

**TABLE 1**  
**FORMER LINKUS 32-24 TANK BATTERY**  
**PRODUCED WATER VESSEL SOIL ANALYTICAL RESULTS SUMMARY**  
**TABLE CONTAMINANTS OF CONCERN**

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)
Residential SSL <sup>(1,2)</sup>			1.2	490	5.8	58	30	27	2	500
Protection of Groundwater SSL <sup>(1,2,3)</sup>			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500
PWV01-B @ 4'	6/4/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	0.046	0.64	0.058	376
AST01 @ 0-6"	6/4/2021	0-6 in. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
S01 @ 7'	6/8/2021	7 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
S02 @ 2.5'	6/8/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
S03 @ 6'	6/8/2021	6 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
S04 @ 2.5'	6/8/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
S05 @ 6'	6/8/2021	6 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
S06 @ 2.5'	6/9/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
S07 @ 6'	6/9/2021	6 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
S08 @ 2.5'	6/9/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
S09 @ 6'	6/9/2021	6 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
S10 @ 7'	6/9/2021	7 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
S11 @ 13'	6/10/2021	13 ft. bgs	0.012	<0.0050	0.59	0.66	1.3	0.11	0.25	214
S12 @ 16'	6/11/2021	16 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	0.0080	0.016	<0.0038	0.74
S13 @ 14'	6/11/2021	14 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
S14 @ 14'	6/11/2021	14 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	0.0072	<0.0038	1.0
S15 @ 14'	6/11/2021	14 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
S16 @ 14'	6/11/2021	14 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
S17 @ 2.5'	6/11/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
S18 @ 6'	6/11/2021	6 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
S19 @ 7'	6/11/2021	7 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
S20 @ 2.5'	6/11/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
S21 @ 6'	6/11/2021	6 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
S22 @ 2.5'	6/11/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
S23 @ 6'	6/11/2021	6 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
S24 @ 2.5'	6/11/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
S25 @ 6'	6/11/2021	6 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
S26 @ 16.5'	6/14/2021	16.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50

**Notes:**

- Compounds referenced from the COGCC 2 CCR 404-1, Table 915-1, effective January 15, 2021.
- Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.
- SSLs are applicable if a pathway for communication with groundwater is present.
- 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

Source material characterization sample

in. = Inches

ft. = Feet

bgs = Below ground surface

**BOLD** = Analytical result is in exceedance of applicable standard.

**TABLE 2**  
**FORMER LINKUS 32-24 TANK BATTERY**  
**PRODUCED WATER VESSEL SOIL ANALYTICAL RESULTS SUMMARY TABLE**  
**INORGANIC COMPOUNDS**

Sample ID	Date Sampled	Depth	pH (units)	EC (mmhos/cm)	SAR (units)	Boron (mg/L)
Soil Suitability for Reclamation Standard <sup>(1)</sup>			6-8.3	<4	<6	2
PWV01-B @ 4'	6/4/2021	4 ft. bgs	8.23	1.15	<b>7.42</b>	0.957
BKG01 @ 2.5'	6/4/2021	2.5 ft. bgs	7.86	NA	1.48	NA

**Notes:**

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

COGCC = Colorado Oil and Gas Conservation Commission

EC = Electrical conductivity

SAR = Sodium adsorption ratio

mmhos/cm = millimhos per centimeter

mg/L = milligram per liter

ft. = Feet

bgs = Below ground surface

**BOLD** = Analytical result is in exceedance of applicable standard.

TABLE 3  
FORMER LINKUS 32-24 TANK BATTERY  
PRODUCED WATER VESSEL SOIL ANALYTICAL RESULTS SUMMARY TABLE  
ORGANIC COMPOUNDS - VOC & PAHs

Sample ID	Date Sampled	Depth	1, 2, 4-TMB (mg/kg)	1, 3, 5-TMB (mg/kg)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benz(a) (mg/kg)	Benzo(a) (mg/kg)	Benzo(b) (mg/kg)	Benzo(k) (mg/kg)	Chrysene (mg/kg)	A,H (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	1,2,3-CD (mg/kg)	Pyrene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)
Residential SSL <sup>(1,2)</sup>			30	27	360	1,800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
Protection of Groundwater SSL <sup>(1,2,3)</sup>			0.0081	0.0087	0.55	5.8	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
PWV01-B @ 4'	6/4/2021	4 ft. bgs	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500

**Notes:**  
1. Compounds referenced from the COGCC 2 CCR 404-1, Table 915-1, effective January 15, 2021.  
2. Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.  
3. SSLs are applicable if a pathway for communication with groundwater is present.  
COGCC = Colorado Oil and Gas Conservation Commission  
(<) = Analytical result is less than the indicated laboratory reporting limit.  
TMB = Trimethylbenzene  
PAHs = Polycyclic aromatic hydrocarbons  
Benz(a) = Benzanthrane  
Benzo(a) = Benzopyrene  
Benzo(b) = Benzofluoranthene  
Benzo(k) = Benzofluoranthene  
A,H = Dibenzoanthracene  
1,2,3-CD = Indenopyrene  
M = Methylnaphthalene  
mg/kg = Milligrams per kilogram  
ft. = Feet  
bgs = Below ground surface  
**BOLD** = Analytical result is in exceedance of applicable standard.

TABLE 4  
FORMER LINKUS 32-24 TANK BATTERY  
PRODUCED WATER VESSEL SOIL ANALYTICAL RESULTS SUMMARY TABLE  
METALS

Sample ID	Date Sampled	Depth	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
Residential SSL <sup>(1,2)</sup>			0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
Protection of Groundwater SSL <sup>(1,2,3)</sup>			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
PWV01-B @ 4'	6/4/2021	4 ft. bgs	1.39	102	0.294	<0.30 <sup>(4)</sup>	13.5	10.3	15.4	4.31	0.0661	58.5
BKG01 @ 2.5'	6/4/2021	2.5 ft. bgs	6.01	185	0.285	<0.30 <sup>(4)</sup>	17.4	12.8	17.1	1.04	0.0785	56.8

Notes:

- Compounds referenced from the COGCC 2 CCR 404-1, Table 915-1, effective January 15, 2021.
- Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.
- SSLs are applicable if a pathway for communication with groundwater is present.
- Compound falls within COGCC Table 915-1 Footnote 9.

COGCC = Colorado Oil and Gas Conservation Commission

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

mg/kg = Milligrams per kilogram

= Source material characterization sample

ft. = Feet

bgs = Below ground surface

**BOLD** = Analytical result is in exceedance of applicable standard.

**BOLD** = Analytical result is in exceedance of applicable standard, but within 1.25x background concentration.

**TABLE 5**  
**FORMER LINKUS 32-24 TANK BATTERY**  
**PRODUCED WATER VESSEL FIELD DATA SUMMARY TABLE**

Sample ID	Date Sampled	Depth	GPS Data <sup>(1)</sup> Latitude / Longitude		PDOP Value	VOC Concentration <sup>(2)</sup> (ppm)
PWV01-B @ 4'	6/4/2021	4 ft. bgs	40.038914	-104.948734	0.9	1,494
AST01 @ 0-6"	6/4/2021	0-6 in. bgs	40.038904	-104.948671	0.8	12.8
BKG01 @ 2.5'	6/4/2021	2.5 ft. bgs	40.038783	-104.948926	0.8	0.0
S01 @ 7'	6/8/2021	7 ft. bgs	40.038906	-104.948735	1.2	1.9
S02 @ 2.5'	6/8/2021	2.5 ft. bgs	40.038911	-104.948761	1.1	0.6
S03 @ 6'	6/8/2021	6 ft. bgs	40.038911	-104.948761	1.1	0.3
S04 @ 2.5'	6/8/2021	2.5 ft. bgs	40.038878	-104.948733	1.1	0.9
S05 @ 6'	6/8/2021	6 ft. bgs	40.038878	-104.948733	1.1	1.7
S06 @ 2.5'	6/9/2021	2.5 ft. bgs	40.038961	-104.948736	1.0	0.9
S07 @ 6'	6/9/2021	6 ft. bgs	40.038961	-104.948736	1.0	1.5
S08 @ 2.5'	6/9/2021	2.5 ft. bgs	40.038945	-104.948776	1.0	0.7
S09 @ 6'	6/9/2021	6 ft. bgs	40.038945	-104.948776	1.0	0.6
S10 @ 7'	6/9/2021	7 ft. bgs	NC	NC	NC	2.5
S11 @ 13'	6/10/2021	13 ft. bgs	NC	NC	NC	206.8
S12 @ 16'	6/11/2021	16 ft. bgs	NC	NC	NC	7.2
S13 @ 14'	6/11/2021	14 ft. bgs	40.038934	-104.948675	1.1	1.2
S14 @ 14'	6/11/2021	14 ft. bgs	NC	NC	NC	12.2
S15 @ 14'	6/11/2021	14 ft. bgs	40.038868	-104.948674	1.0	2.1
S16 @ 14'	6/11/2021	14 ft. bgs	40.038905	-104.948633	1.0	0.7
S17 @ 2.5'	6/11/2021	2.5 ft. bgs	40.038951	-104.948680	1.0	0.1
S18 @ 6'	6/11/2021	6 ft. bgs	40.038951	-104.948680	1.0	0.3
S19 @ 7'	6/11/2021	7 ft. bgs	NC	NC	NC	0.9
S20 @ 2.5'	6/11/2021	2.5 ft. bgs	40.038934	-104.948675	1.1	0.3
S21 @ 6'	6/11/2021	6 ft. bgs	40.038934	-104.948675	1.1	0.2
S22 @ 2.5'	6/11/2021	2.5 ft. bgs	40.038905	-104.948633	1.0	0.7
S23 @ 6'	6/11/2021	6 ft. bgs	40.038905	-104.948633	1.0	0.4
S24 @ 2.5'	6/11/2021	2.5 ft. bgs	40.038868	-104.948674	1.0	0.4
S25 @ 6'	6/11/2021	6 ft. bgs	40.038868	-104.948674	1.0	0.5
S26 @ 16.5'	6/14/2021	16.5 ft. bgs	NC	NC	NC	0.7

**Notes:**

1. Global Positioning System (GPS) data is provided in decimal degrees using World Geodetic System (WGS) 84 UTM Zone 13 North.

2. Volatile organic compound (VOC) concentrations are measured in the field using a photoionization detector (PID).

PDOP = Position Dilution of Precision

ppm = Parts per million

  = Source material characterization sample

ft. = Feet

bgs = Below ground surface

NC = Data not collected

Produced Water Vessel  
Attachment A

# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

June 28, 2021

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

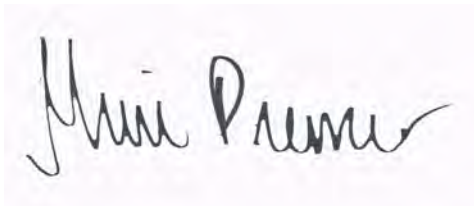
Denver, CO 80203

RE: Linkus 32-24 Tank Battery

Work Order #2106099

Enclosed are the results of analyses for samples received by Summit Scientific on 06/04/21 17:25. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Muri Premer", is shown on a light pink background.

Muri Premer For Paul Shrewsbury  
President



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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/28/21 14:37

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@3'	2106099-01	Soil	06/04/21 09:53	06/04/21 17:25
SS02@3'	2106099-02	Soil	06/04/21 10:22	06/04/21 17:25
PWV01-B@4'	2106099-03	Soil	06/04/21 10:12	06/04/21 17:25
BKG01@2.5'	2106099-04	Soil	06/04/21 09:42	06/04/21 17:25

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

2106099

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

Page 1 of 1

Client: PDC / Tasman Project Manager: Mark Longhurst  
 Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com  
 City/State/Zip: Broomfield/ CO/ 80020  
 Phone: 303-487-1228 Project Name: Linkus 32-24 Tank Battery  
 Sampler Name: Cody Miller 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	GBTEXN - 8260B <sup>415</sup>	TPH - (C6 - C36) <sup>415</sup>	pH, EC, SAR <sup>415</sup>	Boron - HWS <sup>415</sup>	VOC - 915	PAH - 915	Metals - 915	TMB <sub>5</sub> (1,2,4,6,8) <sup>415</sup>			
1	SS01 23'	6/4/21	0953	3			X			X				X	X	X	X	X	X	X	X		
2	SS02 23'	↓	1022	3			X			X				X	X						X		
3	PW01-B 24'	↓	1012	3			X			X												X	
4	BK01 22.5'	↓	0942	1			X			X											X		
5																							
6																							
7																							
8																							
9																							
10																							

Relinquished by: Cody Miller Date/Time: 6/4/21 1540	Received by: Tasman's Lock Box Date/Time: 6/4/21 1540	<b>Turn Around Time</b> (Check) Same Day <input checked="" type="checkbox"/> 72 hours ___ 24 hours ___ Standard ___ 48 hours ___ <b>Sample Integrity:</b> Temperature Upon Receipt: 6 Samples Intact: <input checked="" type="checkbox"/> Yes No	<b>Notes:</b>
Relinquished by: Tasman's Lock Box Date/Time: 6/4/21 1715	Received by: [Signature] Date/Time: 6/4/21 1715		
Relinquished by:	Received by:		

# Sample Receipt Checklist

S2 Work Order 2106099

Client: PDC / Tasman Client Project ID: Linkus 32-24 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) 6

Thermometer ID: 61857155-K

	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 provided that 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> <u>JB</u>	<u>Same day.</u>
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, ect	<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.

