

Analytical Results  
Former Duke J 4-33 Tank Battery

**TABLE 1**  
**FORMER DUKE J 4-33 TANK BATTERY**  
**SOIL ANALYTICAL RESULTS SUMMARY TABLE**  
**ORGANIC COMPOUNDS**

Sample ID	Date Sampled	Depth	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	1, 2, 4-TMB (mg/kg)	1, 3, 5-TMB (mg/kg)	Naphthalene (mg/kg)	TPH <sup>(4)</sup> (mg/kg)
<b>Residential SSL <sup>(1,2)</sup></b>			<b>1.2</b>	<b>490</b>	<b>5.8</b>	<b>58</b>	<b>30</b>	<b>27</b>	<b>2</b>	<b>500</b>
<b>Protection of Groundwater SSL <sup>(1,2,3)</sup></b>			<b>0.0026</b>	<b>0.69</b>	<b>0.78</b>	<b>9.9</b>	<b>0.0081</b>	<b>0.0087</b>	<b>0.0038</b>	<b>500</b>
SEP01-DL-B @ 4'	12/3/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
SEP01-DL-N @ 2.5'	12/3/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
SEP01-FL @ 4'	12/3/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
AST01 @ 4'	12/3/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
AST02 @ 4'	12/3/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
AST03 @ 4'	12/3/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
AST04 @ 4'	12/3/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
AST05 @ 4'	12/3/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
AST06 @ 4'	12/3/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50

**Notes:**

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

COGCC = Colorado Oil and Gas Conservation Commission

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

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

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

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

mg/kg = Milligrams per kilogram

TMB = Trimethylbenzene

ft. = Feet

bgs = Below ground surface

**TABLE 2**  
**FORMER DUKE J 4-33 TANK BATTERY**  
**SOIL ANALYTICAL RESULTS SUMMARY TABLE**  
**INORGANIC COMPOUNDS**

Sample ID	Date Sampled	Depth	pH (units)	EC (mmhos/cm)	SAR (units)	Boron (mg/L)
<b>Soil Suitability for Reclamation Standard <sup>(1)</sup></b>			<b>6-8.3</b>	<b>&lt;4</b>	<b>&lt;6</b>	<b>2</b>
SEP01-DL-B @ 4'	12/3/2021	4 ft. bgs	7.89	0.623	0.777	0.0632
SEP01-DL-N @ 2.5'	12/3/2021	2.5 ft. bgs	7.96	0.467	0.314	<0.0100

**Notes:**

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

COGCC = Colorado Oil and Gas Conservation Commission

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

EC = Electrical conductivity

SAR = Sodium adsorption ratio

mmhos/cm = Millimhos per centimeter

mg/L = Milligrams per liter

ft. = Feet

bgs = Below ground surface

**TABLE 3**  
**FORMER DUKE J 4-33 TANK BATTERY**  
**FIELD DATA SUMMARY TABLE**

Sample ID	Date Sampled	Depth	GPS Data <sup>(1)</sup>		PDOP Value	VOC Concentration <sup>(2)</sup> (ppm)
			Latitude	Longitude		
SEP-01-DL-B @ 4'	12/3/2021	4 ft. bgs	40.425686	-104.792249	1.1	1.5
SEP01-DL-N @ 2.5'	12/3/2021	2.5 ft. bgs	40.425707	-104.792245	1.2	0.0
SEP01-DL-W @ 2.5'	12/3/2021	2.5 ft. bgs	40.425710	-104.792281	1.2	0.0
SEP01-DL-S @ 2.5'	12/3/2021	2.5 ft. bgs	40.425693	-104.792266	1.2	0.0
SEP01-DL-E @ 2.5'	12/3/2021	2.5 ft. bgs	40.425679	-104.792242	1.2	0.0
SEP01-FL @ 4'	12/3/2021	4 ft. bgs	40.425679	-104.792192	1.1	0.0
AST01 @ 4'	12/3/2021	4 ft. bgs	40.425982	-104.791963	1.1	8.8
AST02 @ 4'	12/3/2021	4 ft. bgs	40.426033	-104.791949	1.2	0.7
AST03 @ 4'	12/3/2021	4 ft. bgs	40.426026	-104.791895	1.2	0.1
AST04 @ 4'	12/3/2021	4 ft. bgs	40.425957	-104.791895	1.2	0.1
AST05 @ 4'	12/3/2021	4 ft. bgs	40.425915	-104.791901	1.2	0.0
AST06 @ 4'	12/3/2021	4 ft. bgs	40.425925	-104.791947	1.2	0.0
BKG01 @ 2.5'	12/3/2021	2.5 ft. bgs	40.425798	-104.791970	1.0	1.1
BKG01 @ 4'	12/3/2021	4 ft. bgs	40.425798	-104.791970	1.0	1.3
MH01 @ 0-6"	12/3/2021	0-6 in. bgs	40.425753	-104.792115	1.1	0.0

