

PDC Energy, Inc.
First Quarter 2023 Groundwater Monitoring Summary

February 6, 2023

Former Jerke UP 8-7 Tank Battery
SENE S7 T4N R65W
Remediation # 9300

This groundwater summary has been prepared by Tasman, Inc. for the former Jerke UP 8-7 tank battery.

Site History and Background

On November 6, 2013, a historic hydrocarbon release was discovered beneath the produced water vault during removal activities. Following the discovery, mitigation activities were initiated, and between November 6, and November 11, 2013, approximately 440 cubic yards of impacted material were removed from location. Groundwater was encountered within the excavation at approximately 5 feet below ground surface (bgs). Groundwater vacuum recovery was conducted concurrent with excavation activities and approximately 810 barrels (bbls) of groundwater were removed from the former excavation. Between December 2013 and March 2021, eighteen monitoring wells were installed within and adjacent to the former excavation to confirm the absence of dissolved phase hydrocarbon impacts and establish point of compliance (POC) on site. Due to third-party operations, monitoring well BH15 was destroyed during the second quarter 2022. On December 15, 2022, an unknown volume of oil released into secondary containment at the Jerke UP 8-7 tank battery location. Following the release excavation activities were initiated. A summary of excavation and confirmation soil sampling activities is included below under the Source Mass Removal Activities section.

Groundwater Monitoring Activities

On January 3, 2023, groundwater monitoring was conducted at all 17 monitoring well locations (BH01R, BH02R, BH03, BH04, BH05, BH06R, BH07, BH08R, BH09R, BH10, BH11 - BH14, and BH16 – BH18). During initial gauging activities, light non-aqueous phase liquid (LNAPL) was measured in monitoring wells BH02R and BH04. Consequently, no samples were collected from these wells during the first quarter 2023. Additionally, BH06R and BH18 were unable to be located due to snowdrifts and frozen ground on site. Thirteen (13) groundwater samples were submitted to Summit Scientific Laboratory (Summit) for analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, 1,2,4-trimethylbenzene (TMB), and 1,3,5-TMB by EPA Method 8260B.

First quarter 2023 analytical results indicated that organic compound concentrations were in exceedance of the applicable COGCC Table 915-1 groundwater standards in monitoring wells BH10 and BH11. Organic compound concentrations were in compliance with the applicable regulatory standards in the remaining 11 monitoring well locations. Sample locations and corresponding analytical results are illustrated on

Figure 1. Groundwater elevation data is illustrated on Figure 2. Analytical results are summarized in Table 1. The laboratory analytical report is included in Attachment A.

Source Mass Removal Activities

Following the discovery of the December 15, 2022, release at the Jerke Up 8-7 Tank Battery, source mass removal activities were initiated on January 10, 2023, to delineate and remove hydrocarbon impacted material on site. Between January 10, and February 1, 2023, approximately 3,160 cubic yards of impacted material were removed from site. Groundwater was encountered within the excavation at approximately 7 feet bgs. Groundwater recovery operations were performed concurrent with excavation activities and approximately 8,025 barrels of groundwater were removed from site.

During excavation activities, 64 confirmation soil samples (SS01 – SS25, SS27 – SS36, SS38 – SS45, SS47 – SS62, SS64 – SS68) were collected from the base and sidewalls of the excavation at depths ranging from approximately 5 feet to 14 feet bgs and were submitted to Summit for laboratory analysis of BTEX, naphthalene, 1,2,4-TMB, 1,3,5-TMB, total petroleum hydrocarbons (TPH)[C6-C36], benz(a)anthracene, dibenzoanthracene, fluorene, 1-methylnaphthalene (M), 2-M, electrical conductivity (EC), boron, arsenic, and selenium. Additionally, four soil samples (SS26, SS37, SS46, and SS63) were collected from within the root zone at approximately 2.5 feet bgs and were submitted to Summit for laboratory analysis of pH, EC, sodium adsorption ratio (SAR), and boron.

Soil analytical results indicated that organic compound concentrations were in compliance with the applicable COGCC Table 915-1 Protection of Groundwater SSLs in all samples collected from the final excavation extent. Arsenic and/or selenium concentrations were in exceedance of the applicable regulatory standards in all samples collected from the final excavation extent. In addition, pH, EC, SAR, and boron levels were in compliance with the applicable regulatory standards in all four soil suitability samples collected. Confirmation samples and the final excavation extent are illustrated on Figure 3. Soil analytical results are summarized in Tables 2 – 5. GPS coordinates and field observed VOC concentrations are summarized in Table 6. The laboratory reports are included in Attachment A and the excavation field notes and photo logs are included as Attachment B.

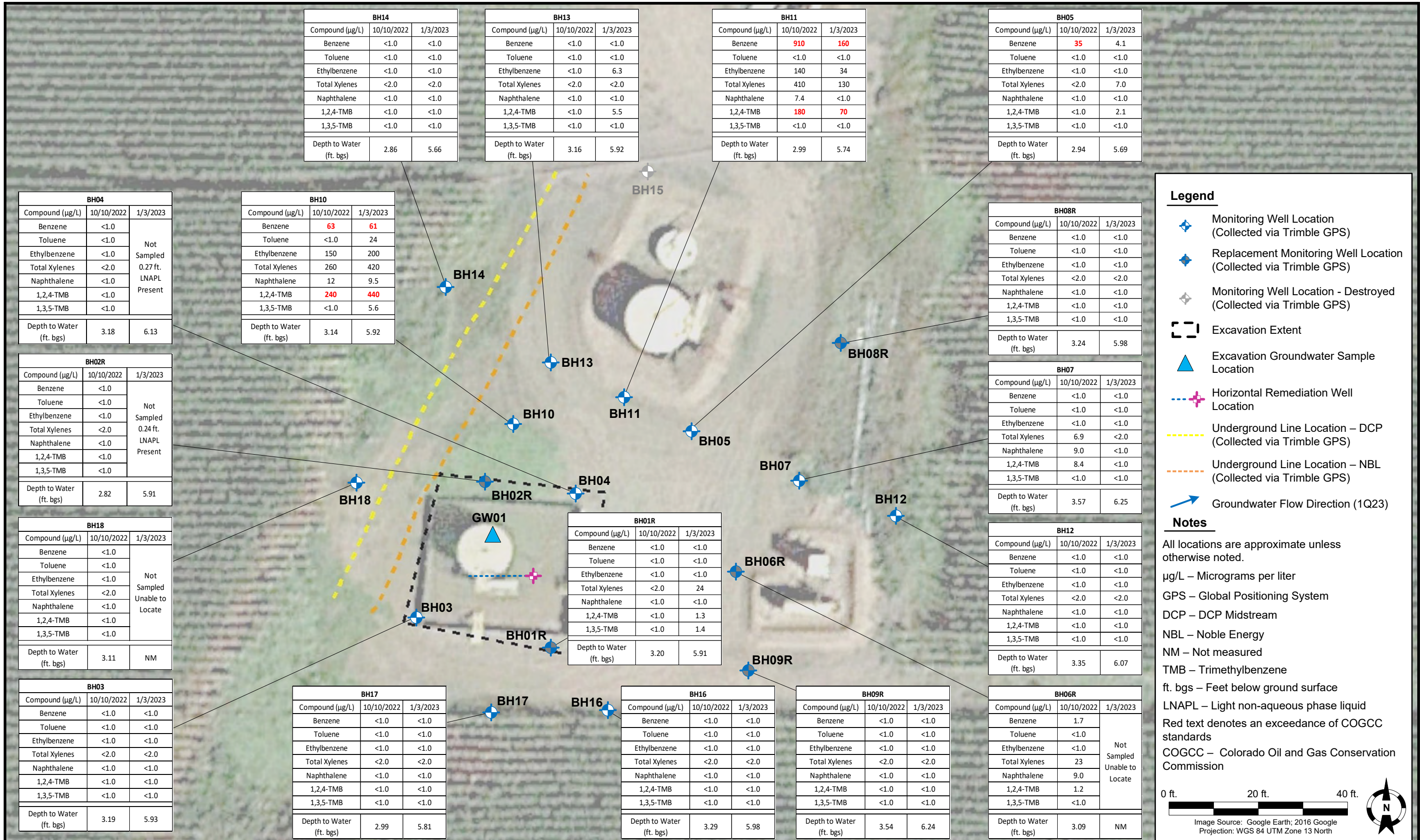
Remediation Activities and Path Forward

Enhanced fluid recovery (EFR) and air sparge (AS) were initiated at the site during the first quarter 2014 and continued through April 20, 2018. Monitored natural attenuation (MNA) was selected as the remediation strategy for the remainder of the second quarter 2018 and continued through the third quarter 2020. Based on persisting organic compound concentrations, EFR/AS activities were re-initiated in November 2020 and continued through the fourth quarter 2022. The remediation strategy will be re-evaluated following analytical results received following the next groundwater monitoring event.

All 18 site monitoring wells were destroyed during excavation activities. Twelve additional monitoring wells will be installed to replace the destroyed monitoring wells and confirm the absence of dissolved-phase hydrocarbon impacts within and surrounding the former excavation extent. The proposed

monitoring well locations are illustrated on Figure 4. Quarterly groundwater monitoring will continue following monitoring well installation activities.

Additionally, based on soil analytical results received during January excavation activities, further site investigation is required to assess arsenic and selenium concentrations in native soil on site. The proposed soil borings are illustrated on Figure 5.





DATE: February 23, 2023

DESIGNED BY: C. Hamlin

DRAWN BY: J. Marcus



TASMAN

Tasman, Inc.
6855 West 119th Avenue
Broomfield, CO 80020

PDC Energy, Inc. – DJ Basin
Former Jerke UP 8-7 Tank Battery
SENE, Section 7, Township 4 North, Range 65 West
Weld County, Colorado

GROUNDWATER
ELEVATION CONTOUR
MAP (01/03/2023)

FIGURE
2



DATE: February 27, 2023	 TASMAN	Tasman, Inc. 6855 W. 119 th Ave. Broomfield, CO 80020	PDC Energy, Inc. – DJ Basin Former Jerke Up 8-7 Tank Battery SENE, Section 7, Township 4 North, Range 65 West Weld County, Colorado	EXCAVATION SITE MAP	FIGURE 3
DESIGNED BY: C. Hamlin					
DRAWN BY: K. Shepherd					



DATE:	March 1, 2023
DESIGNED BY:	C. Hamlin
DRAWN BY:	J. Marcus



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

PDC Energy, Inc. – DJ Basin
Former Jerke Up 8-7 Tank Battery
SENE, Section 7, Township 4 North, Range 65 West
Weld County, Colorado

**PROPOSED
MONITORING WELL
LOCATION MAP**

**FIGURE
4**



DATE:	February 27, 2023	<div><div>Tasman, Inc. 6855 W. 119th Ave. Broomfield, CO 80020</div></div>	<div>PDC Energy, Inc. – DJ Basin Former Jerke Up 8-7 Tank Battery SENE, Section 7, Township 4 North, Range 65 West Weld County, Colorado</div>	<div>PROPOSED SOIL BORING LOCATION MAP</div>	<div>FIGURE 5</div>
DESIGNED BY:	C. Hamlin				
DRAWN BY:	K. Shepherd				

TABLE 1
FORMER JERKE UP 8-7 TANK BATTERY
GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE

Sample ID	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Naphthalene (µg/L)	1,2,4-TMB (µg/L)	1,3,5-TMB (µg/L)	Depth to Water ⁽²⁾ (ft.)	Groundwater Elevation (ft. AMSL)
COGCC Table 915-1 Groundwater Standard (µg/L) ⁽¹⁾		5	560	700	1,400	140	67	67	-	-
BH01R	1/19/2021	<1.0	<1.0	42	260	5.4	98	57	6.02	4681.86
BH01R	4/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.33	4681.55
BH01R	7/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.39	4686.49
BH01R	10/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.66	4685.22
BH01R	1/20/2022	<1.0	<1.0	5.1	39	2.4	23	6.4	4.73	4683.15
BH01R	4/13/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.04	4683.15
BH01R	8/1/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.04	4685.84
BH01R	10/10/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.20	4684.68
BH01R	1/3/2023	<1.0	<1.0	<1.0	24	<1.0	1.3	1.4	5.91	4681.97
BH02R	1/19/2021	Not Sampled - Well Dry							NM	NM
BH02R	4/21/2021	Not Sampled - Insufficient Volume							6.10	4681.32
BH02R	7/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.74	4686.68
BH02R	10/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.59	4684.83
BH02R	1/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.50	4682.92
BH02R	4/13/2022	Not Sampled - Insufficient Volume							5.88	4681.54
BH02R	8/1/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.15	4686.27
BH02R	10/10/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.82	4684.60
BH02R	1/3/2023	Not Sampled - 0.24 ft. LNAPL Present							5.91	4681.69
BH03	1/19/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.07	4681.81
BH03	4/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.28	4681.60
BH03	7/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.35	4686.53
BH03	10/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.56	4685.32
BH03	1/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.75	4683.13
BH03	4/13/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.08	4681.80
BH03	8/1/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.06	4685.82
BH03	10/10/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.19	4684.69
BH03	1/3/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.93	4681.95
BH04	1/19/2021	39	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.01	4681.75
BH04	4/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.35	4681.41
BH04	7/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.50	4686.26
BH04	10/21/2021	9,100	<1.0	560	570	2.8	2.6	1.6	2.81	4684.95
BH04	1/20/2022	2,800	1.2	66	370	9.7	17	6.8	4.72	4683.04
BH04	4/13/2022	1,400	<1.0	<1.0	31	3.2	9.4	1.4	6.07	4681.69
BH04	8/1/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.65	4685.11
BH04	10/10/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.18	4684.58
BH04	1/3/2023	Not Sampled - 0.27 ft. LNAPL Present							6.13	4681.83
BH05	1/19/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.81	4681.74
BH05	4/21/2021	2.5	<1.0	2.4	17	<1.0	2.1	1.5	6.10	4681.45
BH05	7/21/2021	22	<1.0	26	60	<1.0	3.4	5.0	1.41	4686.14
BH05	10/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.43	4685.12
BH05	1/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.50	4683.05
BH05	4/13/2022	11	<1.0	52	270	<1.0	40	6.5	5.86	4681.69
BH05	8/1/2022	1.6	<1.0	<1.0	4.5	2.0	3.3	<1.0	2.07	4685.48
BH05	10/10/2022	35	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.94	4684.61
BH05	1/3/2023	4.1	<1.0	<1.0	7.0	<1.0	2.1	<1.0	5.69	4681.86
BH06R	1/19/2021	<1.0	<1.0	93	530	2.4	110	45	6.06	4681.82
BH06R	4/21/2021	<1.0	<1.0	58	170	<1.0	28	12	6.17	4681.71
BH06R	7/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.50	4686.38
BH06R	10/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.50	4685.38
BH06R	1/20/2022	<1.0	<1.0	<1.0	2.3	<1.0	6.6	<1.0	4.60	4683.28
BH06R	4/13/2022	<1.0	<1.0	2.3	<2.0	<1.0	<1.0	<1.0	5.94	4681.94
BH06R	8/1/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.01	4685.87

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COGCC Table 915-1 Groundwater Standard (µg/L) ⁽¹⁾		5	560	700	1,400	140	67	67	-	-
BH06R	10/10/2022	1.7	<1.0	<1.0	23	9.0	1.2	<1.0	3.09	4684.79
BH06R	1/3/2023	Not Sampled - Unable to Locate							NM	NM
BH07	1/19/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.38	4681.78
BH07	4/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.68	4681.48
BH07	7/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.01	4686.15
BH07	10/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.00	4685.16
BH07	1/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.07	4683.09
BH07	4/13/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.43	4681.73
BH07	8/1/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.51	4685.65
BH07	10/10/2022	<1.0	<1.0	<1.0	6.9	9.0	8.4	<1.0	3.57	4684.59
BH07	1/3/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.25	4681.91
BH08R	1/19/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.22	4681.50
BH08R	4/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.54	4681.18
BH08R	7/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.87	4684.85
BH08R	10/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.80	4684.92
BH08R	1/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.99	4682.73
BH08R	4/13/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.34*	4681.38
BH08R	8/1/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.24	4685.93
BH08R	10/10/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.24	4684.93
BH08R	1/3/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.98	4682.16
BH09R	1/19/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.33	4681.84
BH09R	4/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.57	4681.60
BH09R	7/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.84	4686.33
BH09R	10/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.90	4685.27
BH09R	1/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.99	4683.18
BH09R	4/13/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.32	4681.85
BH09R	8/1/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.33	4685.84
BH09R	10/10/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.54	4684.63
BH09R	1/3/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.24	4681.93
BH10	1/19/2021	280	<1.0	430	2,300	41	960	73	6.10	4681.64
BH10	4/21/2021	Not Sampled - Insufficient Volume							6.34	4681.40
BH10	7/21/2021	1,400	<1.0	1,700	7,600	250	4,200	97	1.76	4685.98
BH10	10/21/2021	<1.0	<1.0	12	150	<1.0	120	<1.0	2.65	4685.09
BH10	1/20/2022	110	<1.0	160	440	12	130	<1.0	4.74	4683.00
BH10	4/13/2022	38	<1.0	110	660	10	480	38	6.07	4681.67
BH10	8/1/2022	98	<1.0	180	950	5.8	130	14	2.10	4685.64
BH10	10/10/2022	63	<1.0	150	260	12	240	<1.0	3.14	4684.60
BH10	1/3/2023	61	24	200	420	9.5	440	5.6	5.92	4681.82
BH11	1/19/2021	Not Sampled - Insufficient Volume							NM	NM
BH11	4/21/2021	Not Sampled - Insufficient Volume							6.40	4681.33
BH11	7/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.67	4686.06
BH11	10/21/2021	140	<1.0	<1.0	300	<1.0	37	20	2.62	4685.11
BH11	1/20/2022	360	<1.0	120	400	4.8	120	29	4.75	4682.98
BH11	4/13/2022	Not Sampled - Insufficient Volume							6.06	4681.67
BH11	8/1/2022	1,600	<1.0	640	2,900	22	500	130	2.25	4685.38
BH11	10/10/2022	910	<1.0	140	410	7.4	180	<1.0	2.99	4684.64
BH11	1/3/2023	160	<1.0	34	130	<1.0	70	<1.0	5.74	4681.89
BH12	1/19/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.14	4681.81
BH12	4/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.42	4681.53
BH12	7/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.81	4686.14
BH12	10/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.73	4685.22

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GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE

Sample ID	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Naphthalene (µg/L)	1,2,4-TMB (µg/L)	1,3,5-TMB (µg/L)	Depth to Water ⁽²⁾ (ft.)	Groundwater Elevation (ft. AMSL)
COGCC Table 915-1 Groundwater Standard (µg/L) ⁽¹⁾		5	560	700	1,400	140	67	67	-	-
BH12	1/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.84	4683.11
BH12	4/13/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.20	4681.75
BH12	8/1/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.28	4685.67
BH12	10/10/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.35	4684.60
BH12	1/3/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.07	4681.88
BH13	1/19/2021	2.3	<1.0	7.7	49	<1.0	14	<1.0	6.04	4681.63
BH13	4/21/2021	<1.0	<1.0	<1.0	2.4	<1.0	<1.0	<1.0	6.32	4681.35
BH13	7/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.64	4686.03
BH13	10/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.67	4685.00
BH13	1/20/2022	<1.0	<1.0	<1.0	2.4	<1.0	1.6	<1.0	4.79	4682.88
BH13	4/13/2022	2.5	<1.0	33	180	<1.0	36	2.9	6.09	4681.58
BH13	8/1/2022	<1.0	<1.0	4.2	12	<1.0	9.3	<1.0	2.13	4685.54
BH13	10/10/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.16	4684.51
BH13	1/3/2023	<1.0	<1.0	6.3	<2.0	<1.0	5.5	<1.0	5.92	4681.75
BH14	1/19/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.83	4681.61
BH14	4/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.15	4681.29
BH14	7/21/2021	Not Sampled - Submerged							NM	NM
BH14	10/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.44	4685.00
BH14	1/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.57	4682.87
BH14	4/13/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.84	4681.60
BH14	8/1/2022	Not Sampled - Submerged							NM	NM
BH14	10/10/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.86	4684.58
BH14	1/3/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.66	4681.78
BH15	1/19/2021	<1.0	<1.0	<1.0	<2.0	<1.0	1.6	<1.0	6.76	4681.61
BH15	4/21/2021	1.2	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	7.11	4681.26
BH15	7/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.43	4685.94
BH15	10/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.38	4684.99
BH15	1/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.50	4682.87
BH15	4/13/2022	Not Sampled - Destroyed							NM	NM
BH16	4/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.34	4681.66
BH16	7/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.50	4686.50
BH16	10/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.67	4685.33
BH16	1/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.79	4683.21
BH16	4/13/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.12	4681.88
BH16	8/1/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.04	4685.96
BH16	10/10/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.29	4684.71
BH16	1/3/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.98	4682.02
BH17	4/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.06	4681.66
BH17	7/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.11	4686.61
BH17	10/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.41	4685.31
BH17	1/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.52	4683.20
BH17	4/13/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.83	4681.89
BH17	8/1/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.85	4685.87
BH17	10/10/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.99	4684.73
BH17	1/3/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.81	4681.91
BH18	4/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.24	4681.54
BH18	7/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.38	4686.40
BH18	10/21/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.55	4685.23
BH18	1/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.65	4683.13
BH18	4/13/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.02	4681.76
BH18	8/1/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.03	4685.75

TABLE 1
FORMER JERKE UP 8-7 TANK BATTERY
GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE

Sample ID	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Naphthalene (µg/L)	1,2,4-TMB (µg/L)	1,3,5-TMB (µg/L)	Depth to Water ⁽²⁾ (ft.)	Groundwater Elevation (ft. AMSL)
COGCC Table 915-1 Groundwater Standard (µg/L) ⁽¹⁾		5	560	700	1,400	140	67	67	-	-
BH18	10/10/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.11	4684.67
BH18	1/3/2023	Not Sampled - Unable to Locate							NM	NM

Notes:

1. Groundwater standards referenced from 2 CCR 404-1, Table 915-1, January 15, 2021.

2. Depth to water measurements were measured from ground surface for excavation samples. Monitoring well measurements were collected from top of casing and adjusted using survey data to reflect depth of water from ground surface.

TMB = Trimethylbenzene

COGCC = Colorado Oil and Gas Conservation Commission

µg/L = Micrograms per liter

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

* = Depth to water anomalous due to damage to well casing.

ft. = Feet

AMSL = Above Mean Sea Level

NM = Not measured

BOLD = Analytical result is in exceedance of applicable standard.

