

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

September 17, 2024

Karen Olson

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: PDC - Dunham Tank Battery

Work Order #2409063

Enclosed are the results of analyses for samples received by Summit Scientific on 09/05/24 17:41. 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 distinct 'W'.

Jacob Wood For Paul Shrewsbury

President



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

Project: PDC - Dunham Tank Battery

Project Number: 36700
 Project Manager: Karen Olson

Reported:
 09/17/24 08:41

ANALYTICAL REPORT FOR SAMPLES


Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SEP01-DL-B@3'	2409063-01	Soil	09/05/24 13:50	09/05/24 17:41
SEP01-DL-S@1.5'	2409063-03	Soil	09/05/24 13:40	09/05/24 17:41
SEP01-FL@3'	2409063-06	Soil	09/05/24 13:55	09/05/24 17:41
AST01@0-6"	2409063-07	Soil	09/05/24 13:05	09/05/24 17:41
BKG01@0-6"	2409063-08	Soil	09/05/24 14:04	09/05/24 17:41
BKG01@1.5'	2409063-09	Soil	09/05/24 14:08	09/05/24 17:41
BKG01@3'	2409063-10	Soil	09/05/24 14:12	09/05/24 17:41

Case Narrative

Rerun analyses were performed by client request on 9/12/2024.
 The rerun results included in this report are denoted with "RE#."

This is a revision of the report originally sent on 9/12/2024 at 09:03 MT.

Summit Scientific



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

Send Data To:		Send Invoice To:	
Client: PDC / Tasman	Project Manager: Karen Olson	Company: PDC Energy	
Address: 6855 W 119th Ave	E-Mail: karen.olson@PDCE.com	Project Name/Location: <i>Dunham 415 Tank Battery</i>	
City/State/Zip: Broomfield / CO / 80020		AFE#: <i>Px-900244</i>	
Phone: 303-487-1228	Project Name: <i>Dunham 415 Tank Battery</i>	PO/Billing Codes:	
Sampler Name: <i>Molly Parks, David Erwin</i>	Project Number: <i>36700</i>	Contact: <i>Karen Olson Debbert Pace</i>	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix		Analysis Requested							Special Instructions	
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH (C6-C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR		PAHs
1	SEP01-DL-B 0.3'	9-5-24	1350	3			X					X	X	X	X	X	X	X	
2	SEP01-DL-N 0.15'		1336									X	X	X	X	X	X	X	X
3	SEP01-DL-S 0.15'		1340									X	X	X	X	X	X	X	
4	SEP01-DL-E 0.15'		1344									X	X	X	X	X	X	X	X
5	SEP01-DL-W 0.15'		1346									X	X	X	X	X	X	X	X
6	SIRP01-FL 0.3'		1355									X	X	X	X	X	X	X	
7	AST01 00-6"		1305	5								X	X	X	X	X	X	X	
8	BKG01 00-6"		1404	2											X	X		X	
9	BKG01 0.15'		1408	2											X	X		X	
10	BKG01 0.3'		1412	2											X	X		X	
11																			
12																			
13																			
14																			
15																			

Relinquished by: <i>MP</i>	Date/Time: <i>09-05-24 / 1600</i>	Received by: <i>Tasmanlock box</i>	Date/Time: <i>09-05-24 / 1600</i>	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: <i>Tasmanlock box</i>	Date/Time: <i>9524 / 1741</i>	Received by: <i>[Signature]</i>	Date/Time: <i>9524 / 1741</i>	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: <i>79</i>	Corrected Temperature: <i>8</i>	IR gun #:		HNO3 lot #:		

Send Data To:		Send Invoice To:	
Client: PDC / Tasman	Project Manager: Karen Olson	Company: PDC Energy	
Address: 6855 W 119th Ave	E-Mail: karen.olson@PDCE.com	Project Name/Location: <i>Dunham 415 Tank Battery</i>	
City/State/Zip: Broomfield / CO / 80020		AFE#: <i>Px-900244</i>	
Phone: 303-487-1228	Project Name: <i>Dunham 415 Tank Battery</i>	PO/Billing Codes:	
Sampler Name: <i>Molly Parks, David Erwin</i>	Project Number: <i>36700</i>	Contact: <i>Karen Olson, Deborah Pace</i>	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix		Analysis Requested							Special Instructions			
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH (C6-C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR		PAHs	Metals	On Hold
1	SEP01-DL-B 0.3'	9-5-24	1350	3			X			X											
2	SEP01-DL-N 0.15'		1336																		X
3	SEP01-DL-S 0.15'		1340																		
4	SEP01-DL-E 0.15'		1344																		X
5	SEP01-DL-W 0.15'		1346																		X
6	SIRP01-FL 0.3'		1355																		
7	AST01 00-6"		1305	5								X	X	X	X	X	X	X	X		
8	BKG01 00-6"		1404	2											X	X					X
9	BKG01 0.15'		1408	2											X	X					X
10	BKG01 0.3'		1412	2			X								X	X					X
11																					
12																					
13																					
14																					
15																					

Relinquished by: <i>MP</i>	Date/Time: <i>09-05-24 / 1600</i>	Received by: <i>Tasmanlock box</i>	Date/Time: <i>09-05-24 / 1600</i>	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: <i>Tasmanlock box</i>	Date/Time: <i>9524 / 1741</i>	Received by: <i>[Signature]</i>	Date/Time: <i>9524 / 1741</i>	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: <i>79</i>	Corrected Temperature: <i>8</i>	IR gun #:		HNO3 lot #:		



Tasman Geosciences
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Broomfield CO, 80020

Project: PDC - Dunham Tank Battery

Project Number: 36700
Project Manager: Karen Olson

Reported:
09/17/24 08:41

SEP01-DL-B@3'
2409063-01 (Soil)

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Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/05/24 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHI0240	09/09/24	09/09/24	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: **09/05/24 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0377	94.3 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0394	98.6 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0391	97.8 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/05/24 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHI0242	09/09/24	09/09/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **09/05/24 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	8.42	67.3 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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2409063-01 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **09/05/24 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHI0159	09/06/24	09/07/24	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	"	"	"	"	"	"	
2-Methylnaphthalene	0.0126	0.00500	"	"	"	"	"	"	

