@0-6"
2501193-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/14/25 11:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BIA0954	01/21/25	01/26/25	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/14/25 11:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0398	99.5 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0402	101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0366	91.6 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/14/25 11:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BIA0960	01/21/25	01/22/25	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/14/25 11:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	11.4	91.0 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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03/17/25 10:39

AST01@0-6"
2501193-01 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **01/14/25 11:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BIA1060	01/23/25	01/29/25	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: **01/14/25 11:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0247	74.1 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0237	71.2 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/14/25 11:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BIB1205	02/21/25	02/25/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/14/25 11:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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AST01@0-6"
2501193-01 (Soil)

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Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.19	0.200	mg/kg dry	1	BIB1694	02/28/25	03/14/25	EPA 6020B	
Barium	29.9	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.33	0.400	"	"	"	"	"	"	
Lead	1.82	0.200	"	"	"	"	"	"	
Nickel	2.67	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	7.39	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/14/25 11:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIB0006	02/02/25	02/02/25	EPA 7196A	

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

Date Sampled: **01/14/25 11:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	60.9	0.0500	mg/L dry	1	BIB0356	02/07/25	02/15/25	EPA 6020B	
Magnesium	36.4	0.0500	"	"	"	"	"	"	
Sodium	35.4	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/14/25 11:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.887	0.00100	units	1	BIB0884	02/17/25	02/17/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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2501193-01 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/14/25 11:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	97.3		%	1	BIB0008	02/03/25	02/03/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/14/25 11:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.237	0.0100	mmhos/cm	1	BIB0358	02/07/25	02/10/25	EPA 120.1	

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

Date Sampled: **01/14/25 11:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	9.61		pH Units	1	BIB0357	02/07/25	02/10/25	EPA 9045D	

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PWV01-B@6'
2501193-02 (Soil)

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Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/14/25 11:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BIA0954	01/21/25	01/26/25	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/14/25 11:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0439	110 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0403	101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0378	94.5 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/14/25 11:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BIA0960	01/21/25	01/22/25	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/14/25 11:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	10.2	81.4 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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PWV01-B@6'
2501193-02 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **01/14/25 11:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BIA1060	01/23/25	01/29/25	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: **01/14/25 11:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0145	43.4 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0159	47.6 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/14/25 11:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BIB1205	02/21/25	02/25/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/14/25 11:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project Manager: Andy Sagen

Reported:
03/17/25 10:39

PWV01-B@6'
2501193-02 (Soil)

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Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.13	0.200	mg/kg dry	1	BIB1694	02/28/25	03/14/25	EPA 6020B	
Barium	77.4	0.400	"	"	"	"	"	"	
Cadmium	0.262	0.200	"	"	"	"	"	"	
Copper	4.55	0.400	"	"	"	"	"	"	
Lead	6.27	0.200	"	"	"	"	"	"	
Nickel	4.68	0.400	"	"	"	"	"	"	
Silver	0.0287	0.0200	"	"	"	"	"	"	
Zinc	18.9	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/14/25 11:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIB0006	02/02/25	02/02/25	EPA 7196A	

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

Date Sampled: **01/14/25 11:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	26.5	0.0500	mg/L dry	1	BIB0356	02/07/25	02/15/25	EPA 6020B	
Magnesium	5.45	0.0500	"	"	"	"	"	"	
Sodium	9.70	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/14/25 11:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.448	0.00100	units	1	BIB0884	02/17/25	02/17/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/14/25 11:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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03/17/25 10:39

PWV01-B@6'
2501193-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	88.4	%	1	BIB0008	02/03/25	02/03/25	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/14/25 11:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.245	0.0100	mmhos/cm	1	BIB0358	02/07/25	02/10/25	EPA 120.1	

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

Date Sampled: **01/14/25 11:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.51		pH Units	1	BIB0357	02/07/25	02/10/25	EPA 9045D	

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Project: PDC - Moody 1-30 Tank Battery

Project Number: UWRWE-A4387-ABN
Project Manager: Andy Sagen

Reported:
03/17/25 10:39

PWV01-E@2.5'
2501193-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/14/25 12:02**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BIA0954	01/21/25	01/26/25	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/14/25 12:02**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0459	115 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0400	99.9 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0368	91.9 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/14/25 12:02**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BIA0960	01/21/25	01/22/25	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/14/25 12:02**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	9.88	79.0 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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