TABLE 2
FORMER JERKE UP 8-7 TANK BATTERY
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 ⁽⁴⁾ (mg/kg)	Benz(a) (mg/kg)	A,H (mg/kg)	Fluorene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)	EC (mmhos/cm)	Boron (mg/L)	Arsenic (mg/kg)	Selenium (mg/kg)
Residential SSL ^(1,2)			1.2	490	5.8	58	30	27	2	500	1.1	0.11	240	18	24	<4	2	0.68	390
Protection of Groundwater SSL ^(1,2,3)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500	0.011	0.096	0.54	0.006	0.019	-	-	0.29	0.26
SS01 @ 0-6"*	12/16/2022	0-6 in. bgs	0.031	9.2	0.31	23	5.3	4.9	0.26	33,040	<1.00	<1.00	1	7.98	14.4	4.92	5.72	2.06	0.393
WC01 @ 6'	01/10/2023	6 ft. bgs	0.43	<0.0050	7.2	140	39	31	0.87	2,020	<0.00500	<0.00500	0.0366	0.14	1.16	0.946	0.0364	0.651	<0.294
SS01 @ 14'	01/12/2023	14 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.330	0.0559	0.344	<0.260
SS02 @ 14'	01/12/2023	14 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.355	0.0733	0.412	<0.260
SS03 @ 14'	01/13/2023	14 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.448	0.0611	0.886	0.874
SS04 @ 5'	01/13/2023	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.539	0.0900	0.809	0.808
SS05 @ 10'	01/13/2023	10 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.506	0.0753	<0.200	0.703
SS06 @ 5'	01/13/2023	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.594	0.326	7.68	1.03
SS07 @ 10'	01/13/2023	10 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.362	0.0740	<0.200	0.628
SS08 @ 14'	01/13/2023	14 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.424	0.0508	1.21	0.643
SS09 @ 14'	01/13/2023	14 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.394	0.0573	0.510	0.546
SS10 @ 5'	01/13/2023	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.406	0.0968	4.40	0.893
SS11 @ 10'	01/13/2023	10 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.421	0.312	20.3	1.19
SS12 @ 14'	01/16/2023	14 ft. bgs	0.0052	0.0096	0.017	0.26	0.063	0.045	0.0082	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.438	0.105	0.476	0.398
SS13 @ 5'	01/16/2023	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.542	0.206	7.11	0.577
SS14 @ 10'	01/16/2023	10 ft. bgs	<0.0020	<0.0050	<0.0050	0.056	0.067	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.432	0.118	0.530	0.297
SS15 @ 14'	01/16/2023	14 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.390	0.0955	0.729	0.925
SS16 @ 14'	01/17/2023	14 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.232	0.0542	0.358	<0.260
SS17 @ 14.5'	01/17/2023	14.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.468	0.0576	0.345	<0.260
SS18 @ 14'	01/17/2023	14 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.334	0.0565	0.418	<0.260
SS19 @ 5'	01/19/2023	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.859	0.289	8.68	0.731
SS20 @ 10'	01/19/2023	10 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.350	0.0491	<0.200	0.348
SS21 @ 14'	01/19/2023	14 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.600	0.0589	0.476	0.585
SS22 @ 5'	01/19/2023	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.603	0.120	1.16	0.587
SS23 @ 10'	01/19/2023	10 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.448	0.0482	0.285	0.403
SS24 @ 14'	01/19/2023	14 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.510	0.0687	<0.200	0.276
SS25 @ 14'	01/20/2023	14 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.328	0.0327	<0.200	0.651
SS27 @ 5'	01/20/2023	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.345	0.0447	0.599	0.468
SS28 @ 10'	01/20/2023	10 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.402	0.0374	<0.200	0.418
SS29 @ 5'	01/24/2023	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.583	0.329	17.0	0.660
SS30 @ 10'	01/24/2023	10 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.451	0.0786	0.303	0.323
SS31 @ 14'	01/24/2023	14 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.456	0.126	0.589	0.837
SS32 @ 14'	01/24/2023	14 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.235	0.0978	0.261	0.304
SS33 @ 14'	01/24/2023	14 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.314	0.115	0.551	0.439
SS34 @ 5'	01/24/2023	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.474	0.114	0.925	0.753
SS35 @ 10'	01/24/2023	10 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.701	0.0918	<0.200	0.573
SS36 @ 14'	01/24/2023	14 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.298	0.109	0.644	0.531
SS38 @ 5'	01/25/2023	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.450	0.120	3.91	<0.260
SS39 @ 10'	01/25/2023	10 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.506	0.0831	1.10	<0.260
SS40 @ 14'	01/25/2023	14 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.338	0.0708	0.561	<0.260
SS41 @ 5'	01/25/2023	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.461	0.103	2.26	<0.260
SS42 @ 10'	01/25/2023	10 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.461	0.072	0.686	<0.260
SS43 @ 14'	01/26/2023	14 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.317	0.141	0.345	0.329
SS44 @ 14'	01/26/2023	14 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.344	0.0881	0.469	0.285
SS45 @ 14'	01/26/2023	14 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.306	0.0878	<0.200	0.402
SS47 @ 5'	01/26/2023	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.450	0.0600	2.17	0.482
SS48 @ 10'	01/26/2023	10 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500</					

TABLE 3
FORMER JERKE UP 8-7 TANK BATTERY
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 (1)			6-8.3	<4	<6	2
SS01 @ 0-6"*	12/16/2022	0-6 in. bgs	7.47	4.92	4.43	5.72
WC01 @ 6'	01/10/2023	6 ft. bgs	7.68	0.946	2.35	0.0364
SS26 @ 2.5'	01/20/2023	2.5 ft. bgs	8.12	0.940	2.76	0.327
SS37 @ 2.5'	01/25/2023	2.5 ft. bgs	7.96	0.751	2.89	0.116
SS46 @ 2.5'	01/26/2023	2.5 ft. bgs	8.01	0.795	1.68	0.107
WC02 @ 10'	01/26/2023	10 ft. bgs	7.89	1.69	2.73	0.0718
SS63 @ 2.5'	01/27/2023	2.5 ft. bgs	7.63	0.950	2.01	0.0660

Notes:

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

* = SS01 @ 0-6" was a 6 point composite sample collected from source material surrounding the above ground storage tank.

COGCC = Colorado Oil and Gas Conservation Commission

EC = Electrical conductivity

SAR = Sodium adsorption ratio

mmhos/cm = millimhos per centimeter

mg/L = milligram per liter

in. = Inches

ft. = Feet

bgs = Below ground surface

BOLD = Analytical result is in exceedance of applicable standard.

 = Source material characterization sample, excavated and transported off-site for disposal.

TABLE 4
FORMER JERKE UP 8-7 TANK BATTERY
SOIL ANALYTICAL RESULTS SUMMARY TABLE
ORGANIC COMPOUNDS - PAHs

Sample ID	Date Sampled	Depth	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 ^(1,2)			360	1,800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
Protection of Groundwater SSL ^(1,2,3)			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
SS01 @ 0-6''*	12/16/2022	0-6 in. bgs	<1.00 ⁽⁴⁾	<1.00 ⁽⁴⁾	<1.00 ⁽⁴⁾	<1.00 ⁽⁴⁾	<1.00 ⁽⁴⁾	<1.00 ⁽⁴⁾	<1.00 ⁽⁴⁾	<1.00 ⁽⁴⁾	<1.00 ⁽⁴⁾	1.00	<1.00 ⁽⁴⁾	<1.00 ⁽⁴⁾	7.98	14.4
WC01 @ 6'	01/10/2023	6 ft. bgs	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0366	<0.00500	<0.00500	0.140	1.16
WC02 @ 10'	01/26/2023	10 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	0.0424	0.0893

- 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.

* = SS01 @ 0-6" was a 6 point composite sample collected from source material surrounding the above ground storage tank.

COGCC = Colorado Oil and Gas Conservation Commission

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

PAHs = Polycyclic aromatic hydrocarbons

Benz(a) = Benzanthracene

Benzo(a) = Benzopyrene

Benzo(b) = Benzofluoranthene

Benzo(k) = Benzofluoranthene

A,H = Dibenzoanthracene

1,2,3-CD = Indenopyrene

M = Methylnaphthalene

mg/kg = Milligrams per kilogram

= Source material characterization sample, excavated and transported off-site for disposal.

in. = Inches

ft. = Feet

bgs = Below ground surface

BOLD = Analytical result is in exceedance of applicable standard.

TABLE 5
FORMER JERKE UP 8-7 TANK BATTERY
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 ^(1,2)			0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
Protection of Groundwater SSL ^(1,2,3)			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
SS01@0-6"*	12/16/2022	0-6 in. bgs	2.06	57.9	0.366	<0.30 ⁽⁴⁾	10.9	5.18	6.30	0.393	0.0441	68.3
WC01@6'	01/10/2023	6 ft. bgs	0.651	30.2	0.0570	<0.30 ⁽⁴⁾	1.68	2.70	2.21	<0.294 ⁽⁴⁾	0.0113	9.40
WC02@10'	01/26/2023	10 ft. bgs	<0.245	21.5	0.0304	<0.30 ⁽⁴⁾	2.33	2.35	2.05	0.385	0.0139	10.4

Notes:

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

2. Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.

3. SSLs are applicable if a pathway for communication with groundwater is present.

4. Compound falls within COGCC Table 915-1 Footnote 9.

* = SS01 @ 0-6" was a 6 point composite sample collected from source material surrounding the above ground storage tank.

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, excavated and transported off-site for disposal.

ft. = Feet

in. = Inches

bgs = Below ground surface

BOLD = Analytical result is in exceedance of applicable standard.

TABLE 6
FORMER JERKE UP 8-7 TANK BATTERY
FIELD DATA SUMMARY TABLE

Sample ID	Date Sampled	Depth	GPS Data ⁽¹⁾ Latitude / Longitude		PDOP Value	VOC Concentration ⁽²⁾ (ppm)
SS01 @ 0-6"*	12/16/2022	0-6 in. bgs	NC	NC	NC	339
WC01 @ 6'	01/10/2023	6 ft. bgs	40.329111	-104.701256	1.1	1,779
SS01 @ 14'	01/12/2023	14 ft. bgs	40.329108	-104.701274	NC	32.5
SS02 @ 14'	01/12/2023	14 ft. bgs	40.329052	-104.701094	NC	4.2
SS03 @ 14'	01/13/2023	14 ft. bgs	40.329040	-104.701149	NC	0.3
SS04 @ 5'	01/13/2023	5 ft. bgs	40.329038	-104.701067	1.0	0.0
SS05 @ 10'	01/13/2023	10 ft. bgs	40.329038	-104.701067	1.0	0.0
SS06 @ 5'	01/13/2023	5 ft. bgs	40.329019	-104.701136	1.0	0.0
SS07 @ 10'	01/13/2023	10 ft. bgs	40.329019	-104.701136	1.0	0.1
SS08 @ 14'	01/13/2023	14 ft. bgs	40.329028	-104.701197	NC	0.0
SS09 @ 14'	01/13/2023	14 ft. bgs	40.329074	-104.701060	NC	0.0
SS10 @ 5'	01/13/2023	5 ft. bgs	40.329069	-104.701040	1.0	3.7
SS11 @ 10'	01/13/2023	10 ft. bgs	40.329069	-104.701040	1.0	0.0
SS12 @ 14'	01/16/2023	14 ft. bgs	40.329058	-104.701178	NC	8.9
SS13 @ 5'	01/16/2023	5 ft. bgs	40.329117	-104.701064	1.0	7.1
SS14 @ 10'	01/16/2023	10 ft. bgs	40.329117	-104.701064	1.0	24.0
SS15 @ 14'	01/16/2023	14 ft. bgs	40.329079	-104.701129	NC	5.5
SS16 @ 14'	01/17/2023	14 ft. bgs	40.329100	-104.701088	NC	1.4
SS17 @ 14.5'	01/17/2023	14.5 ft. bgs	40.329059	-104.701177	NC	1.8
SS18 @ 14'	01/17/2023	14 ft. bgs	40.329075	-104.701225	NC	0.2
SS19 @ 5'	01/19/2023	5 ft. bgs	40.329001	-104.701220	1.1	0.2
SS20 @ 10'	01/19/2023	10 ft. bgs	40.329001	-104.701220	1.1	0.1
SS21 @ 14'	01/19/2023	14 ft. bgs	40.329036	-104.701239	NC	0.0
SS22 @ 5'	01/19/2023	5 ft. bgs	40.329009	-104.701290	1.0	0.1
SS23 @ 10'	01/19/2023	10 ft. bgs	40.329009	-104.701290	1.0	0.0
SS24 @ 14'	01/19/2023	14 ft. bgs	40.329017	-104.701272	NC	0.4
SS25 @ 14'	01/20/2023	14 ft. bgs	40.329048	-104.701286	NC	0.0
SS26 @ 2.5'	01/20/2023	2.5 ft. bgs	40.329026	-104.701348	1.0	0.0
SS27 @ 5'	01/20/2023	5 ft. bgs	40.329026	-104.701348	1.0	0.0
SS28 @ 10'	01/20/2023	10 ft. bgs	40.329026	-104.701348	1.0	0.0
SS29 @ 5'	01/24/2023	5 ft. bgs	40.329122	-104.701052	1.0	0.0
SS30 @ 10'	01/24/2023	10 ft. bgs	40.329122	-104.701052	1.0	1.3
SS31 @ 14'	01/24/2023	14 ft. bgs	40.329132	-104.701088	NC	0.3
SS32 @ 14'	01/24/2023	14 ft. bgs	40.329095	-104.701177	NC	2.3
SS33 @ 14'	01/24/2023	14 ft. bgs	40.329110	-104.701128	NC	0.5
SS34 @ 5'	01/24/2023	5 ft. bgs	40.329069	-104.701383	1.0	0.1
SS35 @ 10'	01/24/2023	10 ft. bgs	40.329069	-104.701383	1.0	0.1
SS36 @ 14'	01/24/2023	14 ft. bgs	40.329055	-104.701350	NC	0.1
SS37 @ 2.5'	01/25/2023	2.5 ft. bgs	40.329180	-104.701083	1.1	0.1
SS38 @ 5'	01/25/2023	5 ft. bgs	40.329180	-104.701083	1.1	1.7

TABLE 6
FORMER JERKE UP 8-7 TANK BATTERY
FIELD DATA SUMMARY TABLE

Sample ID	Date Sampled	Depth	GPS Data ⁽¹⁾ Latitude / Longitude		PDOP Value	VOC Concentration ⁽²⁾ (ppm)
SS39 @ 10'	01/25/2023	10 ft. bgs	40.329180	-104.701083	1.1	0.0
SS40 @ 14'	01/25/2023	14 ft. bgs	40.329166	-104.701104	NC	0.0
SS41 @ 5'	01/25/2023	5 ft. bgs	40.329196	-104.701145	1.1	1.8
SS42 @ 10'	01/25/2023	10 ft. bgs	40.329196	-104.701145	1.1	0.0
SS43 @ 14'	01/26/2023	14 ft. bgs	40.329185	-104.701149	NC	0.0
SS44 @ 14'	01/26/2023	14 ft. bgs	40.329147	-104.701149	NC	0.1
SS45 @ 14'	01/26/2023	14 ft. bgs	40.329130	-104.701200	NC	1.2
SS46 @ 2.5'	01/26/2023	2.5 ft. bgs	40.329222	-104.701196	1.0	0.6
SS47 @ 5'	01/26/2023	5 ft. bgs	40.329222	-104.701196	1.0	1.7
SS48 @ 10'	01/26/2023	10 ft. bgs	40.329222	-104.701196	1.0	3.8
SS49 @ 14'	01/26/2023	14 ft. bgs	40.329176	-104.701195	NC	0.0
SS50 @ 5'	01/26/2023	5 ft. bgs	40.329124	-104.701353	1.1	30.1
SS51 @ 10'	01/26/2023	10 ft. bgs	40.329124	-104.701353	1.1	19.9
SS52 @ 5'	01/26/2023	5 ft. bgs	40.329223	-104.701249	1.0	2.2
SS53 @ 10'	01/26/2023	10 ft. bgs	40.329223	-104.701249	1.0	5.2
WC02 @ 10'	01/26/2023	10 ft. bgs	40.329157	-104.701331	1.0	2,011
SS54 @ 14'	01/27/2023	14 ft. bgs	40.329092	-104.701332	NC	3.9
SS55 @ 14'	01/27/2023	14 ft. bgs	40.329142	-104.701304	NC	3.7
SS56 @ 14'	01/27/2023	14 ft. bgs	40.329151	-104.701245	NC	1.5
SS57 @ 14'	01/27/2023	14 ft. bgs	40.329197	-104.701222	NC	0.0
SS58 @ 5'	01/27/2023	5 ft. bgs	40.329159	-104.701333	1.0	612
SS59 @ 10'	01/27/2023	10 ft. bgs	40.329159	-104.701333	1.0	872
SS60 @ 5'	01/27/2023	5 ft. bgs	40.329211	-104.701290	1.0	0.0
SS61 @ 10'	01/27/2023	10 ft. bgs	40.329211	-104.701290	1.0	0.0
SS62 @ 14'	01/27/2023	14 ft. bgs	40.329192	-104.701283	NC	0.7
SS63 @ 2.5'	01/27/2023	2.5 ft. bgs	40.329223	-104.701249	1.0	0.0
SS64 @ 14.5'	01/30/2023	14.5 ft. bgs	40.329151	-104.701249	NC	1.2
SS65 @ 6'	02/01/2023	6 ft. bgs	40.329172	-104.701347	NC	272
SS66 @ 5'	02/01/2023	5 ft. bgs	40.329197	-104.701337	1.1	274
SS67 @ 5'	02/01/2023	5 ft. bgs	40.329177	-104.701361	1.1	192
SS68 @ 5'	02/01/2023	5 ft. bgs	40.329154	-104.701361	1.0	324

TABLE 6
FORMER JERKE UP 8-7 TANK BATTERY
FIELD DATA SUMMARY TABLE

Sample ID	Date Sampled	Depth	GPS Data ⁽¹⁾ Latitude / Longitude	PDOP Value	VOC Concentration ⁽²⁾ (ppm)
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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).

* = SS01 @ 0-6" was a 6 point composite sample collected from source material surrounding the above ground storage tank.

PDOP = Position Dilution of Precision

ppm = Parts per million

ft. = Feet

in. = Inches

bgs = Below ground surface

NC = Data not collected

= Source material excavated and transported off-site for disposal.

= Source material characterization sample, excavated and transported off-site for disposal.

Attachment A

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

December 27, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Jerke UP 8-7 Tank Battery

Work Order #2212327

Enclosed are the results of analyses for samples received by Summit Scientific on 12/16/22 16:38. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely", is written over a light blue rectangular background.

Scott Sheely For Paul Shrewsbury
President



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
12/27/22 11:43

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@0-6"	2212327-01	Soil	12/16/22 13:40	12/16/22 16:38

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

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

2212322

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: Jerbe 008-7 Tank Battery

Sampler Name: Aaron Otilar

Project Number: NA

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN-8260B	TPH-(C6-C36)	pH, EC, SAR	Boron -HWS	TMB's(1,2,4)&(1,3,5)	PAH - 915	Metals - 915		
1	SS0100-6"	12/16/22	1340	3			X			X				X	X	X	X	X	X		
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time	(Check)	Notes:
<i>Aaron Otilar</i>	12/16/22 8:1545	<i>Tasman Lockbox</i>	12/16/22 1545	Same Day	X 72 hours	
				24 hours	Standard	
				48 hours		
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:		
<i>Tasman Lockbox</i>	12/16/22 1638	<i>[Signature]</i>	12/16/22 1638	Temperature Upon Receipt: 8.6		
Relinquished by:	Date/Time:	Received by:	Date/Time:	Samples Intact: Yes No		

S₂

Sample Receipt Checklist

S2 Work Order# 2212327Client: Pactasman

Client Project ID:

Jarce up 8-7 Tank Battery

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

Airbill #:

--	--	--	--	--

Matrix (Check all that apply)

Air

☐

Soil/Solid

☒

Water

☐

Other

☐

Temp (°C)

8.6

Thermometer #

1

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

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

Custodian Printed Name

Date/Time

12.16.22



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/22 11:43

SS01@0-6"
2212327-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/16/22 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.031	0.0020	mg/kg	1	BFL0449	12/17/22	12/19/22	EPA 8260B	
Toluene	9.2	0.050	"	10	"	"	"	"	E
Ethylbenzene	0.31	0.0050	"	1	"	"	"	"	
Xylenes (total)	23	0.10	"	10	"	"	"	"	E
1,2,4-Trimethylbenzene	5.3	0.050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	4.9	0.050	"	"	"	"	"	"	
Naphthalene	0.26	0.0038	"	1	"	"	"	"	
Gasoline Range Hydrocarbons	640	5.0	"	10	"	"	"	"	E

Date Sampled: **12/16/22 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0460	115 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0372	93.1 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0520	130 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/16/22 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	31000	50	mg/kg	1	BFL0450	12/17/22	12/17/22	EPA 8015M	E
C28-C36 (ORO)	1400	50	"	"	"	"	"	"	

Date Sampled: **12/16/22 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	88.7	710 %	30-150		"	"	"	"	S-02

PAH by EPA Method 8270D SIM

R-01

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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/22 11:43

SS01@0-6"
2212327-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

R-01

Date Sampled: **12/16/22 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	1.00	mg/kg	200	BFL0468	12/19/22	12/20/22	EPA 8270D SIM	
Anthracene	ND	1.00	"	"	"	"	"	"	
Benzo (a) anthracene	ND	1.00	"	"	"	"	"	"	
Benzo (a) pyrene	ND	1.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	1.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	1.00	"	"	"	"	"	"	
Chrysene	ND	1.00	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	1.00	"	"	"	"	"	"	
Fluoranthene	ND	1.00	"	"	"	"	"	"	
Fluorene	1.00	1.00	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	1.00	"	"	"	"	"	"	
Pyrene	ND	1.00	"	"	"	"	"	"	
1-Methylnaphthalene	7.98	1.00	"	"	"	"	"	"	
2-Methylnaphthalene	14.4	1.00	"	"	"	"	"	"	

Date Sampled: **12/16/22 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.00	%	40-150		"	"	"	"	S-01
Surrogate: Fluoranthene-d10	0.00	%	40-150		"	"	"	"	S-01

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **12/16/22 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	5.72	0.0100	mg/L	1	BFL0446	12/17/22	12/18/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **12/16/22 13:40**