Date Sampled: **09/05/24 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0187	56.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0187	56.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/05/24 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHI0167	09/06/24	09/06/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/05/24 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.42	0.200	mg/kg dry	1	BHI0213	09/09/24	09/09/24	EPA 6020B	

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SEP01-DL-B@3'
2409063-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Barium	67.4	0.400	mg/kg dry	1	BHI0213	09/09/24	09/09/24	EPA 6020B	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	7.91	0.400	"	"	"	"	"	"	
Lead	14.5	0.200	"	"	"	"	"	"	
Nickel	6.98	0.400	"	"	"	"	"	"	
Silver	0.0265	0.0200	"	"	"	"	"	"	
Zinc	26.8	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/05/24 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0178	09/06/24	09/06/24	EPA 7196A	

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

Date Sampled: **09/05/24 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	48.9	0.0500	mg/L dry	1	BHI0295	09/10/24	09/11/24	EPA 6020B	
Magnesium	5.37	0.0500	"	"	"	"	"	"	
Sodium	2.60	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/05/24 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0942	0.00100	units	1	BHI0379	09/12/24	09/12/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/05/24 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Reported:
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SEP01-DL-B@3'
2409063-01 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

% Solids	87.6	%	1	BHI0179	09/06/24	09/06/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/05/24 13:50**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.247	0.0100	mmhos/cm	1	BHI0301	09/10/24	09/11/24	EPA 120.1	

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

Date Sampled: **09/05/24 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.23		pH Units	1	BHI0299	09/10/24	09/11/24	EPA 9045D	

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Project: PDC - Dunham Tank Battery

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09/17/24 08:41

SEP01-DL-B@3'
2409063-01RE1 (Soil)

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PAH by EPA Method 8270D SIM


Date Sampled: **09/05/24 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1-Methylnaphthalene	ND	0.00500	mg/kg	1	BHI0425	09/13/24	09/13/24	EPA 8270D SIM	

Date Sampled: **09/05/24 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0197	59.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0159	47.6 %	40-150		"	"	"	"	

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Project: PDC - Dunham Tank Battery

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09/17/24 08:41

SEP01-DL-S@1.5'
2409063-03 (Soil)

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Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/05/24 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHI0240	09/09/24	09/09/24	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: **09/05/24 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0410	103 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0403	101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0390	97.5 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/05/24 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHI0242	09/09/24	09/09/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **09/05/24 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	7.37	58.9 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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SEP01-DL-S@1.5'
2409063-03 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **09/05/24 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHI0159	09/06/24	09/07/24	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: **09/05/24 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0189	56.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0183	55.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/05/24 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHI0167	09/06/24	09/06/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/05/24 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: PDC - Dunham Tank Battery

Project Number: 36700
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Reported:
09/17/24 08:41

SEP01-DL-S@1.5'
2409063-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.83	0.200	mg/kg dry	1	BHI0213	09/09/24	09/09/24	EPA 6020B	
Barium	76.7	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	8.28	0.400	"	"	"	"	"	"	
Lead	6.89	0.200	"	"	"	"	"	"	
Nickel	7.69	0.400	"	"	"	"	"	"	
Silver	0.0279	0.0200	"	"	"	"	"	"	
Zinc	26.7	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/05/24 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0178	09/06/24	09/06/24	EPA 7196A	

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

Date Sampled: **09/05/24 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	25.3	0.0500	mg/L dry	1	BHI0295	09/10/24	09/11/24	EPA 6020B	
Magnesium	3.36	0.0500	"	"	"	"	"	"	
Sodium	0.722	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/05/24 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0358	0.00100	units	1	BHI0379	09/12/24	09/12/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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

Project: PDC - Dunham Tank Battery

Project Number: 36700
Project Manager: Karen Olson

Reported:
09/17/24 08:41

SEP01-DL-S@1.5'
2409063-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/05/24 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.0		%	1	BHI0179	09/06/24	09/06/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/05/24 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.143	0.0100	mmhos/cm	1	BHI0301	09/10/24	09/11/24	EPA 120.1	

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

Date Sampled: **09/05/24 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.38		pH Units	1	BHI0299	09/10/24	09/11/24	EPA 9045D	

Summit Scientific

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

Project: PDC - Dunham Tank Battery

Project Number: 36700
Project Manager: Karen Olson

Reported:
09/17/24 08:41

SEP01-FL@3'
2409063-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/05/24 13:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHI0240	09/09/24	09/09/24	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: **09/05/24 13:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0423	106 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0403	101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0394	98.6 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/05/24 13:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHI0242	09/09/24	09/10/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **09/05/24 13:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	8.75	70.0 %		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 - Dunham Tank Battery

Project Number: 36700
Project Manager: Karen Olson

Reported:
09/17/24 08:41

SEP01-FL@3'
2409063-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/05/24 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHI0159	09/06/24	09/07/24	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: **09/05/24 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0170	50.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0171	51.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/05/24 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHI0167	09/06/24	09/06/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/05/24 13:55**

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 - Dunham Tank Battery

Project Number: 36700
Project Manager: Karen Olson

Reported:
09/17/24 08:41

SEP01-FL@3'
2409063-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	3.08	0.200	mg/kg dry	1	BHI0213	09/09/24	09/09/24	EPA 6020B
Barium	84.9	0.400	"	"	"	"	"	"
Cadmium	0.450	0.200	"	"	"	"	"	"
Copper	9.16	0.400	"	"	"	"	"	"
Lead	9.47	0.200	"	"	"	"	"	"
Nickel	8.74	0.400	"	"	"	"	"	"
Silver	0.0328	0.0200	"	"	"	"	"	"
Zinc	32.2	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/05/24 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0178	09/06/24	09/06/24	EPA 7196A	

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

Date Sampled: **09/05/24 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	32.3	0.0500	mg/L dry	1	BHI0295	09/10/24	09/11/24	EPA 6020B	
Magnesium	13.2	0.0500	"	"	"	"	"	"	
Sodium	87.1	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/05/24 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.26	0.00100	units	1	BHI0379	09/12/24	09/12/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/05/24 13:55**