Project: PDC - Moody 1-30 Tank Battery

Project Number: UWRWE-A4387-ABN
Project Manager: Andy Sagen

Reported:
03/17/25 10:39

PWV01-E@2.5'
2501193-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/14/25 12:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BIA1060	01/23/25	01/29/25	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: **01/14/25 12:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0250	74.9 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0250	74.9 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/14/25 12:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BIB1205	02/21/25	02/25/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/14/25 12:02**

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 - Moody 1-30 Tank Battery

Project Number: UWRWE-A4387-ABN
Project Manager: Andy Sagen

Reported:
03/17/25 10:39

PWV01-E@2.5'
2501193-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	5.51	0.200	mg/kg dry	1	BIB1694	02/28/25	03/14/25	EPA 6020B	
Barium	77.7	0.400	"	"	"	"	"	"	
Cadmium	0.358	0.200	"	"	"	"	"	"	
Copper	6.83	0.400	"	"	"	"	"	"	
Lead	8.97	0.200	"	"	"	"	"	"	
Nickel	5.55	0.400	"	"	"	"	"	"	
Silver	0.0401	0.0200	"	"	"	"	"	"	
Zinc	22.6	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/14/25 12:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIB0006	02/02/25	02/02/25	EPA 7196A	

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

Date Sampled: **01/14/25 12:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	82.9	0.0500	mg/L dry	1	BIB0356	02/07/25	02/15/25	EPA 6020B	
Magnesium	21.6	0.0500	"	"	"	"	"	"	
Sodium	3.80	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/14/25 12:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0961	0.00100	units	1	BIB0884	02/17/25	02/17/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/14/25 12:02**

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

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Project: PDC - Moody 1-30 Tank Battery

Project Number: UWRWE-A4387-ABN
Project Manager: Andy Sagen

Reported:
03/17/25 10:39

PWV01-E@2.5'
2501193-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	86.1	%	1	BIB0008	02/03/25	02/03/25	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/14/25 12:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.152	0.0100	mmhos/cm	1	BIB0358	02/07/25	02/10/25	EPA 120.1	

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

Date Sampled: **01/14/25 12:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.46		pH Units	1	BIB0357	02/07/25	02/10/25	EPA 9045D	

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

Project: PDC - Moody 1-30 Tank Battery

Project Number: UWRWE-A4387-ABN
Project Manager: Andy Sagen

Reported:
03/17/25 10:39

BKG01@0-6"
2501193-07 (Soil)

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Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/14/25 13:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BIB1205	02/21/25	02/25/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/14/25 13:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	3.46	0.200	mg/kg dry	1	BIB1694	02/28/25	03/14/25	EPA 6020B	
Barium	62.3	0.400	"	"	"	"	"	"	
Cadmium	0.379	0.200	"	"	"	"	"	"	
Copper	6.84	0.400	"	"	"	"	"	"	
Lead	8.74	0.200	"	"	"	"	"	"	
Nickel	5.49	0.400	"	"	"	"	"	"	
Silver	0.0434	0.0200	"	"	"	"	"	"	
Zinc	28.1	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/14/25 13:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIB0006	02/02/25	02/02/25	EPA 7196A	

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

Date Sampled: **01/14/25 13:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	137	0.0500	mg/L dry	1	BIB0356	02/07/25	02/15/25	EPA 6020B	
Magnesium	56.2	0.0500	"	"	"	"	"	"	
Sodium	4.50	0.0500	"	"	"	"	"	"	

Summit Scientific

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

Project: PDC - Moody 1-30 Tank Battery
Project Number: UWRWE-A4387-ABN
Project Manager: Andy Sagen

Reported:
03/17/25 10:39

BKG01@0-6''
2501193-07 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **01/14/25 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0818	0.00100	units	1	BIB0884	02/17/25	02/17/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/14/25 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.2		%	1	BIB0008	02/03/25	02/03/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/14/25 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.107	0.0100	mmhos/cm	1	BIB0358	02/07/25	02/10/25	EPA 120.1	

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

Date Sampled: **01/14/25 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.62		pH Units	1	BIB0357	02/07/25	02/10/25	EPA 9045D	