**Notes:**

1. Global Positioning System (GPS) data is provided in decimal degrees using World Geodetic System (WGS) 84 UTM Zone 13 North.
2. Volatile organic compound (VOC) concentrations are measured in the field using a photoionization detector (PID).
3. Sample included for reference only, sample collected during associated tank battery decommissioning.

PDOP = Position Dilution of Precision

ppm = Parts per million

ft. = Feet

in. = Inches

bgs = Below ground surface

# **ATTACHMENT A**

# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

December 27, 2021

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

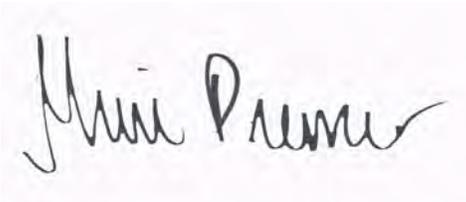
Denver, CO 80203

RE: Duke J 4-33 Tank Battery

Work Order #2112066

Enclosed are the results of analyses for samples received by Summit Scientific on 12/03/21 15:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Muri Premer". The signature is written in a cursive style and is positioned above the typed name and title.

Muri Premer For Paul Shrewsbury  
President



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

Project: Duke J 4-33 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
12/27/21 18:12

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SEP01-DL-B@4'	2112066-01	Soil	12/03/21 11:00	12/03/21 15:30
SEP01-DL-N@2.5'	2112066-02	Soil	12/03/21 11:02	12/03/21 15:30
SEP01-FL@4'	2112066-06	Soil	12/03/21 11:10	12/03/21 15:30
AST01@4'	2112066-09	Soil	12/03/21 13:30	12/03/21 15:30
AST02@4'	2112066-10	Soil	12/03/21 13:32	12/03/21 15:30
AST03@4'	2112066-11	Soil	12/03/21 13:34	12/03/21 15:30
AST04@4'	2112066-12	Soil	12/03/21 13:36	12/03/21 15:30
AST05@4'	2112066-13	Soil	12/03/21 13:38	12/03/21 15:30
AST06@4'	2112066-14	Soil	12/03/21 13:40	12/03/21 15:30

Summit Scientific

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



# Summit Scientific

2112066.2

S<sub>2</sub>

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

Client: PDC / Tasman Project Manager: Mark Longhurst  
 Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com  
 City/State/Zip: Broomfield/ CO/ 80020  
 Phone: 303-487-1228 Project Name: DVIRE J 4-33 TANK BATTERY  
 Sampler Name: MATAYA W. Project Number:

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 - 915			
1	AST03 @ 4'	12-3-21	1334	3			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				pH, EC, SAR by saturated paste	
2	AST04 @ 4'		1330	3			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					
3	AST05 @ 4'		1338	3			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					
4	AST06 @ 4'		1340	3			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by: <u>Mataya W.</u> Date/Time: <u>12-3-21 3:30pm</u>	Received by: <u>Tasman's Lock Box</u> Date/Time: _____	Turn Around Time (Check) Same Day _____ 72 hours _____ 24 hours _____ Standard <input checked="" type="checkbox"/> 48 hours _____ Sample Integrity: Temperature Upon Receipt: <u>11.1</u> Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Notes:
Relinquished by: <u>Tasman's Lock Box</u> Date/Time: _____	Received by: <u>[Signature]</u> Date/Time: <u>12 3 21 1530</u>		
Relinquished by: _____ Date/Time: _____	Received by: _____ Date/Time: _____		