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 - Dunham Tank Battery
Project Number: 36700
Project Manager: Karen Olson

Reported:
09/17/24 08:41

SEP01-FL@3'
2409063-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	83.5	%	1	BHI0179	09/06/24	09/06/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/05/24 13:55**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.398	0.0100	mmhos/cm	1	BHI0301	09/10/24	09/11/24	EPA 120.1	

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

Date Sampled: **09/05/24 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.59		pH Units	1	BHI0299	09/10/24	09/11/24	EPA 9045D	

Summit Scientific



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

Project: PDC - Dunham Tank Battery

Project Number: 36700
Project Manager: Karen Olson

Reported:
09/17/24 08:41

AST01@0-6"
2409063-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/05/24 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHI0240	09/09/24	09/09/24	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: **09/05/24 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0404	101 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0403	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0388	96.9 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/05/24 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHI0242	09/09/24	09/10/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/05/24 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	10.1	80.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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

Project: PDC - Dunham Tank Battery

Project Number: 36700
Project Manager: Karen Olson

Reported:
09/17/24 08:41

AST01@0-6"
2409063-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/05/24 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHI0159	09/06/24	09/07/24	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: **09/05/24 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0198	59.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0197	59.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/05/24 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHI0167	09/06/24	09/06/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/05/24 13:05**

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 - Dunham Tank Battery

Project Number: 36700
Project Manager: Karen Olson

Reported:
09/17/24 08:41

AST01@0-6"
2409063-07 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.95	0.200	mg/kg dry	1	BHI0213	09/09/24	09/09/24	EPA 6020B	
Barium	31.4	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	5.45	0.400	"	"	"	"	"	"	
Lead	2.96	0.200	"	"	"	"	"	"	
Nickel	3.62	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	12.9	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/05/24 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0178	09/06/24	09/06/24	EPA 7196A	

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

Date Sampled: **09/05/24 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	35.4	0.0500	mg/L dry	1	BHI0295	09/10/24	09/11/24	EPA 6020B	
Magnesium	9.68	0.0500	"	"	"	"	"	"	
Sodium	24.2	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/05/24 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.930	0.00100	units	1	BHI0379	09/12/24	09/12/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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

Project: PDC - Dunham Tank Battery

Project Number: 36700
Project Manager: Karen Olson

Reported:
09/17/24 08:41

AST01@0-6"
2409063-07 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/05/24 13:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	96.2			%	1	BHI0179	09/06/24	09/06/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/05/24 13:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.492	0.0100		mmhos/cm	1	BHI0301	09/10/24	09/11/24	EPA 120.1	

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

Date Sampled: **09/05/24 13:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.98			pH Units	1	BHI0299	09/10/24	09/11/24	EPA 9045D	

Summit Scientific

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

Project: PDC - Dunham Tank Battery

Project Number: 36700
Project Manager: Karen Olson

Reported:
09/17/24 08:41

BKG01@0-6''
2409063-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/05/24 14:04**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHI0167	09/06/24	09/06/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/05/24 14:04**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	3.09	0.200	mg/kg dry	1	BHI0213	09/09/24	09/09/24	EPA 6020B	
Barium	90.8	0.400	"	"	"	"	"	"	
Cadmium	0.267	0.200	"	"	"	"	"	"	
Copper	9.47	0.400	"	"	"	"	"	"	
Lead	9.94	0.200	"	"	"	"	"	"	
Nickel	8.89	0.400	"	"	"	"	"	"	
Silver	0.0410	0.0200	"	"	"	"	"	"	
Zinc	32.8	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/05/24 14:04**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0178	09/06/24	09/06/24	EPA 7196A	

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

Date Sampled: **09/05/24 14:04**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	41.6	0.0500	mg/L dry	1	BHI0295	09/10/24	09/11/24	EPA 6020B	
Magnesium	7.76	0.0500	"	"	"	"	"	"	
Sodium	29.5	0.0500	"	"	"	"	"	"	

Summit Scientific

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

Project: PDC - Dunham Tank Battery

Project Number: 36700
Project Manager: Karen Olson

Reported:
09/17/24 08:41

BKG01@0-6''
2409063-08 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **09/05/24 14:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.10	0.00100	units	1	BHI0379	09/12/24	09/12/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/05/24 14:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.9		%	1	BHI0179	09/06/24	09/06/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/05/24 14:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.279	0.0100	mmhos/cm	1	BHI0301	09/10/24	09/11/24	EPA 120.1	

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

Date Sampled: **09/05/24 14:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.34		pH Units	1	BHI0299	09/10/24	09/11/24	EPA 9045D	

Summit Scientific

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

Project: PDC - Dunham Tank Battery

Project Number: 36700
Project Manager: Karen Olson

Reported:
09/17/24 08:41

BKG01@1.5'
2409063-09 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/05/24 14:08**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	3.24	2.00	mg/L	1	BHI0167	09/06/24	09/06/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/05/24 14:08**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	3.56	0.200	mg/kg dry	1	BHI0213	09/09/24	09/09/24	EPA 6020B	
Barium	118	0.400	"	"	"	"	"	"	
Cadmium	0.264	0.200	"	"	"	"	"	"	
Copper	11.2	0.400	"	"	"	"	"	"	
Lead	9.12	0.200	"	"	"	"	"	"	
Nickel	12.7	0.400	"	"	"	"	"	"	
Silver	0.0375	0.0200	"	"	"	"	"	"	
Zinc	35.4	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/05/24 14:08**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0230	09/09/24	09/09/24	EPA 7196A	

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

Date Sampled: **09/05/24 14:08**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	303	0.0500	mg/L dry	1	BHI0295	09/10/24	09/11/24	EPA 6020B	
Magnesium	169	0.0500	"	"	"	"	"	"	
Sodium	570	0.0500	"	"	"	"	"	"	

Calculated Analysis

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

Project: PDC - Dunham Tank Battery

Project Number: 36700
Project Manager: Karen Olson

Reported:
09/17/24 08:41

BKG01@1.5'
2409063-09 (Soil)