Summit Scientific

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

Project: PDC - Moody 1-30 Tank Battery

Project Number: UWRWE-A4387-ABN
Project Manager: Andy Sagen

Reported:
03/17/25 10:39

BKG01@2'
2501193-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/14/25 13:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Boron	ND	2.00		mg/L	1	BIB1205	02/21/25	02/25/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/14/25 13:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Arsenic	3.92	0.200		mg/kg dry	1	BIB1694	02/28/25	03/14/25	EPA 6020B	
Barium	67.7	0.400		"	"	"	"	"	"	
Cadmium	0.331	0.200		"	"	"	"	"	"	
Copper	5.96	0.400		"	"	"	"	"	"	
Lead	7.90	0.200		"	"	"	"	"	"	
Nickel	5.06	0.400		"	"	"	"	"	"	
Silver	0.0338	0.0200		"	"	"	"	"	"	
Zinc	20.0	0.400		"	"	"	"	"	"	
Selenium	0.261	0.260		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/14/25 13:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BIB0006	02/02/25	02/02/25	EPA 7196A	

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

Date Sampled: **01/14/25 13:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	120	0.0500		mg/L dry	1	BIB0356	02/07/25	02/15/25	EPA 6020B	
Magnesium	44.5	0.0500		"	"	"	"	"	"	
Sodium	4.72	0.0500		"	"	"	"	"	"	

Calculated Analysis

Summit Scientific

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

Project: PDC - Moody 1-30 Tank Battery
Project Number: UWRWE-A4387-ABN
Project Manager: Andy Sagen

Reported:
03/17/25 10:39

BKG01@2'
2501193-08 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **01/14/25 13:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0935	0.00100	units	1	BIB0884	02/17/25	02/17/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/14/25 13:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.2		%	1	BIB0008	02/03/25	02/03/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/14/25 13:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0561	0.0100	mmhos/cm	1	BIB0358	02/07/25	02/10/25	EPA 120.1	

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

Date Sampled: **01/14/25 13:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.53		pH Units	1	BIB0357	02/07/25	02/10/25	EPA 9045D	

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Broomfield CO, 80020

Project: PDC - Moody 1-30 Tank Battery
Project Number: UWRWE-A4387-ABN
Project Manager: Andy Sagen

Reported:
03/17/25 10:39

BKG01@2.5'
2501193-09 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/14/25 13:18**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BIB1205	02/21/25	02/25/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/14/25 13:18**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	3.84	0.200	mg/kg dry	1	BIB1694	02/28/25	03/14/25	EPA 6020B	
Barium	52.0	0.400	"	"	"	"	"	"	
Cadmium	0.342	0.200	"	"	"	"	"	"	
Copper	5.53	0.400	"	"	"	"	"	"	
Lead	7.34	0.200	"	"	"	"	"	"	
Nickel	4.69	0.400	"	"	"	"	"	"	
Silver	0.0237	0.0200	"	"	"	"	"	"	
Zinc	17.9	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/14/25 13:18**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIB0006	02/02/25	02/02/25	EPA 7196A	

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

Date Sampled: **01/14/25 13:18**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	152	0.0500	mg/L dry	1	BIB0356	02/07/25	02/15/25	EPA 6020B	
Magnesium	57.5	0.0500	"	"	"	"	"	"	
Sodium	6.84	0.0500	"	"	"	"	"	"	

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Project: PDC - Moody 1-30 Tank Battery
Project Number: UWRWE-A4387-ABN
Project Manager: Andy Sagen

Reported:
03/17/25 10:39

BKG01@2.5'
2501193-09 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **01/14/25 13:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.120	0.00100	units	1	BIB0884	02/17/25	02/17/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/14/25 13:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.8		%	1	BIB0008	02/03/25	02/03/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/14/25 13:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0840	0.0100	mmhos/cm	1	BIB0358	02/07/25	02/10/25	EPA 120.1	

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

Date Sampled: **01/14/25 13:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.35		pH Units	1	BIB0357	02/07/25	02/10/25	EPA 9045D	

Summit Scientific

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

Project: PDC - Moody 1-30 Tank Battery

Project Number: UWRWE-A4387-ABN
Project Manager: Andy Sagen

Reported:
03/17/25 10:39

BKG01@6'
2501193-10 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/14/25 13:24**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BIB1205	02/21/25	02/25/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/14/25 13:24**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	4.37	0.200	mg/kg dry	1	BIB1694	02/28/25	03/14/25	EPA 6020B	
Barium	194	0.400	"	"	"	"	"	"	
Cadmium	0.376	0.200	"	"	"	"	"	"	
Copper	5.62	0.400	"	"	"	"	"	"	
Lead	8.34	0.200	"	"	"	"	"	"	
Nickel	6.55	0.400	"	"	"	"	"	"	
Silver	0.0584	0.0200	"	"	"	"	"	"	
Zinc	22.0	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/14/25 13:24**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIB0006	02/02/25	02/02/25	EPA 7196A	