S<sub>2</sub>

2/2

2112066

Sample Receipt Checklist

S2 Work Order# \_\_\_\_\_

Client: Proc/Tasman Client Project ID: Duke J4-33 Tank Battery

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

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

Temp (°C) 11.1

Thermometer ID: G86A9201901378

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

Additional Comments (if any):

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

[Signature]  
Custodian Printed Name or Initials

12-3-21  
Date/Time



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

Project: Duke J 4-33 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/27/21 18:12

**SEP01-DL-B@4'**  
**2112066-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **12/03/21 11:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BEL0172	12/08/21	12/09/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **12/03/21 11:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		113 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		114 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/03/21 11:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BEL0171	12/08/21	12/09/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **12/03/21 11:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		83.0 %	30-150		"	"	"	"	

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

Summit Scientific

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

Project: Duke J 4-33 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/27/21 18:12

**SEP01-DL-B@4'**  
**2112066-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **12/03/21 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.0632</b>	0.0100	mg/L	1	BEL0168	12/08/21	12/14/21	EPA 6020B	

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

Date Sampled: **12/03/21 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Calcium</b>	<b>57.2</b>	0.0566	mg/L dry	1	BEL0191	12/09/21	12/15/21	EPA 6020B	
<b>Magnesium</b>	<b>20.9</b>	0.0566	"	"	"	"	"	"	
<b>Sodium</b>	<b>27.0</b>	0.0566	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **12/03/21 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Sodium Adsorption Ratio</b>	<b>0.777</b>	0.00100	units	1	BEL0354	12/15/21	12/15/21	Calculation	

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

Date Sampled: **12/03/21 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>% Solids</b>	<b>88.3</b>		%	1	BEL0328	12/15/21	12/15/21	Calculation	

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

Date Sampled: **12/03/21 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>0.623</b>	0.0100	mmhos/cm	1	BEL0238	12/10/21	12/10/21	EPA 120.1	

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

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

Project: Duke J 4-33 Tank Battery

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 12/27/21 18:12

**SEP01-DL-B@4'**  
**2112066-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **12/03/21 11:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>pH</b>	<b>7.89</b>		pH Units	1	BEL0239	12/10/21	12/10/21	EPA 9045D	

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

Project: Duke J 4-33 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/27/21 18:12

**SEP01-DL-N@2.5'**  
**2112066-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **12/03/21 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEL0172	12/08/21	12/09/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **12/03/21 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		113 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		111 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		112 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/03/21 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEL0171	12/08/21	12/09/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

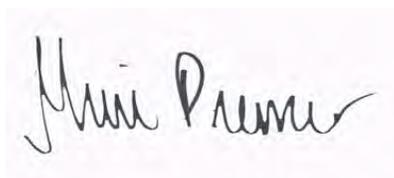
Date Sampled: **12/03/21 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		68.0 %	30-150		"	"	"	"	

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

Summit Scientific

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

Project: Duke J 4-33 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/27/21 18:12

**SEP01-DL-N@2.5'**  
**2112066-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **12/03/21 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	0.0100	mg/L	1	BEL0168	12/08/21	12/14/21	EPA 6020B	

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

Date Sampled: **12/03/21 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	43.6	0.0537	mg/L dry	1	BEL0191	12/09/21	12/15/21	EPA 6020B	
Magnesium	12.9	0.0537	"	"	"	"	"	"	
Sodium	9.19	0.0537	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **12/03/21 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.314	0.00100	units	1	BEL0354	12/15/21	12/15/21	Calculation	

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

Date Sampled: **12/03/21 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.0		%	1	BEL0328	12/15/21	12/15/21	Calculation	

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

Date Sampled: **12/03/21 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.467	0.0100	mmhos/cm	1	BEL0238	12/10/21	12/10/21	EPA 120.1	