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Calculated Analysis

Date Sampled: **09/05/24 14:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	6.51	0.00100	units	1	BHI0379	09/12/24	09/12/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/05/24 14:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.6		%	1	BHI0179	09/06/24	09/06/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/05/24 14:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	4.62	0.0100	mmhos/cm	1	BHI0301	09/10/24	09/11/24	EPA 120.1	

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

Date Sampled: **09/05/24 14:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.93		pH Units	1	BHI0299	09/10/24	09/11/24	EPA 9045D	

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Project: PDC - Dunham Tank Battery

Project Number: 36700
Project Manager: Karen Olson

Reported:
09/17/24 08:41

BKG01@3'
2409063-10 (Soil)

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Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/05/24 14:12**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHI0167	09/06/24	09/06/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/05/24 14:12**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.42	0.200	mg/kg dry	1	BHI0213	09/09/24	09/09/24	EPA 6020B	
Barium	73.6	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	5.97	0.400	"	"	"	"	"	"	
Lead	5.79	0.200	"	"	"	"	"	"	
Nickel	5.86	0.400	"	"	"	"	"	"	
Silver	0.0305	0.0200	"	"	"	"	"	"	
Zinc	21.0	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/05/24 14:12**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0230	09/09/24	09/09/24	EPA 7196A	

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

Date Sampled: **09/05/24 14:12**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	106	0.0500	mg/L dry	1	BHI0295	09/10/24	09/11/24	EPA 6020B	
Magnesium	211	0.0500	"	"	"	"	"	"	
Sodium	1930	0.0500	"	"	"	"	"	"	

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Project: PDC - Dunham Tank Battery

Project Number: 36700
Project Manager: Karen Olson

Reported:
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BKG01@3'
2409063-10 (Soil)

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Calculated Analysis

Date Sampled: **09/05/24 14:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	24.9	0.00100	units	1	BHI0379	09/12/24	09/12/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/05/24 14:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.7		%	1	BHI0179	09/06/24	09/06/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/05/24 14:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	10.2	0.0100	mmhos/cm	1	BHI0301	09/10/24	09/11/24	EPA 120.1	

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

Date Sampled: **09/05/24 14:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.20		pH Units	1	BHI0299	09/10/24	09/11/24	EPA 9045D	

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Project: PDC - Dunham Tank Battery

Project Number: 36700
Project Manager: Karen Olson

Reported:
09/17/24 08:41

Volatile Organic Compounds by EPA Method 8260B - Quality Control

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

Batch BHI0240 - EPA 5030 Soil MS

Blank (BHI0240-BLK1)

Prepared & Analyzed: 09/09/24

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>	<i>0.0360</i>		<i>"</i>	<i>0.0400</i>		<i>90.0</i>		<i>50-150</i>		
<i>Surrogate: Toluene-d8</i>	<i>0.0394</i>		<i>"</i>	<i>0.0400</i>		<i>98.4</i>		<i>50-150</i>		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0379</i>		<i>"</i>	<i>0.0400</i>		<i>94.8</i>		<i>50-150</i>		

LCS (BHI0240-BS1)

Prepared & Analyzed: 09/09/24

Benzene	0.102	0.0020	mg/kg	0.100		102		70-130		
Toluene	0.101	0.0050	"	0.100		101		70-130		
Ethylbenzene	0.109	0.0050	"	0.100		109		70-130		
m,p-Xylene	0.208	0.010	"	0.200		104		70-130		
o-Xylene	0.102	0.0050	"	0.100		102		70-130		
1,2,4-Trimethylbenzene	0.101	0.0050	"	0.100		101		70-130		
1,3,5-Trimethylbenzene	0.105	0.0050	"	0.100		105		70-130		
Naphthalene	0.0888	0.0038	"	0.100		88.8		70-130		
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0411</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>		<i>50-150</i>		
<i>Surrogate: Toluene-d8</i>	<i>0.0404</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>		<i>50-150</i>		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0387</i>		<i>"</i>	<i>0.0400</i>		<i>96.7</i>		<i>50-150</i>		

Matrix Spike (BHI0240-MS1)

Source: 2409063-01

Prepared & Analyzed: 09/09/24

Benzene	0.115	0.0020	mg/kg	0.100	ND	115		70-130		
Toluene	0.111	0.0050	"	0.100	ND	111		70-130		
Ethylbenzene	0.113	0.0050	"	0.100	ND	113		70-130		
m,p-Xylene	0.217	0.010	"	0.200	ND	108		70-130		
o-Xylene	0.104	0.0050	"	0.100	ND	104		70-130		
1,2,4-Trimethylbenzene	0.0993	0.0050	"	0.100	ND	99.3		70-130		
1,3,5-Trimethylbenzene	0.103	0.0050	"	0.100	ND	103		70-130		
Naphthalene	0.0848	0.0038	"	0.100	ND	84.8		70-130		
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0436</i>		<i>"</i>	<i>0.0400</i>		<i>109</i>		<i>50-150</i>		
<i>Surrogate: Toluene-d8</i>	<i>0.0410</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>		<i>50-150</i>		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0397</i>		<i>"</i>	<i>0.0400</i>		<i>99.2</i>		<i>50-150</i>		

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Project: PDC - Dunham Tank Battery

Project Number: 36700
Project Manager: Karen Olson

Reported:
09/17/24 08:41

Volatile Organic Compounds by EPA Method 8260B - Quality Control

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

Batch BHI0240 - EPA 5030 Soil MS

Matrix Spike Dup (BHI0240-MSD1)	Source: 2409063-01			Prepared & Analyzed: 09/09/24						
Benzene	0.101	0.0020	mg/kg	0.100	ND	101	70-130	12.6	30	
Toluene	0.0982	0.0050	"	0.100	ND	98.2	70-130	12.3	30	
Ethylbenzene	0.104	0.0050	"	0.100	ND	104	70-130	8.77	30	
m,p-Xylene	0.199	0.010	"	0.200	ND	99.6	70-130	8.58	30	
o-Xylene	0.0992	0.0050	"	0.100	ND	99.2	70-130	5.13	30	
1,2,4-Trimethylbenzene	0.0944	0.0050	"	0.100	ND	94.4	70-130	5.02	30	
1,3,5-Trimethylbenzene	0.0958	0.0050	"	0.100	ND	95.8	70-130	7.15	30	
Naphthalene	0.0895	0.0038	"	0.100	ND	89.5	70-130	5.37	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0406</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0389</i>		<i>"</i>	<i>0.0400</i>		<i>97.2</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0403</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>50-150</i>			