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/22 11:43

SS01@0-6"
2212327-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	2.06	0.212	mg/kg dry	1	BFL0477	12/19/22	12/20/22	EPA 6020B
Barium	57.9	0.425	"	"	"	"	"	"
Cadmium	0.366	0.212	"	"	"	"	"	"
Copper	10.9	0.425	"	"	"	"	"	"
Lead	5.18	0.212	"	"	"	"	"	"
Nickel	6.30	0.425	"	"	"	"	"	"
Selenium	0.393	0.276	"	"	"	"	"	"
Silver	0.0441	0.0212	"	"	"	"	"	"
Zinc	68.3	0.425	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **12/16/22 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFL0500	12/20/22	12/20/22	EPA 7196A	

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

Date Sampled: **12/16/22 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	446	0.0531	mg/L dry	1	BFL0461	12/18/22	12/20/22	EPA 6020B	
Magnesium	184	0.0531	"	"	"	"	"	"	
Sodium	441	0.0531	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **12/16/22 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.43	0.00100	units	1	BFL0507	12/20/22	12/20/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/16/22 13:40**

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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/22 11:43

SS01@0-6"
2212327-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	94.1	%	1	BFL0460	12/18/22	12/18/22	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **12/16/22 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	4.92	0.0100	mmhos/cm	1	BFL0476	12/19/22	12/19/22	EPA 120.1	

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

Date Sampled: **12/16/22 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.47		pH Units	1	BFL0475	12/19/22	12/20/22	EPA 9045D	

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/22 11:43

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 BFL0449 - EPA 5030 Soil MS

Blank (BFL0449-BLK1)

Prepared: 12/17/22 Analyzed: 12/18/22

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	50-150			
Surrogate: Toluene-d8	0.0399		"	0.0400		99.7	50-150			
Surrogate: 4-Bromofluorobenzene	0.0421		"	0.0400		105	50-150			

LCS (BFL0449-BS1)

Prepared: 12/17/22 Analyzed: 12/18/22

Benzene	0.107	0.0020	mg/kg	0.125		85.5	70-130			
Toluene	0.145	0.0050	"	0.125		116	70-130			
Ethylbenzene	0.161	0.0050	"	0.125		129	70-130			
m,p-Xylene	0.325	0.010	"	0.250		130	70-130			
o-Xylene	0.151	0.0050	"	0.125		121	70-130			
1,2,4-Trimethylbenzene	0.142	0.0050	"	0.125		114	70-130			
1,3,5-Trimethylbenzene	0.146	0.0050	"	0.125		117	70-130			
Naphthalene	0.136	0.0038	"	0.125		109	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0411		"	0.0400		103	50-150			
Surrogate: Toluene-d8	0.0403		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0395		"	0.0400		98.8	50-150			

Matrix Spike (BFL0449-MS1)

Source: 2212328-01

Prepared: 12/17/22 Analyzed: 12/18/22

Benzene	0.101	0.0020	mg/kg	0.125	ND	80.6	70-130			
Toluene	0.138	0.0050	"	0.125	ND	111	70-130			
Ethylbenzene	0.153	0.0050	"	0.125	ND	122	70-130			
m,p-Xylene	0.308	0.010	"	0.250	ND	123	70-130			
o-Xylene	0.145	0.0050	"	0.125	ND	116	70-130			
1,2,4-Trimethylbenzene	0.138	0.0050	"	0.125	ND	111	70-130			
1,3,5-Trimethylbenzene	0.137	0.0050	"	0.125	ND	110	70-130			
Naphthalene	0.150	0.0038	"	0.125	ND	120	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0409		"	0.0400		102	50-150			
Surrogate: Toluene-d8	0.0409		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0399		"	0.0400		99.8	50-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/22 11:43

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 BFL0449 - EPA 5030 Soil MS

Matrix Spike Dup (BFL0449-MSD1)	Source: 2212328-01			Prepared: 12/17/22 Analyzed: 12/18/22						
Benzene	0.104	0.0020	mg/kg	0.125	ND	83.2	70-130	3.11	30	
Toluene	0.142	0.0050	"	0.125	ND	114	70-130	2.99	30	
Ethylbenzene	0.163	0.0050	"	0.125	ND	130	70-130	6.39	30	
m,p-Xylene	0.320	0.010	"	0.250	ND	128	70-130	3.96	30	
o-Xylene	0.149	0.0050	"	0.125	ND	119	70-130	2.57	30	
1,2,4-Trimethylbenzene	0.142	0.0050	"	0.125	ND	114	70-130	2.82	30	
1,3,5-Trimethylbenzene	0.145	0.0050	"	0.125	ND	116	70-130	5.15	30	
Naphthalene	0.142	0.0038	"	0.125	ND	113	70-130	5.66	30	
Surrogate: 1,2-Dichloroethane-d4	0.0415		"	0.0400		104	50-150			
Surrogate: Toluene-d8	0.0400		"	0.0400		100	50-150			
Surrogate: 4-Bromofluorobenzene	0.0395		"	0.0400		98.8	50-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/22 11:43

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 BFL0450 - EPA 3550A

Blank (BFL0450-BLK1)

Prepared & Analyzed: 12/17/22

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	15.1		"	12.5		121	30-150			

LCS (BFL0450-BS1)

Prepared & Analyzed: 12/17/22

C10-C28 (DRO)	466	50	mg/kg	500		93.3	70-130			
Surrogate: o-Terphenyl	15.0		"	12.5		120	30-150			

Matrix Spike (BFL0450-MS1)

Source: 2212328-01

Prepared & Analyzed: 12/17/22

C10-C28 (DRO)	402	50	mg/kg	500	ND	80.5	70-130			
Surrogate: o-Terphenyl	13.9		"	12.5		111	30-150			

Matrix Spike Dup (BFL0450-MSD1)

Source: 2212328-01

Prepared & Analyzed: 12/17/22

C10-C28 (DRO)	431	50	mg/kg	500	ND	86.3	70-130	6.95	20	
Surrogate: o-Terphenyl	16.6		"	12.5		133	30-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/22 11:43

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFL0468 - EPA 5030 Soil MS

Blank (BFL0468-BLK1)

Prepared & Analyzed: 12/19/22

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	0.0231		"	0.0333		69.2	40-150			
Surrogate: Fluoranthene-d10	0.0331		"	0.0333		99.2	40-150			

LCS (BFL0468-BS1)

Prepared & Analyzed: 12/19/22

Acenaphthene	0.0316	0.00500	mg/kg	0.0333		94.8	31-137			
Anthracene	0.0305	0.00500	"	0.0333		91.4	30-120			
Benzo (a) anthracene	0.0294	0.00500	"	0.0333		88.1	30-120			
Benzo (a) pyrene	0.0348	0.00500	"	0.0333		104	30-120			
Benzo (b) fluoranthene	0.0292	0.00500	"	0.0333		87.5	30-120			
Benzo (k) fluoranthene	0.0352	0.00500	"	0.0333		106	30-120			
Chrysene	0.0369	0.00500	"	0.0333		111	30-120			
Dibenz (a,h) anthracene	0.0272	0.00500	"	0.0333		81.5	30-120			
Fluoranthene	0.0315	0.00500	"	0.0333		94.4	30-120			
Fluorene	0.0316	0.00500	"	0.0333		94.9	30-120			
Indeno (1,2,3-cd) pyrene	0.0280	0.00500	"	0.0333		84.0	30-120			
Pyrene	0.0351	0.00500	"	0.0333		105	35-142			
1-Methylnaphthalene	0.0256	0.00500	"	0.0333		76.7	35-142			
2-Methylnaphthalene	0.0279	0.00500	"	0.0333		83.8	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0255		"	0.0333		76.4	40-150			
Surrogate: Fluoranthene-d10	0.0309		"	0.0333		92.6	40-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/22 11:43

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFL0468 - EPA 5030 Soil MS

Matrix Spike (BFL0468-MS1)

Source: 2212329-01

Prepared & Analyzed: 12/19/22

Acenaphthene	0.0212	0.00500	mg/kg	0.0333	ND	63.7	31-137		
Anthracene	0.0196	0.00500	"	0.0333	ND	58.7	30-120		
Benzo (a) anthracene	0.0214	0.00500	"	0.0333	ND	64.2	30-120		
Benzo (a) pyrene	0.0228	0.00500	"	0.0333	ND	68.5	30-120		
Benzo (b) fluoranthene	0.0171	0.00500	"	0.0333	ND	51.2	30-120		
Benzo (k) fluoranthene	0.0193	0.00500	"	0.0333	ND	58.0	30-120		
Chrysene	0.0221	0.00500	"	0.0333	ND	66.3	30-120		
Dibenz (a,h) anthracene	0.0182	0.00500	"	0.0333	ND	54.6	30-120		
Fluoranthene	0.0209	0.00500	"	0.0333	ND	62.6	30-120		
Fluorene	0.0214	0.00500	"	0.0333	ND	64.1	30-120		
Indeno (1,2,3-cd) pyrene	0.0181	0.00500	"	0.0333	ND	54.2	30-120		
Pyrene	0.0225	0.00500	"	0.0333	ND	67.6	35-142		
1-Methylnaphthalene	0.0204	0.00500	"	0.0333	ND	61.1	15-130		
2-Methylnaphthalene	0.0210	0.00500	"	0.0333	ND	63.0	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0206		"	0.0333		61.7	40-150		
Surrogate: Fluoranthene-d10	0.0219		"	0.0333		65.8	40-150		

Matrix Spike Dup (BFL0468-MSD1)

Source: 2212329-01

Prepared & Analyzed: 12/19/22

Acenaphthene	0.0222	0.00500	mg/kg	0.0333	ND	66.7	31-137	4.59	30
Anthracene	0.0210	0.00500	"	0.0333	ND	62.9	30-120	6.86	30
Benzo (a) anthracene	0.0230	0.00500	"	0.0333	ND	69.1	30-120	7.30	30
Benzo (a) pyrene	0.0226	0.00500	"	0.0333	ND	67.8	30-120	1.00	30
Benzo (b) fluoranthene	0.0183	0.00500	"	0.0333	ND	54.9	30-120	6.99	30
Benzo (k) fluoranthene	0.0205	0.00500	"	0.0333	ND	61.4	30-120	5.65	30
Chrysene	0.0233	0.00500	"	0.0333	ND	69.9	30-120	5.32	30
Dibenz (a,h) anthracene	0.0203	0.00500	"	0.0333	ND	60.9	30-120	10.9	30
Fluoranthene	0.0215	0.00500	"	0.0333	ND	64.4	30-120	2.91	30
Fluorene	0.0222	0.00500	"	0.0333	ND	66.7	30-120	4.01	30
Indeno (1,2,3-cd) pyrene	0.0189	0.00500	"	0.0333	ND	56.8	30-120	4.62	30
Pyrene	0.0242	0.00500	"	0.0333	ND	72.6	35-142	7.13	30
1-Methylnaphthalene	0.0201	0.00500	"	0.0333	ND	60.3	15-130	1.31	50
2-Methylnaphthalene	0.0236	0.00500	"	0.0333	ND	70.9	15-130	11.7	50
Surrogate: 2-Methylnaphthalene-d10	0.0210		"	0.0333		63.1	40-150		
Surrogate: Fluoranthene-d10	0.0227		"	0.0333		68.2	40-150		

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/22 11:43

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 BFL0446 - EPA 3050B

Blank (BFL0446-BLK1)

Prepared & Analyzed: 12/17/22

Boron ND 0.0100 mg/L

LCS (BFL0446-BS1)

Prepared & Analyzed: 12/17/22

Boron 4.58 0.0100 mg/L 5.00 91.7 80-120

Duplicate (BFL0446-DUP1)

Source: 2212292-01

Prepared & Analyzed: 12/17/22

Boron 4.10 0.0100 mg/L 3.84 6.57 20

Matrix Spike (BFL0446-MS1)

Source: 2212292-01

Prepared & Analyzed: 12/17/22

Boron 8.10 0.0100 mg/L 5.00 3.84 85.1 75-125

Matrix Spike Dup (BFL0446-MSD1)

Source: 2212292-01

Prepared & Analyzed: 12/17/22

Boron 8.14 0.0100 mg/L 5.00 3.84 86.1 75-125 0.576 25

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/22 11:43

Total Metals by EPA 6020B - Quality Control

Summit Scientific

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

Batch BFL0477 - EPA 3050B

Blank (BFL0477-BLK1)

Prepared: 12/19/22 Analyzed: 12/20/22

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	0.356	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

LCS (BFL0477-BS1)

Prepared: 12/19/22 Analyzed: 12/20/22

Arsenic	34.8	0.200	mg/kg wet	40.0	86.9	80-120
Barium	32.6	0.400	"	40.0	81.6	80-120
Cadmium	1.66	0.200	"	2.00	82.8	80-120
Copper	33.1	0.400	"	40.0	82.8	80-120
Lead	19.8	0.200	"	20.0	99.2	80-120
Nickel	33.1	0.400	"	40.0	82.8	80-120
Selenium	3.23	0.260	"	4.00	80.8	80-120
Silver	1.62	0.0200	"	2.00	81.1	80-120
Zinc	35.4	0.400	"	40.0	88.5	80-120

Duplicate (BFL0477-DUP1)

Source: 2212154-02

Prepared: 12/19/22 Analyzed: 12/20/22

Arsenic	3.65	0.235	mg/kg dry	3.69	1.10	20
Barium	85.1	0.471	"	83.1	2.37	20
Cadmium	0.167	0.235	"	0.154	8.37	20
Copper	7.14	0.471	"	7.09	0.768	20
Lead	6.31	0.235	"	6.18	2.03	20
Nickel	8.21	0.471	"	8.03	2.17	20
Selenium	0.396	0.306	"	0.389	1.57	20
Silver	0.0347	0.0235	"	0.0310	11.2	20
Zinc	30.7	0.471	"	30.2	1.72	20

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/22 11:43

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 BFL0477 - EPA 3050B

Matrix Spike (BFL0477-MS1)

Source: 2212154-02

Prepared: 12/19/22 Analyzed: 12/20/22

Arsenic	41.1	0.235	mg/kg dry	47.1	3.69	79.6	75-125
Barium	134	0.471	"	47.1	83.1	108	75-125
Cadmium	2.03	0.235	"	2.35	0.154	79.7	75-125
Copper	43.0	0.471	"	47.1	7.09	76.4	75-125
Lead	27.3	0.235	"	23.5	6.18	89.8	75-125
Nickel	45.2	0.471	"	47.1	8.03	79.1	75-125
Selenium	4.30	0.306	"	4.71	0.389	83.2	75-125
Silver	1.82	0.0235	"	2.35	0.0310	76.0	75-125
Zinc	68.2	0.471	"	47.1	30.2	80.9	75-125

Matrix Spike Dup (BFL0477-MSD1)

Source: 2212154-02

Prepared: 12/19/22 Analyzed: 12/20/22

Arsenic	41.9	0.235	mg/kg dry	47.1	3.69	81.2	75-125	1.86	25
Barium	136	0.471	"	47.1	83.1	112	75-125	1.44	25
Cadmium	2.13	0.235	"	2.35	0.154	83.9	75-125	4.84	25
Copper	43.7	0.471	"	47.1	7.09	77.8	75-125	1.54	25
Lead	24.2	0.235	"	23.5	6.18	76.4	75-125	12.2	25
Nickel	45.8	0.471	"	47.1	8.03	80.3	75-125	1.30	25
Selenium	4.30	0.306	"	4.71	0.389	83.2	75-125	0.0305	25
Silver	1.94	0.0235	"	2.35	0.0310	81.2	75-125	6.51	25
Zinc	69.1	0.471	"	47.1	30.2	82.8	75-125	1.29	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.



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/22 11:43

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BFL0500 - 3060A Mod

Blank (BFL0500-BLK1)

Prepared & Analyzed: 12/20/22

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BFL0500-BS1)

Prepared & Analyzed: 12/20/22

Chromium, Hexavalent 21.8 0.30 mg/kg wet 25.0 87.0 80-120

Duplicate (BFL0500-DUP1)

Source: 2211104-01

Prepared & Analyzed: 12/20/22

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BFL0500-MS1)

Source: 2211104-01

Prepared & Analyzed: 12/20/22

Chromium, Hexavalent 28.2 0.30 mg/kg dry 33.7 ND 83.8 75-125

Matrix Spike Dup (BFL0500-MSD1)

Source: 2211104-01

Prepared & Analyzed: 12/20/22

Chromium, Hexavalent 26.5 0.30 mg/kg dry 33.7 ND 78.8 75-125 6.15 20

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/22 11:43

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 BFL0461 - General Preparation

Blank (BFL0461-BLK1)

Prepared: 12/18/22 Analyzed: 12/19/22

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

LCS (BFL0461-BS1)

Prepared: 12/18/22 Analyzed: 12/19/22

Calcium	3.54	0.0500	mg/L wet	5.00	70.8	70-130
Magnesium	3.98	0.0500	"	5.00	79.6	70-130
Sodium	3.67	0.0500	"	5.00	73.4	70-130

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: Jerke UP 8-7 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
12/27/22 11:43

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

Summit Scientific

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

Batch BFL0460 - General Preparation

Duplicate (BFL0460-DUP1)

Source: 2212239-16

Prepared & Analyzed: 12/18/22

% Solids	94.1	%	93.6	0.490	20
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Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
12/27/22 11:43

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

Summit Scientific

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

Batch BFL0475 - General Preparation

LCS (BFL0475-BS1)

Prepared: 12/19/22 Analyzed: 12/20/22

pH	9.26	pH Units	9.18	101	95-105
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Duplicate (BFL0475-DUP1)

Source: 2212229-01

Prepared: 12/19/22 Analyzed: 12/20/22

pH	8.37	pH Units	8.28	1.08	20
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Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/22 11:43

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.
S-01	The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference's.
R-01	The Reporting Limit for this analyte has been raised to account for matrix interference.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.
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

January 05, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Jerke UP 8-7 Tank Battery

Work Order #2301028

Enclosed are the results of analyses for samples received by Summit Scientific on 01/03/23 18:01. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely", is written over a light blue rectangular background.

Scott Sheely For Paul Shrewsbury

President



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/05/23 13:38

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01R	2301028-01	Water	01/03/23 11:25	01/03/23 18:01
BH03	2301028-02	Water	01/03/23 11:30	01/03/23 18:01
BH05	2301028-03	Water	01/03/23 11:42	01/03/23 18:01
BH07	2301028-04	Water	01/03/23 11:50	01/03/23 18:01
BH08R	2301028-05	Water	01/03/23 11:53	01/03/23 18:01
BH09R	2301028-06	Water	01/03/23 11:56	01/03/23 18:01
BH10	2301028-07	Water	01/03/23 11:59	01/03/23 18:01
BH11	2301028-08	Water	01/03/23 12:05	01/03/23 18:01
BH12	2301028-09	Water	01/03/23 12:08	01/03/23 18:01
BH13	2301028-10	Water	01/03/23 12:10	01/03/23 18:01
BH14	2301028-11	Water	01/03/23 12:12	01/03/23 18:01
BH16	2301028-12	Water	01/03/23 12:17	01/03/23 18:01
BH17	2301028-13	Water	01/03/23 12:20	01/03/23 18:01

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

S₂

2301028.1

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

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: Jerke VP 8-7 Tank Battery
Sampler Name: Emilia Wozniak Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions	
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR	PAH - 915			
1	BH01R	11/3/23	1125	3	X				X					X		X					pH, EC, SAR by saturated paste
2	BH03		1130	1																	
3	BH05		1142	1																	
4	BH07		1150	1																	
5	BH08R		1153	1																	
6	BH09R		1156	1																	
7	BH10		1159	1																	
8	BH11		1205	1																	
9	BH12		1208	1																	
10	BH13		1210	1																	

Relinquished by: <i>Emilia Wozniak</i>	Date/Time: 11/3/23 1719	Received by: <i>Tasman's Lock Box</i>	Date/Time: 11/5/23 1719	Turn Around Time (Check)	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 1323 1801	Received by: <i>[Signature]</i>	Date/Time: 1323 1801	Same Day _____ 72 hours _____	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours _____ Standard <input checked="" type="checkbox"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	48 hours _____	
				Sample Integrity:	
				Temperature Upon Receipt: 6.7	
				Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Summit Scientific

S₂

2301028.2

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: Jerke VP 8-7 tank Battery
Sampler Name: Emilia Wozniak	Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR	PAH - 915			
1	BH14	11/3/23	1212	3	X				X					X		X					pH, EC, SAR by saturated paste
2	BH16	↓	1217	↓	↓				↓					↓		↓					
3	BH17	↓	1220	↓	↓				↓					↓		↓					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by: <i>Emilia Wozniak</i>	Date/Time: 11/3/23 1719	Received by: Tasman's Lock Box	Date/Time: 11/3/23 1719	Turn Around Time (Check) Same Day <input type="checkbox"/> 72 hours <input type="checkbox"/> 24 hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 hours <input type="checkbox"/>	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 1323 1801	Received by: <i>[Signature]</i>	Date/Time: 1323 1801	Sample Integrity: Temperature Upon Receipt: 6.7	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

S₂

2/2

Sample Receipt Checklist

S2 Work Order# 2301028Client: ABC TasmanClient Project ID: yerke up 8-7 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐Airbill #:

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Matrix (Check all that apply)

Air

☐

Soil/Solid

☐

Water

☒

Other

☐

Temp (°C)

6.7

Thermometer #

1

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

Custodian Printed Name

Date/Time

1-3-23



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/05/23 13:38

BH01R
2301028-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/23 11:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BGA0048	01/04/23	01/04/23	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	24	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	1.3	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	1.4	1.0		"	"	"	"	"	"	

Date Sampled: **01/03/23 11:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	14.1	106 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	13.1	98.0 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.3	99.8 %		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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/05/23 13:38

BH03
2301028-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/23 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BGA0048	01/04/23	01/04/23	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **01/03/23 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	13.5	101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	13.0	97.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.4	101 %	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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/05/23 13:38

BH05
2301028-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/23 11:42**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	4.1	1.0		ug/l	1	BGA0048	01/04/23	01/04/23	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	7.0	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	2.1	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **01/03/23 11:42**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	13.3	99.9 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	13.1	98.0 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.4	101 %		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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/05/23 13:38

BH07
2301028-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/23 11:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BGA0048	01/04/23	01/04/23	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **01/03/23 11:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	13.9	104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	12.9	96.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.5	101 %	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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/05/23 13:38