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

Date Sampled: **01/14/25 13:24**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	127	0.0500	mg/L dry	1	BIB0356	02/07/25	02/15/25	EPA 6020B	
Magnesium	6.52	0.0500	"	"	"	"	"	"	
Sodium	11.3	0.0500	"	"	"	"	"	"	

Summit Scientific

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Broomfield CO, 80020

Project: PDC - Moody 1-30 Tank Battery
Project Number: UWRWE-A4387-ABN
Project Manager: Andy Sagen

Reported:
03/17/25 10:39

BKG01@6'
2501193-10 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **01/14/25 13:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.265	0.00100	units	1	BIB0884	02/17/25	02/17/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/14/25 13:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.2		%	1	BIB0008	02/03/25	02/03/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/14/25 13:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.161	0.0100	mmhos/cm	1	BIB0358	02/07/25	02/10/25	EPA 120.1	

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

Date Sampled: **01/14/25 13:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.87		pH Units	1	BIB0357	02/07/25	02/10/25	EPA 9045D	

Summit Scientific

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

Project: PDC - Moody 1-30 Tank Battery

Project Number: UWRWE-A4387-ABN
Project Manager: Andy Sagen

Reported:
03/17/25 10:39

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 BIA0954 - EPA 5030 Soil MS

Blank (BIA0954-BLK1)

Prepared: 01/21/25 Analyzed: 01/26/25

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	0.0394		"	0.0400		98.6	50-150			
Surrogate: Toluene-d8	0.0404		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0376		"	0.0400		94.0	50-150			

LCS (BIA0954-BS1)

Prepared: 01/21/25 Analyzed: 01/26/25

Benzene	0.0940	0.0020	mg/kg	0.100		94.0	70-130			
Toluene	0.0923	0.0050	"	0.100		92.3	70-130			
Ethylbenzene	0.0947	0.0050	"	0.100		94.7	70-130			
m,p-Xylene	0.187	0.010	"	0.200		93.6	70-130			
o-Xylene	0.0918	0.0050	"	0.100		91.8	70-130			
1,2,4-Trimethylbenzene	0.0872	0.0050	"	0.100		87.2	70-130			
1,3,5-Trimethylbenzene	0.0866	0.0050	"	0.100		86.6	70-130			
Naphthalene	0.0846	0.0038	"	0.100		84.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0391		"	0.0400		97.6	50-150			
Surrogate: Toluene-d8	0.0404		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0388		"	0.0400		97.0	50-150			

Matrix Spike (BIA0954-MS1)

Source: 2501186-01

Prepared: 01/21/25 Analyzed: 01/26/25

QM-01

Benzene	0.0112	0.0020	mg/kg	0.100	ND	11.2	70-130			
Toluene	0.0211	0.0050	"	0.100	ND	21.1	70-130			
Ethylbenzene	0.0858	0.0050	"	0.100	ND	85.8	70-130			
m,p-Xylene	0.167	0.010	"	0.200	ND	83.4	70-130			
o-Xylene	0.0784	0.0050	"	0.100	ND	78.4	70-130			
1,2,4-Trimethylbenzene	0.0756	0.0050	"	0.100	ND	75.6	70-130			
1,3,5-Trimethylbenzene	0.0787	0.0050	"	0.100	ND	78.7	70-130			
Naphthalene	0.0138	0.0038	"	0.100	ND	13.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0441		"	0.0400		110	50-150			
Surrogate: Toluene-d8	0.0393		"	0.0400		98.2	50-150			
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400		99.9	50-150			