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Project: PDC - Dunham Tank Battery
Project Number: 36700
Project Manager: Karen Olson

Reported:
09/17/24 08:41

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 BHI0242 - EPA 3550A

Blank (BHI0242-BLK1)

Prepared & Analyzed: 09/09/24

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	14.3		"	12.5		115		30-150			

LCS (BHI0242-BS1)

Prepared & Analyzed: 09/09/24

C10-C28 (DRO)	439	50	mg/kg	500		87.8		70-130			
Surrogate: <i>o</i> -Terphenyl	13.5		"	12.5		108		30-150			

Matrix Spike (BHI0242-MS1)

Source: 2409063-01

Prepared & Analyzed: 09/09/24

C10-C28 (DRO)	488	50	mg/kg	500	ND	97.6		70-130			
Surrogate: <i>o</i> -Terphenyl	13.2		"	12.5		106		30-150			

Matrix Spike Dup (BHI0242-MSD1)

Source: 2409063-01

Prepared & Analyzed: 09/09/24

C10-C28 (DRO)	544	50	mg/kg	500	ND	109		70-130	10.9	20	
Surrogate: <i>o</i> -Terphenyl	13.8		"	12.5		110		30-150			

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Project: PDC - Dunham Tank Battery

Project Number: 36700
Project Manager: Karen Olson

Reported:
09/17/24 08:41

PAH by EPA Method 8270D SIM - Quality Control

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

Batch BHI0159 - EPA 5030 Soil MS

Blank (BHI0159-BLK1)

Prepared & Analyzed: 09/06/24

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>	0.0227		"	0.0333	68.2	40-150					
<i>Surrogate: Fluoranthene-d10</i>	0.0235		"	0.0333	70.6	40-150					

LCS (BHI0159-BS1)

Prepared & Analyzed: 09/06/24

Acenaphthene	0.0212	0.00500	mg/kg	0.0333	63.7	31-137					
Anthracene	0.0212	0.00500	"	0.0333	63.6	30-120					
Benzo (a) anthracene	0.0240	0.00500	"	0.0333	72.0	30-120					
Benzo (a) pyrene	0.0230	0.00500	"	0.0333	69.1	30-120					
Benzo (b) fluoranthene	0.0224	0.00500	"	0.0333	67.1	30-120					
Benzo (k) fluoranthene	0.0216	0.00500	"	0.0333	64.9	30-120					
Chrysene	0.0220	0.00500	"	0.0333	66.0	30-120					
Dibenz (a,h) anthracene	0.0240	0.00500	"	0.0333	71.8	30-120					
Fluoranthene	0.0216	0.00500	"	0.0333	64.9	30-120					
Fluorene	0.0217	0.00500	"	0.0333	65.1	30-120					
Indeno (1,2,3-cd) pyrene	0.0244	0.00500	"	0.0333	73.3	30-120					
Pyrene	0.0222	0.00500	"	0.0333	66.7	35-142					
1-Methylnaphthalene	0.0221	0.00500	"	0.0333	66.4	35-142					
2-Methylnaphthalene	0.0209	0.00500	"	0.0333	62.7	35-142					
<i>Surrogate: 2-Methylnaphthalene-d10</i>	0.0226		"	0.0333	67.7	40-150					
<i>Surrogate: Fluoranthene-d10</i>	0.0224		"	0.0333	67.2	40-150					

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Broomfield CO, 80020

Project: PDC - Dunham Tank Battery

Project Number: 36700
Project Manager: Karen Olson

Reported:
09/17/24 08:41

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 BHI0159 - EPA 5030 Soil MS

Matrix Spike (BHI0159-MS1)	Source: 2409056-01			Prepared & Analyzed: 09/06/24							
Acenaphthene	0.0194	0.00500	mg/kg	0.0333	ND	58.3	31-137				
Anthracene	0.0195	0.00500	"	0.0333	ND	58.5	30-120				
Benzo (a) anthracene	0.0223	0.00500	"	0.0333	ND	67.0	30-120				
Benzo (a) pyrene	0.0205	0.00500	"	0.0333	ND	61.6	30-120				
Benzo (b) fluoranthene	0.0201	0.00500	"	0.0333	ND	60.4	30-120				
Benzo (k) fluoranthene	0.0191	0.00500	"	0.0333	ND	57.4	30-120				
Chrysene	0.0202	0.00500	"	0.0333	ND	60.6	30-120				
Dibenz (a,h) anthracene	0.0206	0.00500	"	0.0333	ND	61.7	30-120				
Fluoranthene	0.0197	0.00500	"	0.0333	ND	59.1	30-120				
Fluorene	0.0198	0.00500	"	0.0333	ND	59.4	30-120				
Indeno (1,2,3-cd) pyrene	0.0214	0.00500	"	0.0333	ND	64.2	30-120				
Pyrene	0.0213	0.00500	"	0.0333	ND	63.9	35-142				
1-Methylnaphthalene	0.0190	0.00500	"	0.0333	ND	56.9	15-130				
2-Methylnaphthalene	0.0172	0.00500	"	0.0333	ND	51.5	15-130				
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0196</i>		<i>"</i>	<i>0.0333</i>		<i>58.8</i>	<i>40-150</i>				
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0197</i>		<i>"</i>	<i>0.0333</i>		<i>59.2</i>	<i>40-150</i>				