BH08R
2301028-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/23 11:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BGA0048	01/04/23	01/04/23	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **01/03/23 11:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	13.3	99.7 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	13.0	97.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.2	98.6 %	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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/05/23 13:38

BH09R
2301028-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/23 11:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BGA0048	01/04/23	01/04/23	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **01/03/23 11:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	13.6	102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	12.9	96.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.2	99.2 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/05/23 13:38

BH10
2301028-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/23 11:59**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	61	1.0	ug/l	1	BGA0048	01/04/23	01/05/23	EPA 8260B	
Toluene	24	1.0	"	"	"	"	"	"	
Ethylbenzene	200	1.0	"	"	"	"	"	"	
Xylenes (total)	420	20	"	10	"	"	01/04/23	"	
Naphthalene	9.5	1.0	"	1	"	"	01/05/23	"	
1,2,4-Trimethylbenzene	440	10	"	10	"	"	01/04/23	"	
1,3,5-Trimethylbenzene	5.6	1.0	"	1	"	"	01/05/23	"	

Date Sampled: **01/03/23 11:59**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: 1,2-Dichloroethane-d4</i>	13.4	100 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>	13.5	101 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	15.0	112 %	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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/05/23 13:38

BH11
2301028-08 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	160	1.0		ug/l	1	BGA0048	01/04/23	01/05/23	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	34	1.0		"	"	"	"	"	"	
Xylenes (total)	130	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	70	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **01/03/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	13.5	101 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	13.3	99.8 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.2	99.2 %		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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/05/23 13:38

BH12
2301028-09 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/23 12:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BGA0048	01/04/23	01/05/23	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **01/03/23 12:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	13.2	98.7 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	12.9	96.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.3	99.5 %	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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/05/23 13:38

BH13
2301028-10 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/23 12:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BGA0048	01/04/23	01/05/23	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	6.3	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	5.5	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **01/03/23 12:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	13.1	98.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	14.0	105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	16.0	120 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/05/23 13:38

BH14
2301028-11 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/23 12:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BGA0048	01/04/23	01/05/23	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **01/03/23 12:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	13.2	99.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	13.1	98.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.1	98.0 %	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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/05/23 13:38

BH16
2301028-12 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/23 12:17**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BGA0048	01/04/23	01/05/23	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **01/03/23 12:17**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	13.4	100 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	13.0	97.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.2	98.9 %	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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/05/23 13:38

BH17
2301028-13 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/23 12:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BGA0048	01/04/23	01/05/23	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **01/03/23 12:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	13.4	100 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	12.9	96.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.2	98.8 %	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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/05/23 13:38

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 BGA0048 - EPA 5030 Water MS

Blank (BGA0048-BLK1)

Prepared & Analyzed: 01/04/23

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Naphthalene	ND	1.0	"							
1,2,4-Trimethylbenzene	ND	1.0	"							
1,3,5-Trimethylbenzene	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	13.1		"	13.3		98.4	23-173			
Surrogate: Toluene-d8	13.1		"	13.3		98.6	20-170			
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.3	21-167			

LCS (BGA0048-BS1)

Prepared & Analyzed: 01/04/23

Benzene	38.1	1.0	ug/l	41.7		91.5	51-132			
Toluene	38.6	1.0	"	41.7		92.7	51-138			
Ethylbenzene	40.4	1.0	"	41.7		97.0	58-146			
m,p-Xylene	80.8	2.0	"	83.3		97.0	57-144			
o-Xylene	38.5	1.0	"	41.7		92.4	53-146			
Naphthalene	33.8	1.0	"	41.7		81.1	70-130			
1,2,4-Trimethylbenzene	42.3	1.0	"	41.7		102	70-130			
1,3,5-Trimethylbenzene	43.5	1.0	"	41.7		104	70-130			
Surrogate: 1,2-Dichloroethane-d4	13.4		"	13.3		101	23-173			
Surrogate: Toluene-d8	13.2		"	13.3		98.8	20-170			
Surrogate: 4-Bromofluorobenzene	12.9		"	13.3		96.5	21-167			

Matrix Spike (BGA0048-MS1)

Source: 2301028-01

Prepared & Analyzed: 01/04/23

Benzene	38.8	1.0	ug/l	41.7	ND	93.2	34-141			
Toluene	39.8	1.0	"	41.7	ND	95.6	27-151			
Ethylbenzene	41.9	1.0	"	41.7	ND	101	29-160			
m,p-Xylene	104	2.0	"	83.3	23.5	97.0	20-166			
o-Xylene	40.0	1.0	"	41.7	ND	96.0	33-159			
Naphthalene	37.9	1.0	"	41.7	ND	91.0	70-130			
1,2,4-Trimethylbenzene	47.2	1.0	"	41.7	1.34	110	70-130			
1,3,5-Trimethylbenzene	47.4	1.0	"	41.7	1.39	110	70-130			
Surrogate: 1,2-Dichloroethane-d4	13.6		"	13.3		102	23-173			
Surrogate: Toluene-d8	13.0		"	13.3		97.5	20-170			
Surrogate: 4-Bromofluorobenzene	13.3		"	13.3		99.8	21-167			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/05/23 13:38

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 BGA0048 - EPA 5030 Water MS

Matrix Spike Dup (BGA0048-MSD1)	Source: 2301028-01			Prepared & Analyzed: 01/04/23						
Benzene	38.1	1.0	ug/l	41.7	ND	91.4	34-141	1.98	30	
Toluene	38.8	1.0	"	41.7	ND	93.2	27-151	2.54	30	
Ethylbenzene	41.4	1.0	"	41.7	ND	99.3	29-160	1.30	30	
m,p-Xylene	103	2.0	"	83.3	23.5	95.0	20-166	1.61	30	
o-Xylene	39.4	1.0	"	41.7	ND	94.5	33-159	1.51	30	
Naphthalene	37.5	1.0	"	41.7	ND	90.0	70-130	1.17	30	
1,2,4-Trimethylbenzene	46.4	1.0	"	41.7	1.34	108	70-130	1.73	30	
1,3,5-Trimethylbenzene	46.7	1.0	"	41.7	1.39	109	70-130	1.57	30	
Surrogate: 1,2-Dichloroethane-d4	13.6		"	13.3		102	23-173			
Surrogate: Toluene-d8	12.9		"	13.3		96.7	20-170			
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.0	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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/05/23 13:38

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

January 13, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Jerke UP 8-7 Tank Battery

Work Order #2301167

Enclosed are the results of analyses for samples received by Summit Scientific on 01/10/23 18:12. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely", is written over a light blue rectangular background.

Scott Sheely For Paul Shrewsbury

President



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/13/23 15:47

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WC01@6'	2301167-01	Soil	01/10/23 09:25	01/10/23 18:12

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

2301167

S₂

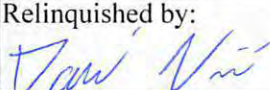
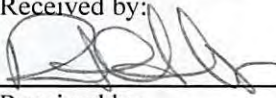
4653 Table Mountain Drive ♦ Golden, Colorado 80403

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: Jerke UP 8-7 Tank Battery
 Sampler Name: David Vigil Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions	
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	pH, EC, SAR	Boron - HWS	TMBS (1,2,4) & (1,3,5)	PAH - 915	Metals - 915		
1	WC01 @ 10'	1/10/23	0925	3			X			X				X	X	X	X	X	X	X	pH, EC, SAR by saturated paste
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by: 	Date/Time: 1/10/23 1615	Received by: Tasman's Lock Box	Date/Time: 1/10/23 1615	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours — 24 hours — Standard — 48 hours — Sample Integrity: Temperature Upon Receipt: 7.3 Samples Intact: <input checked="" type="checkbox"/> Yes No	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 1/10/23 1812	Received by: 	Date/Time: 1/10/23 1812		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

S₂

Sample Receipt Checklist

S2 Work Order# 2301167Client: Pactasman Client Project ID: Verke up 8-7 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: _____

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Matrix (Check all that apply) Air ☐ Soil/Solid ☐ Water ☐ Other ☐Temp (°C) 7.3 Thermometer # 1

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

Additional Comments (if any):

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

Custodian Printed Name

Date/Time

1-10-23



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/13/23 15:47

WC01@6'
2301167-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/23 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.43	0.0020	mg/kg	1	BGA0202	01/10/23	01/11/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	7.2	0.50	"	100	"	"	"	"	
Xylenes (total)	140	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	39	0.50	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	31	0.50	"	"	"	"	"	"	
Naphthalene	0.87	0.38	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1600	50	"	"	"	"	"	"	

Date Sampled: **01/10/23 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0466	116 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0531	133 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0514	129 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/23 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	420	50	mg/kg	1	BGA0204	01/10/23	01/11/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/23 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	13.8	111 %	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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/13/23 15:47

WC01@6'
2301167-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/10/23 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGA0215	01/11/23	01/12/23	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	0.0366	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.140	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	1.16	0.00500	"	"	"	"	"	"	E

Date Sampled: **01/10/23 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0167	50.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0276	82.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/10/23 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0364	0.0100	mg/L	1	BGA0209	01/10/23	01/12/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/10/23 09:25**

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/13/23 15:47

WC01@6'
2301167-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	0.651	0.226	mg/kg dry	1	BGA0232	01/11/23	01/11/23	EPA 6020B
Barium	30.2	0.453	"	"	"	"	"	"
Cadmium	0.0570	0.226	"	"	"	"	"	"
Copper	1.68	0.453	"	"	"	"	"	"
Lead	2.70	0.226	"	"	"	"	"	"
Nickel	2.21	0.453	"	"	"	"	"	"
Selenium	ND	0.294	"	"	"	"	"	"
Silver	0.0113	0.0226	"	"	"	"	"	"
Zinc	9.40	0.453	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/10/23 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGA0244	01/11/23	01/11/23	EPA 7196A	

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

Date Sampled: **01/10/23 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	48.2	0.0566	mg/L dry	1	BGA0246	01/11/23	01/13/23	EPA 6020B	
Magnesium	30.3	0.0566	"	"	"	"	"	"	
Sodium	84.6	0.0566	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/10/23 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.35	0.00100	units	1	BGA0310	01/13/23	01/13/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/23 09:25**

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/13/23 15:47

WC01@6'
2301167-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	88.4	%	1	BGA0289	01/12/23	01/12/23	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/10/23 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.946	0.0100	mmhos/cm	1	BGA0277	01/12/23	01/12/23	EPA 120.1	

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

Date Sampled: **01/10/23 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.68		pH Units	1	BGA0278	01/12/23	01/12/23	EPA 9045D	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/13/23 15:47

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 BGA0202 - EPA 5030 Soil MS

Blank (BGA0202-BLK1)

Prepared: 01/10/23 Analyzed: 01/11/23

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	0.0558		"	0.0400		140	50-150			
Surrogate: Toluene-d8	0.0377		"	0.0400		94.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400		101	50-150			

LCS (BGA0202-BS1)

Prepared: 01/10/23 Analyzed: 01/11/23

Benzene	0.0962	0.0020	mg/kg	0.125		77.0	70-130			
Toluene	0.114	0.0050	"	0.125		91.4	70-130			
Ethylbenzene	0.139	0.0050	"	0.125		111	70-130			
m,p-Xylene	0.266	0.010	"	0.250		106	70-130			
o-Xylene	0.129	0.0050	"	0.125		103	70-130			
1,2,4-Trimethylbenzene	0.156	0.0050	"	0.125		124	70-130			
1,3,5-Trimethylbenzene	0.150	0.0050	"	0.125		120	70-130			
Naphthalene	0.139	0.0038	"	0.125		111	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0562		"	0.0400		141	50-150			
Surrogate: Toluene-d8	0.0381		"	0.0400		95.2	50-150			
Surrogate: 4-Bromofluorobenzene	0.0386		"	0.0400		96.5	50-150			

Matrix Spike (BGA0202-MS1)

Source: 2301151-01

Prepared: 01/10/23 Analyzed: 01/11/23

Benzene	0.0950	0.0020	mg/kg	0.125	ND	76.0	70-130			
Toluene	0.113	0.0050	"	0.125	ND	90.5	70-130			
Ethylbenzene	0.135	0.0050	"	0.125	ND	108	70-130			
m,p-Xylene	0.260	0.010	"	0.250	ND	104	70-130			
o-Xylene	0.128	0.0050	"	0.125	ND	102	70-130			
1,2,4-Trimethylbenzene	0.151	0.0050	"	0.125	ND	121	70-130			
1,3,5-Trimethylbenzene	0.146	0.0050	"	0.125	ND	117	70-130			
Naphthalene	0.141	0.0038	"	0.125	ND	113	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0579		"	0.0400		145	50-150			
Surrogate: Toluene-d8	0.0375		"	0.0400		93.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0384		"	0.0400		95.9	50-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/13/23 15:47

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 BGA0202 - EPA 5030 Soil MS

Matrix Spike Dup (BGA0202-MSD1)	Source: 2301151-01			Prepared: 01/10/23 Analyzed: 01/11/23						
Benzene	0.0946	0.0020	mg/kg	0.125	ND	75.7	70-130	0.380	30	
Toluene	0.114	0.0050	"	0.125	ND	91.1	70-130	0.608	30	
Ethylbenzene	0.139	0.0050	"	0.125	ND	112	70-130	3.52	30	
m,p-Xylene	0.268	0.010	"	0.250	ND	107	70-130	3.11	30	
o-Xylene	0.132	0.0050	"	0.125	ND	105	70-130	2.77	30	
1,2,4-Trimethylbenzene	0.154	0.0050	"	0.125	ND	123	70-130	1.63	30	
1,3,5-Trimethylbenzene	0.152	0.0050	"	0.125	ND	121	70-130	4.03	30	
Naphthalene	0.157	0.0038	"	0.125	ND	126	70-130	10.7	30	
Surrogate: 1,2-Dichloroethane-d4	0.0564		"	0.0400		141	50-150			
Surrogate: Toluene-d8	0.0376		"	0.0400		93.9	50-150			
Surrogate: 4-Bromofluorobenzene	0.0383		"	0.0400		95.7	50-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/13/23 15:47

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 BGA0204 - EPA 3550A

Blank (BGA0204-BLK1)

Prepared: 01/10/23 Analyzed: 01/11/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	12.9		"	12.5		103	30-150			

LCS (BGA0204-BS1)

Prepared: 01/10/23 Analyzed: 01/11/23

C10-C28 (DRO)	474	50	mg/kg	500		94.9	70-130			
Surrogate: o-Terphenyl	13.2		"	12.5		106	30-150			

Matrix Spike (BGA0204-MS1)

Source: 2301151-01

Prepared: 01/10/23 Analyzed: 01/11/23

C10-C28 (DRO)	434	50	mg/kg	500	14.7	83.9	70-130			
Surrogate: o-Terphenyl	12.0		"	12.5		96.2	30-150			

Matrix Spike Dup (BGA0204-MSD1)

Source: 2301151-01

Prepared: 01/10/23 Analyzed: 01/11/23

C10-C28 (DRO)	465	50	mg/kg	500	14.7	90.0	70-130	6.82	20	
Surrogate: o-Terphenyl	13.3		"	12.5		106	30-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/13/23 15:47

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGA0215 - EPA 5030 Soil MS

Blank (BGA0215-BLK1)

Prepared & Analyzed: 01/11/23

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	0.0233		"	0.0333		70.0	40-150			
Surrogate: Fluoranthene-d10	0.0310		"	0.0333		92.9	40-150			

LCS (BGA0215-BS1)

Prepared & Analyzed: 01/11/23

Acenaphthene	0.0294	0.00500	mg/kg	0.0333		88.2	31-137			
Anthracene	0.0300	0.00500	"	0.0333		89.9	30-120			
Benzo (a) anthracene	0.0261	0.00500	"	0.0333		78.4	30-120			
Benzo (a) pyrene	0.0319	0.00500	"	0.0333		95.7	30-120			
Benzo (b) fluoranthene	0.0248	0.00500	"	0.0333		74.4	30-120			
Benzo (k) fluoranthene	0.0308	0.00500	"	0.0333		92.5	30-120			
Chrysene	0.0320	0.00500	"	0.0333		96.1	30-120			
Dibenz (a,h) anthracene	0.0220	0.00500	"	0.0333		66.1	30-120			
Fluoranthene	0.0302	0.00500	"	0.0333		90.7	30-120			
Fluorene	0.0291	0.00500	"	0.0333		87.3	30-120			
Indeno (1,2,3-cd) pyrene	0.0238	0.00500	"	0.0333		71.4	30-120			
Pyrene	0.0324	0.00500	"	0.0333		97.1	35-142			
1-Methylnaphthalene	0.0250	0.00500	"	0.0333		74.9	35-142			
2-Methylnaphthalene	0.0249	0.00500	"	0.0333		74.6	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0262		"	0.0333		78.5	40-150			
Surrogate: Fluoranthene-d10	0.0308		"	0.0333		92.4	40-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/13/23 15:47

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGA0215 - EPA 5030 Soil MS

Matrix Spike (BGA0215-MS1)

Source: 2301136-01

Prepared & Analyzed: 01/11/23

Acenaphthene	0.0235	0.00500	mg/kg	0.0333	ND	70.4	31-137			
Anthracene	0.0228	0.00500	"	0.0333	ND	68.4	30-120			
Benzo (a) anthracene	0.0247	0.00500	"	0.0333	0.00323	64.4	30-120			
Benzo (a) pyrene	0.0247	0.00500	"	0.0333	0.00201	68.0	30-120			
Benzo (b) fluoranthene	0.0190	0.00500	"	0.0333	0.00171	51.8	30-120			
Benzo (k) fluoranthene	0.0214	0.00500	"	0.0333	ND	64.2	30-120			
Chrysene	0.0241	0.00500	"	0.0333	ND	72.2	30-120			
Dibenz (a,h) anthracene	0.0198	0.00500	"	0.0333	ND	59.3	30-120			
Fluoranthene	0.0251	0.00500	"	0.0333	0.00568	58.3	30-120			
Fluorene	0.0237	0.00500	"	0.0333	ND	71.2	30-120			
Indeno (1,2,3-cd) pyrene	0.0215	0.00500	"	0.0333	ND	64.6	30-120			
Pyrene	0.0244	0.00500	"	0.0333	0.00388	61.5	35-142			
1-Methylnaphthalene	0.0205	0.00500	"	0.0333	ND	61.4	15-130			
2-Methylnaphthalene	0.0208	0.00500	"	0.0333	ND	62.3	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0214		"	0.0333		64.1	40-150			
Surrogate: Fluoranthene-d10	0.0257		"	0.0333		77.1	40-150			

Matrix Spike Dup (BGA0215-MSD1)

Source: 2301136-01

Prepared & Analyzed: 01/11/23

Acenaphthene	0.0230	0.00500	mg/kg	0.0333	ND	69.1	31-137	1.84	30	
Anthracene	0.0224	0.00500	"	0.0333	ND	67.1	30-120	1.84	30	
Benzo (a) anthracene	0.0260	0.00500	"	0.0333	0.00323	68.3	30-120	5.08	30	
Benzo (a) pyrene	0.0193	0.00500	"	0.0333	0.00201	52.0	30-120	24.4	30	
Benzo (b) fluoranthene	0.0204	0.00500	"	0.0333	0.00171	56.0	30-120	7.24	30	
Benzo (k) fluoranthene	0.0197	0.00500	"	0.0333	ND	59.1	30-120	8.30	30	
Chrysene	0.0232	0.00500	"	0.0333	ND	69.7	30-120	3.53	30	
Dibenz (a,h) anthracene	0.0190	0.00500	"	0.0333	ND	56.9	30-120	4.16	30	
Fluoranthene	0.0251	0.00500	"	0.0333	0.00568	58.1	30-120	0.271	30	
Fluorene	0.0236	0.00500	"	0.0333	ND	70.9	30-120	0.404	30	
Indeno (1,2,3-cd) pyrene	0.0221	0.00500	"	0.0333	ND	66.3	30-120	2.60	30	
Pyrene	0.0201	0.00500	"	0.0333	0.00388	48.7	35-142	19.0	30	
1-Methylnaphthalene	0.0194	0.00500	"	0.0333	ND	58.2	15-130	5.36	50	
2-Methylnaphthalene	0.0223	0.00500	"	0.0333	ND	67.0	15-130	7.28	50	
Surrogate: 2-Methylnaphthalene-d10	0.0202		"	0.0333		60.6	40-150			
Surrogate: Fluoranthene-d10	0.0244		"	0.0333		73.1	40-150			

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/13/23 15:47

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 BGA0209 - EPA 3050B

Blank (BGA0209-BLK1)

Prepared: 01/10/23 Analyzed: 01/12/23

Boron ND 0.0100 mg/L

LCS (BGA0209-BS1)

Prepared: 01/10/23 Analyzed: 01/12/23

Boron 4.86 0.0100 mg/L 5.00 97.3 80-120

Duplicate (BGA0209-DUP1)

Source: 2301153-01

Prepared: 01/10/23 Analyzed: 01/12/23

Boron 0.331 0.0100 mg/L 0.351 6.09 20

Matrix Spike (BGA0209-MS1)

Source: 2301153-01

Prepared: 01/10/23 Analyzed: 01/12/23

Boron 4.93 0.0100 mg/L 5.00 0.351 91.6 75-125

Matrix Spike Dup (BGA0209-MSD1)

Source: 2301153-01

Prepared: 01/10/23 Analyzed: 01/12/23

Boron 4.28 0.0100 mg/L 5.00 0.351 78.7 75-125 14.1 25

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/13/23 15:47

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGA0232 - EPA 3050B

Blank (BGA0232-BLK1)

Prepared & Analyzed: 01/11/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	0.156	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

LCS (BGA0232-BS1)

Prepared & Analyzed: 01/11/23

Arsenic	43.1	0.200	mg/kg wet	40.0	108	80-120
Barium	41.7	0.400	"	40.0	104	80-120
Cadmium	1.99	0.200	"	2.00	99.6	80-120
Copper	45.1	0.400	"	40.0	113	80-120
Lead	22.6	0.200	"	20.0	113	80-120
Nickel	42.3	0.400	"	40.0	106	80-120
Selenium	4.25	0.260	"	4.00	106	80-120
Silver	2.01	0.0200	"	2.00	100	80-120
Zinc	43.4	0.400	"	40.0	108	80-120

Duplicate (BGA0232-DUP1)

Source: 2301151-01

Prepared & Analyzed: 01/11/23

Arsenic	1.99	0.238	mg/kg dry	2.08	4.39	20
Barium	112	0.477	"	125	10.9	20
Cadmium	0.382	0.238	"	0.416	8.36	20
Copper	6.04	0.477	"	6.20	2.56	20
Lead	8.52	0.238	"	9.35	9.21	20
Nickel	5.38	0.477	"	5.51	2.49	20
Selenium	ND	0.310	"	ND		20
Silver	0.0319	0.0238	"	0.0305	4.58	20
Zinc	22.2	0.477	"	22.9	3.19	20