JB  
Custodian Printed Name or Initials

[Signature]  
Signature of Custodian

6/14/21  
Date/Time



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

Project: Linkus 32-24 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/28/21 14:37

**SS01@3'**  
**2106099-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/04/21 09:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	2.8	0.20	mg/kg	100	BEF0129	06/04/21	06/05/21	EPA 8260B	
Toluene	0.84	0.50	"	"	"	"	"	"	
Ethylbenzene	6.2	0.50	"	"	"	"	"	"	
Xylenes (total)	0.48	0.010	"	1	"	"	06/05/21	"	
1,2,4-Trimethylbenzene	45	0.50	"	100	"	"	06/05/21	"	
1,3,5-Trimethylbenzene	39	0.50	"	"	"	"	"	"	
Naphthalene	1.3	0.0038	"	1	"	"	06/05/21	"	
Gasoline Range Hydrocarbons	1500	50	"	100	"	"	06/05/21	"	

Date Sampled: **06/04/21 09:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		162 %	23-173		"	"	06/05/21	"	
Surrogate: Toluene-d8		124 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		864 %	21-167		"	"	"	"	S-02

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/04/21 09:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	4400	50	mg/kg	1	BEF0130	06/04/21	06/05/21	EPA 8015M	
C28-C36 (ORO)	96	50	"	"	"	"	"	"	

Date Sampled: **06/04/21 09:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		90.5 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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



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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/28/21 14:37

**SS01@3'**  
**2106099-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/04/21 09:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEF0548	06/25/21	06/27/21	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	"	"	"	"	"	"	
<b>Chrysene</b>	<b>0.00989</b>	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
<b>Fluoranthene</b>	<b>0.0167</b>	0.00500	"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.0706</b>	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
<b>Pyrene</b>	<b>0.0157</b>	0.00500	"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.543</b>	0.0500	"	10	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>0.974</b>	0.0500	"	"	"	"	"	"	

Date Sampled: **06/04/21 09:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		14.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		108 %	40-150		"	"	"	"	

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

Date Sampled: **06/04/21 09:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.513</b>	0.0100	mg/L	1	BEF0234	06/10/21	06/13/21	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **06/04/21 09:53**

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

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

Project: Linkus 32-24 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/28/21 14:37

**SS01@3'**  
**2106099-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	4.52	0.280	mg/kg dry	1	BEF0153	06/07/21	06/10/21	EPA 6020B
Barium	245	0.561	"	"	"	"	"	"
Cadmium	0.508	0.280	"	"	"	"	"	"
Copper	19.6	0.561	"	"	"	"	"	"
Lead	14.6	0.280	"	"	"	"	"	"
Nickel	17.3	0.561	"	"	"	"	"	"
Selenium	1.32	0.365	"	"	"	"	"	"
Silver	0.0730	0.0280	"	"	"	"	"	"
Zinc	63.8	0.561	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **06/04/21 09:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEF0223	06/09/21	06/10/21	EPA 7196A	

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

Date Sampled: **06/04/21 09:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	46.4	0.0701	mg/L dry	1	BEF0216	06/09/21	06/13/21	EPA 6020B	
Magnesium	12.9	0.0701	"	"	"	"	"	"	
Sodium	161	0.0701	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **06/04/21 09:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	5.39	0.00100	units	1	BEF0291	06/14/21	06/14/21	Calculation	

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

Date Sampled: **06/04/21 09:53**

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

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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/28/21 14:37

**SS01@3'**  
**2106099-01 (Soil)**

**Summit Scientific**

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

% Solids	71.3	%	1	BEF0164	06/08/21	06/09/21	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **06/04/21 09:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.529	0.0100	mmhos/cm	1	BEF0237	06/10/21	06/10/21	EPA 120.1	

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

Date Sampled: **06/04/21 09:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.63		pH Units	1	BEF0236	06/10/21	06/10/21	EPA 9045D	

Summit Scientific

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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/28/21 14:37

**SS02@3'**  
**2106099-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/04/21 10:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>0.0050</b>	0.0020	mg/kg	1	BEF0129	06/04/21	06/05/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.056</b>	0.010	"	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	<b>0.016</b>	0.0050	"	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	<b>0.014</b>	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **06/04/21 10:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		127 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/04/21 10:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEF0130	06/04/21	06/05/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/04/21 10:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		81.0 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Linkus 32-24 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/28/21 14:37

**PWV01-B@4'**  
**2106099-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/04/21 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEF0252	06/10/21	06/11/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	<b>0.046</b>	0.0050	"	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	<b>0.64</b>	0.0050	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>0.058</b>	0.0038	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>56</b>	0.50	"	"	"	"	"	"	

Date Sampled: **06/04/21 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		69.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		160 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/04/21 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>320</b>	50	mg/kg	1	BEF0251	06/10/21	06/11/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/04/21 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		105 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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

Project: Linkus 32-24 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/28/21 14:37

**PWV01-B@4'**  
**2106099-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/04/21 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEF0548	06/25/21	06/27/21	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: **06/04/21 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		69.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		76.3 %	40-150		"	"	"	"	

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

Date Sampled: **06/04/21 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.957</b>	0.0100	mg/L	1	BEF0234	06/10/21	06/13/21	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **06/04/21 10:12**

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

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

Project: Linkus 32-24 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/28/21 14:37

**PWV01-B@4'**  
**2106099-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.39	0.256	mg/kg dry	1	BEF0217	06/09/21	06/11/21	EPA 6020B	
Barium	102	0.512	"	"	"	"	"	"	
Cadmium	0.294	0.256	"	"	"	"	"	"	
Copper	13.5	0.512	"	"	"	"	"	"	
Lead	10.3	0.256	"	"	"	"	"	"	
Nickel	15.4	0.512	"	"	"	"	"	"	
Selenium	4.31	0.333	"	"	"	"	"	"	
Silver	0.0661	0.0256	"	"	"	"	"	"	
Zinc	58.5	0.512	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **06/04/21 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEF0223	06/09/21	06/10/21	EPA 7196A	

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

Date Sampled: **06/04/21 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	35.9	0.0640	mg/L dry	1	BEF0245	06/10/21	06/14/21	EPA 6020B	
Magnesium	39.1	0.0640	"	"	"	"	"	"	
Sodium	270	0.0640	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **06/04/21 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	7.42	0.00100	units	1	BEF0291	06/14/21	06/14/21	Calculation	

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

Date Sampled: **06/04/21 10:12**

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

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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/28/21 14:37

**PWV01-B@4'**  
**2106099-03 (Soil)**

**Summit Scientific**

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

% Solids	78.1	%	1	BEF0215	06/09/21	06/10/21	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **06/04/21 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.15	0.0100	mmhos/cm	1	BEF0270	06/11/21	06/11/21	EPA 120.1	

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

Date Sampled: **06/04/21 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.23		pH Units	1	BEF0269	06/11/21	06/11/21	EPA 9045D	

Summit Scientific

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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/28/21 14:37

**BKG01@2.5'**  
**2106099-04 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **06/04/21 09:42**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	6.01	0.274	mg/kg dry	1	BEF0153	06/07/21	06/10/21	EPA 6020B	
Barium	185	0.547	"	"	"	"	"	"	
Cadmium	0.285	0.274	"	"	"	"	"	"	
Copper	17.4	0.547	"	"	"	"	"	"	
Lead	12.8	0.274	"	"	"	"	"	"	
Nickel	17.1	0.547	"	"	"	"	"	"	
Selenium	1.04	0.356	"	"	"	"	"	"	
Silver	0.0785	0.0274	"	"	"	"	"	"	
Zinc	56.8	0.547	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **06/04/21 09:42**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEF0223	06/09/21	06/10/21	EPA 7196A	

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

Date Sampled: **06/04/21 09:42**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	456	0.0684	mg/L dry	1	BEF0351	06/16/21	06/17/21	EPA 6020B	
Magnesium	117	0.0684	"	"	"	"	"	"	
Sodium	137	0.0684	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **06/04/21 09:42**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	1.48	0.00100	units	1	BEF0409	06/18/21	06/18/21	Calculation	

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

Summit Scientific

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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/28/21 14:37

**BKG01@2.5'**  
**2106099-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/04/21 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	73.1		%	1	BEF0139	06/07/21	06/07/21	Calculation	

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

Date Sampled: **06/04/21 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.86		pH Units	1	BEF0378	06/17/21	06/17/21	EPA 9045D	

Summit Scientific

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

Project: Linkus 32-24 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/28/21 14:37

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

### Summit Scientific

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

#### Batch BEF0129 - EPA 5030 Soil MS

##### Blank (BEF0129-BLK1)

Prepared & Analyzed: 06/04/21

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0410		"	0.0400		102	23-173			
Surrogate: Toluene-d8	0.0444		"	0.0400		111	20-170			
Surrogate: 4-Bromofluorobenzene	0.0488		"	0.0400		122	21-167			

##### LCS (BEF0129-BS1)

Prepared & Analyzed: 06/04/21

Benzene	0.104	0.0020	mg/kg	0.100		104	70-130			
Toluene	0.127	0.0050	"	0.100		127	70-130			
Ethylbenzene	0.0992	0.0050	"	0.100		99.2	70-130			
m,p-Xylene	0.203	0.010	"	0.200		101	70-130			
o-Xylene	0.104	0.0050	"	0.100		104	70-130			
1,2,4-Trimethylbenzene	0.120	0.0050	"	0.100		120	70-130			
1,3,5-Trimethylbenzene	0.122	0.0050	"	0.100		122	70-130			
Naphthalene	0.0953	0.0038	"	0.100		95.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0392		"	0.0400		97.9	23-173			
Surrogate: Toluene-d8	0.0415		"	0.0400		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0490		"	0.0400		122	21-167			

##### Matrix Spike (BEF0129-MS1)

Source: 2106097-01

Prepared & Analyzed: 06/04/21

Benzene	0.101	0.0020	mg/kg	0.100	ND	101	70-130			
Toluene	0.128	0.0050	"	0.100	ND	128	70-130			
Ethylbenzene	0.0980	0.0050	"	0.100	ND	98.0	70-130			
m,p-Xylene	0.203	0.010	"	0.200	ND	102	70-130			
o-Xylene	0.0998	0.0050	"	0.100	ND	99.8	70-130			
1,2,4-Trimethylbenzene	0.120	0.0050	"	0.100	ND	120	70-130			
1,3,5-Trimethylbenzene	0.121	0.0050	"	0.100	ND	121	70-130			
Naphthalene	0.0978	0.0038	"	0.100	ND	97.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0430		"	0.0400		108	23-173			
Surrogate: Toluene-d8	0.0415		"	0.0400		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0508		"	0.0400		127	21-167			

Summit Scientific

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



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

Project: Linkus 32-24 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/28/21 14:37

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

### Summit Scientific

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

#### Batch BEF0129 - EPA 5030 Soil MS

Matrix Spike Dup (BEF0129-MSD1)		Source: 2106097-01			Prepared & Analyzed: 06/04/21					
Benzene	0.100	0.0020	mg/kg	0.100	ND	100	70-130	0.984	30	
Toluene	0.127	0.0050	"	0.100	ND	127	70-130	1.03	30	
Ethylbenzene	0.0969	0.0050	"	0.100	ND	96.9	70-130	1.08	30	
m,p-Xylene	0.202	0.010	"	0.200	ND	101	70-130	0.800	30	
o-Xylene	0.102	0.0050	"	0.100	ND	102	70-130	1.96	30	
1,2,4-Trimethylbenzene	0.119	0.0050	"	0.100	ND	119	70-130	0.728	30	
1,3,5-Trimethylbenzene	0.124	0.0050	"	0.100	ND	124	70-130	2.58	30	
Naphthalene	0.112	0.0038	"	0.100	ND	112	70-130	13.3	30	
Surrogate: 1,2-Dichloroethane-d4	0.0435		"	0.0400		109	23-173			
Surrogate: Toluene-d8	0.0416		"	0.0400		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0491		"	0.0400		123	21-167			