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

Summit Scientific

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

Project: Duke J 4-33 Tank Battery

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 12/27/21 18:12

**SEP01-DL-N@2.5'**  
**2112066-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **12/03/21 11:02**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>pH</b>	<b>7.96</b>		pH Units	1	BEL0239	12/10/21	12/10/21	EPA 9045D	

Summit Scientific

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

Project: Duke J 4-33 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/27/21 18:12

**SEP01-FL@4'**  
**2112066-06 (Soil)**

**Summit Scientific**

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

Date Sampled: **12/03/21 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEL0172	12/08/21	12/23/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **12/03/21 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		110 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		94.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.1 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/03/21 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEL0171	12/08/21	12/09/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **12/03/21 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		61.2 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Duke J 4-33 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/27/21 18:12

**AST01@4'**  
**2112066-09 (Soil)**

**Summit Scientific**

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

Date Sampled: **12/03/21 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BEL0172	12/08/21	12/09/21	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **12/03/21 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		116 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		111 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		115 %		21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/03/21 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BEL0171	12/08/21	12/09/21	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **12/03/21 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		57.2 %		30-150		"	"	"	"	

Summit Scientific

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

Project: Duke J 4-33 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/27/21 18:12

**AST02@4'**  
**2112066-10 (Soil)**

**Summit Scientific**

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

Date Sampled: **12/03/21 13:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEL0172	12/08/21	12/09/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **12/03/21 13:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		114 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		107 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		112 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/03/21 13:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEL0171	12/08/21	12/09/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **12/03/21 13:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		83.4 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Duke J 4-33 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/27/21 18:12

**AST03@4'**  
**2112066-11 (Soil)**

**Summit Scientific**

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

Date Sampled: **12/03/21 13:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEL0172	12/08/21	12/09/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **12/03/21 13:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		117 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		112 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/03/21 13:34**

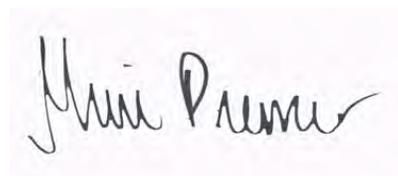
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEL0171	12/08/21	12/09/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **12/03/21 13:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		98.4 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Duke J 4-33 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/27/21 18:12

**AST04@4'**  
**2112066-12 (Soil)**

**Summit Scientific**

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

Date Sampled: **12/03/21 13:36**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BEL0172	12/08/21	12/09/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **12/03/21 13:36**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		111 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		107 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		115 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/03/21 13:36**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BEL0171	12/08/21	12/09/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **12/03/21 13:36**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		64.2 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Duke J 4-33 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/27/21 18:12

**AST05@4'**  
**2112066-13 (Soil)**

**Summit Scientific**

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

Date Sampled: **12/03/21 13:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEL0172	12/08/21	12/09/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **12/03/21 13:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		112 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		107 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		112 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/03/21 13:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEL0171	12/08/21	12/09/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **12/03/21 13:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		90.2 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Duke J 4-33 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/27/21 18:12

**AST06@4'**  
**2112066-14 (Soil)**

**Summit Scientific**

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

Date Sampled: **12/03/21 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEL0172	12/08/21	12/09/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **12/03/21 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		113 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		110 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		115 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/03/21 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEL0171	12/08/21	12/09/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **12/03/21 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		69.7 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Duke J 4-33 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/27/21 18:12

### 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 BEL0172 - EPA 5030 Soil MS

##### Blank (BEL0172-BLK1)

Prepared: 12/08/21 Analyzed: 12/09/21

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0459		"	0.0400		115	23-173			
<i>Surrogate: Toluene-d8</i>	0.0434		"	0.0400		108	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0446		"	0.0400		111	21-167			