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/13/23 15:47

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 BGA0232 - EPA 3050B

Matrix Spike (BGA0232-MS1)			Source: 2301151-01		Prepared & Analyzed: 01/11/23					
Arsenic	50.0	0.238	mg/kg dry	47.7	2.08	100	75-125			
Barium	168	0.477	"	47.7	125	91.7	75-125			
Cadmium	2.73	0.238	"	2.38	0.416	97.2	75-125			
Copper	46.4	0.477	"	47.7	6.20	84.4	75-125			
Lead	32.8	0.238	"	23.8	9.35	98.6	75-125			
Nickel	44.5	0.477	"	47.7	5.51	81.8	75-125			
Selenium	4.05	0.310	"	4.77	ND	85.0	75-125			
Silver	2.36	0.0238	"	2.38	0.0305	97.6	75-125			
Zinc	54.0	0.477	"	47.7	22.9	65.4	75-125			QM-05

Matrix Spike Dup (BGA0232-MSD1)			Source: 2301151-01		Prepared & Analyzed: 01/11/23					
Arsenic	47.5	0.238	mg/kg dry	47.7	2.08	95.3	75-125	5.03	25	
Barium	153	0.477	"	47.7	125	60.6	75-125	9.22	25	QM-05
Cadmium	2.59	0.238	"	2.38	0.416	91.2	75-125	5.34	25	
Copper	45.5	0.477	"	47.7	6.20	82.4	75-125	2.08	25	
Lead	31.0	0.238	"	23.8	9.35	90.7	75-125	5.92	25	
Nickel	34.0	0.477	"	47.7	5.51	59.7	75-125	26.9	25	QM-05
Selenium	4.09	0.310	"	4.77	ND	85.9	75-125	0.995	25	
Silver	2.25	0.0238	"	2.38	0.0305	93.3	75-125	4.53	25	
Zinc	53.0	0.477	"	47.7	22.9	63.1	75-125	2.02	25	QM-05

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/13/23 15:47

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 BGA0244 - 3060A Mod

Blank (BGA0244-BLK1)

Prepared & Analyzed: 01/11/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGA0244-BS1)

Prepared & Analyzed: 01/11/23

Chromium, Hexavalent 21.4 0.30 mg/kg wet 25.0 85.8 80-120

Duplicate (BGA0244-DUP1)

Source: 2301151-01

Prepared & Analyzed: 01/11/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGA0244-MS1)

Source: 2301151-01

Prepared & Analyzed: 01/11/23

Chromium, Hexavalent 28.7 0.30 mg/kg dry 29.8 ND 96.4 75-125

Matrix Spike Dup (BGA0244-MSD1)

Source: 2301151-01

Prepared & Analyzed: 01/11/23

Chromium, Hexavalent 29.4 0.30 mg/kg dry 29.8 ND 98.6 75-125 2.26 20

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

01/13/23 15:47

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 BGA0246 - General Preparation

Blank (BGA0246-BLK1)

Prepared: 01/11/23 Analyzed: 01/12/23

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

LCS (BGA0246-BS1)

Prepared: 01/11/23 Analyzed: 01/12/23

Calcium	5.09	0.0500	mg/L wet	5.00	102	70-130
Magnesium	4.70	0.0500	"	5.00	94.0	70-130
Sodium	4.68	0.0500	"	5.00	93.5	70-130

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

01/13/23 15:47

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

Summit Scientific

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

Batch BGA0289 - General Preparation

Duplicate (BGA0289-DUP1)

Source: 2301143-04

Prepared & Analyzed: 01/12/23

% Solids	88.1	%	87.9	0.204	20
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Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/13/23 15:47

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 BGA0277 - General Preparation

Blank (BGA0277-BLK1)

Prepared & Analyzed: 01/12/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGA0277-BS1)

Prepared & Analyzed: 01/12/23

Specific Conductance (EC) 0.151 0.0100 mmhos/cm 0.150 101 95-105

Duplicate (BGA0277-DUP1)

Source: 2301163-01

Prepared & Analyzed: 01/12/23

Specific Conductance (EC) 1.22 0.0100 mmhos/cm 1.22 0.0817 20

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/13/23 15:47

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

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

Batch BGA0278 - General Preparation

LCS (BGA0278-BS1)

Prepared & Analyzed: 01/12/23

pH	8.99	pH Units	9.18	97.9	95-105
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Duplicate (BGA0278-DUP1)

Source: 2301163-01

Prepared & Analyzed: 01/12/23

pH	8.26	pH Units	8.30	0.483	20
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Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/13/23 15:47

Notes and Definitions

QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.
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

January 16, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Jerke UP 8-7 Tank Battery

Work Order #2301226

Enclosed are the results of analyses for samples received by Summit Scientific on 01/12/23 17:55. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely", is written over a light blue rectangular background.

Scott Sheely For Paul Shrewsbury

President



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/16/23 14:22

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@14'	2301226-01	Soil	01/12/23 10:00	01/12/23 17:55
SS02@14'	2301226-02	Soil	01/12/23 12:35	01/12/23 17:55

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

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403


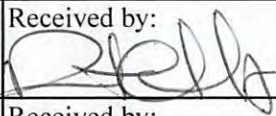
303-277-9310

2301226

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: Jerke Up 8-7 Tank Battery
 Sampler Name: David Vigil Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions		
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	(1) pH, EC, SAR	Boron - HWS	TMBS (1,2,4) & (1,3,5)	(2) PAH - 915	(3) Metals - 915			
1	SS01 @ 14'	1/12/23	1000	3			X			X				X	X	X	X	X	X	X		pH, EC, SAR by saturated paste
2	SS02 @ 14'	↓	1235	↓			↓			↓				X	X	X	X	X	X	X		
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						

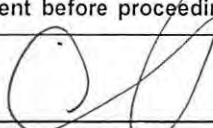
Relinquished by: 	Date/Time: 1/12/23 1545	Received by: Tasman's Lock Box	Date/Time: 1/12/23 1545	Turn Around Time (Check): Same Day <input checked="" type="checkbox"/> 72 hours <input type="checkbox"/> 24 hours <input type="checkbox"/> 48 hours <input type="checkbox"/>	Notes: (1) - Only EC (2) - PAHs: benzo(a), dibenz(a,h), Fluorene, 1-M, 2-M, benz(a) (3) Metals: arsenic, Selenium
Relinquished by: Tasman's Lock Box	Date/Time: 1/12/23 1755	Received by: 	Date/Time: 1/12/23 1755	Sample Integrity: Temperature Upon Receipt: 8.2	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Samples Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

S₂

Sample Receipt Checklist

S2 Work Order# 2301226Client: Poc / Asman Client Project ID: Jerke up 8-7 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: _____
☐ ☐ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 8.2Thermometer # 1

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

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

 Custodian Printed Name

1.12.23
 Date/Time



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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/16/23 14:22

SS01@14'
2301226-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/12/23 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGA0290	01/12/23	01/12/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/12/23 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0548	137 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0373	93.3 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0405	101 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/12/23 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0291	01/12/23	01/12/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/12/23 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	13.5	108 %	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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/16/23 14:22

SS01@14'
2301226-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/12/23 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGA0294	01/13/23	01/14/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/12/23 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0200	60.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0297	89.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/12/23 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0559	0.0100	mg/L	1	BGA0292	01/12/23	01/13/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/12/23 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.344	0.200	mg/kg dry	1	BGA0293	01/12/23	01/13/23	EPA 6020B	
Selenium	ND	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/12/23 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.9		%	1	BGA0306	01/13/23	01/13/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/16/23 14:22

SS01@14'
2301226-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/12/23 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.330	0.0100		mmhos/cm	1	BGA0316	01/13/23	01/13/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/16/23 14:22

SS02@14'
2301226-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/12/23 12:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0290	01/12/23	01/12/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/12/23 12:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0567	142 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0374	93.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0408	102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/12/23 12:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0291	01/12/23	01/12/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/12/23 12:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	13.7	109 %	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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/16/23 14:22

SS02@14'
2301226-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/12/23 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGA0294	01/13/23	01/14/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/12/23 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0179	53.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0243	72.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/12/23 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0733	0.0100	mg/L	1	BGA0292	01/12/23	01/13/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/12/23 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.412	0.200	mg/kg dry	1	BGA0293	01/12/23	01/13/23	EPA 6020B	
Selenium	ND	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/12/23 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.0		%	1	BGA0306	01/13/23	01/13/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/16/23 14:22

SS02@14'
2301226-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/12/23 12:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.355	0.0100		mmhos/cm	1	BGA0316	01/13/23	01/13/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/16/23 14:22

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 BGA0290 - EPA 5030 Soil MS

Blank (BGA0290-BLK1)

Prepared: 01/12/23 Analyzed: 01/13/23

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	0.0389		"	0.0400		97.2	50-150			
Surrogate: Toluene-d8	0.0409		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.4	50-150			

LCS (BGA0290-BS1)

Prepared: 01/12/23 Analyzed: 01/13/23

Benzene	0.0969	0.0020	mg/kg	0.100		96.9	70-130			
Toluene	0.0986	0.0050	"	0.100		98.6	70-130			
Ethylbenzene	0.0916	0.0050	"	0.100		91.6	70-130			
m,p-Xylene	0.199	0.010	"	0.200		99.5	70-130			
o-Xylene	0.0873	0.0050	"	0.100		87.3	70-130			
1,2,4-Trimethylbenzene	0.100	0.0050	"	0.100		100	70-130			
1,3,5-Trimethylbenzene	0.102	0.0050	"	0.100		102	70-130			
Naphthalene	0.0943	0.0038	"	0.100		94.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0419		"	0.0400		105	50-150			
Surrogate: Toluene-d8	0.0376		"	0.0400		94.0	50-150			
Surrogate: 4-Bromofluorobenzene	0.0354		"	0.0400		88.5	50-150			

Matrix Spike (BGA0290-MS1)

Source: 2301224-01

Prepared: 01/12/23 Analyzed: 01/13/23

Benzene	0.0972	0.0020	mg/kg	0.100	ND	97.2	70-130			
Toluene	0.0994	0.0050	"	0.100	ND	99.4	70-130			
Ethylbenzene	0.0950	0.0050	"	0.100	ND	95.0	70-130			
m,p-Xylene	0.199	0.010	"	0.200	ND	99.5	70-130			
o-Xylene	0.0903	0.0050	"	0.100	ND	90.3	70-130			
1,2,4-Trimethylbenzene	0.0996	0.0050	"	0.100	ND	99.6	70-130			
1,3,5-Trimethylbenzene	0.105	0.0050	"	0.100	ND	105	70-130			
Naphthalene	0.101	0.0038	"	0.100	ND	101	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0438		"	0.0400		110	50-150			
Surrogate: Toluene-d8	0.0380		"	0.0400		95.0	50-150			
Surrogate: 4-Bromofluorobenzene	0.0347		"	0.0400		86.8	50-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/16/23 14:22

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 BGA0290 - EPA 5030 Soil MS

Matrix Spike Dup (BGA0290-MSD1)	Source: 2301224-01			Prepared: 01/12/23 Analyzed: 01/13/23						
Benzene	0.101	0.0020	mg/kg	0.100	ND	101	70-130	3.58	30	
Toluene	0.105	0.0050	"	0.100	ND	105	70-130	5.23	30	
Ethylbenzene	0.0990	0.0050	"	0.100	ND	99.0	70-130	4.11	30	
m,p-Xylene	0.208	0.010	"	0.200	ND	104	70-130	4.21	30	
o-Xylene	0.0920	0.0050	"	0.100	ND	92.0	70-130	1.94	30	
1,2,4-Trimethylbenzene	0.101	0.0050	"	0.100	ND	101	70-130	0.929	30	
1,3,5-Trimethylbenzene	0.107	0.0050	"	0.100	ND	107	70-130	1.73	30	
Naphthalene	0.0994	0.0038	"	0.100	ND	99.4	70-130	1.68	30	
Surrogate: 1,2-Dichloroethane-d4	0.0388		"	0.0400		97.0	50-150			
Surrogate: Toluene-d8	0.0386		"	0.0400		96.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0347		"	0.0400		86.8	50-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/16/23 14:22

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 BGA0291 - EPA 3550A

Blank (BGA0291-BLK1)

Prepared: 01/12/23 Analyzed: 01/13/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	17.6		"	12.5		141	30-150			

LCS (BGA0291-BS1)

Prepared: 01/12/23 Analyzed: 01/13/23

C10-C28 (DRO)	525	50	mg/kg	500		105	70-130			
Surrogate: o-Terphenyl	13.8		"	12.5		110	30-150			

Matrix Spike (BGA0291-MS1)

Source: 2301224-01

Prepared: 01/12/23 Analyzed: 01/13/23

C10-C28 (DRO)	477	50	mg/kg	500	44.3	86.6	70-130			
Surrogate: o-Terphenyl	12.2		"	12.5		97.8	30-150			

Matrix Spike Dup (BGA0291-MSD1)

Source: 2301224-01

Prepared: 01/12/23 Analyzed: 01/13/23

C10-C28 (DRO)	442	50	mg/kg	500	44.3	79.5	70-130	7.72	20	
Surrogate: o-Terphenyl	12.7		"	12.5		101	30-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/16/23 14:22

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 BGA0294 - EPA 5030 Soil MS

Blank (BGA0294-BLK1)

Prepared & Analyzed: 01/13/23

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	0.0262		"	0.0333		78.7	40-150			
Surrogate: Fluoranthene-d10	0.0338		"	0.0333		101	40-150			

LCS (BGA0294-BS1)

Prepared & Analyzed: 01/13/23

Acenaphthene	0.0381	0.00500	mg/kg	0.0333	114	31-137
Anthracene	0.0346	0.00500	"	0.0333	104	30-120
Benzo (a) anthracene	0.0362	0.00500	"	0.0333	109	30-120
Benzo (a) pyrene	0.0382	0.00500	"	0.0333	115	30-120
Benzo (b) fluoranthene	0.0376	0.00500	"	0.0333	113	30-120
Benzo (k) fluoranthene	0.0383	0.00500	"	0.0333	115	30-120
Chrysene	0.0387	0.00500	"	0.0333	116	30-120
Dibenz (a,h) anthracene	0.0352	0.00500	"	0.0333	106	30-120
Fluoranthene	0.0396	0.00500	"	0.0333	119	30-120
Fluorene	0.0389	0.00500	"	0.0333	117	30-120
Indeno (1,2,3-cd) pyrene	0.0358	0.00500	"	0.0333	108	30-120
Pyrene	0.0381	0.00500	"	0.0333	114	35-142
1-Methylnaphthalene	0.0379	0.00500	"	0.0333	114	35-142
2-Methylnaphthalene	0.0371	0.00500	"	0.0333	111	35-142
Surrogate: 2-Methylnaphthalene-d10	0.0321		"	0.0333	96.2	40-150
Surrogate: Fluoranthene-d10	0.0346		"	0.0333	104	40-150

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/16/23 14:22

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 BGA0294 - EPA 5030 Soil MS

Matrix Spike (BGA0294-MS1)

Source: 2301172-02

Prepared & Analyzed: 01/13/23

Acenaphthene	0.0194	0.00500	mg/kg	0.0333	ND	58.2	31-137				
Anthracene	0.0239	0.00500	"	0.0333	0.00350	61.3	30-120				
Benzo (a) anthracene	0.0194	0.00500	"	0.0333	ND	58.3	30-120				
Benzo (a) pyrene	0.0193	0.00500	"	0.0333	ND	57.8	30-120				
Benzo (b) fluoranthene	0.0193	0.00500	"	0.0333	ND	57.9	30-120				
Benzo (k) fluoranthene	0.0185	0.00500	"	0.0333	ND	55.5	30-120				
Chrysene	0.0199	0.00500	"	0.0333	ND	59.8	30-120				
Dibenz (a,h) anthracene	0.0158	0.00500	"	0.0333	ND	47.5	30-120				
Fluoranthene	0.0246	0.00500	"	0.0333	0.00259	65.9	30-120				
Fluorene	0.0196	0.00500	"	0.0333	ND	58.8	30-120				
Indeno (1,2,3-cd) pyrene	0.0186	0.00500	"	0.0333	ND	55.9	30-120				
Pyrene	0.0224	0.00500	"	0.0333	0.00255	59.5	35-142				
1-Methylnaphthalene	0.0176	0.00500	"	0.0333	ND	53.0	15-130				
2-Methylnaphthalene	0.0188	0.00500	"	0.0333	ND	56.3	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0158		"	0.0333		47.5	40-150				
Surrogate: Fluoranthene-d10	0.0181		"	0.0333		54.3	40-150				

Matrix Spike Dup (BGA0294-MSD1)

Source: 2301172-02

Prepared & Analyzed: 01/13/23

Acenaphthene	0.0195	0.00500	mg/kg	0.0333	ND	58.6	31-137	0.724	30		
Anthracene	0.0204	0.00500	"	0.0333	0.00350	50.7	30-120	16.0	30		
Benzo (a) anthracene	0.0178	0.00500	"	0.0333	ND	53.5	30-120	8.66	30		
Benzo (a) pyrene	0.0188	0.00500	"	0.0333	ND	56.4	30-120	2.41	30		
Benzo (b) fluoranthene	0.0188	0.00500	"	0.0333	ND	56.5	30-120	2.37	30		
Benzo (k) fluoranthene	0.0190	0.00500	"	0.0333	ND	56.9	30-120	2.36	30		
Chrysene	0.0184	0.00500	"	0.0333	ND	55.2	30-120	8.03	30		
Dibenz (a,h) anthracene	0.0163	0.00500	"	0.0333	ND	48.8	30-120	2.66	30		
Fluoranthene	0.0204	0.00500	"	0.0333	0.00259	53.4	30-120	18.5	30		
Fluorene	0.0189	0.00500	"	0.0333	ND	56.6	30-120	3.75	30		
Indeno (1,2,3-cd) pyrene	0.0180	0.00500	"	0.0333	ND	53.9	30-120	3.66	30		
Pyrene	0.0190	0.00500	"	0.0333	0.00255	49.4	35-142	16.3	30		
1-Methylnaphthalene	0.0178	0.00500	"	0.0333	ND	53.3	15-130	0.711	50		
2-Methylnaphthalene	0.0170	0.00500	"	0.0333	ND	51.1	15-130	9.72	50		
Surrogate: 2-Methylnaphthalene-d10	0.0163		"	0.0333		48.8	40-150				
Surrogate: Fluoranthene-d10	0.0200		"	0.0333		59.9	40-150				

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/16/23 14:22

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 BGA0292 - EPA 3050B

Blank (BGA0292-BLK1)

Prepared: 01/12/23 Analyzed: 01/13/23

Boron ND 0.0100 mg/L

LCS (BGA0292-BS1)

Prepared: 01/12/23 Analyzed: 01/13/23

Boron 4.75 0.0100 mg/L 5.00 95.1 80-120

Duplicate (BGA0292-DUP1)

Source: 2301140-01

Prepared: 01/12/23 Analyzed: 01/13/23

Boron 0.0806 0.0100 mg/L 0.0854 5.83 20

Matrix Spike (BGA0292-MS1)

Source: 2301140-01

Prepared: 01/12/23 Analyzed: 01/13/23

Boron 4.72 0.0100 mg/L 5.00 0.0854 92.8 75-125

Matrix Spike Dup (BGA0292-MSD1)

Source: 2301140-01

Prepared: 01/12/23 Analyzed: 01/13/23

Boron 4.55 0.0100 mg/L 5.00 0.0854 89.2 75-125 3.82 25

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/16/23 14:22

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 BGA0293 - EPA 3050B

Blank (BGA0293-BLK1)

Prepared: 01/12/23 Analyzed: 01/13/23

Arsenic	ND	0.200	mg/kg wet
Selenium	ND	0.260	"

LCS (BGA0293-BS1)

Prepared: 01/12/23 Analyzed: 01/13/23

Arsenic	41.4	0.200	mg/kg wet	40.0	104	80-120
Selenium	3.86	0.260	"	4.00	96.6	80-120

Duplicate (BGA0293-DUP1)

Source: 2301137-01

Prepared: 01/12/23 Analyzed: 01/13/23

Arsenic	1.11	0.200	mg/kg dry	0.968	13.2	20
Selenium	ND	0.260	"	ND		20

Matrix Spike (BGA0293-MS1)

Source: 2301137-01

Prepared: 01/12/23 Analyzed: 01/13/23

Arsenic	43.6	0.200	mg/kg dry	42.5	0.968	100	75-125
Selenium	4.00	0.260	"	4.25	ND	94.0	75-125

Matrix Spike Dup (BGA0293-MSD1)

Source: 2301137-01

Prepared: 01/12/23 Analyzed: 01/13/23

Arsenic	44.4	0.200	mg/kg dry	42.5	0.968	102	75-125	1.88	25
Selenium	3.93	0.260	"	4.25	ND	92.4	75-125	1.73	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.



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/16/23 14:22

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

Summit Scientific

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

Batch BGA0306 - General Preparation

Duplicate (BGA0306-DUP1)			Source: 2212221-01			Prepared & Analyzed: 01/13/23				
% Solids	86.0		%			85.4		0.695	20	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/16/23 14:22

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013 - Quality Control
Summit Scientific

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

Batch BGA0316 - General Preparation

Blank (BGA0316-BLK1)

Prepared & Analyzed: 01/13/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGA0316-BS1)

Prepared & Analyzed: 01/13/23

Specific Conductance (EC) 0.152 0.0100 mmhos/cm 0.150 101 95-105

Duplicate (BGA0316-DUP1)

Source: 2301185-01

Prepared & Analyzed: 01/13/23

Specific Conductance (EC) 4.48 0.0100 mmhos/cm 5.18 14.4 20

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/16/23 14:22

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

January 17, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Jerke UP 8-7 Tank Battery

Work Order #2301260

Enclosed are the results of analyses for samples received by Summit Scientific on 01/13/23 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 "Scott Sheely", is written over a light blue rectangular background.