#### Batch BEF0252 - EPA 5030 Soil MS

Blank (BEF0252-BLK1)		Prepared: 06/10/21 Analyzed: 06/11/21								
Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0321		"	0.0400		80.3	23-173			
Surrogate: Toluene-d8	0.0464		"	0.0400		116	20-170			
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400		100	21-167			

Summit Scientific

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

Project: Linkus 32-24 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/28/21 14:37

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

### Summit Scientific

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

#### Batch BEF0252 - EPA 5030 Soil MS

##### LCS (BEF0252-BS1)

Prepared: 06/10/21 Analyzed: 06/11/21

Benzene	0.0858	0.0020	mg/kg	0.100		85.8	70-130			
Toluene	0.0790	0.0050	"	0.100		79.0	70-130			
Ethylbenzene	0.0905	0.0050	"	0.100		90.5	70-130			
m,p-Xylene	0.177	0.010	"	0.200		88.4	70-130			
o-Xylene	0.0812	0.0050	"	0.100		81.2	70-130			
1,2,4-Trimethylbenzene	0.0883	0.0050	"	0.100		88.3	70-130			
1,3,5-Trimethylbenzene	0.0874	0.0050	"	0.100		87.4	70-130			
Naphthalene	0.0889	0.0038	"	0.100		88.9	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0248		"	0.0400		62.0	23-173			
Surrogate: Toluene-d8	0.0406		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0366		"	0.0400		91.6	21-167			

##### Matrix Spike (BEF0252-MS1)

Source: 2106108-01

Prepared: 06/10/21 Analyzed: 06/11/21

Benzene	0.0857	0.0020	mg/kg	0.100	ND	85.7	70-130			
Toluene	0.0737	0.0050	"	0.100	ND	73.7	70-130			
Ethylbenzene	0.0896	0.0050	"	0.100	ND	89.6	70-130			
m,p-Xylene	0.175	0.010	"	0.200	ND	87.4	70-130			
o-Xylene	0.0814	0.0050	"	0.100	ND	81.4	70-130			
1,2,4-Trimethylbenzene	0.0882	0.0050	"	0.100	ND	88.2	70-130			
1,3,5-Trimethylbenzene	0.0868	0.0050	"	0.100	ND	86.8	70-130			
Naphthalene	0.100	0.0038	"	0.100	0.00798	92.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0304		"	0.0400		76.0	23-173			
Surrogate: Toluene-d8	0.0371		"	0.0400		92.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0370		"	0.0400		92.6	21-167			

##### Matrix Spike Dup (BEF0252-MSD1)

Source: 2106108-01

Prepared: 06/10/21 Analyzed: 06/11/21

Benzene	0.0820	0.0020	mg/kg	0.100	ND	82.0	70-130	4.33	30	
Toluene	0.0955	0.0050	"	0.100	ND	95.5	70-130	25.8	30	
Ethylbenzene	0.0808	0.0050	"	0.100	ND	80.8	70-130	10.2	30	
m,p-Xylene	0.157	0.010	"	0.200	ND	78.6	70-130	10.6	30	
o-Xylene	0.0735	0.0050	"	0.100	ND	73.5	70-130	10.2	30	
1,2,4-Trimethylbenzene	0.0783	0.0050	"	0.100	ND	78.3	70-130	11.9	30	
1,3,5-Trimethylbenzene	0.0772	0.0050	"	0.100	ND	77.2	70-130	11.7	30	
Naphthalene	0.101	0.0038	"	0.100	0.00798	93.4	70-130	1.40	30	
Surrogate: 1,2-Dichloroethane-d4	0.0282		"	0.0400		70.6	23-173			
Surrogate: Toluene-d8	0.0370		"	0.0400		92.5	20-170			
Surrogate: 4-Bromofluorobenzene	0.0343		"	0.0400		85.8	21-167			

Summit Scientific

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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/28/21 14:37

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch BEF0130 - EPA 3550A**

**Blank (BEF0130-BLK1)**

Prepared: 06/04/21 Analyzed: 06/05/21

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

**LCS (BEF0130-BS1)**

Prepared: 06/04/21 Analyzed: 06/05/21

C10-C28 (DRO)	496	50	mg/kg	500	99.3	70-130
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**Matrix Spike (BEF0130-MS1)**

**Source: 2106023-01**

Prepared: 06/04/21 Analyzed: 06/05/21

C10-C28 (DRO)	441	50	mg/kg	500	29.6	82.4	70-130
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**Matrix Spike Dup (BEF0130-MSD1)**

**Source: 2106023-01**

Prepared: 06/04/21 Analyzed: 06/05/21

C10-C28 (DRO)	452	50	mg/kg	500	29.6	84.5	70-130	2.46	20
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**Batch BEF0251 - EPA 3550A**

**Blank (BEF0251-BLK1)**

Prepared & Analyzed: 06/10/21

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

**LCS (BEF0251-BS1)**

Prepared & Analyzed: 06/10/21

C10-C28 (DRO)	505	50	mg/kg	500	101	70-130
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**Matrix Spike (BEF0251-MS1)**

**Source: 2106108-01**

Prepared: 06/10/21 Analyzed: 06/11/21

C10-C28 (DRO)	541	50	mg/kg	500	28.0	103	70-130
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**Matrix Spike Dup (BEF0251-MSD1)**

**Source: 2106108-01**

Prepared: 06/10/21 Analyzed: 06/11/21

C10-C28 (DRO)	542	50	mg/kg	500	28.0	103	70-130	0.206	20
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Summit Scientific

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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/28/21 14:37

## PAH by EPA Method 8270D SIM - Quality Control

### Summit Scientific

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

#### Batch BEF0548 - EPA 5030 Soil MS

##### Blank (BEF0548-BLK1)

Prepared: 06/25/21 Analyzed: 06/27/21

Acenaphthene	ND	0.00500	mg/kg								
Anthracene	ND	0.00500	"								
Benzo (a) anthracene	ND	0.00500	"								
Benzo (a) pyrene	ND	0.00500	"								
Benzo (b) fluoranthene	ND	0.00500	"								
Benzo (k) fluoranthene	ND	0.00500	"								
Chrysene	ND	0.00500	"								
Dibenz (a,h) anthracene	ND	0.00500	"								
Fluoranthene	ND	0.00500	"								
Fluorene	ND	0.00500	"								
Indeno (1,2,3-cd) pyrene	ND	0.00500	"								
Pyrene	ND	0.00500	"								
1-Methylnaphthalene	ND	0.00500	"								
2-Methylnaphthalene	ND	0.00500	"								
Surrogate: 2-Methylnaphthalene-d10	0.0272		"	0.0333		81.5		40-150			
Surrogate: Fluoranthene-d10	0.0272		"	0.0333		81.7		40-150			

##### LCS (BEF0548-BS1)

Prepared: 06/25/21 Analyzed: 06/27/21

Acenaphthene	0.0317	0.00500	mg/kg	0.0333		95.2		31-137			
Anthracene	0.0286	0.00500	"	0.0333		85.8		30-120			
Benzo (a) anthracene	0.0320	0.00500	"	0.0333		95.9		30-120			
Benzo (a) pyrene	0.0309	0.00500	"	0.0333		92.7		30-120			
Benzo (b) fluoranthene	0.0336	0.00500	"	0.0333		101		30-120			
Benzo (k) fluoranthene	0.0289	0.00500	"	0.0333		86.8		30-120			
Chrysene	0.0316	0.00500	"	0.0333		94.7		30-120			
Dibenz (a,h) anthracene	0.0278	0.00500	"	0.0333		83.3		30-120			
Fluoranthene	0.0288	0.00500	"	0.0333		86.3		30-120			
Fluorene	0.0324	0.00500	"	0.0333		97.2		30-120			
Indeno (1,2,3-cd) pyrene	0.0277	0.00500	"	0.0333		83.0		30-120			
Pyrene	0.0282	0.00500	"	0.0333		84.7		35-142			
1-Methylnaphthalene	0.0305	0.00500	"	0.0333		91.5		35-142			
2-Methylnaphthalene	0.0305	0.00500	"	0.0333		91.4		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0260		"	0.0333		78.0		40-150			
Surrogate: Fluoranthene-d10	0.0319		"	0.0333		95.8		40-150			

Summit Scientific

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

Project: Linkus 32-24 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/28/21 14:37

### PAH by EPA Method 8270D SIM - Quality Control

#### Summit Scientific

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

#### Batch BEF0548 - EPA 5030 Soil MS

##### Matrix Spike (BEF0548-MS1)

Source: 2106029-01

Prepared: 06/25/21 Analyzed: 06/27/21

Acenaphthene	0.0341	0.00500	mg/kg	0.0333	ND	102	31-137		
Anthracene	0.0311	0.00500	"	0.0333	ND	93.4	30-120		
Benzo (a) anthracene	0.0348	0.00500	"	0.0333	ND	104	30-120		
Benzo (a) pyrene	0.0337	0.00500	"	0.0333	ND	101	30-120		
Benzo (b) fluoranthene	0.0364	0.00500	"	0.0333	ND	109	30-120		
Benzo (k) fluoranthene	0.0312	0.00500	"	0.0333	ND	93.6	30-120		
Chrysene	0.0341	0.00500	"	0.0333	ND	102	30-120		
Dibenz (a,h) anthracene	0.0308	0.00500	"	0.0333	ND	92.4	30-120		
Fluoranthene	0.0305	0.00500	"	0.0333	ND	91.4	30-120		
Fluorene	0.0346	0.00500	"	0.0333	ND	104	30-120		
Indeno (1,2,3-cd) pyrene	0.0307	0.00500	"	0.0333	ND	92.1	30-120		
Pyrene	0.0296	0.00500	"	0.0333	ND	88.9	35-142		
1-Methylnaphthalene	0.0306	0.00500	"	0.0333	ND	91.9	15-130		
2-Methylnaphthalene	0.0316	0.00500	"	0.0333	ND	94.8	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0273		"	0.0333		81.9	40-150		
Surrogate: Fluoranthene-d10	0.0331		"	0.0333		99.3	40-150		

##### Matrix Spike Dup (BEF0548-MSD1)

Source: 2106029-01

Prepared: 06/25/21 Analyzed: 06/27/21

Acenaphthene	0.0337	0.00500	mg/kg	0.0333	ND	101	31-137	1.07	30
Anthracene	0.0300	0.00500	"	0.0333	ND	90.1	30-120	3.56	30
Benzo (a) anthracene	0.0323	0.00500	"	0.0333	ND	96.9	30-120	7.43	30
Benzo (a) pyrene	0.0317	0.00500	"	0.0333	ND	95.1	30-120	5.96	30
Benzo (b) fluoranthene	0.0352	0.00500	"	0.0333	ND	106	30-120	3.33	30
Benzo (k) fluoranthene	0.0302	0.00500	"	0.0333	ND	90.7	30-120	3.12	30
Chrysene	0.0324	0.00500	"	0.0333	ND	97.3	30-120	5.04	30
Dibenz (a,h) anthracene	0.0282	0.00500	"	0.0333	ND	84.5	30-120	8.97	30
Fluoranthene	0.0296	0.00500	"	0.0333	ND	88.8	30-120	2.91	30
Fluorene	0.0342	0.00500	"	0.0333	ND	103	30-120	1.28	30
Indeno (1,2,3-cd) pyrene	0.0283	0.00500	"	0.0333	ND	85.0	30-120	8.06	30
Pyrene	0.0281	0.00500	"	0.0333	ND	84.2	35-142	5.48	30
1-Methylnaphthalene	0.0313	0.00500	"	0.0333	ND	93.8	15-130	2.05	50
2-Methylnaphthalene	0.0316	0.00500	"	0.0333	ND	94.9	15-130	0.0812	50
Surrogate: 2-Methylnaphthalene-d10	0.0264		"	0.0333		79.1	40-150		
Surrogate: Fluoranthene-d10	0.0316		"	0.0333		94.7	40-150		