Matrix Spike Dup (BHI0159-MSD1)	Source: 2409056-01			Prepared & Analyzed: 09/06/24							
Acenaphthene	0.0201	0.00500	mg/kg	0.0333	ND	60.4	31-137	3.57	30		
Anthracene	0.0207	0.00500	"	0.0333	ND	62.2	30-120	6.14	30		
Benzo (a) anthracene	0.0230	0.00500	"	0.0333	ND	68.9	30-120	2.73	30		
Benzo (a) pyrene	0.0212	0.00500	"	0.0333	ND	63.5	30-120	3.02	30		
Benzo (b) fluoranthene	0.0209	0.00500	"	0.0333	ND	62.6	30-120	3.53	30		
Benzo (k) fluoranthene	0.0194	0.00500	"	0.0333	ND	58.1	30-120	1.05	30		
Chrysene	0.0207	0.00500	"	0.0333	ND	62.2	30-120	2.65	30		
Dibenz (a,h) anthracene	0.0224	0.00500	"	0.0333	ND	67.2	30-120	8.65	30		
Fluoranthene	0.0207	0.00500	"	0.0333	ND	62.1	30-120	4.96	30		
Fluorene	0.0207	0.00500	"	0.0333	ND	62.1	30-120	4.47	30		
Indeno (1,2,3-cd) pyrene	0.0228	0.00500	"	0.0333	ND	68.4	30-120	6.35	30		
Pyrene	0.0225	0.00500	"	0.0333	ND	67.4	35-142	5.30	30		
1-Methylnaphthalene	0.0194	0.00500	"	0.0333	ND	58.3	15-130	2.40	50		
2-Methylnaphthalene	0.0186	0.00500	"	0.0333	ND	55.7	15-130	7.82	50		
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0196</i>		<i>"</i>	<i>0.0333</i>		<i>58.7</i>	<i>40-150</i>				
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0211</i>		<i>"</i>	<i>0.0333</i>		<i>63.3</i>	<i>40-150</i>				

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

Project: PDC - Dunham Tank Battery
Project Number: 36700
Project Manager: Karen Olson

Reported:
09/17/24 08:41

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 BHI0425 - EPA 5030 Soil MS

Blank (BHI0425-BLK1)

Prepared & Analyzed: 09/13/24

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>	<i>0.0254</i>		"	<i>0.0333</i>		<i>76.3</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0198</i>		"	<i>0.0333</i>		<i>59.3</i>	<i>40-150</i>			

LCS (BHI0425-BS1)

Prepared & Analyzed: 09/13/24

Acenaphthene	0.0272	0.00500	mg/kg	0.0333		81.7	31-137			
Anthracene	0.0266	0.00500	"	0.0333		79.7	30-120			
Benzo (a) anthracene	0.0251	0.00500	"	0.0333		75.3	30-120			
Benzo (a) pyrene	0.0239	0.00500	"	0.0333		71.7	30-120			
Benzo (b) fluoranthene	0.0166	0.00500	"	0.0333		49.8	30-120			
Benzo (k) fluoranthene	0.0209	0.00500	"	0.0333		62.6	30-120			
Chrysene	0.0286	0.00500	"	0.0333		85.9	30-120			
Dibenz (a,h) anthracene	0.0292	0.00500	"	0.0333		87.6	30-120			
Fluoranthene	0.0212	0.00500	"	0.0333		63.6	30-120			
Fluorene	0.0266	0.00500	"	0.0333		79.7	30-120			
Indeno (1,2,3-cd) pyrene	0.0347	0.00500	"	0.0333		104	30-120			
Pyrene	0.0348	0.00500	"	0.0333		104	35-142			
1-Methylnaphthalene	0.0281	0.00500	"	0.0333		84.3	35-142			
2-Methylnaphthalene	0.0275	0.00500	"	0.0333		82.4	35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0277</i>		"	<i>0.0333</i>		<i>83.0</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0215</i>		"	<i>0.0333</i>		<i>64.4</i>	<i>40-150</i>			

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

Project: PDC - Dunham Tank Battery

Project Number: 36700
Project Manager: Karen Olson

Reported:
09/17/24 08:41

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 BHI0425 - EPA 5030 Soil MS

Matrix Spike (BHI0425-MS1)	Source: 2409175-01			Prepared & Analyzed: 09/13/24								
Acenaphthene	0.0144	0.00500	mg/kg	0.0333	ND	43.1	31-137					
Anthracene	0.0178	0.00500	"	0.0333	ND	53.4	30-120					
Benzo (a) anthracene	0.0140	0.00500	"	0.0333	ND	42.0	30-120					
Benzo (a) pyrene	0.0169	0.00500	"	0.0333	ND	50.8	30-120					
Benzo (b) fluoranthene	0.0143	0.00500	"	0.0333	ND	42.8	30-120					
Benzo (k) fluoranthene	0.0207	0.00500	"	0.0333	ND	62.1	30-120					
Chrysene	0.0166	0.00500	"	0.0333	ND	49.7	30-120					
Dibenz (a,h) anthracene	0.0176	0.00500	"	0.0333	ND	52.9	30-120					
Fluoranthene	0.0237	0.00500	"	0.0333	ND	71.0	30-120					
Fluorene	0.0160	0.00500	"	0.0333	ND	47.9	30-120					
Indeno (1,2,3-cd) pyrene	0.0225	0.00500	"	0.0333	ND	67.5	30-120					
Pyrene	0.0185	0.00500	"	0.0333	ND	55.5	35-142					
1-Methylnaphthalene	0.0156	0.00500	"	0.0333	ND	46.9	15-130					
2-Methylnaphthalene	0.0260	0.00500	"	0.0333	ND	78.0	15-130					
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0138</i>		<i>"</i>	<i>0.0333</i>		<i>41.3</i>	<i>40-150</i>					
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0144</i>		<i>"</i>	<i>0.0333</i>		<i>43.2</i>	<i>40-150</i>					