Scott Sheely For Paul Shrewsbury

President



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS03@14'	2301260-01	Soil	01/13/23 09:30	01/13/23 17:57
SS04@5'	2301260-02	Soil	01/13/23 09:45	01/13/23 17:57
SS05@10'	2301260-03	Soil	01/13/23 09:50	01/13/23 17:57
SS06@5'	2301260-04	Soil	01/13/23 10:05	01/13/23 17:57
SS07@10'	2301260-05	Soil	01/13/23 10:10	01/13/23 17:57
SS08@14'	2301260-06	Soil	01/13/23 11:55	01/13/23 17:57
SS09@14'	2301260-07	Soil	01/13/23 13:45	01/13/23 17:57
SS10@5'	2301260-08	Soil	01/13/23 14:30	01/13/23 17:57
SS11@10'	2301260-09	Soil	01/13/23 14:35	01/13/23 17:57

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

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

2301260

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: Jerke UP 8-7 Tank Battery

Sampler Name: David Vigil

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions	
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	(1) pH, EC, SAR	Boron - HWS	TMBs (1,2,4) & (1,3,5)	(2) PAH - 915	(3) Metals - 915		
1	SS03 @ 14'	1/13/23	0930	3			X			X				X	X	X	X	X	X		pH, EC, SAR by saturated paste
2	SS04 @ 5'		0945											X	X	X	X	X			
3	SS05 @ 10'		0950											X	X	X	X	X			
4	SS06 @ 5'		1005											X	X	X	X	X			
5	SS07 @ 10'		1010											X	X	X	X	X			
6	SS08 @ 14'		1155											X	X	X	X	X			
7	SS09 @ 14'		1345											X	X	X	X	X			
8	SS10 @ 5'		1430											X	X	X	X	X			
9	SS11 @ 10'		1435											X	X	X	X	X			
10																					

Relinquished by: 	Date/Time: 1/13/23 1635	Received by: Tasman's Lock Box	Date/Time: 1/13/23 1635	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard 48 hours <input type="checkbox"/>	Notes: (1) - Only EC (2) - PAHs: benz(a), dibenz(a,h), Fluorene, 1-M, 2-M (3) - Metals: arsenic, Selenium
Relinquished by: Tasman's Lock Box	Date/Time: 1/13/23 1737	Received by: 	Date/Time: 1/13/23 1757	Sample Integrity: Temperature Upon Receipt: 74	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

S₂

Sample Receipt Checklist

S2 Work Order# 2301260Client: PetrasmanClient Project ID: Jerke up 8-7 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐Airbill #:

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Matrix (Check all that apply)

Air

☐

Soil/Solid

☐

Water

☐

Other

☐

Temp (°C)

74

Thermometer #

1

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


 Custodian Printed Name

1.13.23
 Date/Time



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

SS03@14'
2301260-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/13/23 09:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0322	01/13/23	01/14/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/13/23 09:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0555	139 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0383	95.7 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0397	99.3 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/13/23 09:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0323	01/13/23	01/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/13/23 09:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	16.1	129 %	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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

SS03@14'
2301260-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/13/23 09:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGA0343	01/16/23	01/17/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/13/23 09:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0291	87.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0233	70.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/13/23 09:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	0.0611	0.0100	mg/L	1	BGA0330	01/15/23	01/16/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/13/23 09:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	0.886	0.200	mg/kg dry	1	BGA0332	01/15/23	01/16/23	EPA 6020B	
Selenium	0.874	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/13/23 09:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
% Solids	81.5		%	1	BGA0326	01/15/23	01/15/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

SS03@14'
2301260-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/13/23 09:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.448	0.0100		mmhos/cm	1	BGA0358	01/16/23	01/16/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

SS04@5'
2301260-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/13/23 09:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0322	01/13/23	01/14/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/13/23 09:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0532	133 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0376	93.9 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0392	98.0 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/13/23 09:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0323	01/13/23	01/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/13/23 09:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	14.6	117 %	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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

SS04@5'
2301260-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/13/23 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGA0343	01/16/23	01/17/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/13/23 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0293	88.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0250	74.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/13/23 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0900	0.0100	mg/L	1	BGA0330	01/15/23	01/16/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/13/23 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.809	0.200	mg/kg dry	1	BGA0332	01/15/23	01/16/23	EPA 6020B	
Selenium	0.808	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/13/23 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.4		%	1	BGA0326	01/15/23	01/15/23	Calculation	

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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

SS04@5'
2301260-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/13/23 09:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.539	0.0100		mmhos/cm	1	BGA0358	01/16/23	01/16/23	EPA 120.1	

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

SS05@10'
2301260-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/13/23 09:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0322	01/13/23	01/14/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/13/23 09:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0532	133 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0377	94.2 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0405	101 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/13/23 09:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0323	01/13/23	01/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/13/23 09:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	13.9	111 %	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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

SS05@10'
2301260-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/13/23 09:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGA0343	01/16/23	01/17/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/13/23 09:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0283	84.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0275	82.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/13/23 09:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	0.0753	0.0100	mg/L	1	BGA0330	01/15/23	01/16/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/13/23 09:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	ND	0.200	mg/kg dry	1	BGA0332	01/15/23	01/16/23	EPA 6020B	
Selenium	0.703	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/13/23 09:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
% Solids	78.9		%	1	BGA0326	01/15/23	01/15/23	Calculation	

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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

SS05@10'
2301260-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/13/23 09:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.506	0.0100		mmhos/cm	1	BGA0358	01/16/23	01/16/23	EPA 120.1	

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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

SS06@5'
2301260-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/13/23 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0322	01/13/23	01/14/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/13/23 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0546	136 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0377	94.2 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0398	99.5 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/13/23 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0323	01/13/23	01/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/13/23 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	12.1	97.1 %	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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

SS06@5'
2301260-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/13/23 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGA0343	01/16/23	01/17/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/13/23 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0280	84.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0280	84.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/13/23 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	0.326	0.0100	mg/L	1	BGA0330	01/15/23	01/16/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/13/23 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	7.68	0.200	mg/kg dry	1	BGA0332	01/15/23	01/16/23	EPA 6020B	
Selenium	1.03	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/13/23 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
% Solids	85.8		%	1	BGA0326	01/15/23	01/15/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

SS06@5'
2301260-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/13/23 10:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.594	0.0100		mmhos/cm	1	BGA0358	01/16/23	01/16/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

SS07@10'
2301260-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/13/23 10:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0322	01/13/23	01/14/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/13/23 10:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0530	133 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0377	94.2 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0407	102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/13/23 10:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0323	01/13/23	01/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/13/23 10:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	13.6	108 %	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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

SS07@10'
2301260-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/13/23 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGA0343	01/16/23	01/17/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/13/23 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0291	87.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0254	76.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/13/23 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0740	0.0100	mg/L	1	BGA0330	01/15/23	01/16/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/13/23 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BGA0332	01/15/23	01/16/23	EPA 6020B	
Selenium	0.628	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/13/23 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.4		%	1	BGA0326	01/15/23	01/15/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

SS07@10'
2301260-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/13/23 10:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.362	0.0100		mmhos/cm	1	BGA0358	01/16/23	01/16/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

SS08@14'
2301260-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/13/23 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0322	01/13/23	01/14/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/13/23 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0540	135 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0376	94.0 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0400	100 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/13/23 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0323	01/13/23	01/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/13/23 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	15.2	122 %	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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

SS08@14'
2301260-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/13/23 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGA0343	01/16/23	01/17/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/13/23 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0272	81.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0243	72.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/13/23 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	0.0508	0.0100	mg/L	1	BGA0330	01/15/23	01/16/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/13/23 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	1.21	0.200	mg/kg dry	1	BGA0332	01/15/23	01/16/23	EPA 6020B	
Selenium	0.643	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/13/23 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
% Solids	79.7		%	1	BGA0326	01/15/23	01/15/23	Calculation	

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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

SS08@14'
2301260-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/13/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.424	0.0100		mmhos/cm	1	BGA0358	01/16/23	01/16/23	EPA 120.1	

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

SS09@14'
2301260-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/13/23 13:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0322	01/13/23	01/14/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/13/23 13:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0524	131 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0374	93.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0393	98.2 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/13/23 13:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0323	01/13/23	01/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/13/23 13:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	15.3	123 %	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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

SS09@14'
2301260-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/13/23 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGA0343	01/16/23	01/17/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/13/23 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0284	85.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0262	78.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/13/23 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0573	0.0100	mg/L	1	BGA0330	01/15/23	01/16/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/13/23 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.510	0.200	mg/kg dry	1	BGA0332	01/15/23	01/16/23	EPA 6020B	
Selenium	0.546	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/13/23 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.9		%	1	BGA0326	01/15/23	01/15/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

SS09@14'
2301260-07 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/13/23 13:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.394	0.0100		mmhos/cm	1	BGA0358	01/16/23	01/16/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

SS10@5'
2301260-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/13/23 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0322	01/13/23	01/14/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/13/23 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0561	140 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0380	95.0 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0402	101 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/13/23 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0323	01/13/23	01/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/13/23 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	15.8	126 %	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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

SS10@5'
2301260-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/13/23 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGA0343	01/16/23	01/17/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/13/23 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0228	68.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0302	90.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/13/23 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	0.0968	0.0100	mg/L	1	BGA0330	01/15/23	01/16/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/13/23 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	4.40	0.200	mg/kg dry	1	BGA0332	01/15/23	01/16/23	EPA 6020B	
Selenium	0.893	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/13/23 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
% Solids	86.1		%	1	BGA0326	01/15/23	01/15/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

SS10@5'
2301260-08 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/13/23 14:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.406	0.0100		mmhos/cm	1	BGA0358	01/16/23	01/16/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

SS11@10'
2301260-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/13/23 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0322	01/13/23	01/14/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/13/23 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0526	132 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0371	92.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0409	102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/13/23 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0323	01/13/23	01/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/13/23 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	16.5	132 %	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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

SS11@10'
2301260-09 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/13/23 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGA0343	01/16/23	01/17/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/13/23 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0281	84.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0235	70.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/13/23 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	0.312	0.0100	mg/L	1	BGA0330	01/15/23	01/16/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/13/23 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	20.3	0.200	mg/kg dry	1	BGA0332	01/15/23	01/16/23	EPA 6020B	
Selenium	1.19	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/13/23 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
% Solids	82.7		%	1	BGA0326	01/15/23	01/15/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

SS11@10'
2301260-09 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/13/23 14:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.421	0.0100		mmhos/cm	1	BGA0358	01/16/23	01/16/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

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 BGA0322 - EPA 5030 Soil MS

Blank (BGA0322-BLK1)

Prepared & Analyzed: 01/13/23

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	0.0420		"	0.0400		105	50-150			
Surrogate: Toluene-d8	0.0395		"	0.0400		98.7	50-150			
Surrogate: 4-Bromofluorobenzene	0.0300		"	0.0400		75.0	50-150			

LCS (BGA0322-BS1)

Prepared & Analyzed: 01/13/23

Benzene	0.0950	0.0020	mg/kg	0.100		95.0	70-130			
Toluene	0.0991	0.0050	"	0.100		99.1	70-130			
Ethylbenzene	0.0917	0.0050	"	0.100		91.7	70-130			
m,p-Xylene	0.189	0.010	"	0.200		94.7	70-130			
o-Xylene	0.0866	0.0050	"	0.100		86.6	70-130			
1,2,4-Trimethylbenzene	0.0952	0.0050	"	0.100		95.2	70-130			
1,3,5-Trimethylbenzene	0.0994	0.0050	"	0.100		99.4	70-130			
Naphthalene	0.0910	0.0038	"	0.100		91.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0440		"	0.0400		110	50-150			
Surrogate: Toluene-d8	0.0363		"	0.0400		90.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0322		"	0.0400		80.5	50-150			

Matrix Spike (BGA0322-MS1)

Source: 2301247-01

Prepared & Analyzed: 01/13/23

Benzene	0.0986	0.0020	mg/kg	0.100	ND	98.6	70-130			
Toluene	0.103	0.0050	"	0.100	ND	103	70-130			
Ethylbenzene	0.0869	0.0050	"	0.100	ND	86.9	70-130			
m,p-Xylene	0.184	0.010	"	0.200	ND	92.2	70-130			
o-Xylene	0.0851	0.0050	"	0.100	ND	85.1	70-130			
1,2,4-Trimethylbenzene	0.0922	0.0050	"	0.100	ND	92.2	70-130			
1,3,5-Trimethylbenzene	0.0978	0.0050	"	0.100	ND	97.8	70-130			
Naphthalene	0.104	0.0038	"	0.100	ND	104	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0440		"	0.0400		110	50-150			
Surrogate: Toluene-d8	0.0393		"	0.0400		98.2	50-150			
Surrogate: 4-Bromofluorobenzene	0.0286		"	0.0400		71.5	50-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

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 BGA0322 - EPA 5030 Soil MS

Matrix Spike Dup (BGA0322-MSD1)	Source: 2301247-01			Prepared & Analyzed: 01/13/23						
Benzene	0.0930	0.0020	mg/kg	0.100	ND	93.0	70-130	5.82	30	
Toluene	0.0978	0.0050	"	0.100	ND	97.8	70-130	5.46	30	
Ethylbenzene	0.0868	0.0050	"	0.100	ND	86.8	70-130	0.138	30	
m,p-Xylene	0.181	0.010	"	0.200	ND	90.5	70-130	1.91	30	
o-Xylene	0.0855	0.0050	"	0.100	ND	85.5	70-130	0.492	30	
1,2,4-Trimethylbenzene	0.0943	0.0050	"	0.100	ND	94.3	70-130	2.19	30	
1,3,5-Trimethylbenzene	0.0965	0.0050	"	0.100	ND	96.5	70-130	1.36	30	
Naphthalene	0.103	0.0038	"	0.100	ND	103	70-130	1.04	30	
Surrogate: 1,2-Dichloroethane-d4	0.0432		"	0.0400		108	50-150			
Surrogate: Toluene-d8	0.0382		"	0.0400		95.5	50-150			
Surrogate: 4-Bromofluorobenzene	0.0297		"	0.0400		74.3	50-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

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 BGA0323 - EPA 3550A

Blank (BGA0323-BLK1)

Prepared & Analyzed: 01/13/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	5.34		"	12.5		42.7	30-150			

LCS (BGA0323-BS1)

Prepared & Analyzed: 01/13/23

C10-C28 (DRO)	475	50	mg/kg	500		95.1	70-130			
Surrogate: o-Terphenyl	16.5		"	12.5		132	30-150			

Matrix Spike (BGA0323-MS1)

Source: 2301247-01

Prepared & Analyzed: 01/13/23

C10-C28 (DRO)	432	50	mg/kg	500	24.4	81.5	70-130			
Surrogate: o-Terphenyl	14.2		"	12.5		113	30-150			

Matrix Spike Dup (BGA0323-MSD1)

Source: 2301247-01

Prepared & Analyzed: 01/13/23

C10-C28 (DRO)	448	50	mg/kg	500	24.4	84.8	70-130	3.77	20	
Surrogate: o-Terphenyl	13.7		"	12.5		110	30-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

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

Batch BGA0343 - EPA 5030 Soil MS

Blank (BGA0343-BLK1)

Prepared & Analyzed: 01/16/23

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	0.0391		"	0.0333		117		40-150			
Surrogate: Fluoranthene-d10	0.0336		"	0.0333		101		40-150			

LCS (BGA0343-BS1)

Prepared & Analyzed: 01/16/23

Acenaphthene	0.0360	0.00500	mg/kg	0.0333		108		31-137			
Anthracene	0.0379	0.00500	"	0.0333		114		30-120			
Benzo (a) anthracene	0.0267	0.00500	"	0.0333		80.0		30-120			
Benzo (a) pyrene	0.0335	0.00500	"	0.0333		100		30-120			
Benzo (b) fluoranthene	0.0331	0.00500	"	0.0333		99.2		30-120			
Benzo (k) fluoranthene	0.0362	0.00500	"	0.0333		109		30-120			
Chrysene	0.0306	0.00500	"	0.0333		91.7		30-120			
Dibenz (a,h) anthracene	0.0344	0.00500	"	0.0333		103		30-120			
Fluoranthene	0.0309	0.00500	"	0.0333		92.8		30-120			
Fluorene	0.0314	0.00500	"	0.0333		94.2		30-120			
Indeno (1,2,3-cd) pyrene	0.0338	0.00500	"	0.0333		101		30-120			
Pyrene	0.0297	0.00500	"	0.0333		89.1		35-142			
1-Methylnaphthalene	0.0298	0.00500	"	0.0333		89.5		35-142			
2-Methylnaphthalene	0.0321	0.00500	"	0.0333		96.3		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0324		"	0.0333		97.2		40-150			
Surrogate: Fluoranthene-d10	0.0353		"	0.0333		106		40-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGA0343 - EPA 5030 Soil MS

Matrix Spike (BGA0343-MS1)

Source: 2301259-01

Prepared & Analyzed: 01/16/23

Acenaphthene	0.0369	0.00500	mg/kg	0.0333	ND	111	31-137		
Anthracene	0.0337	0.00500	"	0.0333	ND	101	30-120		
Benzo (a) anthracene	0.0278	0.00500	"	0.0333	ND	83.5	30-120		
Benzo (a) pyrene	0.0303	0.00500	"	0.0333	ND	91.0	30-120		
Benzo (b) fluoranthene	0.0308	0.00500	"	0.0333	ND	92.5	30-120		
Benzo (k) fluoranthene	0.0314	0.00500	"	0.0333	ND	94.2	30-120		
Chrysene	0.0276	0.00500	"	0.0333	ND	82.7	30-120		
Dibenz (a,h) anthracene	0.0319	0.00500	"	0.0333	ND	95.8	30-120		
Fluoranthene	0.0355	0.00500	"	0.0333	ND	107	30-120		
Fluorene	0.0383	0.00500	"	0.0333	ND	115	30-120		
Indeno (1,2,3-cd) pyrene	0.0318	0.00500	"	0.0333	ND	95.4	30-120		
Pyrene	0.0261	0.00500	"	0.0333	ND	78.2	35-142		
1-Methylnaphthalene	0.0291	0.00500	"	0.0333	ND	87.2	15-130		
2-Methylnaphthalene	0.0284	0.00500	"	0.0333	ND	85.3	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0285		"	0.0333		85.5	40-150		
Surrogate: Fluoranthene-d10	0.0366		"	0.0333		110	40-150		

Matrix Spike Dup (BGA0343-MSD1)

Source: 2301259-01

Prepared & Analyzed: 01/16/23

Acenaphthene	0.0313	0.00500	mg/kg	0.0333	ND	93.8	31-137	16.4	30
Anthracene	0.0314	0.00500	"	0.0333	ND	94.3	30-120	6.89	30
Benzo (a) anthracene	0.0259	0.00500	"	0.0333	ND	77.8	30-120	7.02	30
Benzo (a) pyrene	0.0283	0.00500	"	0.0333	ND	85.0	30-120	6.88	30
Benzo (b) fluoranthene	0.0278	0.00500	"	0.0333	ND	83.3	30-120	10.5	30
Benzo (k) fluoranthene	0.0286	0.00500	"	0.0333	ND	85.8	30-120	9.31	30
Chrysene	0.0255	0.00500	"	0.0333	ND	76.4	30-120	7.90	30
Dibenz (a,h) anthracene	0.0307	0.00500	"	0.0333	ND	92.1	30-120	3.90	30
Fluoranthene	0.0374	0.00500	"	0.0333	ND	112	30-120	5.16	30
Fluorene	0.0312	0.00500	"	0.0333	ND	93.6	30-120	20.5	30
Indeno (1,2,3-cd) pyrene	0.0302	0.00500	"	0.0333	ND	90.7	30-120	5.06	30
Pyrene	0.0265	0.00500	"	0.0333	ND	79.5	35-142	1.74	30
1-Methylnaphthalene	0.0268	0.00500	"	0.0333	ND	80.3	15-130	8.30	50
2-Methylnaphthalene	0.0272	0.00500	"	0.0333	ND	81.6	15-130	4.49	50
Surrogate: 2-Methylnaphthalene-d10	0.0259		"	0.0333		77.7	40-150		
Surrogate: Fluoranthene-d10	0.0364		"	0.0333		109	40-150		

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

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 BGA0330 - EPA 3050B

Blank (BGA0330-BLK1)

Prepared: 01/15/23 Analyzed: 01/16/23

Boron ND 0.0100 mg/L

LCS (BGA0330-BS1)

Prepared: 01/15/23 Analyzed: 01/16/23

Boron 5.16 0.0100 mg/L 5.00 103 80-120

Duplicate (BGA0330-DUP1)

Source: 2301180-03

Prepared: 01/15/23 Analyzed: 01/16/23

Boron 0.208 0.0100 mg/L 0.206 0.774 20

Matrix Spike (BGA0330-MS1)

Source: 2301180-03

Prepared: 01/15/23 Analyzed: 01/16/23

Boron 5.91 0.0100 mg/L 5.00 0.206 114 75-125

Matrix Spike Dup (BGA0330-MSD1)

Source: 2301180-03

Prepared: 01/15/23 Analyzed: 01/16/23

Boron 6.47 0.0100 mg/L 5.00 0.206 125 75-125 9.08 25

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

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 BGA0332 - EPA 3050B

Blank (BGA0332-BLK1)

Prepared: 01/15/23 Analyzed: 01/16/23

Arsenic	ND	0.200	mg/kg wet
Selenium	ND	0.260	"

LCS (BGA0332-BS1)

Prepared: 01/15/23 Analyzed: 01/16/23

Arsenic	45.1	0.200	mg/kg wet	40.0	113	80-120
Selenium	4.14	0.260	"	4.00	104	80-120

Duplicate (BGA0332-DUP1)

Source: 2301247-01

Prepared: 01/15/23 Analyzed: 01/16/23

Arsenic	1.33	0.200	mg/kg dry	1.48	10.9	20
Selenium	0.820	0.260	"	0.850	3.59	20

Matrix Spike (BGA0332-MS1)

Source: 2301247-01

Prepared: 01/15/23 Analyzed: 01/16/23

Arsenic	54.6	0.200	mg/kg dry	47.4	1.48	112	75-125
Selenium	5.38	0.260	"	4.74	0.850	95.7	75-125

Matrix Spike Dup (BGA0332-MSD1)

Source: 2301247-01

Prepared: 01/15/23 Analyzed: 01/16/23

Arsenic	61.4	0.200	mg/kg dry	47.4	1.48	126	75-125	11.6	25	QM-07
Selenium	5.95	0.260	"	4.74	0.850	108	75-125	10.1	25	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

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

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

Batch BGA0326 - General Preparation

Duplicate (BGA0326-DUP1)			Source: 2301247-01			Prepared & Analyzed: 01/15/23				
% Solids	84.6		%			84.4		0.233		20

Summit Scientific



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013 - Quality Control

Summit Scientific

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

Batch BGA0358 - General Preparation

Blank (BGA0358-BLK1)

Prepared & Analyzed: 01/16/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGA0358-BS1)

Prepared & Analyzed: 01/16/23

Specific Conductance (EC) 0.151 0.0100 mmhos/cm 0.150 101 95-105

Duplicate (BGA0358-DUP1)

Source: 2301260-01

Prepared & Analyzed: 01/16/23

Specific Conductance (EC) 0.444 0.0100 mmhos/cm 0.448 0.852 20

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/17/23 12:05

Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
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

January 20, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Jerke UP 8-7 Tank Battery

Work Order #2301276

Enclosed are the results of analyses for samples received by Summit Scientific on 01/16/23 17:26. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely", is written over a light blue rectangular background.