Summit Scientific

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

Project: Linkus 32-24 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/28/21 14:37

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

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

**Batch BEF0234 - EPA 3050B**

**Blank (BEF0234-BLK1)**

Prepared: 06/10/21 Analyzed: 06/12/21

Boron ND 0.0100 mg/L

**LCS (BEF0234-BS1)**

Prepared: 06/10/21 Analyzed: 06/12/21

Boron 4.70 0.0100 mg/L 5.00 93.9 80-120

**Duplicate (BEF0234-DUP1)**

**Source: 2106094-04**

Prepared: 06/10/21 Analyzed: 06/12/21

Boron 0.700 0.0100 mg/L 0.691 1.36 20

**Matrix Spike (BEF0234-MS1)**

**Source: 2106094-04**

Prepared: 06/10/21 Analyzed: 06/12/21

Boron 5.03 0.0100 mg/L 5.00 0.691 86.9 75-125

**Matrix Spike Dup (BEF0234-MSD1)**

**Source: 2106094-04**

Prepared: 06/10/21 Analyzed: 06/12/21

Boron 5.31 0.0100 mg/L 5.00 0.691 92.4 75-125 5.37 25

Summit Scientific

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

Project: Linkus 32-24 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/28/21 14:37

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

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

**Batch BEF0153 - EPA 3050B**

**Blank (BEF0153-BLK1)**

Prepared: 06/07/21 Analyzed: 06/10/21

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	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

**LCS (BEF0153-BS1)**

Prepared: 06/07/21 Analyzed: 06/10/21

Arsenic	43.0	0.200	mg/kg wet	40.0	108	80-120
Barium	38.3	0.400	"	40.0	95.8	80-120
Cadmium	2.07	0.200	"	2.00	103	80-120
Copper	40.5	0.400	"	40.0	101	80-120
Lead	19.7	0.200	"	20.0	98.6	80-120
Nickel	39.4	0.400	"	40.0	98.5	80-120
Selenium	4.07	0.260	"	4.00	102	80-120
Silver	1.98	0.0200	"	2.00	99.0	80-120
Zinc	43.3	0.400	"	40.0	108	80-120

**Duplicate (BEF0153-DUP1)**

Source: 2106026-01

Prepared: 06/07/21 Analyzed: 06/10/21

Arsenic	1.53	0.219	mg/kg dry	1.35	12.8	20
Barium	54.8	0.437	"	47.5	14.3	20
Cadmium	0.0692	0.219	"	0.0666	3.76	20
Copper	4.70	0.437	"	4.33	8.37	20
Lead	5.08	0.219	"	4.41	14.0	20
Nickel	4.58	0.437	"	4.05	12.3	20
Selenium	0.228	0.284	"	0.236	3.28	20
Silver	0.0224	0.0219	"	0.0206	8.39	20
Zinc	18.4	0.437	"	16.7	10.1	20

Summit Scientific

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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/28/21 14:37

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

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

**Batch BEF0153 - EPA 3050B**

**Matrix Spike (BEF0153-MS1)**

Source: 2106026-01

Prepared: 06/07/21 Analyzed: 06/10/21

Arsenic	44.6	0.219	mg/kg dry	43.7	1.35	98.8	75-125
Barium	93.2	0.437	"	43.7	47.5	104	75-125
Cadmium	2.25	0.219	"	2.19	0.0666	99.9	75-125
Copper	46.7	0.437	"	43.7	4.33	96.8	75-125
Lead	24.6	0.219	"	21.9	4.41	92.5	75-125
Nickel	45.9	0.437	"	43.7	4.05	95.7	75-125
Selenium	4.00	0.284	"	4.37	0.236	86.1	75-125
Silver	2.08	0.0219	"	2.19	0.0206	94.0	75-125
Zinc	63.4	0.437	"	43.7	16.7	107	75-125

**Matrix Spike Dup (BEF0153-MSD1)**

Source: 2106026-01

Prepared: 06/07/21 Analyzed: 06/10/21

Arsenic	47.1	0.219	mg/kg dry	43.7	1.35	105	75-125	5.47	25
Barium	102	0.437	"	43.7	47.5	124	75-125	8.93	25
Cadmium	2.38	0.219	"	2.19	0.0666	106	75-125	5.56	25
Copper	50.0	0.437	"	43.7	4.33	104	75-125	6.90	25
Lead	27.0	0.219	"	21.9	4.41	103	75-125	9.27	25
Nickel	49.3	0.437	"	43.7	4.05	103	75-125	7.08	25
Selenium	4.26	0.284	"	4.37	0.236	91.9	75-125	6.16	25
Silver	2.20	0.0219	"	2.19	0.0206	99.6	75-125	5.73	25
Zinc	67.6	0.437	"	43.7	16.7	117	75-125	6.47	25

**Batch BEF0217 - EPA 3050B**

**Blank (BEF0217-BLK1)**

Prepared: 06/09/21 Analyzed: 06/11/21

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	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

Summit Scientific

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



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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/28/21 14:37

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

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

**Batch BEF0217 - EPA 3050B**

**LCS (BEF0217-BS1)**

Prepared: 06/09/21 Analyzed: 06/11/21

Arsenic	41.7	0.200	mg/kg wet	40.0		104	80-120
Barium	39.6	0.400	"	40.0		99.1	80-120
Cadmium	1.98	0.200	"	2.00		98.8	80-120
Copper	38.7	0.400	"	40.0		96.8	80-120
Lead	20.4	0.200	"	20.0		102	80-120
Nickel	37.6	0.400	"	40.0		94.1	80-120
Selenium	3.91	0.260	"	4.00		97.7	80-120
Silver	1.92	0.0200	"	2.00		96.2	80-120
Zinc	41.1	0.400	"	40.0		103	80-120

**Matrix Spike (BEF0217-MS1)**

Source: 2105198-09

Prepared: 06/09/21 Analyzed: 06/11/21

Arsenic	46.9	0.221	mg/kg dry	44.3	2.94	99.3	75-125
Barium	121	0.443	"	44.3	68.3	119	75-125
Cadmium	2.30	0.221	"	2.21	0.137	97.8	75-125
Copper	53.8	0.443	"	44.3	9.62	99.7	75-125
Lead	29.6	0.221	"	22.1	9.08	92.7	75-125
Nickel	52.1	0.443	"	44.3	9.43	96.4	75-125
Selenium	6.69	0.288	"	4.43	0.652	137	75-125
Silver	2.19	0.0221	"	2.21	0.0644	95.8	75-125
Zinc	81.8	0.443	"	44.3	36.9	102	75-125

QR-04

**Matrix Spike Dup (BEF0217-MSD1)**

Source: 2105198-09

Prepared: 06/09/21 Analyzed: 06/11/21

Arsenic	46.7	0.221	mg/kg dry	44.3	2.94	98.8	75-125	0.485	25
Barium	110	0.443	"	44.3	68.3	93.2	75-125	10.1	25
Cadmium	2.29	0.221	"	2.21	0.137	97.2	75-125	0.502	25
Copper	52.9	0.443	"	44.3	9.62	97.8	75-125	1.61	25
Lead	29.5	0.221	"	22.1	9.08	92.2	75-125	0.350	25
Nickel	51.3	0.443	"	44.3	9.43	94.6	75-125	1.53	25
Selenium	6.83	0.288	"	4.43	0.652	140	75-125	2.00	25
Silver	2.17	0.0221	"	2.21	0.0644	95.1	75-125	0.779	25
Zinc	87.6	0.443	"	44.3	36.9	115	75-125	6.85	25

QR-04

Summit Scientific

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

Project: Linkus 32-24 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/28/21 14:37

**Hexavalent Chromium by EPA Method 7196 - Quality Control**  
**Summit Scientific**

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

**Batch BEF0223 - 3060A Mod**

**Blank (BEF0223-BLK1)**

Prepared: 06/09/21 Analyzed: 06/10/21

Chromium, Hexavalent ND 0.30 mg/kg wet

**LCS (BEF0223-BS1)**

Prepared: 06/09/21 Analyzed: 06/10/21

Chromium, Hexavalent 22.2 0.30 mg/kg wet 25.0 89.0 80-120

**Duplicate (BEF0223-DUP1)**

**Source: 2106098-01**

Prepared: 06/09/21 Analyzed: 06/10/21

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

**Matrix Spike (BEF0223-MS1)**

**Source: 2106098-01**

Prepared: 06/09/21 Analyzed: 06/10/21

Chromium, Hexavalent 25.4 0.30 mg/kg dry 29.2 ND 87.0 75-125

**Matrix Spike Dup (BEF0223-MSD1)**

**Source: 2106098-01**

Prepared: 06/09/21 Analyzed: 06/10/21

Chromium, Hexavalent 25.4 0.30 mg/kg dry 29.2 ND 87.0 75-125 0.00 20

Summit Scientific

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

Project: Linkus 32-24 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/28/21 14:37

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

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

**Batch BEF0216 - General Preparation**

**Blank (BEF0216-BLK1)**

Prepared: 06/09/21 Analyzed: 06/12/21

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

**LCS (BEF0216-BS1)**

Prepared: 06/09/21 Analyzed: 06/12/21

Calcium	5.09	0.0500	mg/L wet	5.00	102	70-130
Magnesium	5.35	0.0500	"	5.00	107	70-130
Sodium	5.08	0.0500	"	5.00	102	70-130

**Batch BEF0245 - General Preparation**

**Blank (BEF0245-BLK1)**

Prepared: 06/10/21 Analyzed: 06/13/21

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

**LCS (BEF0245-BS1)**

Prepared: 06/10/21 Analyzed: 06/13/21

Calcium	5.16	0.0500	mg/L wet	5.00	103	70-130
Magnesium	5.35	0.0500	"	5.00	107	70-130
Sodium	4.97	0.0500	"	5.00	99.4	70-130

**Batch BEF0351 - General Preparation**

**Blank (BEF0351-BLK1)**

Prepared: 06/16/21 Analyzed: 06/17/21

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

Summit Scientific

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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/28/21 14:37

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

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

**Batch BEF0351 - General Preparation**

**LCS (BEF0351-BS1)**

Prepared: 06/16/21 Analyzed: 06/17/21

Calcium	5.48	0.0500	mg/L wet	5.00	110	70-130
Magnesium	5.85	0.0500	"	5.00	117	70-130
Sodium	5.28	0.0500	"	5.00	106	70-130

Summit Scientific

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

Project: Linkus 32-24 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/28/21 14:37

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

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

**Batch BEF0139 - General Preparation**

<b>Duplicate (BEF0139-DUP1)</b>		<b>Source: 2105160-07</b>			Prepared & Analyzed: 06/07/21						
% Solids	98.4		%		87.6			11.6	20		

**Batch BEF0164 - General Preparation**

<b>Duplicate (BEF0164-DUP1)</b>		<b>Source: 2104483-01</b>			Prepared: 06/08/21 Analyzed: 06/09/21						
% Solids	90.8		%		92.0			1.33	20		

**Batch BEF0215 - General Preparation**

<b>Duplicate (BEF0215-DUP1)</b>		<b>Source: 2106099-03</b>			Prepared: 06/09/21 Analyzed: 06/10/21						
% Solids	82.4		%		78.1			5.27	20		

Summit Scientific

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

Project: Linkus 32-24 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/28/21 14:37

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

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

**Batch BEF0237 - General Preparation**

**Blank (BEF0237-BLK1)**

Prepared & Analyzed: 06/10/21

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BEF0237-BS1)**

Prepared & Analyzed: 06/10/21

Specific Conductance (EC) 0.160 0.0100 mmhos/cm 0.150 107 90-110

**Duplicate (BEF0237-DUP1)**

**Source: 2106099-01**

Prepared & Analyzed: 06/10/21

Specific Conductance (EC) 0.527 0.0100 mmhos/cm 0.529 0.455 20

**Batch BEF0270 - General Preparation**

**Blank (BEF0270-BLK1)**

Prepared & Analyzed: 06/11/21

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BEF0270-BS1)**

Prepared & Analyzed: 06/11/21

Specific Conductance (EC) 0.158 0.0100 mmhos/cm 0.150 105 90-110

**Duplicate (BEF0270-DUP1)**

**Source: 2105335-09**

Prepared & Analyzed: 06/11/21

Specific Conductance (EC) 0.926 0.0100 mmhos/cm 0.928 0.205 20

Summit Scientific

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

Project: Linkus 32-24 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/28/21 14:37

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

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

**Batch BEF0236 - General Preparation**

<b>LCS (BEF0236-BS1)</b>				Prepared & Analyzed: 06/10/21						
pH	9.22		pH Units	9.21	100	95-105				
<b>Duplicate (BEF0236-DUP1)</b>				<b>Source: 2106099-01</b>		Prepared & Analyzed: 06/10/21				
pH	8.62		pH Units	8.63		0.116	20			

**Batch BEF0269 - General Preparation**

<b>LCS (BEF0269-BS1)</b>				Prepared & Analyzed: 06/11/21						
pH	9.21		pH Units	9.21	100	95-105				
<b>Duplicate (BEF0269-DUP1)</b>				<b>Source: 2104483-01</b>		Prepared & Analyzed: 06/11/21				
pH	7.76		pH Units	7.78		0.257	20			

**Batch BEF0378 - General Preparation**

<b>LCS (BEF0378-BS1)</b>				Prepared & Analyzed: 06/17/21						
pH	9.24		pH Units	9.21	100	95-105				
<b>Duplicate (BEF0378-DUP1)</b>				<b>Source: 2106099-04</b>		Prepared & Analyzed: 06/17/21				
pH	7.86		pH Units	7.86		0.00	20			

Summit Scientific

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

Project: Linkus 32-24 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/28/21 14:37

### Notes and Definitions

S-02      The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.