Matrix Spike Dup (BHI0425-MSD1)	Source: 2409175-01			Prepared & Analyzed: 09/13/24								
Acenaphthene	0.0164	0.00500	mg/kg	0.0333	ND	49.2	31-137	13.1	30			
Anthracene	0.0182	0.00500	"	0.0333	ND	54.6	30-120	2.25	30			
Benzo (a) anthracene	0.0159	0.00500	"	0.0333	ND	47.7	30-120	12.8	30			
Benzo (a) pyrene	0.0164	0.00500	"	0.0333	ND	49.2	30-120	3.17	30			
Benzo (b) fluoranthene	0.0195	0.00500	"	0.0333	ND	58.5	30-120	31.0	30			QR-02
Benzo (k) fluoranthene	0.0150	0.00500	"	0.0333	ND	44.9	30-120	32.1	30			QR-02
Chrysene	0.0189	0.00500	"	0.0333	ND	56.7	30-120	13.2	30			
Dibenz (a,h) anthracene	0.0195	0.00500	"	0.0333	ND	58.6	30-120	10.2	30			
Fluoranthene	0.0205	0.00500	"	0.0333	ND	61.4	30-120	14.6	30			
Fluorene	0.0159	0.00500	"	0.0333	ND	47.6	30-120	0.798	30			
Indeno (1,2,3-cd) pyrene	0.0210	0.00500	"	0.0333	ND	62.9	30-120	7.08	30			
Pyrene	0.0209	0.00500	"	0.0333	ND	62.7	35-142	12.1	30			
1-Methylnaphthalene	0.0133	0.00500	"	0.0333	ND	40.0	15-130	15.8	50			
2-Methylnaphthalene	0.0133	0.00500	"	0.0333	ND	40.0	15-130	64.4	50			QR-02
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0142</i>		<i>"</i>	<i>0.0333</i>		<i>42.5</i>	<i>40-150</i>					
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0136</i>		<i>"</i>	<i>0.0333</i>		<i>40.7</i>	<i>40-150</i>					

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

Project: PDC - Dunham Tank Battery

Project Number: 36700
Project Manager: Karen Olson

Reported:
09/17/24 08:41

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 BHI0167 - EPA 3050B

Blank (BHI0167-BLK1)

Prepared & Analyzed: 09/06/24

Boron ND 2.00 mg/L

LCS (BHI0167-BS1)

Prepared & Analyzed: 09/06/24

Boron 5.01 2.00 mg/L 5.00 100 80-120

Duplicate (BHI0167-DUP1)

Source: 2409051-01

Prepared & Analyzed: 09/06/24

Boron 0.562 2.00 mg/L 0.552 1.69 20

Matrix Spike (BHI0167-MS1)

Source: 2409051-01

Prepared & Analyzed: 09/06/24

Boron 5.39 2.00 mg/L 4.97 0.552 97.4 75-125

Matrix Spike Dup (BHI0167-MSD1)

Source: 2409051-01

Prepared & Analyzed: 09/06/24

Boron 5.55 2.00 mg/L 4.97 0.552 101 75-125 2.87 25

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Tasman Geosciences
6855 W. 119th Ave.
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Project: PDC - Dunham Tank Battery

Project Number: 36700
Project Manager: Karen Olson

Reported:
09/17/24 08:41

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHI0213 - EPA 3050B

Blank (BHI0213-BLK1)

Prepared & Analyzed: 09/09/24

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 (BHI0213-BS1)

Prepared & Analyzed: 09/09/24

Arsenic	31.2	0.179	mg/kg wet	35.7	87.4	80-120
Barium	31.6	0.357	"	35.7	88.5	80-120
Cadmium	1.62	0.179	"	1.79	90.8	80-120
Copper	32.5	0.357	"	35.7	91.0	80-120
Lead	15.7	0.179	"	17.9	87.9	80-120
Nickel	32.3	0.357	"	35.7	90.4	80-120
Silver	1.64	0.0179	"	1.79	91.8	80-120
Zinc	31.5	0.357	"	35.7	88.3	80-120
Selenium	3.14	0.232	"	3.57	87.9	80-120

Duplicate (BHI0213-DUP1)

Source: 2409061-01

Prepared & Analyzed: 09/09/24

Arsenic	1.59	0.200	mg/kg dry	1.62	2.23	20	
Barium	64.8	0.400	"	107	49.1	20	QR-02
Cadmium	0.0959	0.200	"	0.116	19.0	20	
Copper	4.43	0.400	"	5.24	16.8	20	
Lead	4.55	0.200	"	4.89	7.34	20	
Nickel	4.49	0.400	"	4.55	1.30	20	
Silver	0.0232	0.0200	"	0.0278	18.0	20	
Zinc	18.9	0.400	"	19.6	3.63	20	
Selenium	ND	0.260	"	ND		20	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Dunham Tank Battery

Project Number: 36700
Project Manager: Karen Olson

Reported:
09/17/24 08:41

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 BHI0213 - EPA 3050B

Matrix Spike (BHI0213-MS1)	Source: 2409061-01			Prepared & Analyzed: 09/09/24								
Arsenic	38.4	0.200	mg/kg dry	41.2	1.62	89.3	75-125					
Barium	121	0.400	"	41.2	107	34.8	75-125					QM-05
Cadmium	1.89	0.200	"	2.06	0.116	85.9	75-125					
Copper	43.4	0.400	"	41.2	5.24	92.6	75-125					
Lead	22.8	0.200	"	20.6	4.89	87.2	75-125					
Nickel	43.0	0.400	"	41.2	4.55	93.4	75-125					
Silver	1.75	0.0200	"	2.06	0.0278	83.6	75-125					
Zinc	56.3	0.400	"	41.2	19.6	89.0	75-125					
Selenium	3.32	0.260	"	4.12	ND	80.6	75-125					

Matrix Spike Dup (BHI0213-MSD1)	Source: 2409061-01			Prepared & Analyzed: 09/09/24								
Arsenic	37.7	0.200	mg/kg dry	40.3	1.62	89.6	75-125	1.89	25			
Barium	118	0.400	"	40.3	107	27.9	75-125	2.59	25			QM-05
Cadmium	1.84	0.200	"	2.01	0.116	85.4	75-125	2.66	25			
Copper	42.4	0.400	"	40.3	5.24	92.3	75-125	2.24	25			
Lead	22.5	0.200	"	20.1	4.89	87.2	75-125	1.72	25			
Nickel	42.1	0.400	"	40.3	4.55	93.2	75-125	2.26	25			
Silver	1.70	0.0200	"	2.01	0.0278	83.0	75-125	2.88	25			
Zinc	55.1	0.400	"	40.3	19.6	88.1	75-125	2.12	25			
Selenium	3.26	0.260	"	4.03	ND	81.0	75-125	1.79	25			