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

Project: PDC - Moody 1-30 Tank Battery

Project Number: UWRWE-A4387-ABN
Project Manager: Andy Sagen

Reported:
03/17/25 10:39

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 BIA0954 - EPA 5030 Soil MS

Matrix Spike Dup (BIA0954-MSD1)	Source: 2501186-01			Prepared: 01/21/25 Analyzed: 01/26/25		QM-01			
Benzene	ND	0.0020	mg/kg	0.100	ND	70-130	200	30	
Toluene	0.00588	0.0050	"	0.100	ND	5.88	70-130	113	30
Ethylbenzene	0.0728	0.0050	"	0.100	ND	72.8	70-130	16.5	30
m,p-Xylene	0.141	0.010	"	0.200	ND	70.7	70-130	16.5	30
o-Xylene	0.0583	0.0050	"	0.100	ND	58.3	70-130	29.5	30
1,2,4-Trimethylbenzene	0.0670	0.0050	"	0.100	ND	67.0	70-130	12.0	30
1,3,5-Trimethylbenzene	0.0775	0.0050	"	0.100	ND	77.5	70-130	1.54	30
Naphthalene	ND	0.0038	"	0.100	ND	70-130	200	30	
Surrogate: 1,2-Dichloroethane-d4	0.0385		"	0.0400		96.2	50-150		
Surrogate: Toluene-d8	0.0391		"	0.0400		97.7	50-150		
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.6	50-150		

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Project: PDC - Moody 1-30 Tank Battery

Project Number: UWRWE-A4387-ABN
Project Manager: Andy Sagen

Reported:
03/17/25 10:39

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BIA0960 - EPA 3550A

Blank (BIA0960-BLK1)

Prepared: 01/21/25 Analyzed: 01/22/25

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	13.8		"	12.5		111	30-150				

LCS (BIA0960-BS1)

Prepared: 01/21/25 Analyzed: 01/22/25

C10-C28 (DRO)	646	50	mg/kg	500		129	70-130				
Surrogate: <i>o</i> -Terphenyl	15.3		"	12.5		122	30-150				

Matrix Spike (BIA0960-MS1)

Source: 2501186-01

Prepared: 01/21/25 Analyzed: 01/22/25

C10-C28 (DRO)	642	50	mg/kg	500	ND	128	70-130				
Surrogate: <i>o</i> -Terphenyl	13.8		"	12.5		110	30-150				

Matrix Spike Dup (BIA0960-MSD1)

Source: 2501186-01

Prepared: 01/21/25 Analyzed: 01/22/25

C10-C28 (DRO)	596	50	mg/kg	500	ND	119	70-130	7.52	20		
Surrogate: <i>o</i> -Terphenyl	13.7		"	12.5		110	30-150				

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Broomfield CO, 80020

Project: PDC - Moody 1-30 Tank Battery

Project Number: UWRWE-A4387-ABN
Project Manager: Andy Sagen

Reported:
03/17/25 10:39

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BIA1060 - EPA 5030 Soil MS

Blank (BIA1060-BLK1)

Prepared: 01/23/25 Analyzed: 01/28/25

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	0.0196		"	0.0333	58.8	40-140					
Surrogate: Fluoranthene-d10	0.0206		"	0.0333	61.8	40-140					

LCS (BIA1060-BS1)

Prepared: 01/23/25 Analyzed: 01/28/25

Acenaphthene	0.0196	0.00500	mg/kg	0.0333	58.7	40-140					
Anthracene	0.0182	0.00500	"	0.0333	54.7	40-140					
Benzo (a) anthracene	0.0212	0.00500	"	0.0333	63.5	40-140					
Benzo (a) pyrene	0.0183	0.00500	"	0.0333	55.0	40-140					
Benzo (b) fluoranthene	0.0193	0.00500	"	0.0333	57.9	40-140					
Benzo (k) fluoranthene	0.0205	0.00500	"	0.0333	61.6	40-140					
Chrysene	0.0212	0.00500	"	0.0333	63.6	40-140					
Dibenz (a,h) anthracene	0.0162	0.00500	"	0.0333	48.6	40-140					
Fluoranthene	0.0216	0.00500	"	0.0333	64.9	40-140					
Fluorene	0.0190	0.00500	"	0.0333	56.9	40-140					
Indeno (1,2,3-cd) pyrene	0.0158	0.00500	"	0.0333	47.4	40-140					
Pyrene	0.0218	0.00500	"	0.0333	65.5	40-140					
1-Methylnaphthalene	0.0212	0.00500	"	0.0333	63.5	40-140					
2-Methylnaphthalene	0.0215	0.00500	"	0.0333	64.4	40-140					
Surrogate: 2-Methylnaphthalene-d10	0.0205		"	0.0333	61.6	40-140					
Surrogate: Fluoranthene-d10	0.0205		"	0.0333	61.4	40-140					

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Project: PDC - Moody 1-30 Tank Battery