##### LCS (BEL0172-BS1)

Prepared: 12/08/21 Analyzed: 12/09/21

Benzene	0.0744	0.0020	mg/kg	0.100		74.4	70-130			
Toluene	0.0743	0.0050	"	0.100		74.3	70-130			
Ethylbenzene	0.0956	0.0050	"	0.100		95.6	70-130			
m,p-Xylene	0.190	0.010	"	0.200		95.1	70-130			
o-Xylene	0.0985	0.0050	"	0.100		98.5	70-130			
1,2,4-Trimethylbenzene	0.0727	0.0050	"	0.100		72.7	70-130			
1,3,5-Trimethylbenzene	0.0717	0.0050	"	0.100		71.7	70-130			
Naphthalene	0.0978	0.0038	"	0.100		97.8	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0457		"	0.0400		114	23-173			
<i>Surrogate: Toluene-d8</i>	0.0447		"	0.0400		112	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0430		"	0.0400		108	21-167			

##### Matrix Spike (BEL0172-MS1)

Source: 2112066-01

Prepared: 12/08/21 Analyzed: 12/09/21

Benzene	0.112	0.0020	mg/kg	0.100	ND	112	70-130			
Toluene	0.105	0.0050	"	0.100	ND	105	70-130			
Ethylbenzene	0.0939	0.0050	"	0.100	ND	93.9	70-130			
m,p-Xylene	0.183	0.010	"	0.200	ND	91.5	70-130			
o-Xylene	0.0972	0.0050	"	0.100	ND	97.2	70-130			
1,2,4-Trimethylbenzene	0.103	0.0050	"	0.100	ND	103	70-130			
1,3,5-Trimethylbenzene	0.0998	0.0050	"	0.100	ND	99.8	70-130			
Naphthalene	0.105	0.0038	"	0.100	ND	105	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0434		"	0.0400		109	23-173			
<i>Surrogate: Toluene-d8</i>	0.0435		"	0.0400		109	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0416		"	0.0400		104	21-167			

Summit Scientific

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

Project: Duke J 4-33 Tank Battery

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 12/27/21 18:12

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

**Summit Scientific**

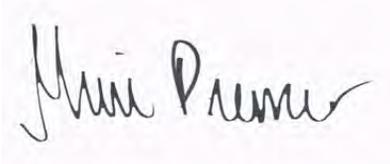
Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD		Notes
		Limit	Units			%REC	Limits	RPD	Limit	

**Batch BEL0172 - EPA 5030 Soil MS**

Matrix Spike Dup (BEL0172-MSD1)	Source: 2112066-01			Prepared: 12/08/21 Analyzed: 12/09/21					
Benzene	0.128	0.0020	mg/kg	0.100	ND	128	70-130	14.0	30
Toluene	0.121	0.0050	"	0.100	ND	121	70-130	13.7	30
Ethylbenzene	0.108	0.0050	"	0.100	ND	108	70-130	13.5	30
m,p-Xylene	0.212	0.010	"	0.200	ND	106	70-130	14.8	30
o-Xylene	0.113	0.0050	"	0.100	ND	113	70-130	15.0	30
1,2,4-Trimethylbenzene	0.122	0.0050	"	0.100	ND	122	70-130	16.3	30
1,3,5-Trimethylbenzene	0.116	0.0050	"	0.100	ND	116	70-130	15.4	30
Naphthalene	0.121	0.0038	"	0.100	ND	121	70-130	14.7	30
Surrogate: 1,2-Dichloroethane-d4	0.0446		"	0.0400		111	23-173		
Surrogate: Toluene-d8	0.0442		"	0.0400		111	20-170		
Surrogate: 4-Bromofluorobenzene	0.0432		"	0.0400		108	21-167		

Summit Scientific

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

Project: Duke J 4-33 Tank Battery

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 12/27/21 18:12

**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 BEL0171 - EPA 3550A**

**Blank (BEL0171-BLK1)**

Prepared: 12/08/21 Analyzed: 12/09/21

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

**LCS (BEL0171-BS1)**

Prepared: 12/08/21 Analyzed: 12/09/21

C10-C28 (DRO)	440	50	mg/kg	500	88.0	70-130				
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**Matrix Spike (BEL0171-MS1)**

Source: 2112066-01

Prepared: 12/08/21 Analyzed: 12/09/21

C10-C28 (DRO)	436	50	mg/kg	500	42.4	78.6	70-130			
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**Matrix Spike Dup (BEL0171-MSD1)**