QR-04      The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance. QC batch accepted based on LCS and/or LCSD recovery 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

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

June 09, 2021

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Linkus 32-24 Tank Battery

Work Order #2106163

Enclosed are the results of analyses for samples received by Summit Scientific on 06/08/21 17:57. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury

President



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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/09/21 07:56

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S01@7'	2106163-01	Soil	06/08/21 12:34	06/08/21 17:57
S02@2.5'	2106163-02	Soil	06/08/21 14:06	06/08/21 17:57
S03@6'	2106163-03	Soil	06/08/21 14:08	06/08/21 17:57
S04@2.5'	2106163-04	Soil	06/08/21 15:02	06/08/21 17:57
S05@6'	2106163-05	Soil	06/08/21 15:04	06/08/21 17:57

Summit Scientific

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2106163

# Summit Scientific

S<sub>2</sub>

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

Page 1 of 1

Client: PDC / Tasman

Project Manager: Mark Longhurst

Address: 6855 W 119th Ave

E-Mail: mark.longhurst@PDCE.com

City/State/Zip: Broomfield/ CO/ 80020

Phone: 303-487-1228

Project Name: Linkus 32-24 Tank Battery

Sampler Name: Cody Miller

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions	
					HCl	HNO <sub>3</sub>	None	Other	Water	Soil	Air-Canister #	Other	GBTEXN - 8260B <sup>915</sup>	TPH - (C6 - C36) <sup>915</sup>	pH, EC, SAR <sup>915</sup>	Boron - HWS <sup>915</sup>	VOC - 915	PAH - 915	Metals - 915	TMDS (1,2,4,6,13,5) <sup>915</sup>		
1	S01 @ 7'	6/8/21	1234	3			X			X				X	X						X	pH, EC, SAR by saturated paste
2	S02 @ 7.5'		1406	3			X			X				X	X					X		
3	S03 @ 6'		1408	3			X			X				X	X					X		
4	S04 @ 2.5'		1502	3			X			X				X	X					X		
5	S05 @ 6'		1504	3			X			X				X	X					X		
6																						
7																						
8																						
9																						
10																						

Relinquished by: Cody Miller	Date/Time: 6/8/21 1625	Received by: Tasman's Lock Box	Date/Time: 6/8/21 1625	Turn Around Time (Check)	Notes:
				Same Day <input checked="" type="checkbox"/> 72 hours	
				24 hours <input type="checkbox"/> Standard	
Relinquished by: Tasman's Lock Box	Date/Time: 6/8/21 1837	Received by: [Signature]	Date/Time: 6/8/21 1837	48 hours <input type="checkbox"/>	Sample Integrity: 13
				Temperature Upon Receipt: 13	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

# Sample Receipt Checklist

S2 Work Order 2106163

Client: PDL / Tasman Client Project ID: Linkus 32-24 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)	<u>13</u>
-----------	-----------

Thermometer ID: 61857155-K

	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 provided that 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Same day.</u>
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, ect	<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.

JB  
Custodian Printed Name or Initials

John Brown  
Signature of Custodian

5/8/21  
Date/Time



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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/09/21 07:56

**S01@7'**  
**2106163-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/08/21 12:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEF0185	06/08/21	06/08/21	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: **06/08/21 12:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		127 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.7 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/08/21 12:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEF0186	"	06/08/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/08/21 12:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		81.9 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/09/21 07:56

**S02@2.5'**  
**2106163-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/08/21 14:06**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEF0185	06/08/21	06/08/21	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: **06/08/21 14:06**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.7 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/08/21 14:06**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEF0186	"	06/08/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/08/21 14:06**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		80.6 %	30-150		"	"	"	"	

Summit Scientific

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



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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/09/21 07:56

**S03@6'**  
**2106163-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/08/21 14:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEF0185	06/08/21	06/08/21	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: **06/08/21 14:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		115 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.9 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/08/21 14:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEF0186	"	06/08/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/08/21 14:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		79.7 %	30-150		"	"	"	"	

Summit Scientific

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



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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/09/21 07:56

**S04@2.5'**  
**2106163-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/08/21 15:02**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEF0185	06/08/21	06/08/21	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: **06/08/21 15:02**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		112 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.6 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/08/21 15:02**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEF0186	"	06/09/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/08/21 15:02**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		81.8 %	30-150		"	"	"	"	

Summit Scientific

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





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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/09/21 07:56

**S05@6'**  
**2106163-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/08/21 15:04**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEF0185	06/08/21	06/08/21	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: **06/08/21 15:04**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.4 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/08/21 15:04**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEF0186	"	06/09/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/08/21 15:04**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		89.3 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Linkus 32-24 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/09/21 07:56

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

### Summit Scientific

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

#### Batch BEF0185 - EPA 5030 Soil MS

##### Blank (BEF0185-BLK1)

Prepared & Analyzed: 06/08/21

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0576		"	0.0400		144	23-173			
Surrogate: Toluene-d8	0.0511		"	0.0400		128	20-170			
Surrogate: 4-Bromofluorobenzene	0.0547		"	0.0400		137	21-167			

##### LCS (BEF0185-BS1)

Prepared & Analyzed: 06/08/21

Benzene	0.0953	0.0020	mg/kg	0.100		95.3	70-130			
Toluene	0.104	0.0050	"	0.100		104	70-130			
Ethylbenzene	0.0827	0.0050	"	0.100		82.7	70-130			
m,p-Xylene	0.183	0.010	"	0.200		91.3	70-130			
o-Xylene	0.0896	0.0050	"	0.100		89.6	70-130			
1,2,4-Trimethylbenzene	0.0887	0.0050	"	0.100		88.7	70-130			
1,3,5-Trimethylbenzene	0.0886	0.0050	"	0.100		88.6	70-130			
Naphthalene	0.0933	0.0038	"	0.100		93.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0461		"	0.0400		115	23-173			
Surrogate: Toluene-d8	0.0505		"	0.0400		126	20-170			
Surrogate: 4-Bromofluorobenzene	0.0535		"	0.0400		134	21-167			

##### Matrix Spike (BEF0185-MS1)

Source: 2106159-01

Prepared & Analyzed: 06/08/21

Benzene	0.0903	0.0020	mg/kg	0.100	ND	90.3	70-130			
Toluene	0.101	0.0050	"	0.100	ND	101	70-130			
Ethylbenzene	0.0791	0.0050	"	0.100	ND	79.1	70-130			
m,p-Xylene	0.174	0.010	"	0.200	ND	87.2	70-130			
o-Xylene	0.0903	0.0050	"	0.100	ND	90.3	70-130			
1,2,4-Trimethylbenzene	0.0862	0.0050	"	0.100	ND	86.2	70-130			
1,3,5-Trimethylbenzene	0.0869	0.0050	"	0.100	ND	86.9	70-130			
Naphthalene	0.0881	0.0038	"	0.100	ND	88.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0336		"	0.0400		84.0	23-173			
Surrogate: Toluene-d8	0.0502		"	0.0400		125	20-170			
Surrogate: 4-Bromofluorobenzene	0.0540		"	0.0400		135	21-167			

Summit Scientific

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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/09/21 07:56

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

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

**Batch BEF0185 - EPA 5030 Soil MS**

Matrix Spike Dup (BEF0185-MSD1)	Source: 2106159-01			Prepared & Analyzed: 06/08/21						
Benzene	0.0881	0.0020	mg/kg	0.100	ND	88.1	70-130	2.39	30	
Toluene	0.108	0.0050	"	0.100	ND	108	70-130	6.66	30	
Ethylbenzene	0.0990	0.0050	"	0.100	ND	99.0	70-130	22.3	30	
m,p-Xylene	0.151	0.010	"	0.200	ND	75.7	70-130	14.1	30	
o-Xylene	0.0777	0.0050	"	0.100	ND	77.7	70-130	15.0	30	
1,2,4-Trimethylbenzene	0.107	0.0050	"	0.100	ND	107	70-130	21.2	30	
1,3,5-Trimethylbenzene	0.106	0.0050	"	0.100	ND	106	70-130	19.7	30	
Naphthalene	0.0836	0.0038	"	0.100	ND	83.6	70-130	5.17	30	
Surrogate: 1,2-Dichloroethane-d4	0.0316		"	0.0400		79.0	23-173			
Surrogate: Toluene-d8	0.0484		"	0.0400		121	20-170			
Surrogate: 4-Bromofluorobenzene	0.0563		"	0.0400		141	21-167			

Summit Scientific

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



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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/09/21 07:56

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch BEF0186 - EPA 3550A**

**Blank (BEF0186-BLK1)**

Prepared: 06/08/21 Analyzed: 06/09/21

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

**LCS (BEF0186-BS1)**

Prepared: 06/08/21 Analyzed: 06/09/21

C10-C28 (DRO)	452	50	mg/kg	500	90.5	70-130
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**Matrix Spike (BEF0186-MS1)**

Source: 2106159-01

Prepared: 06/08/21 Analyzed: 06/09/21

C10-C28 (DRO)	453	50	mg/kg	500	14.3	87.7	70-130
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**Matrix Spike Dup (BEF0186-MSD1)**

Source: 2106159-01

Prepared: 06/08/21 Analyzed: 06/09/21

C10-C28 (DRO)	452	50	mg/kg	500	14.3	87.6	70-130	0.0917	20
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Summit Scientific

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



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

Project: Linkus 32-24 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/09/21 07:56

### Notes and Definitions

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

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

June 10, 2021

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Linkus 32-24 Tank Battery

Work Order #2106179

Enclosed are the results of analyses for samples received by Summit Scientific on 06/09/21 18:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury

President



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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/10/21 06:24

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S06@2.5'	2106179-01	Soil	06/09/21 10:57	06/09/21 18:00
S07@6'	2106179-02	Soil	06/09/21 11:00	06/09/21 18:00
S08@2.5'	2106179-03	Soil	06/09/21 11:28	06/09/21 18:00
S09@6'	2106179-04	Soil	06/09/21 11:34	06/09/21 18:00
S10@7'	2106179-05	Soil	06/09/21 11:36	06/09/21 18:00

Summit Scientific

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

# Summit Scientific

S<sub>2</sub>

2106179

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

Page 1 of 1

Client: PDC / Tasman Project Manager: Mark Longhurst  
 Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com  
 City/State/Zip: Broomfield/ CO/ 80020  
 Phone: 303-487-1228 Project Name: Linkus 32-24 Tank Battery  
 Sampler Name: Cody Miller Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested								Special Instructions	
					HCl	HNO <sub>3</sub>	None	Other	Water	Soil	Air-Canister #	Other	GBTEXN - 8260B <sup>915</sup>	TPH - (C6 - C36) <sup>915</sup>	pH, EC, SAR <sup>915</sup>	Boron - HWS <sup>915</sup>	VOC - 915	PAH - 915	Metals - 915		7MB (12, 14, 13, 15) <sup>915</sup>
1	506 w 2.5'	6/9/21	1057	3			X			X			X	X						X	pH, EC, SAR by saturated paste
2	507 w 6'	↓	1100	3			X		X				X	X					X		
3	508 w 2.5'		1128	3			X		X				X	X					X		
4	509 w 6'		1134	3			X		X				X	X					X		
5	510 w 7'		1136	3			X		X				X	X					X		
6																					
7																					
8																					
9																					
10																					

Relinquished by: Cody Miller	Date/Time: 6/9/21 / 1615	Received by: Tasman's Lock Box	Date/Time: 6/9/21 / 1615	Turn Around Time (Check)	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 6/9/21 1800	Received by: [Signature]	Date/Time: 6/9/21 1800	Same Day <input checked="" type="checkbox"/> 72 hours <input type="checkbox"/> 24 hours <input type="checkbox"/> Standard <input type="checkbox"/> 48 hours <input type="checkbox"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity: 5	
				Temperature Upon Receipt: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

# Sample Receipt Checklist

S2 Work Order 2106179

Client: POC / Tasman Client Project ID: Linkus 32-24 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) 5

Thermometer ID: 61857155-K

	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 provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>On ice.</i>
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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>Same day.</i>
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, ect	<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.