Project Number: UWRWE-A4387-ABN
Project Manager: Andy Sagen

Reported:
03/17/25 10:39

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 BIA1060 - EPA 5030 Soil MS

Matrix Spike (BIA1060-MS1)	Source: 2501193-01			Prepared: 01/23/25 Analyzed: 01/28/25						
Acenaphthene	0.0260	0.00500	mg/kg	0.0333	ND	77.9	40-140			
Anthracene	0.0263	0.00500	"	0.0333	ND	78.8	40-140			
Benzo (a) anthracene	0.0288	0.00500	"	0.0333	ND	86.4	40-140			
Benzo (a) pyrene	0.0249	0.00500	"	0.0333	ND	74.8	40-140			
Benzo (b) fluoranthene	0.0240	0.00500	"	0.0333	ND	72.1	40-140			
Benzo (k) fluoranthene	0.0247	0.00500	"	0.0333	ND	74.2	40-140			
Chrysene	0.0276	0.00500	"	0.0333	ND	82.8	40-140			
Dibenz (a,h) anthracene	0.0217	0.00500	"	0.0333	ND	65.2	40-140			
Fluoranthene	0.0275	0.00500	"	0.0333	ND	82.4	40-140			
Fluorene	0.0259	0.00500	"	0.0333	ND	77.7	40-140			
Indeno (1,2,3-cd) pyrene	0.0245	0.00500	"	0.0333	ND	73.4	40-140			
Pyrene	0.0280	0.00500	"	0.0333	ND	84.0	40-140			
1-Methylnaphthalene	0.0251	0.00500	"	0.0333	ND	75.3	40-140			
2-Methylnaphthalene	0.0251	0.00500	"	0.0333	ND	75.4	40-140			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0253</i>	<i>"</i>	<i>"</i>	<i>0.0333</i>	<i>"</i>	<i>76.0</i>	<i>40-140</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0277</i>	<i>"</i>	<i>"</i>	<i>0.0333</i>	<i>"</i>	<i>83.2</i>	<i>40-140</i>			

Matrix Spike Dup (BIA1060-MSD1)	Source: 2501193-01			Prepared: 01/23/25 Analyzed: 01/28/25						
Acenaphthene	0.0213	0.00500	mg/kg	0.0333	ND	63.8	40-140	19.9	30	
Anthracene	0.0211	0.00500	"	0.0333	ND	63.3	40-140	21.8	30	
Benzo (a) anthracene	0.0241	0.00500	"	0.0333	ND	72.4	40-140	17.7	30	
Benzo (a) pyrene	0.0218	0.00500	"	0.0333	ND	65.5	40-140	13.3	30	
Benzo (b) fluoranthene	0.0214	0.00500	"	0.0333	ND	64.3	40-140	11.4	30	
Benzo (k) fluoranthene	0.0212	0.00500	"	0.0333	ND	63.6	40-140	15.3	30	
Chrysene	0.0224	0.00500	"	0.0333	ND	67.3	40-140	20.7	30	
Dibenz (a,h) anthracene	0.0178	0.00500	"	0.0333	ND	53.4	40-140	19.9	30	
Fluoranthene	0.0226	0.00500	"	0.0333	ND	67.8	40-140	19.5	30	
Fluorene	0.0250	0.00500	"	0.0333	ND	74.9	40-140	3.61	30	
Indeno (1,2,3-cd) pyrene	0.0197	0.00500	"	0.0333	ND	59.2	40-140	21.5	30	
Pyrene	0.0217	0.00500	"	0.0333	ND	65.0	40-140	25.4	30	
1-Methylnaphthalene	0.0235	0.00500	"	0.0333	ND	70.4	40-140	6.72	30	
2-Methylnaphthalene	0.0228	0.00500	"	0.0333	ND	68.3	40-140	9.78	30	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0228</i>	<i>"</i>	<i>"</i>	<i>0.0333</i>	<i>"</i>	<i>68.4</i>	<i>40-140</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0225</i>	<i>"</i>	<i>"</i>	<i>0.0333</i>	<i>"</i>	<i>67.5</i>	<i>40-140</i>			

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

Project: PDC - Moody 1-30 Tank Battery

Project Number: UWRWE-A4387-ABN
Project Manager: Andy Sagen

Reported:
03/17/25 10:39

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

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

Batch BIB1205 - EPA 3050B

Blank (BIB1205-BLK1)