Source: 2112066-01

Prepared: 12/08/21 Analyzed: 12/09/21

C10-C28 (DRO)	411	50	mg/kg	500	42.4	73.8	70-130	5.77	20	
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Summit Scientific

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

Project: Duke J 4-33 Tank Battery

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 12/27/21 18:12

**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 BEL0168 - EPA 3050B**

**Blank (BEL0168-BLK1)**

Prepared: 12/08/21 Analyzed: 12/14/21

Boron ND 0.0100 mg/L

**LCS (BEL0168-BS1)**

Prepared: 12/08/21 Analyzed: 12/14/21

Boron 5.10 0.0100 mg/L 5.00 102 80-120

**Duplicate (BEL0168-DUP1)**

**Source: 2112027-01**

Prepared: 12/08/21 Analyzed: 12/14/21

Boron ND 0.0100 mg/L ND 20

**Matrix Spike (BEL0168-MS1)**

**Source: 2112027-01**

Prepared: 12/08/21 Analyzed: 12/14/21

Boron 5.40 0.0100 mg/L 5.00 ND 108 75-125

**Matrix Spike Dup (BEL0168-MSD1)**

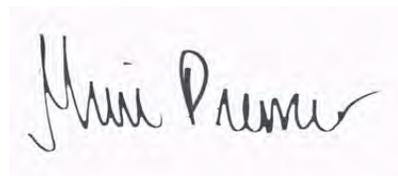
**Source: 2112027-01**

Prepared: 12/08/21 Analyzed: 12/14/21

Boron 5.39 0.0100 mg/L 5.00 ND 108 75-125 0.156 25

Summit Scientific

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

Project: Duke J 4-33 Tank Battery

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 12/27/21 18:12

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

**Summit Scientific**

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

**Batch BEL0191 - General Preparation**

**Blank (BEL0191-BLK1)**

Prepared: 12/09/21 Analyzed: 12/15/21

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

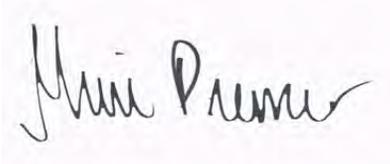
**LCS (BEL0191-BS1)**

Prepared: 12/09/21 Analyzed: 12/15/21

Calcium	5.26	0.0500	mg/L wet	5.00	105	70-130				
Magnesium	5.19	0.0500	"	5.00	104	70-130				
Sodium	4.74	0.0500	"	5.00	94.9	70-130				

Summit Scientific

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

Project: Duke J 4-33 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
 12/27/21 18:12

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

**Summit Scientific**

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

**Batch BEL0328 - General Preparation**

**Duplicate (BEL0328-DUP1)**

**Source: 2112061-01**

Prepared & Analyzed: 12/15/21

% Solids	90.1		%		90.5			0.401		20	
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Summit Scientific

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

Project: Duke J 4-33 Tank Battery

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 12/27/21 18:12

**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 BEL0238 - General Preparation**

**Blank (BEL0238-BLK1)**

Prepared & Analyzed: 12/10/21

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BEL0238-BS1)**

Prepared & Analyzed: 12/10/21

Specific Conductance (EC) 0.147 0.0100 mmhos/cm 0.150 97.9 95-105

**Duplicate (BEL0238-DUP1)**

Source: 2112066-01

Prepared & Analyzed: 12/10/21

Specific Conductance (EC) 0.624 0.0100 mmhos/cm 0.623 0.176 20

Summit Scientific

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

Project: Duke J 4-33 Tank Battery

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 12/27/21 18:12

**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 BEL0239 - General Preparation**

**LCS (BEL0239-BS1)**

Prepared & Analyzed: 12/10/21

pH 9.06 pH Units 9.18 98.7 95-105

**Duplicate (BEL0239-DUP1)**

Source: 2112066-01

Prepared & Analyzed: 12/10/21

pH 7.93 pH Units 7.89 0.506 20

Summit Scientific

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

Project: Duke J 4-33 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/27/21 18:12

### Notes and Definitions

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