Scott Sheely For Paul Shrewsbury

President



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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 10:42

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS12@14'	2301276-01	Soil	01/16/23 09:40	01/16/23 17:26
SS13@5'	2301276-02	Soil	01/16/23 11:20	01/16/23 17:26
SS14@10'	2301276-03	Soil	01/16/23 11:25	01/16/23 17:26
SS15@14'	2301276-04	Soil	01/16/23 12:50	01/16/23 17:26

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.

2301276

Summit Scientific

S₂

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: Jerke Up 8-7 Tank Battery

Sampler Name: David Vigliani

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested							Special Instructions		
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	(1) pH, EC, SAR	Boron - HWS	TMBs (1,2,4) & (1,3,5)	(2) PAH - 915		(3) Metals - 915	
1	SS12 @ 14'	1/16/23	0940	3			X			X				X	X	X	X	X	X		
2	SS13 @ 5'		1120											X	X	X	X	X	X		
3	SS14 @ 10'		1125																		
4	SS15 @ 14'		1230																		
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by: <i>David Vigliani</i>	Date/Time: 1/16/23 1500	Received by: Tasman's Lock Box	Date/Time: 1/16/23 1500	Turn Around Time Same Day <input checked="" type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard 48 hours <input type="checkbox"/>	(Check) 72 hours Standard	Notes: (1)- only EC (2)- PAHs: benz(a), dibenz(a,h), Fluorene, 1-M, 2-M (3)-Metals: arsenic, Selenium
Relinquished by: Tasman's Lock Box	Date/Time: 1/16/23 1726	Received by: <i>[Signature]</i>	Date/Time: 1/16/23 1726	Sample Integrity: Temperature Upon Receipt: 8-1		
Relinquished by:	Date/Time:	Received by:	Date/Time:	Samples Intact: <input checked="" type="checkbox"/> Yes No		

S₂

Sample Receipt Checklist

S2 Work Order# 2301276Client: Pochasman Client Project ID: Verke up 8-7 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: _____
☐ ☐ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 8.1Thermometer # 1

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

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

Custodian Printed Name

Date/Time

1-16-23



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 10:42

SS12@14'
2301276-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/16/23 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.0052	0.0020	mg/kg	1	BGA0370	01/16/23	01/16/23	EPA 8260B	
Toluene	0.0096	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.017	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.26	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.063	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.045	0.0050	"	"	"	"	"	"	
Naphthalene	0.0082	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	0.67	0.50	"	"	"	"	"	"	

Date Sampled: **01/16/23 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0393	98.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0403	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0465	116 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/16/23 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0371	01/16/23	01/16/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/16/23 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	13.5	108 %	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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 10:42

SS12@14'
2301276-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/16/23 09:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGA0373	01/17/23	01/18/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/16/23 09:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0181	54.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0242	72.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/16/23 09:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	0.105	0.0100	mg/L	1	BGA0387	01/17/23	01/18/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/16/23 09:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	0.476	0.200	mg/kg dry	1	BGA0398	01/17/23	01/18/23	EPA 6020B	
Selenium	0.398	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/16/23 09:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
% Solids	84.3		%	1	BGA0412	01/17/23	01/18/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 10:42

SS12@14'
2301276-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/16/23 09:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.438	0.0100		mmhos/cm	1	BGA0406	01/17/23	01/19/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 10:42

SS13@5'
2301276-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/16/23 11:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0370	01/16/23	01/16/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/16/23 11:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0427	107 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0434	109 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0416	104 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/16/23 11:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0371	01/16/23	01/16/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/16/23 11:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	14.4	115 %	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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 10:42

SS13@5'
2301276-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/16/23 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGA0373	01/17/23	01/18/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/16/23 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0191	57.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0232	69.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/16/23 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.206	0.0100	mg/L	1	BGA0387	01/17/23	01/18/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/16/23 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	7.11	0.200	mg/kg dry	1	BGA0398	01/17/23	01/18/23	EPA 6020B	
Selenium	0.577	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/16/23 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.7		%	1	BGA0412	01/17/23	01/18/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 10:42

SS13@5'
2301276-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/16/23 11:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.542	0.0100		mmhos/cm	1	BGA0406	01/17/23	01/19/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 10:42

SS14@10'
2301276-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/16/23 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGA0370	01/16/23	01/16/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.056	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.0067	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/16/23 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0414	103 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0423	106 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0421	105 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/16/23 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0371	01/16/23	01/16/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/16/23 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	14.7	117 %	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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 10:42

SS14@10'
2301276-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/16/23 11:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGA0373	01/17/23	01/18/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/16/23 11:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0172	51.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0233	69.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/16/23 11:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	0.118	0.0100	mg/L	1	BGA0387	01/17/23	01/18/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/16/23 11:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	0.530	0.200	mg/kg dry	1	BGA0398	01/17/23	01/18/23	EPA 6020B	
Selenium	0.297	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/16/23 11:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
% Solids	84.3		%	1	BGA0412	01/17/23	01/18/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 10:42

SS14@10'
2301276-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/16/23 11:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.432	0.0100		mmhos/cm	1	BGA0406	01/17/23	01/19/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 10:42

SS15@14'
2301276-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/16/23 12:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0370	01/16/23	01/16/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/16/23 12:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0424	106 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0412	103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0410	102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/16/23 12:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0371	01/16/23	01/16/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/16/23 12:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	14.0	112 %	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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 10:42

SS15@14'
2301276-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/16/23 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGA0373	01/17/23	01/18/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/16/23 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0198	59.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0297	89.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/16/23 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0955	0.0100	mg/L	1	BGA0387	01/17/23	01/18/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/16/23 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.729	0.200	mg/kg dry	1	BGA0398	01/17/23	01/18/23	EPA 6020B	
Selenium	0.925	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/16/23 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.1		%	1	BGA0412	01/17/23	01/18/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 10:42

SS15@14'
2301276-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/16/23 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.390	0.0100		mmhos/cm	1	BGA0406	01/17/23	01/19/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 10:42

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 BGA0370 - EPA 5030 Soil MS

Blank (BGA0370-BLK1)

Prepared: 01/16/23 Analyzed: 01/17/23

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	0.0527		"	0.0400		132	50-150			
Surrogate: Toluene-d8	0.0378		"	0.0400		94.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0402		"	0.0400		101	50-150			

LCS (BGA0370-BS1)

Prepared: 01/16/23 Analyzed: 01/17/23

Benzene	0.0835	0.0020	mg/kg	0.100		83.5	70-130			
Toluene	0.0811	0.0050	"	0.100		81.1	70-130			
Ethylbenzene	0.108	0.0050	"	0.100		108	70-130			
m,p-Xylene	0.204	0.010	"	0.200		102	70-130			
o-Xylene	0.102	0.0050	"	0.100		102	70-130			
1,2,4-Trimethylbenzene	0.0977	0.0050	"	0.100		97.7	70-130			
1,3,5-Trimethylbenzene	0.0958	0.0050	"	0.100		95.8	70-130			
Naphthalene	0.108	0.0038	"	0.100		108	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0530		"	0.0400		133	50-150			
Surrogate: Toluene-d8	0.0380		"	0.0400		95.1	50-150			
Surrogate: 4-Bromofluorobenzene	0.0384		"	0.0400		95.9	50-150			

Matrix Spike (BGA0370-MS1)

Source: 2301278-01

Prepared: 01/16/23 Analyzed: 01/17/23

Benzene	0.0839	0.0020	mg/kg	0.100	ND	83.9	70-130			
Toluene	0.0828	0.0050	"	0.100	ND	82.8	70-130			
Ethylbenzene	0.107	0.0050	"	0.100	ND	107	70-130			
m,p-Xylene	0.208	0.010	"	0.200	ND	104	70-130			
o-Xylene	0.103	0.0050	"	0.100	ND	103	70-130			
1,2,4-Trimethylbenzene	0.0967	0.0050	"	0.100	ND	96.7	70-130			
1,3,5-Trimethylbenzene	0.0936	0.0050	"	0.100	ND	93.6	70-130			
Naphthalene	0.0996	0.0038	"	0.100	ND	99.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0539		"	0.0400		135	50-150			
Surrogate: Toluene-d8	0.0387		"	0.0400		96.7	50-150			
Surrogate: 4-Bromofluorobenzene	0.0384		"	0.0400		96.1	50-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 10:42

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 BGA0370 - EPA 5030 Soil MS

Matrix Spike Dup (BGA0370-MSD1)	Source: 2301278-01			Prepared: 01/16/23 Analyzed: 01/17/23						
Benzene	0.0847	0.0020	mg/kg	0.100	ND	84.7	70-130	0.925	30	
Toluene	0.0842	0.0050	"	0.100	ND	84.2	70-130	1.65	30	
Ethylbenzene	0.113	0.0050	"	0.100	ND	113	70-130	5.32	30	
m,p-Xylene	0.242	0.010	"	0.200	ND	121	70-130	15.4	30	
o-Xylene	0.106	0.0050	"	0.100	ND	106	70-130	3.56	30	
1,2,4-Trimethylbenzene	0.121	0.0050	"	0.100	ND	121	70-130	22.5	30	
1,3,5-Trimethylbenzene	0.123	0.0050	"	0.100	ND	123	70-130	27.0	30	
Naphthalene	0.123	0.0038	"	0.100	ND	123	70-130	20.7	30	
Surrogate: 1,2-Dichloroethane-d4	0.0560		"	0.0400		140	50-150			
Surrogate: Toluene-d8	0.0379		"	0.0400		94.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0386		"	0.0400		96.4	50-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 10:42

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 BGA0371 - EPA 3550A

Blank (BGA0371-BLK1)

Prepared: 01/16/23 Analyzed: 01/17/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	7.96		"	12.5		63.7	30-150			

LCS (BGA0371-BS1)

Prepared: 01/16/23 Analyzed: 01/17/23

C10-C28 (DRO)	415	50	mg/kg	500		83.0	70-130			
Surrogate: o-Terphenyl	7.45		"	12.5		59.6	30-150			

Matrix Spike (BGA0371-MS1)

Source: 2301278-01

Prepared: 01/16/23 Analyzed: 01/17/23

C10-C28 (DRO)	398	50	mg/kg	500	ND	79.6	70-130			
Surrogate: o-Terphenyl	8.16		"	12.5		65.3	30-150			

Matrix Spike Dup (BGA0371-MSD1)

Source: 2301278-01

Prepared: 01/16/23 Analyzed: 01/17/23

C10-C28 (DRO)	423	50	mg/kg	500	ND	84.6	70-130	6.04	20	
Surrogate: o-Terphenyl	7.70		"	12.5		61.6	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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 10:42

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGA0373 - EPA 5030 Soil MS

Blank (BGA0373-BLK1)

Prepared & Analyzed: 01/17/23

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	0.0315		"	0.0333		94.5	40-150			
Surrogate: Fluoranthene-d10	0.0349		"	0.0333		105	40-150			

LCS (BGA0373-BS1)

Prepared & Analyzed: 01/17/23

Acenaphthene	0.0375	0.00500	mg/kg	0.0333	112	31-137
Anthracene	0.0371	0.00500	"	0.0333	111	30-120
Benzo (a) anthracene	0.0345	0.00500	"	0.0333	104	30-120
Benzo (a) pyrene	0.0354	0.00500	"	0.0333	106	30-120
Benzo (b) fluoranthene	0.0363	0.00500	"	0.0333	109	30-120
Benzo (k) fluoranthene	0.0372	0.00500	"	0.0333	112	30-120
Chrysene	0.0356	0.00500	"	0.0333	107	30-120
Dibenz (a,h) anthracene	0.0328	0.00500	"	0.0333	98.5	30-120
Fluoranthene	0.0318	0.00500	"	0.0333	95.3	30-120
Fluorene	0.0374	0.00500	"	0.0333	112	30-120
Indeno (1,2,3-cd) pyrene	0.0354	0.00500	"	0.0333	106	30-120
Pyrene	0.0264	0.00500	"	0.0333	79.3	35-142
1-Methylnaphthalene	0.0369	0.00500	"	0.0333	111	35-142
2-Methylnaphthalene	0.0366	0.00500	"	0.0333	110	35-142
Surrogate: 2-Methylnaphthalene-d10	0.0304		"	0.0333	91.2	40-150
Surrogate: Fluoranthene-d10	0.0387		"	0.0333	116	40-150

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 10:42

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 BGA0373 - EPA 5030 Soil MS

Matrix Spike (BGA0373-MS1)

Source: 2301241-01

Prepared & Analyzed: 01/17/23

Acenaphthene	0.0237	0.00500	mg/kg	0.0333	ND	71.1	31-137		
Anthracene	0.0239	0.00500	"	0.0333	ND	71.6	30-120		
Benzo (a) anthracene	0.0245	0.00500	"	0.0333	ND	73.5	30-120		
Benzo (a) pyrene	0.0249	0.00500	"	0.0333	0.00186	69.0	30-120		
Benzo (b) fluoranthene	0.0262	0.00500	"	0.0333	ND	78.7	30-120		
Benzo (k) fluoranthene	0.0239	0.00500	"	0.0333	0.00206	65.7	30-120		
Chrysene	0.0244	0.00500	"	0.0333	ND	73.2	30-120		
Dibenz (a,h) anthracene	0.0187	0.00500	"	0.0333	ND	56.1	30-120		
Fluoranthene	0.0207	0.00500	"	0.0333	ND	62.0	30-120		
Fluorene	0.0237	0.00500	"	0.0333	ND	71.1	30-120		
Indeno (1,2,3-cd) pyrene	0.0238	0.00500	"	0.0333	0.00197	65.5	30-120		
Pyrene	0.0188	0.00500	"	0.0333	ND	56.3	35-142		
1-Methylnaphthalene	0.0257	0.00500	"	0.0333	ND	77.1	15-130		
2-Methylnaphthalene	0.0273	0.00500	"	0.0333	ND	81.8	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0242		"	0.0333		72.6	40-150		
Surrogate: Fluoranthene-d10	0.0252		"	0.0333		75.5	40-150		

Matrix Spike Dup (BGA0373-MSD1)

Source: 2301241-01

Prepared & Analyzed: 01/17/23

Acenaphthene	0.0236	0.00500	mg/kg	0.0333	ND	70.9	31-137	0.282	30
Anthracene	0.0233	0.00500	"	0.0333	ND	69.8	30-120	2.54	30
Benzo (a) anthracene	0.0247	0.00500	"	0.0333	ND	74.1	30-120	0.809	30
Benzo (a) pyrene	0.0235	0.00500	"	0.0333	0.00186	64.8	30-120	5.71	30
Benzo (b) fluoranthene	0.0251	0.00500	"	0.0333	ND	75.2	30-120	4.57	30
Benzo (k) fluoranthene	0.0234	0.00500	"	0.0333	0.00206	64.0	30-120	2.29	30
Chrysene	0.0244	0.00500	"	0.0333	ND	73.2	30-120	0.0464	30
Dibenz (a,h) anthracene	0.0184	0.00500	"	0.0333	ND	55.2	30-120	1.57	30
Fluoranthene	0.0196	0.00500	"	0.0333	ND	58.7	30-120	5.48	30
Fluorene	0.0237	0.00500	"	0.0333	ND	71.0	30-120	0.186	30
Indeno (1,2,3-cd) pyrene	0.0229	0.00500	"	0.0333	0.00197	62.8	30-120	3.89	30
Pyrene	0.0187	0.00500	"	0.0333	ND	56.0	35-142	0.693	30
1-Methylnaphthalene	0.0242	0.00500	"	0.0333	ND	72.7	15-130	5.89	50
2-Methylnaphthalene	0.0261	0.00500	"	0.0333	ND	78.2	15-130	4.58	50
Surrogate: 2-Methylnaphthalene-d10	0.0217		"	0.0333		65.2	40-150		
Surrogate: Fluoranthene-d10	0.0254		"	0.0333		76.3	40-150		

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 10:42

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 BGA0387 - EPA 3050B

Blank (BGA0387-BLK1)

Prepared: 01/17/23 Analyzed: 01/18/23

Boron ND 0.0100 mg/L

LCS (BGA0387-BS1)

Prepared: 01/17/23 Analyzed: 01/18/23

Boron 4.87 0.0100 mg/L 5.00 97.4 80-120

Duplicate (BGA0387-DUP1)

Source: 2301029-13

Prepared: 01/17/23 Analyzed: 01/18/23

Boron 0.420 0.0100 mg/L 0.422 0.394 20

Matrix Spike (BGA0387-MS1)

Source: 2301029-13

Prepared: 01/17/23 Analyzed: 01/18/23

Boron 4.98 0.0100 mg/L 5.00 0.422 91.1 75-125

Matrix Spike Dup (BGA0387-MSD1)

Source: 2301029-13

Prepared: 01/17/23 Analyzed: 01/18/23

Boron 5.18 0.0100 mg/L 5.00 0.422 95.2 75-125 4.02 25

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 10:42

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 BGA0398 - EPA 3050B

Blank (BGA0398-BLK1)

Prepared: 01/17/23 Analyzed: 01/18/23

Arsenic	ND	0.200	mg/kg wet
Selenium	ND	0.260	"

LCS (BGA0398-BS1)

Prepared: 01/17/23 Analyzed: 01/18/23

Arsenic	45.8	0.200	mg/kg wet	40.0	115	80-120
Selenium	4.10	0.260	"	4.00	102	80-120

Duplicate (BGA0398-DUP1)

Source: 2301275-01

Prepared: 01/17/23 Analyzed: 01/18/23

Arsenic	ND	0.200	mg/kg dry	ND			20
Selenium	0.548	0.260	"	0.511		6.91	20

Matrix Spike (BGA0398-MS1)

Source: 2301275-01

Prepared: 01/17/23 Analyzed: 01/18/23

Arsenic	39.0	0.200	mg/kg dry	49.2	ND	79.2	75-125
Selenium	5.07	0.260	"	4.92	0.511	92.6	75-125

Matrix Spike Dup (BGA0398-MSD1)

Source: 2301275-01

Prepared: 01/17/23 Analyzed: 01/18/23

Arsenic	48.7	0.200	mg/kg dry	49.2	ND	98.9	75-125	22.2	25
Selenium	6.18	0.260	"	4.92	0.511	115	75-125	19.7	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.



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

01/20/23 10:42

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

Summit Scientific

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

Batch BGA0412 - General Preparation

Duplicate (BGA0412-DUP1)

Source: 2301161-01

Prepared: 01/17/23 Analyzed: 01/18/23

% Solids	90.2	%	90.3	0.208	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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 10:42

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013 - Quality Control
Summit Scientific

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

Batch BGA0406 - General Preparation

Blank (BGA0406-BLK1)

Prepared: 01/17/23 Analyzed: 01/19/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGA0406-BS1)

Prepared: 01/17/23 Analyzed: 01/19/23

Specific Conductance (EC) 0.145 0.0100 mmhos/cm 0.150 96.5 95-105

Duplicate (BGA0406-DUP1)

Source: 2301276-01

Prepared: 01/17/23 Analyzed: 01/19/23

Specific Conductance (EC) 0.424 0.0100 mmhos/cm 0.438 3.34 20

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: Jerke UP 8-7 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/20/23 10:42

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

January 23, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Jerke UP 8-7 Tank Battery

Work Order #2301298

Enclosed are the results of analyses for samples received by Summit Scientific on 01/17/23 17:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely", is written over a light blue rectangular background.