Prepared: 02/21/25 Analyzed: 02/25/25

Boron ND 2.00 mg/L

LCS (BIB1205-BS1)

Prepared: 02/21/25 Analyzed: 02/25/25

Boron 4.54 2.00 mg/L 5.00 90.8 80-120

Duplicate (BIB1205-DUP1)

Source: 2501192-01

Prepared: 02/21/25 Analyzed: 02/25/25

Boron 0.00724 2.00 mg/L 0.0147 68.3 20 QR-01

Matrix Spike (BIB1205-MS1)

Source: 2501192-01

Prepared: 02/21/25 Analyzed: 02/25/25

Boron 4.73 2.00 mg/L 5.00 0.0147 94.3 75-125

Matrix Spike Dup (BIB1205-MSD1)

Source: 2501192-01

Prepared: 02/21/25 Analyzed: 02/25/25

Boron 4.74 2.00 mg/L 5.00 0.0147 94.5 75-125 0.230 25

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Broomfield CO, 80020

Project: PDC - Moody 1-30 Tank Battery

Project Number: UWRWE-A4387-ABN
Project Manager: Andy Sagen

Reported:
03/17/25 10:39

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BIB1694 - EPA 3050B

Blank (BIB1694-BLK1)

Prepared: 02/28/25 Analyzed: 03/14/25

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 (BIB1694-BS1)

Prepared: 02/28/25 Analyzed: 03/14/25

Arsenic	36.1	0.200	mg/kg wet	39.1	92.3	80-120
Barium	39.5	0.400	"	39.1	101	80-120
Cadmium	1.98	0.200	"	1.95	101	80-120
Copper	42.1	0.400	"	39.1	108	80-120
Lead	19.6	0.200	"	19.5	100	80-120
Nickel	40.8	0.400	"	39.1	105	80-120
Silver	2.00	0.0200	"	1.95	102	80-120
Zinc	40.6	0.400	"	39.1	104	80-120
Selenium	3.74	0.260	"	3.91	95.7	80-120

Duplicate (BIB1694-DUP1)

Source: 2501193-01

Prepared: 02/28/25 Analyzed: 03/14/25

Arsenic	1.19	0.200	mg/kg dry	1.19	0.571	20
Barium	28.0	0.400	"	29.9	6.70	20
Cadmium	0.118	0.200	"	0.130	9.79	20
Copper	2.18	0.400	"	2.33	6.70	20
Lead	1.64	0.200	"	1.82	10.6	20
Nickel	2.36	0.400	"	2.67	12.3	20
Silver	0.00810	0.0200	"	0.00946	15.5	20
Zinc	7.19	0.400	"	7.39	2.81	20
Selenium	ND	0.260	"	ND		20

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Project: PDC - Moody 1-30 Tank Battery

Project Number: UWRWE-A4387-ABN
Project Manager: Andy Sagen

Reported:
03/17/25 10:39

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 BIB1694 - EPA 3050B

Matrix Spike (BIB1694-MS1)

Source: 2501193-01

Prepared: 02/28/25 Analyzed: 03/14/25

Arsenic	39.8	0.200	mg/kg dry	41.1	1.19	94.0	75-125		
Barium	77.2	0.400	"	41.1	29.9	115	75-125		
Cadmium	2.19	0.200	"	2.06	0.130	99.9	75-125		
Copper	38.7	0.400	"	41.1	2.33	88.5	75-125		
Lead	21.9	0.200	"	20.6	1.82	97.8	75-125		
Nickel	37.9	0.400	"	41.1	2.67	85.7	75-125		
Silver	2.03	0.0200	"	2.06	0.00946	98.4	75-125		
Zinc	43.6	0.400	"	41.1	7.39	88.1	75-125		
Selenium	3.63	0.260	"	4.11	ND	88.3	75-125		

Matrix Spike Dup (BIB1694-MSD1)

Source: 2501193-01

Prepared: 02/28/25 Analyzed: 03/14/25

Arsenic	40.9	0.200	mg/kg dry	42.1	1.19	94.3	75-125	2.66	25
Barium	64.4	0.400	"	42.1	29.9	82.0	75-125	18.1	25
Cadmium	2.24	0.200	"	2.11	0.130	100	75-125	2.56	25
Copper	38.0	0.400	"	42.1	2.33	84.7	75-125	1.86	25
Lead	22.7	0.200	"	21.1	1.82	99.3	75-125	3.61	25
Nickel	37.5	0.400	"	42.1	2.67	82.7	75-125	0.992	25
Silver	2.06	0.0200	"	2.11	0.00946	97.3	75-125	1.35	25
Zinc	42.5	0.400	"	42.1	7.39	83.4	75-125	2.55	25
Selenium	3.82	0.260	"	4.21	ND	90.5	75-125	4.99	25