JB  
Custodian Printed Name or Initials

[Signature]  
Signature of Custodian

6/9/21  
Date/Time



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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/10/21 06:24

**S06@2.5'**  
**2106179-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/09/21 10:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEF0228	06/09/21	06/09/21	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: **06/09/21 10:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		97.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/09/21 10:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEF0229	06/09/21	06/09/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/09/21 10:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		96.1 %	30-150		"	"	"	"	

Summit Scientific

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





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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/10/21 06:24

**S07@6'**  
**2106179-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/09/21 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEF0228	06/09/21	06/09/21	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: **06/09/21 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		112 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/09/21 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEF0229	06/09/21	06/09/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/09/21 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		103 %	30-150		"	"	"	"	

Summit Scientific

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



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

Project: Linkus 32-24 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/10/21 06:24

**S08@2.5'**  
**2106179-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/09/21 11:28**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEF0228	06/09/21	06/09/21	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: **06/09/21 11:28**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		95.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		111 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.4 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/09/21 11:28**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEF0229	06/09/21	06/09/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/09/21 11:28**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		100 %	30-150		"	"	"	"	

Summit Scientific

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



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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/10/21 06:24

**S09@6'**  
**2106179-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/09/21 11:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEF0228	06/09/21	06/09/21	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: **06/09/21 11:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		112 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.8 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/09/21 11:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEF0229	06/09/21	06/09/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/09/21 11:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		103 %	30-150		"	"	"	"	

Summit Scientific

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



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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/10/21 06:24

**S10@7'**  
**2106179-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/09/21 11:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEF0228	06/09/21	06/09/21	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: **06/09/21 11:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		121 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		138 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/09/21 11:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEF0229	06/09/21	06/09/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/09/21 11:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		105 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Linkus 32-24 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/10/21 06:24

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

### Summit Scientific

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

#### Batch BEF0228 - EPA 5030 Soil MS

##### Blank (BEF0228-BLK1)

Prepared & Analyzed: 06/09/21

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	"							
Surrogate: 1,2-Dichloroethane-d4	0.0292		"	0.0400		73.1	23-173			
Surrogate: Toluene-d8	0.0476		"	0.0400		119	20-170			
Surrogate: 4-Bromofluorobenzene	0.0392		"	0.0400		98.0	21-167			

##### LCS (BEF0228-BS1)

Prepared & Analyzed: 06/09/21

Benzene	0.0860	0.0020	mg/kg	0.100		86.0	70-130			
Toluene	0.0828	0.0050	"	0.100		82.8	70-130			
Ethylbenzene	0.0883	0.0050	"	0.100		88.3	70-130			
m,p-Xylene	0.177	0.010	"	0.200		88.5	70-130			
o-Xylene	0.0829	0.0050	"	0.100		82.9	70-130			
1,2,4-Trimethylbenzene	0.0884	0.0050	"	0.100		88.4	70-130			
1,3,5-Trimethylbenzene	0.0883	0.0050	"	0.100		88.3	70-130			
Naphthalene	0.0933	0.0038	"	0.100		93.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0268		"	0.0400		67.0	23-173			
Surrogate: Toluene-d8	0.0449		"	0.0400		112	20-170			
Surrogate: 4-Bromofluorobenzene	0.0382		"	0.0400		95.5	21-167			

##### Matrix Spike (BEF0228-MS1)

Source: 2106179-01

Prepared & Analyzed: 06/09/21

Benzene	0.0861	0.0020	mg/kg	0.100	ND	86.1	70-130			
Toluene	0.0721	0.0050	"	0.100	ND	72.1	70-130			
Ethylbenzene	0.0881	0.0050	"	0.100	ND	88.1	70-130			
m,p-Xylene	0.172	0.010	"	0.200	ND	85.9	70-130			
o-Xylene	0.0796	0.0050	"	0.100	ND	79.6	70-130			
1,2,4-Trimethylbenzene	0.0854	0.0050	"	0.100	ND	85.4	70-130			
1,3,5-Trimethylbenzene	0.0844	0.0050	"	0.100	ND	84.4	70-130			
Naphthalene	0.0744	0.0038	"	0.100	ND	74.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0280		"	0.0400		70.0	23-173			
Surrogate: Toluene-d8	0.0361		"	0.0400		90.2	20-170			
Surrogate: 4-Bromofluorobenzene	0.0364		"	0.0400		91.1	21-167			

Summit Scientific

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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/10/21 06:24

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

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

**Batch BEF0228 - EPA 5030 Soil MS**

Matrix Spike Dup (BEF0228-MSD1)	Source: 2106179-01			Prepared & Analyzed: 06/09/21						
Benzene	0.0815	0.0020	mg/kg	0.100	ND	81.5	70-130	5.41	30	
Toluene	0.0961	0.0050	"	0.100	ND	96.1	70-130	28.6	30	
Ethylbenzene	0.0800	0.0050	"	0.100	ND	80.0	70-130	9.64	30	
m,p-Xylene	0.158	0.010	"	0.200	ND	79.2	70-130	8.16	30	
o-Xylene	0.0750	0.0050	"	0.100	ND	75.0	70-130	5.97	30	
1,2,4-Trimethylbenzene	0.0821	0.0050	"	0.100	ND	82.1	70-130	3.91	30	
1,3,5-Trimethylbenzene	0.0794	0.0050	"	0.100	ND	79.4	70-130	6.15	30	
Naphthalene	0.0822	0.0038	"	0.100	ND	82.2	70-130	9.96	30	
Surrogate: 1,2-Dichloroethane-d4	0.0301		"	0.0400		75.2	23-173			
Surrogate: Toluene-d8	0.0373		"	0.0400		93.3	20-170			
Surrogate: 4-Bromofluorobenzene	0.0364		"	0.0400		91.0	21-167			

Summit Scientific

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



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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/10/21 06:24

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch BEF0229 - EPA 3550A**

**Blank (BEF0229-BLK1)**

Prepared & Analyzed: 06/09/21

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

**LCS (BEF0229-BS1)**

Prepared & Analyzed: 06/09/21

C10-C28 (DRO)	555	50	mg/kg	500	111	70-130
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**Matrix Spike (BEF0229-MS1)**

Source: 2106179-01

Prepared & Analyzed: 06/09/21

C10-C28 (DRO)	519	50	mg/kg	500	19.3	99.9	70-130
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**Matrix Spike Dup (BEF0229-MSD1)**

Source: 2106179-01

Prepared & Analyzed: 06/09/21

C10-C28 (DRO)	460	50	mg/kg	500	19.3	88.1	70-130	12.1	20
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Summit Scientific

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



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

Project: Linkus 32-24 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/10/21 06:24

### Notes and Definitions

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



# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

June 11, 2021

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Linkus 32-24 Tank Battery

Work Order #2106219

Enclosed are the results of analyses for samples received by Summit Scientific on 06/10/21 18:31. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury

President



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

Project: Linkus 32-24 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/11/21 06:06

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S11@13'	2106219-01	Soil	06/10/21 16:00	06/10/21 18:31

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 2106219

S<sub>2</sub>

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

Page 1 of 1

Client: PDC / Tasman Project Manager: Mark Longhurst  
 Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com  
 City/State/Zip: Broomfield/ CO/ 80020  
 Phone: 303-487-1228 Project Name: Linkus 32-24 Tank Battery  
 Sampler Name: Cody Miller Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions		
					HCl	HNO <sub>3</sub>	None	Other	Water	Soil	Air-Canister #	Other	GBTEXN - 8260B <sup>915</sup>	TPH - (C6 - C36) <sup>915</sup>	pH, EC, SAR <sup>915</sup>	Boron - HWS <sup>915</sup>	VOC - 915	PAH - 915	Metals - 915				
1	511 213'	6/10/21	1600	3			X			X				X	X							X	pH, EC, SAR by saturated paste
2																							
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							

Relinquished by: Cody Miller	Date/Time: 6/10/21 1650	Received by: Tasman's Lock Box	Date/Time: 6/10/21 1650	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard 48 hours <input type="checkbox"/> Sample Integrity: 6 Temperature Upon Receipt: 6 Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 6/10/21 1800	Received by: [Signature]	Date/Time: 6/10/21 1800		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

2106219

## Sample Receipt Checklist

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

Client: PDC / Tasman Client Project ID: Linkus 32-24 Tank BatteryShipped Via: ☐ H.D./P.U./FedEx/UPS/USPS/Other \_\_\_\_\_ Airbill #: \_\_\_\_\_Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_  
(Describe)Temp (°C) 6

Thermometer ID: 61857155-K

	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 provided that 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> <u>JB</u>	<u>Same day.</u>
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, H <sub>2</sub> SO <sub>4</sub> , NaOH, HNO <sub>3</sub> , ect	<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.JB  
Custodian Printed Name or Initials[Signature]  
Signature of Custodian6/10/21  
Date/Time



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

Project: Linkus 32-24 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/11/21 06:06

**S11@13'**  
**2106219-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/10/21 16:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.012	0.0020	mg/kg	1	BEF0253	06/10/21	06/10/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.59	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.66	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	1.3	0.050	"	10	"	"	"	"	
1,3,5-Trimethylbenzene	0.11	0.0050	"	1	"	"	"	"	
Naphthalene	0.25	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	54	5.0	"	10	"	"	"	"	

Date Sampled: **06/10/21 16:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	85.1 %	23-173	"	"	"	"	"	"	
Surrogate: Toluene-d8	94.6 %	20-170	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	124 %	21-167	"	"	"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/10/21 16:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	160	50	mg/kg	1	BEF0254	"	06/10/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/10/21 16:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	89.5 %	30-150	"	"	"	"	"	"	

Summit Scientific

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



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

Project: Linkus 32-24 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/11/21 06:06

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

### Summit Scientific

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

#### Batch BEF0253 - EPA 5030 Soil MS

##### Blank (BEF0253-BLK1)

Prepared & Analyzed: 06/10/21

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0364		"	0.0400		91.1	23-173			
Surrogate: Toluene-d8	0.0458		"	0.0400		114	20-170			
Surrogate: 4-Bromofluorobenzene	0.0396		"	0.0400		99.0	21-167			

##### LCS (BEF0253-BS1)

Prepared & Analyzed: 06/10/21

Benzene	0.0855	0.0020	mg/kg	0.100		85.5	70-130			
Toluene	0.0816	0.0050	"	0.100		81.6	70-130			
Ethylbenzene	0.0901	0.0050	"	0.100		90.1	70-130			
m,p-Xylene	0.179	0.010	"	0.200		89.6	70-130			
o-Xylene	0.0824	0.0050	"	0.100		82.4	70-130			
1,2,4-Trimethylbenzene	0.0899	0.0050	"	0.100		89.9	70-130			
1,3,5-Trimethylbenzene	0.0891	0.0050	"	0.100		89.1	70-130			
Naphthalene	0.0938	0.0038	"	0.100		93.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0236		"	0.0400		58.9	23-173			
Surrogate: Toluene-d8	0.0421		"	0.0400		105	20-170			
Surrogate: 4-Bromofluorobenzene	0.0365		"	0.0400		91.3	21-167			