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Tasman Geosciences
6855 W. 119th Ave.
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Project: PDC - Dunham Tank Battery

Project Number: 36700
Project Manager: Karen Olson

Reported:
09/17/24 08:41

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 BHI0178 - 3060A Mod

Blank (BHI0178-BLK1)											Prepared & Analyzed: 09/06/24
Chromium, Hexavalent	ND	0.30	mg/kg wet								
LCS (BHI0178-BS1)											Prepared & Analyzed: 09/06/24
Chromium, Hexavalent	26.2	0.30	mg/kg wet	25.0		105	80-120				
Duplicate (BHI0178-DUP1)											Source: 2409056-01 Prepared & Analyzed: 09/06/24
Chromium, Hexavalent	ND	0.30	mg/kg dry		ND					20	
Matrix Spike (BHI0178-MS1)											Source: 2409056-01 Prepared & Analyzed: 09/06/24
Chromium, Hexavalent	30.9	0.30	mg/kg dry	29.1	ND	106	75-125				
Matrix Spike Dup (BHI0178-MSD1)											Source: 2409056-01 Prepared & Analyzed: 09/06/24
Chromium, Hexavalent	31.0	0.30	mg/kg dry	29.1	ND	107	75-125	0.376		20	

Batch BHI0230 - 3060A Mod

Blank (BHI0230-BLK1)											Prepared & Analyzed: 09/09/24
Chromium, Hexavalent	ND	0.30	mg/kg wet								
LCS (BHI0230-BS1)											Prepared & Analyzed: 09/09/24
Chromium, Hexavalent	25.7	0.30	mg/kg wet	25.0		103	80-120				
Duplicate (BHI0230-DUP1)											Source: 2409055-01 Prepared & Analyzed: 09/09/24
Chromium, Hexavalent	ND	0.30	mg/kg dry		ND					20	
Matrix Spike (BHI0230-MS1)											Source: 2409055-01 Prepared & Analyzed: 09/09/24
Chromium, Hexavalent	24.7	0.30	mg/kg dry	25.6	ND	96.4	75-125				

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

Project: PDC - Dunham Tank Battery

Project Number: 36700
Project Manager: Karen Olson

Reported:
09/17/24 08:41

Hexavalent Chromium by EPA Method 7196 - Quality Control

Summit Scientific

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

Batch BHI0230 - 3060A Mod


Matrix Spike Dup (BHI0230-MSD1)

Source: 2409055-01

Prepared & Analyzed: 09/09/24

Chromium, Hexavalent	26.3	0.30	mg/kg dry	25.6	ND	103	75-125	6.23	20	
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Dunham Tank Battery

Project Number: 36700
Project Manager: Karen Olson

Reported:
09/17/24 08:41

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 BHI0295 - General Preparation

Blank (BHI0295-BLK1)

Prepared: 09/10/24 Analyzed: 09/11/24

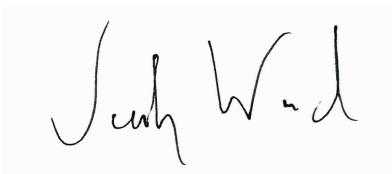
Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							

LCS (BHI0295-BS1)

Prepared: 09/10/24 Analyzed: 09/11/24

Calcium	5.31	0.0500	mg/L wet	5.00		106	70-130			
Magnesium	5.61	0.0500	"	5.00		112	70-130			
Sodium	5.21	0.0500	"	5.00		104	70-130			

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 6855 W. 119th Ave.
 Broomfield CO, 80020

Project: PDC - Dunham Tank Battery

Project Number: 36700
 Project Manager: Karen Olson

Reported:
 09/17/24 08:41

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 BHI0179 - General Preparation


Duplicate (BHI0179-DUP2)

Source: 2408375-05

Prepared & Analyzed: 09/06/24

% Solids	93.9		%		94.2			0.286		20	
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Dunham Tank Battery

Project Number: 36700
Project Manager: Karen Olson

Reported:
09/17/24 08:41

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 BHI0301 - General Preparation

Blank (BHI0301-BLK1)

Prepared: 09/10/24 Analyzed: 09/11/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BHI0301-BS1)

Prepared: 09/10/24 Analyzed: 09/11/24

Specific Conductance (EC) 0.154 0.0100 mmhos/cm 0.150 102 95-105

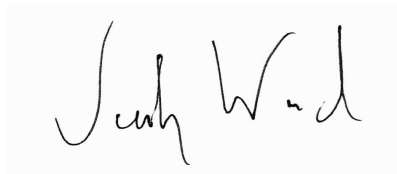
Duplicate (BHI0301-DUP1)

Source: 2409063-01

Prepared: 09/10/24 Analyzed: 09/11/24

Specific Conductance (EC) 0.243 0.0100 mmhos/cm 0.247 1.51 20

Summit Scientific



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6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Dunham Tank Battery

Project Number: 36700
Project Manager: Karen Olson

Reported:
09/17/24 08:41

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

Summit Scientific

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

Batch BHI0299 - General Preparation

LCS (BHI0299-BS1)

Prepared: 09/10/24 Analyzed: 09/11/24

pH 9.17 pH Units 9.18 99.9 95-105

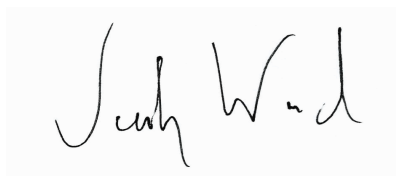
Duplicate (BHI0299-DUP1)

Source: 2409063-01

Prepared: 09/10/24 Analyzed: 09/11/24

pH 8.20 pH Units 8.23 0.365 20

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6855 W. 119th Ave.
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Project: PDC - Dunham Tank Battery

Project Number: 36700
Project Manager: Karen Olson

Reported:
09/17/24 08:41

Notes and Definitions

- QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
- 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