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Moody 1-30 Tank Battery
Project Number: UWRWE-A4387-ABN
Project Manager: Andy Sagen

Reported:
03/17/25 10:39

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 BIB0006 - 3060A Mod

Blank (BIB0006-BLK1)											Prepared & Analyzed: 02/02/25			
Chromium, Hexavalent	ND	0.30	mg/kg wet											
LCS (BIB0006-BS1)											Prepared & Analyzed: 02/02/25			
Chromium, Hexavalent	25.7	0.30	mg/kg wet	25.3		102	80-120							
Duplicate (BIB0006-DUP1)											Source: 2501184-01		Prepared & Analyzed: 02/02/25	
Chromium, Hexavalent	ND	0.30	mg/kg dry			ND				20				
Matrix Spike (BIB0006-MS1)											Source: 2501184-01		Prepared & Analyzed: 02/02/25	
Chromium, Hexavalent	29.6	0.30	mg/kg dry	27.9	ND	106	75-125							
Matrix Spike Dup (BIB0006-MSD1)											Source: 2501184-01		Prepared & Analyzed: 02/02/25	
Chromium, Hexavalent	28.0	0.30	mg/kg dry	30.5	ND	92.0	75-125	5.58		20				

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Project: PDC - Moody 1-30 Tank Battery

Project Number: UWRWE-A4387-ABN
Project Manager: Andy Sagen

Reported:
03/17/25 10:39

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 BIB0356 - General Preparation

Blank (BIB0356-BLK1)

Prepared: 02/07/25 Analyzed: 02/15/25

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

LCS (BIB0356-BS1)

Prepared: 02/07/25 Analyzed: 02/15/25

Calcium	5.29	0.0500	mg/L wet	5.00		106	70-130			
Magnesium	5.00	0.0500	"	5.00		100	70-130			
Sodium	5.05	0.0500	"	5.00		101	70-130			

Summit Scientific

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

Project: PDC - Moody 1-30 Tank Battery

Project Number: UWRWE-A4387-ABN
Project Manager: Andy Sagen

Reported:
03/17/25 10:39

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 BIB0008 - General Preparation

Duplicate (BIB0008-DUP1)

Source: 2501188-01

Prepared & Analyzed: 02/03/25

% Solids	88.8		%		89.4			0.690		20	
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Summit Scientific

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

Project: PDC - Moody 1-30 Tank Battery

Project Number: UWRWE-A4387-ABN
Project Manager: Andy Sagen

Reported:
03/17/25 10:39

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

Summit Scientific

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

Batch BIB0358 - General Preparation

Blank (BIB0358-BLK1)

Prepared: 02/07/25 Analyzed: 02/10/25

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BIB0358-BS1)

Prepared: 02/07/25 Analyzed: 02/10/25

Specific Conductance (EC) 0.157 0.0100 mmhos/cm 0.150 105 95-105

Duplicate (BIB0358-DUP1)

Source: 2501192-01

Prepared: 02/07/25 Analyzed: 02/10/25

Specific Conductance (EC) 0.480 0.0100 mmhos/cm 0.488 1.74 20

Summit Scientific

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

Project: PDC - Moody 1-30 Tank Battery

Project Number: UWRWE-A4387-ABN
Project Manager: Andy Sagen

Reported:
03/17/25 10:39

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

Summit Scientific

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

Batch BIB0357 - General Preparation

LCS (BIB0357-BS1)

Prepared: 02/07/25 Analyzed: 02/10/25

pH 9.19 pH Units 9.18 100 95-105

Duplicate (BIB0357-DUP1)

Source: 2501192-01

Prepared: 02/07/25 Analyzed: 02/10/25

pH 8.58 pH Units 8.57 0.117 20

Summit Scientific

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

Project: PDC - Moody 1-30 Tank Battery

Project Number: UWRWE-A4387-ABN
Project Manager: Andy Sagen

Reported:
03/17/25 10:39

Notes and Definitions

- 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-01 The spike recovery for this QC sample is outside of established control limits due to sample 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