##### Matrix Spike (BEF0253-MS1)

Source: 2106207-01

Prepared & Analyzed: 06/10/21

Benzene	0.0855	0.0020	mg/kg	0.100	ND	85.5	70-130			
Toluene	0.0726	0.0050	"	0.100	ND	72.6	70-130			
Ethylbenzene	0.0839	0.0050	"	0.100	ND	83.9	70-130			
m,p-Xylene	0.165	0.010	"	0.200	ND	82.7	70-130			
o-Xylene	0.0768	0.0050	"	0.100	ND	76.8	70-130			
1,2,4-Trimethylbenzene	0.0825	0.0050	"	0.100	ND	82.5	70-130			
1,3,5-Trimethylbenzene	0.0817	0.0050	"	0.100	ND	81.7	70-130			
Naphthalene	0.0713	0.0038	"	0.100	ND	71.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0309		"	0.0400		77.3	23-173			
Surrogate: Toluene-d8	0.0369		"	0.0400		92.3	20-170			
Surrogate: 4-Bromofluorobenzene	0.0343		"	0.0400		85.8	21-167			

Summit Scientific

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

Project: Linkus 32-24 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/11/21 06:06

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

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

**Batch BEF0253 - EPA 5030 Soil MS**

Matrix Spike Dup (BEF0253-MSD1)		Source: 2106207-01			Prepared: 06/10/21 Analyzed: 06/11/21					
Benzene	0.0840	0.0020	mg/kg	0.100	ND	84.0	70-130	1.84	30	
Toluene	0.0713	0.0050	"	0.100	ND	71.3	70-130	1.79	30	
Ethylbenzene	0.0890	0.0050	"	0.100	ND	89.0	70-130	5.87	30	
m,p-Xylene	0.172	0.010	"	0.200	ND	86.0	70-130	3.93	30	
o-Xylene	0.0808	0.0050	"	0.100	ND	80.8	70-130	4.99	30	
1,2,4-Trimethylbenzene	0.0863	0.0050	"	0.100	ND	86.3	70-130	4.48	30	
1,3,5-Trimethylbenzene	0.0854	0.0050	"	0.100	ND	85.4	70-130	4.49	30	
Naphthalene	0.0729	0.0038	"	0.100	ND	72.9	70-130	2.29	30	
Surrogate: 1,2-Dichloroethane-d4		0.0294	"	0.0400		73.6	23-173			
Surrogate: Toluene-d8		0.0365	"	0.0400		91.3	20-170			
Surrogate: 4-Bromofluorobenzene		0.0353	"	0.0400		88.3	21-167			

Summit Scientific

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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/11/21 06:06

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch BEF0254 - EPA 3550A**

**Blank (BEF0254-BLK1)**

Prepared & Analyzed: 06/10/21

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

**LCS (BEF0254-BS1)**

Prepared & Analyzed: 06/10/21

C10-C28 (DRO)	512	50	mg/kg	500	102	70-130
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**Matrix Spike (BEF0254-MS1)**

Source: 2106207-01

Prepared & Analyzed: 06/10/21

C10-C28 (DRO)	572	50	mg/kg	500	20.8	110	70-130
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**Matrix Spike Dup (BEF0254-MSD1)**

Source: 2106207-01

Prepared & Analyzed: 06/10/21

C10-C28 (DRO)	484	50	mg/kg	500	20.8	92.6	70-130	16.7	20
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Summit Scientific

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

Project: Linkus 32-24 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/11/21 06:06

### Notes and Definitions

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

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

June 14, 2021

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Linkus 32-24 Tank Battery

Work Order #2106247

Enclosed are the results of analyses for samples received by Summit Scientific on 06/11/21 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury

President



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

Project: Linkus 32-24 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/14/21 07:05

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S12@16'	2106247-01	Soil	06/11/21 11:35	06/11/21 17:00
S13@14'	2106247-02	Soil	06/11/21 11:45	06/11/21 17:00
S14@14'	2106247-03	Soil	06/11/21 12:00	06/11/21 17:00
S15@14'	2106247-04	Soil	06/11/21 12:12	06/11/21 17:00
S16@14'	2106247-05	Soil	06/11/21 12:22	06/11/21 17:00
S17@2.5'	2106247-06	Soil	06/11/21 12:46	06/11/21 17:00
S18@6'	2106247-07	Soil	06/11/21 12:52	06/11/21 17:00
S19@7'	2106247-08	Soil	06/11/21 12:58	06/11/21 17:00
S20@2.5'	2106247-09	Soil	06/11/21 13:08	06/11/21 17:00
S21@6'	2106247-10	Soil	06/11/21 13:12	06/11/21 17:00
S22@2.5'	2106247-11	Soil	06/11/21 13:18	06/11/21 17:00
S23@6'	2106247-12	Soil	06/11/21 13:22	06/11/21 17:00
S24@2.5'	2106247-13	Soil	06/11/21 13:36	06/11/21 17:00
S25@6'	2106247-14	Soil	06/11/21 13:40	06/11/21 17:00

Summit Scientific

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

# Summit Scientific

S<sub>2</sub>

4653 Table Mountain Drive ♦ Golden, Colorado 80403

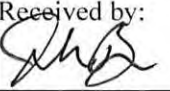
303-277-9310

2106247.1

Page 1 of 2

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: Linkus 32-24 Tank Battery  
 Sampler Name: Cody Miller Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO <sub>3</sub>	None	Other	Water	Soil	Air-Canister #	Other	GBTEXN - 8260B <sup>915</sup>	TPH - (C6 - C36) <sup>915</sup>	pH, EC, SAR <sup>915</sup>	Boron - HWS <sup>915</sup>	VOC - 915	PAH - 915	Metals - 915	774B <sub>5</sub> (124)4(135) <sup>915</sup>	
1	S12 @ 16'	6/11/21	1135	3			X			X			X	X						X	pH, EC, SAR by saturated paste
2	S13 @ 14'		1145	3			X			X			X	X						X	
3	S14 @ 14'		1200	3			X			X			X	X						X	
4	S15 @ 14'		1212	3			X			X			X	X						X	
5	S16 @ 14'		1222	3			X			X			X	X						X	
6	S17 @ 2.5'		1246	3			X			X			X	X						X	
7	S18 @ 6'		1252	3			X			X			X	X						X	
8	S19 @ 7'		1258	3			X			X			X	X						X	
9	S20 @ 2.5'		1308	3			X			X			X	X						X	
10	S21 @ 6'		1312	3			X			X			X	X						X	

Relinquished by: Cody Miller Date/Time: 6/11/21 1520	Received by: Tasman's Lock Box Date/Time: 6/11/21 1520	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard 48 hours <input type="checkbox"/> Sample Integrity: Temperature Upon Receipt: 4 Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Notes:
Relinquished by: Tasman's Lock Box Date/Time: 6/11/21 1700	Received by:  Date/Time: 6/11/21 1700		
Relinquished by:	Received by:		



# Summit Scientific

2106247.2

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

Page 2 of 2

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: Linkus 32-24 Tmk Battery  
Sampler Name: Cody Miller 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	GBTEXN - 8260B <sup>915</sup>	TPH - (C6 - C36) <sup>915</sup>	pH, EC, SAR <sup>915</sup>	Boron - HWS <sup>915</sup>	VOC - 915	PAH - 915	Metals - 915	THB <sub>5</sub> (1,2,4)(1,3,5) <sup>915</sup>		
1	S22 @ 2.5'	6/11/21	1318	3			X			X				X	X						X	pH, EC, SAR by saturated paste
2	S23 @ 6'	↓	1322	3			X			X				X	X						X	
3	S24 @ 2.5'	↓	1336	3			X			X				X	X						X	
4	S25 @ 6'	↓	1340	3			X			X				X	X						X	
5																						
6																						
7																						
8																						
9																						
10																						

Relinquished by: Cody Miller	Date/Time: 6/11/21 1520	Received by: Tasman's Lock Box	Date/Time: 6/11/21 1520	Turn Around Time (Check)	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 6/11/21 1700	Received by: [Signature]	Date/Time: 6/11/21 1700	Same Day <input checked="" type="checkbox"/> 72 hours	
				24 hours <input type="checkbox"/> Standard	
				48 hours <input type="checkbox"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:	
				Temperature Upon Receipt: 3/	
				Samples Intact: (Yes) No	

# Sample Receipt Checklist

S2 Work Order 2106247

Client: PDC / Tasman Client Project ID: Linkus 32-24 Tank Bathy

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

☐ ☒ ☐ ☐ ☐

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

Temp (°C)	4
-----------	---

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	On ice.
NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.				
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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	same day.
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> ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect				
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Record the pH in Comments.				
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.

JB  
Custodian Printed Name or Initials

[Signature]  
Signature of Custodian

6/11/21  
Date/Time



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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/14/21 07:05

**S12@16'**  
**2106247-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/11/21 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEF0277	06/11/21	06/12/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	<b>0.0080</b>	0.0050	"	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	<b>0.016</b>	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>0.74</b>	0.50	"	"	"	"	"	"	

Date Sampled: **06/11/21 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		126 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		73.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		149 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/11/21 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEF0278	06/11/21	06/12/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/11/21 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		89.4 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/14/21 07:05

**S13@14'**  
**2106247-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/11/21 11:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEF0277	06/11/21	06/12/21	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: **06/11/21 11:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.0 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/11/21 11:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEF0278	06/11/21	06/12/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/11/21 11:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		87.8 %	30-150		"	"	"	"	

Summit Scientific

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





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

Project: Linkus 32-24 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/14/21 07:05

**S14@14'**  
**2106247-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/11/21 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEF0277	06/11/21	06/12/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	<b>0.0072</b>	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>1.0</b>	0.50	"	"	"	"	"	"	

Date Sampled: **06/11/21 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		119 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.6 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/11/21 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEF0278	06/11/21	06/12/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/11/21 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		93.1 %	30-150		"	"	"	"	

Summit Scientific

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



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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/14/21 07:05

**S15@14'**  
**2106247-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/11/21 12:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEF0277	06/11/21	06/12/21	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: **06/11/21 12:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.7 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/11/21 12:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEF0278	06/11/21	06/12/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/11/21 12:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		89.7 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/14/21 07:05

**S16@14'**  
**2106247-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/11/21 12:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEF0277	06/11/21	06/12/21	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: **06/11/21 12:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		115 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.1 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/11/21 12:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEF0278	06/11/21	06/12/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/11/21 12:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		90.0 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/14/21 07:05

**S17@2.5'**  
**2106247-06 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/11/21 12:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEF0277	06/11/21	06/12/21	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: **06/11/21 12:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.8 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/11/21 12:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEF0278	06/11/21	06/12/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/11/21 12:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		95.4 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/14/21 07:05

**S18@6'**  
**2106247-07 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/11/21 12:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEF0277	06/11/21	06/12/21	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: **06/11/21 12:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		113 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.8 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/11/21 12:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEF0278	06/11/21	06/12/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/11/21 12:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		99.1 %	30-150		"	"	"	"	

Summit Scientific

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



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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/14/21 07:05

**S19@7'**  
**2106247-08 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/11/21 12:58**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEF0277	06/11/21	06/12/21	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: **06/11/21 12:58**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		113 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.1 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/11/21 12:58**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEF0278	06/11/21	06/12/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/11/21 12:58**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		96.6 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Linkus 32-24 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/14/21 07:05

**S20@2.5'**  
**2106247-09 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/11/21 13:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEF0277	06/11/21	06/12/21	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: **06/11/21 13:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		88.8 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/11/21 13:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEF0278	06/11/21	06/12/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/11/21 13:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		91.8 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/14/21 07:05

**S21@6'**  
**2106247-10 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/11/21 13:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEF0277	06/11/21	06/12/21	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: **06/11/21 13:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		113 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.6 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/11/21 13:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEF0278	06/11/21	06/12/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/11/21 13:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		91.1 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/14/21 07:05

**S22@2.5'**  
**2106247-11 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/11/21 13:18**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEF0277	06/11/21	06/12/21	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: **06/11/21 13:18**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.2 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/11/21 13:18**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEF0278	06/11/21	06/12/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/11/21 13:18**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		91.4 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/14/21 07:05

**S23@6'**  
**2106247-12 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/11/21 13:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEF0277	06/11/21	06/12/21	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: **06/11/21 13:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.4 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/11/21 13:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEF0278	06/11/21	06/12/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/11/21 13:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		93.0 %	30-150		"	"	"	"	

Summit Scientific

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



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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/14/21 07:05

**S24@2.5'**  
**2106247-13 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/11/21 13:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEF0277	06/11/21	06/12/21	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: **06/11/21 13:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		119 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.4 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/11/21 13:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEF0278	06/11/21	06/12/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/11/21 13:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		93.6 %	30-150		"	"	"	"	

Summit Scientific

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



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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/14/21 07:05

**S25@6'**  
**2106247-14 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/11/21 13:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEF0277	06/11/21	06/12/21	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: **06/11/21 13:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		115 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		88.9 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/11/21 13:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEF0278	06/11/21	06/13/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/11/21 13:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		99.1 %	30-150		"	"	"	"	

Summit Scientific

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



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

Project: Linkus 32-24 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/14/21 07:05

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

### Summit Scientific

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

#### Batch BEF0277 - EPA 5030 Soil MS

##### Blank (BEF0277-BLK1)

Prepared: 06/11/21 Analyzed: 06/12/21

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0404		"	0.0400		101	23-173			
Surrogate: Toluene-d8	0.0471		"	0.0400		118	20-170			
Surrogate: 4-Bromofluorobenzene	0.0390		"	0.0400		97.5	21-167			

##### LCS (BEF0277-BS1)

Prepared: 06/11/21 Analyzed: 06/12/21

Benzene	0.0700	0.0020	mg/kg	0.100		70.0	70-130			
Toluene	0.0746	0.0050	"	0.100		74.6	70-130			
Ethylbenzene	0.0843	0.0050	"	0.100		84.3	70-130			
m,p-Xylene	0.159	0.010	"	0.200		79.4	70-130			
o-Xylene	0.0803	0.0050	"	0.100		80.3	70-130			
1,2,4-Trimethylbenzene	0.0782	0.0050	"	0.100		78.2	70-130			
1,3,5-Trimethylbenzene	0.0786	0.0050	"	0.100		78.6	70-130			
Naphthalene	0.0720	0.0038	"	0.100		72.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0294		"	0.0400		73.4	23-173			
Surrogate: Toluene-d8	0.0386		"	0.0400		96.5	20-170			
Surrogate: 4-Bromofluorobenzene	0.0375		"	0.0400		93.8	21-167			

##### Matrix Spike (BEF0277-MS1)

Source: 2106243-02

Prepared: 06/11/21 Analyzed: 06/12/21

Benzene	0.0727	0.0020	mg/kg	0.100	ND	72.7	70-130			
Toluene	0.0765	0.0050	"	0.100	ND	76.5	70-130			
Ethylbenzene	0.0847	0.0050	"	0.100	ND	84.7	70-130			
m,p-Xylene	0.159	0.010	"	0.200	ND	79.5	70-130			
o-Xylene	0.0796	0.0050	"	0.100	ND	79.6	70-130			
1,2,4-Trimethylbenzene	0.0807	0.0050	"	0.100	ND	80.7	70-130			
1,3,5-Trimethylbenzene	0.0795	0.0050	"	0.100	ND	79.5	70-130			
Naphthalene	0.0917	0.0038	"	0.100	ND	91.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0326		"	0.0400		81.6	23-173			
Surrogate: Toluene-d8	0.0391		"	0.0400		97.6	20-170			
Surrogate: 4-Bromofluorobenzene	0.0379		"	0.0400		94.8	21-167			

Summit Scientific

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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/14/21 07:05

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

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

**Batch BEF0277 - EPA 5030 Soil MS**

Matrix Spike Dup (BEF0277-MSD1)		Source: 2106243-02			Prepared: 06/11/21 Analyzed: 06/12/21					
Benzene	0.0747	0.0020	mg/kg	0.100	ND	74.7	70-130	2.77	30	
Toluene	0.0777	0.0050	"	0.100	ND	77.7	70-130	1.60	30	
Ethylbenzene	0.0860	0.0050	"	0.100	ND	86.0	70-130	1.51	30	
m,p-Xylene	0.162	0.010	"	0.200	ND	81.2	70-130	2.22	30	
o-Xylene	0.0819	0.0050	"	0.100	ND	81.9	70-130	2.90	30	
1,2,4-Trimethylbenzene	0.0817	0.0050	"	0.100	ND	81.7	70-130	1.18	30	
1,3,5-Trimethylbenzene	0.0813	0.0050	"	0.100	ND	81.3	70-130	2.28	30	
Naphthalene	0.0932	0.0038	"	0.100	ND	93.2	70-130	1.62	30	
Surrogate: 1,2-Dichloroethane-d4		0.0323	"	0.0400		80.7	23-173			
Surrogate: Toluene-d8		0.0391	"	0.0400		97.6	20-170			
Surrogate: 4-Bromofluorobenzene		0.0381	"	0.0400		95.3	21-167			

Summit Scientific

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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/14/21 07:05

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch BEF0278 - EPA 3550A**

**Blank (BEF0278-BLK1)**

Prepared: 06/11/21 Analyzed: 06/12/21

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

**LCS (BEF0278-BS1)**

Prepared: 06/11/21 Analyzed: 06/12/21

C10-C28 (DRO)	536	50	mg/kg	500	107	70-130
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**Matrix Spike (BEF0278-MS1)**

Source: 2106243-02

Prepared: 06/11/21 Analyzed: 06/12/21

C10-C28 (DRO)	471	50	mg/kg	500	14.1	91.5	70-130
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**Matrix Spike Dup (BEF0278-MSD1)**

Source: 2106243-02

Prepared: 06/11/21 Analyzed: 06/12/21

C10-C28 (DRO)	470	50	mg/kg	500	14.1	91.1	70-130	0.357	20
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Summit Scientific

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

Project: Linkus 32-24 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/14/21 07:05

### Notes and Definitions

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



# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

June 15, 2021

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Linkus 32-24 Tank Battery

Work Order #2106269

Enclosed are the results of analyses for samples received by Summit Scientific on 06/14/21 17:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury

President



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

Project: Linkus 32-24 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
06/15/21 06:29

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S26@16.5'	2106269-01	Soil	06/14/21 15:12	06/14/21 17:15

Summit Scientific

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

# Summit Scientific

2106269

S<sub>2</sub>

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

Page 1 of 1

Client: PDC / Tasman Project Manager: Mark Longhurst  
 Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com  
 City/State/Zip: Broomfield/ CO/ 80020  
 Phone: 303-487-1228 Project Name: Linkus 32-24 Tank Battery  
 Sampler Name: Cody Miller Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested								Special Instructions	
					HCl	HNO <sub>3</sub>	None	Other	Water	Soil	Air-Canister #	Other	GBTEXN - 8260B <sup>915</sup>	TPH - (C6 - C36) <sup>915</sup>	pH, EC, SAR <sup>915</sup>	Boron - HWS <sup>915</sup>	VOC - 915	PAH - 915	Metals - 915		
1	S26.216.5	6/14/21	1512	3			X			X			X	X							pH, EC, SAR by saturated paste
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by: Cody Miller	Date/Time: 6/14/21 1605	Received by: Tasman's Lock Box	Date/Time: 6/14/21 1605	Turn Around Time (Check)	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 6/14/21 1715	Received by: [Signature]	Date/Time: 6/14/21 1715	Same Day <input checked="" type="checkbox"/> 72 hours	
				24 hours <input type="checkbox"/> Standard	
				48 hours <input type="checkbox"/> Sample Integrity: 6	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Temperature Upon Receipt: <input type="checkbox"/>	
				Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

2106269

## Sample Receipt Checklist

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

Client: PDC / Tasman Client Project ID: Linkus 32-24 Tank BatteryShipped Via: ☐ H.D./P.U./FedEx/UPS/USPS/Other \_\_\_\_\_ Airbill #: \_\_\_\_\_Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_  
(Describe)Temp (°C) 6

Thermometer ID: 61857155-K

	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 provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>On ice</i>
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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>Same day.</i>
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, H <sub>2</sub> SO <sub>4</sub> , NaOH, HNO <sub>3</sub> , ect	<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.JB  
Custodian Printed Name or InitialsJohn B.  
Signature of Custodian6/14/21  
Date/Time



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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/15/21 06:29

**S26@16.5'**  
**2106269-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/14/21 15:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEF0303	06/14/21	06/14/21	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: **06/14/21 15:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		112 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/14/21 15:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEF0304	"	06/14/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/14/21 15:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		92.2 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Linkus 32-24 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/15/21 06:29

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

### Summit Scientific

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

#### Batch BEF0303 - EPA 5030 Soil MS

##### Blank (BEF0303-BLK1)

Prepared & Analyzed: 06/14/21

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0475		"	0.0400		119	23-173			
Surrogate: Toluene-d8	0.0402		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0407		"	0.0400		102	21-167			

##### LCS (BEF0303-BS1)

Prepared & Analyzed: 06/14/21

Benzene	0.161	0.0020	mg/kg	0.200		80.3	70-130			
Toluene	0.187	0.0050	"	0.200		93.3	70-130			
Ethylbenzene	0.225	0.0050	"	0.200		112	70-130			
m,p-Xylene	0.470	0.010	"	0.400		117	70-130			
o-Xylene	0.217	0.0050	"	0.200		109	70-130			
1,2,4-Trimethylbenzene	0.182	0.0050	"	0.200		91.1	70-130			
1,3,5-Trimethylbenzene	0.255	0.0050	"	0.200		127	70-130			
Naphthalene	0.204	0.0038	"	0.200		102	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0490		"	0.0400		122	23-173			
Surrogate: Toluene-d8	0.0410		"	0.0400		103	20-170			
Surrogate: 4-Bromofluorobenzene	0.0409		"	0.0400		102	21-167			

##### Matrix Spike (BEF0303-MS1)

Source: 2106265-02

Prepared & Analyzed: 06/14/21

Benzene	0.160	0.0020	mg/kg	0.200	ND	79.8	70-130			
Toluene	0.181	0.0050	"	0.200	ND	90.4	70-130			
Ethylbenzene	0.225	0.0050	"	0.200	ND	112	70-130			
m,p-Xylene	0.472	0.010	"	0.400	ND	118	70-130			
o-Xylene	0.222	0.0050	"	0.200	ND	111	70-130			
1,2,4-Trimethylbenzene	0.213	0.0050	"	0.200	ND	106	70-130			
1,3,5-Trimethylbenzene	0.215	0.0050	"	0.200	ND	108	70-130			
Naphthalene	0.236	0.0038	"	0.200	ND	118	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0489		"	0.0400		122	23-173			
Surrogate: Toluene-d8	0.0390		"	0.0400		97.4	20-170			
Surrogate: 4-Bromofluorobenzene	0.0425		"	0.0400		106	21-167			

Summit Scientific

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

Project: Linkus 32-24 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/15/21 06:29

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

### Summit Scientific

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

#### Batch BEF0303 - EPA 5030 Soil MS

Matrix Spike Dup (BEF0303-MSD1)	Source: 2106265-02			Prepared & Analyzed: 06/14/21						
Benzene	0.167	0.0020	mg/kg	0.200	ND	83.4	70-130	4.41	30	
Toluene	0.201	0.0050	"	0.200	ND	100	70-130	10.4	30	
Ethylbenzene	0.232	0.0050	"	0.200	ND	116	70-130	3.09	30	
m,p-Xylene	0.485	0.010	"	0.400	ND	121	70-130	2.83	30	
o-Xylene	0.227	0.0050	"	0.200	ND	114	70-130	2.31	30	
1,2,4-Trimethylbenzene	0.211	0.0050	"	0.200	ND	105	70-130	0.935	30	
1,3,5-Trimethylbenzene	0.220	0.0050	"	0.200	ND	110	70-130	2.33	30	
Naphthalene	0.213	0.0038	"	0.200	ND	106	70-130	10.3	30	
Surrogate: 1,2-Dichloroethane-d4	0.0525		"	0.0400		131	23-173			
Surrogate: Toluene-d8	0.0410		"	0.0400		103	20-170			
Surrogate: 4-Bromofluorobenzene	0.0417		"	0.0400		104	21-167			

Summit Scientific

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



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

Project: Linkus 32-24 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/15/21 06:29

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch BEF0304 - EPA 3550A**

**Blank (BEF0304-BLK1)**

Prepared & Analyzed: 06/14/21

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

**LCS (BEF0304-BS1)**

Prepared & Analyzed: 06/14/21

C10-C28 (DRO)	496	50	mg/kg	500	99.1	70-130
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**Matrix Spike (BEF0304-MS1)**

Source: 2106265-02

Prepared & Analyzed: 06/14/21

C10-C28 (DRO)	486	50	mg/kg	500	28.4	91.6	70-130
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**Matrix Spike Dup (BEF0304-MSD1)**

Source: 2106265-02

Prepared: 06/14/21 Analyzed: 06/15/21

C10-C28 (DRO)	483	50	mg/kg	500	28.4	91.0	70-130	0.612	20
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Summit Scientific

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

Project: Linkus 32-24 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
06/15/21 06:29

### 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