Scott Sheely For Paul Shrewsbury

President



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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/23/23 11:31

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS16@14'	2301298-01	Soil	01/17/23 09:50	01/17/23 17:40
SS17@14.5	2301298-02	Soil	01/17/23 10:10	01/17/23 17:40
SS18@14'	2301298-03	Soil	01/17/23 12:35	01/17/23 17:40

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


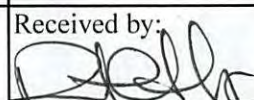
S₂

2301298

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: Jerke Up 8-7 Tank Battery
Sampler Name: David Vigil Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions	
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	pH, EC, SAR	Boron - HWS	TMBs (1,2,4) & (1,3,5)	PAH - 915	Metals - 915		
1	SS16@14'	1/17/23	0950	3			X			X				X	X	X	X	X	X	X	pH, EC, SAR by saturated paste
2	SS17@14.5'	↓	1010	3			↓			↓				↓	↓	↓	↓	↓	↓		
3	SS18@14'	↓	1235	3			↓			↓				↓	↓	↓	↓	↓	↓		
4																					
5																					
6																					
7																					
8																					
9																					
10																					
Relinquished by: 		Date/Time: 1/17/23 1545		Received by: Tasman's Lock Box		Date/Time: 1/17/23 1545		Turn Around Time (Check)		Same Day <input checked="" type="checkbox"/> 72 hours		24 hours		Standard		Notes: (1) - only EC					
Relinquished by: Tasman's Lock Box		Date/Time: 1/17/23 1740		Received by: 		Date/Time: 1/17/23 1740		48 hours		Sample Integrity:		Temperature Upon Receipt: 8.1		Samples Intact: <input checked="" type="checkbox"/> Yes No		(2) - PAHs: benz(a), dibenz(a,h), Fluorene, 1-M, 2-M					
Relinquished by:		Date/Time:		Received by:		Date/Time:										(3) - Metals: arsenic, Selenium					

S₂

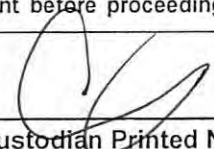
Sample Receipt Checklist

S2 Work Order# 2301298Client: BoltzmanClient Project ID: Jerice UP 8-Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: _____

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------

Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 8.1Thermometer # 1

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

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

 Custodian Printed Name

1-17-23
 Date/Time



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/23/23 11:31

SS16@14'
2301298-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/17/23 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGA0418	01/17/23	01/18/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/17/23 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0450	112 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0399	99.7 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0421	105 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/17/23 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0419	01/17/23	01/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/17/23 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	17.0	136 %	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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/23/23 11:31

SS16@14'
2301298-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/17/23 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGA0421	01/18/23	01/19/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/17/23 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0324	97.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0280	84.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/17/23 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0542	0.0100	mg/L	1	BGA0460	01/19/23	01/21/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/17/23 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.358	0.200	mg/kg dry	1	BGA0431	01/18/23	01/20/23	EPA 6020B	
Selenium	ND	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/17/23 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.8		%	1	BGA0441	01/18/23	01/18/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/23/23 11:31

SS16@14'
2301298-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/17/23 09:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.232	0.0100		mmhos/cm	1	BGA0406	01/17/23	01/19/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/23/23 11:31

SS17@14.5
2301298-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/17/23 10:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0418	01/17/23	01/18/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/17/23 10:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0431	108 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0413	103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0410	103 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/17/23 10:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0419	01/17/23	01/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/17/23 10:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	15.4	123 %	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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/23/23 11:31

SS17@14.5
2301298-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/17/23 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGA0421	01/18/23	01/19/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/17/23 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0259	77.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0256	76.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/17/23 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0576	0.0100	mg/L	1	BGA0460	01/19/23	01/21/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/17/23 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.345	0.200	mg/kg dry	1	BGA0431	01/18/23	01/20/23	EPA 6020B	
Selenium	ND	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/17/23 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.8		%	1	BGA0441	01/18/23	01/18/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/23/23 11:31

SS17@14.5
2301298-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/17/23 10:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.468	0.0100		mmhos/cm	1	BGA0406	01/17/23	01/19/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/23/23 11:31

SS18@14'
2301298-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/17/23 12:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0418	01/17/23	01/18/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/17/23 12:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0446	112 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0394	98.6 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0414	104 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/17/23 12:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0419	01/17/23	01/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/17/23 12:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	17.8	142 %	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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/23/23 11:31

SS18@14'
2301298-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/17/23 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGA0421	01/18/23	01/19/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/17/23 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0277	83.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0262	78.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/17/23 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0565	0.0100	mg/L	1	BGA0460	01/19/23	01/21/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/17/23 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.418	0.200	mg/kg dry	1	BGA0431	01/18/23	01/20/23	EPA 6020B	
Selenium	ND	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/17/23 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.2		%	1	BGA0441	01/18/23	01/18/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/23/23 11:31

SS18@14'
2301298-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/17/23 12:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.334	0.0100		mmhos/cm	1	BGA0406	01/17/23	01/19/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/23/23 11:31

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 BGA0418 - EPA 5030 Soil MS

Blank (BGA0418-BLK1)

Prepared: 01/17/23 Analyzed: 01/18/23

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	0.0510		"	0.0400		128	50-150			
Surrogate: Toluene-d8	0.0376		"	0.0400		94.0	50-150			
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400		101	50-150			

LCS (BGA0418-BS1)

Prepared: 01/17/23 Analyzed: 01/18/23

Benzene	0.106	0.0020	mg/kg	0.100		106	70-130			
Toluene	0.114	0.0050	"	0.100		114	70-130			
Ethylbenzene	0.104	0.0050	"	0.100		104	70-130			
m,p-Xylene	0.211	0.010	"	0.200		105	70-130			
o-Xylene	0.104	0.0050	"	0.100		104	70-130			
1,2,4-Trimethylbenzene	0.0988	0.0050	"	0.100		98.8	70-130			
1,3,5-Trimethylbenzene	0.102	0.0050	"	0.100		102	70-130			
Naphthalene	0.111	0.0038	"	0.100		111	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0497		"	0.0400		124	50-150			
Surrogate: Toluene-d8	0.0377		"	0.0400		94.2	50-150			
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400		101	50-150			

Matrix Spike (BGA0418-MS1)

Source: 2301292-01

Prepared: 01/17/23 Analyzed: 01/18/23

Benzene	0.114	0.0020	mg/kg	0.100	ND	114	70-130			
Toluene	0.103	0.0050	"	0.100	ND	103	70-130			
Ethylbenzene	0.105	0.0050	"	0.100	ND	105	70-130			
m,p-Xylene	0.209	0.010	"	0.200	ND	105	70-130			
o-Xylene	0.103	0.0050	"	0.100	ND	103	70-130			
1,2,4-Trimethylbenzene	0.102	0.0050	"	0.100	ND	102	70-130			
1,3,5-Trimethylbenzene	0.0996	0.0050	"	0.100	ND	99.6	70-130			
Naphthalene	0.106	0.0038	"	0.100	ND	106	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0521		"	0.0400		130	50-150			
Surrogate: Toluene-d8	0.0382		"	0.0400		95.5	50-150			
Surrogate: 4-Bromofluorobenzene	0.0414		"	0.0400		104	50-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/23/23 11:31

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 BGA0418 - EPA 5030 Soil MS

Matrix Spike Dup (BGA0418-MSD1)	Source: 2301292-01			Prepared: 01/17/23 Analyzed: 01/18/23						
Benzene	0.115	0.0020	mg/kg	0.100	ND	115	70-130	0.210	30	
Toluene	0.104	0.0050	"	0.100	ND	104	70-130	0.843	30	
Ethylbenzene	0.101	0.0050	"	0.100	ND	101	70-130	3.87	30	
m,p-Xylene	0.211	0.010	"	0.200	ND	105	70-130	0.614	30	
o-Xylene	0.105	0.0050	"	0.100	ND	105	70-130	2.28	30	
1,2,4-Trimethylbenzene	0.106	0.0050	"	0.100	ND	106	70-130	4.17	30	
1,3,5-Trimethylbenzene	0.102	0.0050	"	0.100	ND	102	70-130	2.65	30	
Naphthalene	0.0994	0.0038	"	0.100	ND	99.4	70-130	6.06	30	
Surrogate: 1,2-Dichloroethane-d4	0.0519		"	0.0400		130	50-150			
Surrogate: Toluene-d8	0.0380		"	0.0400		94.9	50-150			
Surrogate: 4-Bromofluorobenzene	0.0416		"	0.0400		104	50-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/23/23 11:31

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 BGA0419 - EPA 3550A

Blank (BGA0419-BLK1)

Prepared: 01/17/23 Analyzed: 01/18/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	13.0		"	12.5		104	30-150			

LCS (BGA0419-BS1)

Prepared: 01/17/23 Analyzed: 01/18/23

C10-C28 (DRO)	506	50	mg/kg	500		101	70-130			
Surrogate: o-Terphenyl	12.7		"	12.5		102	30-150			

Matrix Spike (BGA0419-MS1)

Source: 2301292-01

Prepared: 01/17/23 Analyzed: 01/18/23

C10-C28 (DRO)	480	50	mg/kg	500	10.8	93.7	70-130			
Surrogate: o-Terphenyl	12.7		"	12.5		101	30-150			

Matrix Spike Dup (BGA0419-MSD1)

Source: 2301292-01

Prepared: 01/17/23 Analyzed: 01/18/23

C10-C28 (DRO)	454	50	mg/kg	500	10.8	88.6	70-130	5.49	20	
Surrogate: o-Terphenyl	12.3		"	12.5		98.5	30-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/23/23 11:31

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 BGA0421 - EPA 5030 Soil MS

Blank (BGA0421-BLK1)

Prepared & Analyzed: 01/18/23

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	0.0291		"	0.0333		87.3	40-150			
Surrogate: Fluoranthene-d10	0.0348		"	0.0333		104	40-150			

LCS (BGA0421-BS1)

Prepared & Analyzed: 01/18/23

Acenaphthene	0.0314	0.00500	mg/kg	0.0333		94.1	31-137			
Anthracene	0.0338	0.00500	"	0.0333		101	30-120			
Benzo (a) anthracene	0.0294	0.00500	"	0.0333		88.2	30-120			
Benzo (a) pyrene	0.0302	0.00500	"	0.0333		90.6	30-120			
Benzo (b) fluoranthene	0.0304	0.00500	"	0.0333		91.3	30-120			
Benzo (k) fluoranthene	0.0300	0.00500	"	0.0333		90.0	30-120			
Chrysene	0.0304	0.00500	"	0.0333		91.3	30-120			
Dibenz (a,h) anthracene	0.0282	0.00500	"	0.0333		84.7	30-120			
Fluoranthene	0.0327	0.00500	"	0.0333		98.0	30-120			
Fluorene	0.0326	0.00500	"	0.0333		97.9	30-120			
Indeno (1,2,3-cd) pyrene	0.0302	0.00500	"	0.0333		90.5	30-120			
Pyrene	0.0302	0.00500	"	0.0333		90.6	35-142			
1-Methylnaphthalene	0.0319	0.00500	"	0.0333		95.8	35-142			
2-Methylnaphthalene	0.0326	0.00500	"	0.0333		97.7	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0331		"	0.0333		99.2	40-150			
Surrogate: Fluoranthene-d10	0.0343		"	0.0333		103	40-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/23/23 11:31

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGA0421 - EPA 5030 Soil MS

Matrix Spike (BGA0421-MS1)			Source: 2301293-01		Prepared & Analyzed: 01/18/23					
Acenaphthene	0.0359	0.00500	mg/kg	0.0333	ND	108	31-137			
Anthracene	0.0213	0.00500	"	0.0333	ND	64.0	30-120			
Benzo (a) anthracene	0.0209	0.00500	"	0.0333	0.00309	53.5	30-120			
Benzo (a) pyrene	0.0176	0.00500	"	0.0333	0.00219	46.2	30-120			
Benzo (b) fluoranthene	0.0178	0.00500	"	0.0333	0.00351	42.8	30-120			
Benzo (k) fluoranthene	0.0173	0.00500	"	0.0333	ND	52.0	30-120			
Chrysene	0.0281	0.00500	"	0.0333	0.00362	73.5	30-120			
Dibenz (a,h) anthracene	0.0154	0.00500	"	0.0333	ND	46.3	30-120			
Fluoranthene	0.0226	0.00500	"	0.0333	0.00994	38.1	30-120			
Fluorene	0.0503	0.00500	"	0.0333	ND	151	30-120			QM-01
Indeno (1,2,3-cd) pyrene	0.0166	0.00500	"	0.0333	0.00168	44.9	30-120			
Pyrene	0.0215	0.00500	"	0.0333	0.00605	46.3	35-142			
1-Methylnaphthalene	0.0217	0.00500	"	0.0333	ND	65.1	15-130			
2-Methylnaphthalene	0.0188	0.00500	"	0.0333	ND	56.4	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0297		"	0.0333		89.2	40-150			
Surrogate: Fluoranthene-d10	0.0213		"	0.0333		63.9	40-150			

Matrix Spike Dup (BGA0421-MSD1)			Source: 2301293-01		Prepared & Analyzed: 01/18/23					
Acenaphthene	0.0320	0.00500	mg/kg	0.0333	ND	96.1	31-137	11.5	30	
Anthracene	0.0206	0.00500	"	0.0333	ND	61.7	30-120	3.66	30	
Benzo (a) anthracene	0.0208	0.00500	"	0.0333	0.00309	53.2	30-120	0.541	30	
Benzo (a) pyrene	0.0190	0.00500	"	0.0333	0.00219	50.4	30-120	7.65	30	
Benzo (b) fluoranthene	0.0195	0.00500	"	0.0333	0.00351	48.0	30-120	9.35	30	
Benzo (k) fluoranthene	0.0185	0.00500	"	0.0333	ND	55.6	30-120	6.68	30	
Chrysene	0.0248	0.00500	"	0.0333	0.00362	63.5	30-120	12.6	30	
Dibenz (a,h) anthracene	0.0160	0.00500	"	0.0333	ND	48.1	30-120	3.68	30	
Fluoranthene	0.0224	0.00500	"	0.0333	0.00994	37.3	30-120	1.16	30	
Fluorene	0.0476	0.00500	"	0.0333	ND	143	30-120	5.58	30	QM-01
Indeno (1,2,3-cd) pyrene	0.0205	0.00500	"	0.0333	0.00168	56.6	30-120	21.0	30	
Pyrene	0.0212	0.00500	"	0.0333	0.00605	45.6	35-142	1.15	30	
1-Methylnaphthalene	0.0229	0.00500	"	0.0333	ND	68.6	15-130	5.27	50	
2-Methylnaphthalene	0.0200	0.00500	"	0.0333	ND	60.0	15-130	6.30	50	
Surrogate: 2-Methylnaphthalene-d10	0.0233		"	0.0333		69.9	40-150			
Surrogate: Fluoranthene-d10	0.0213		"	0.0333		63.9	40-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/23/23 11:31

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 BGA0460 - EPA 3050B

Blank (BGA0460-BLK1)

Prepared: 01/19/23 Analyzed: 01/21/23

Boron ND 0.0100 mg/L

LCS (BGA0460-BS1)

Prepared: 01/19/23 Analyzed: 01/21/23

Boron 5.78 0.0100 mg/L 5.00 116 80-120

Duplicate (BGA0460-DUP1)

Source: 2301265-01

Prepared: 01/19/23 Analyzed: 01/21/23

Boron 0.137 0.0100 mg/L 0.140 2.11 20

Matrix Spike (BGA0460-MS1)

Source: 2301265-01

Prepared: 01/19/23 Analyzed: 01/21/23

Boron 5.83 0.0100 mg/L 5.00 0.140 114 75-125

Matrix Spike Dup (BGA0460-MSD1)

Source: 2301265-01

Prepared: 01/19/23 Analyzed: 01/21/23

Boron 5.83 0.0100 mg/L 5.00 0.140 114 75-125 0.0582 25

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/23/23 11:31

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 BGA0431 - EPA 3050B

Blank (BGA0431-BLK1)

Prepared: 01/18/23 Analyzed: 01/19/23

Arsenic	ND	0.200	mg/kg wet
Selenium	ND	0.260	"

LCS (BGA0431-BS1)

Prepared: 01/18/23 Analyzed: 01/19/23

Arsenic	34.5	0.200	mg/kg wet	40.0	86.3	80-120
Selenium	4.81	0.260	"	4.00	120	80-120

Duplicate (BGA0431-DUP1)

Source: 2301142-11

Prepared: 01/18/23 Analyzed: 01/19/23

Arsenic	3.74	0.200	mg/kg dry	3.74	0.0776	20
Selenium	0.672	0.260	"	0.649	3.51	20

Matrix Spike (BGA0431-MS1)

Source: 2301142-11

Prepared: 01/18/23 Analyzed: 01/19/23

Arsenic	44.4	0.200	mg/kg dry	48.4	3.74	84.1	75-125
Selenium	6.48	0.260	"	4.84	0.649	121	75-125

Matrix Spike Dup (BGA0431-MSD1)

Source: 2301142-11

Prepared: 01/18/23 Analyzed: 01/19/23

Arsenic	44.8	0.200	mg/kg dry	48.4	3.74	85.0	75-125	1.02	25
Selenium	6.24	0.260	"	4.84	0.649	116	75-125	3.75	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.



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/23/23 11:31

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

Summit Scientific

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

Batch BGA0441 - General Preparation

Duplicate (BGA0441-DUP1)

Source: 2301292-01

Prepared & Analyzed: 01/18/23

% Solids	82.7	%	83.2	0.677	20
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Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/23/23 11:31

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013 - Quality Control
Summit Scientific

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

Batch BGA0406 - General Preparation

Blank (BGA0406-BLK1)

Prepared: 01/17/23 Analyzed: 01/19/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGA0406-BS1)

Prepared: 01/17/23 Analyzed: 01/19/23

Specific Conductance (EC) 0.145 0.0100 mmhos/cm 0.150 96.5 95-105

Duplicate (BGA0406-DUP1)

Source: 2301276-01

Prepared: 01/17/23 Analyzed: 01/19/23

Specific Conductance (EC) 0.424 0.0100 mmhos/cm 0.438 3.34 20

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/23/23 11:31

Notes and Definitions

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

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

January 24, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Jerke UP 8-7 Tank Battery

Work Order #2301334

Enclosed are the results of analyses for samples received by Summit Scientific on 01/19/23 18:05. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely", is written over a light blue rectangular background.

Scott Sheely For Paul Shrewsbury
President



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/24/23 13:07

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS19@5'	2301334-01	Soil	01/19/23 11:10	01/19/23 18:05
SS20@10'	2301334-02	Soil	01/19/23 11:15	01/19/23 18:05
SS21@14'	2301334-03	Soil	01/19/23 11:50	01/19/23 18:05
SS22@5'	2301334-04	Soil	01/19/23 14:30	01/19/23 18:05
SS23@10'	2301334-05	Soil	01/19/23 14:35	01/19/23 18:05
SS24@14'	2301334-06	Soil	01/19/23 14:40	01/19/23 18:05

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

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

2301334

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: Jerke Up 8-7 Tank Battery

Sampler Name: David Vignil

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	(1) pH, EC, SAR	Boron - HWS	TMBs (1,2,4) & (1,3,5)	(2) PAH - 915	(3) Metals - 915	
1	SS19 @ 5'	1/19/23	1110	3			X			X			X	X	X	X	X	X	X	pH, EC, SAR by saturated paste
2	SS20 @ 10'		1115																	
3	SS21 @ 14'		1150																	
4	SS22 @ 5'		1430																	
5	SS23 @ 10'		1435																	
6	SS24 @ 14'		1440																	
7																				
8																				
9																				
10																				

Relinquished by: <i>David Vignil</i>	Date/Time: 1/19/23 1645	Received by: Tasman's Lock Box	Date/Time: 1/19/23 1645	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard 48 hours <input type="checkbox"/>	Notes: (1) - Only EC (2) - PAHs: benz(a), dibenz(a,h), Fluorene, 1-M, 2-M (3) - Metals: arsenic, Selenium
Relinquished by: Tasman's Lock Box	Date/Time: 1/19/23 1805	Received by: <i>Gul Br</i>	Date/Time: 1/19/23 1805	Sample Integrity: Temperature Upon Receipt: 3.6	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

S₂

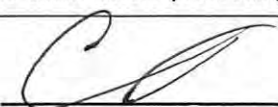
Sample Receipt Checklist

S2 Work Order# 2301334Client: PDC/ Tasman Client Project ID: Jerke Up 8-7 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: _____

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------

Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 3-6 Thermometer # ☐

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

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

 Custodian Printed Name

1.19.23
 Date/Time



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/24/23 13:07

SS19@5'
2301334-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/19/23 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0492	01/19/23	01/19/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/19/23 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0319	79.7 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0356	89.0 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0392	98.0 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/19/23 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0493	01/19/23	01/19/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/19/23 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	12.2	97.2 %	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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/24/23 13:07

SS19@5'
2301334-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/19/23 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGA0496	01/20/23	01/20/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/19/23 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0228	68.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0270	80.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/19/23 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.289	0.0100	mg/L	1	BGA0494	01/19/23	01/21/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/19/23 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	8.68	0.200	mg/kg dry	1	BGA0489	01/19/23	01/21/23	EPA 6020B	
Selenium	0.731	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/19/23 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.5		%	1	BGA0495	01/20/23	01/20/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/24/23 13:07

SS19@5'
2301334-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/19/23 11:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.859	0.0100		mmhos/cm	1	BGA0490	01/19/23	01/19/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/24/23 13:07

SS20@10'
2301334-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/19/23 11:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0492	01/19/23	01/19/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/19/23 11:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0371	92.8 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0376	94.1 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0424	106 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/19/23 11:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0493	01/19/23	01/19/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/19/23 11:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	16.1	129 %	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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/24/23 13:07

SS20@10'
2301334-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/19/23 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGA0496	01/20/23	01/20/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/19/23 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0218	65.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0257	77.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/19/23 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0491	0.0100	mg/L	1	BGA0494	01/19/23	01/21/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/19/23 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BGA0489	01/19/23	01/21/23	EPA 6020B	
Selenium	0.348	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/19/23 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.9		%	1	BGA0495	01/20/23	01/20/23	Calculation	

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/24/23 13:07

SS20@10'
2301334-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods


Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/19/23 11:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.350	0.0100		mmhos/cm	1	BGA0490	01/19/23	01/19/23	EPA 120.1	

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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/24/23 13:07

SS21@14'
2301334-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/19/23 11:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0492	01/19/23	01/19/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/19/23 11:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0412	103 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0413	103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0443	111 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/19/23 11:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0493	01/19/23	01/19/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/19/23 11:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	7.72	61.7 %	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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/24/23 13:07

SS21@14'
2301334-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/19/23 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGA0496	01/20/23	01/20/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/19/23 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0207	62.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0223	66.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/19/23 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0589	0.0100	mg/L	1	BGA0494	01/19/23	01/21/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/19/23 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.476	0.200	mg/kg dry	1	BGA0489	01/19/23	01/21/23	EPA 6020B	
Selenium	0.585	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/19/23 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.1		%	1	BGA0495	01/20/23	01/20/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/24/23 13:07

SS21@14'
2301334-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/19/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.600	0.0100		mmhos/cm	1	BGA0490	01/19/23	01/19/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/24/23 13:07

SS22@5'
2301334-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/19/23 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0492	01/19/23	01/19/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/19/23 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0380	95.1 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0382	95.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0428	107 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/19/23 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0493	01/19/23	01/19/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/19/23 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	17.5	140 %	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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/24/23 13:07

SS22@5'
2301334-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/19/23 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGA0496	01/20/23	01/20/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/19/23 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0218	65.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0265	79.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/19/23 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	0.120	0.0100	mg/L	1	BGA0494	01/19/23	01/21/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/19/23 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	1.16	0.200	mg/kg dry	1	BGA0489	01/19/23	01/21/23	EPA 6020B	
Selenium	0.587	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/19/23 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
% Solids	84.2		%	1	BGA0495	01/20/23	01/20/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/24/23 13:07

SS22@5'
2301334-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/19/23 14:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.603	0.0100		mmhos/cm	1	BGA0490	01/19/23	01/19/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/24/23 13:07

SS23@10'
2301334-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/19/23 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0492	01/19/23	01/19/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/19/23 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0385	96.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0351	87.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0406	102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/19/23 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0493	01/19/23	01/19/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/19/23 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	14.8	119 %	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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/24/23 13:07

SS23@10'
2301334-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/19/23 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGA0496	01/20/23	01/20/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/19/23 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0261	78.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0288	86.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/19/23 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0482	0.0100	mg/L	1	BGA0494	01/19/23	01/21/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/19/23 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.285	0.200	mg/kg dry	1	BGA0489	01/19/23	01/21/23	EPA 6020B	
Selenium	0.403	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/19/23 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.4		%	1	BGA0495	01/20/23	01/20/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/24/23 13:07

SS23@10'
2301334-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/19/23 14:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.448	0.0100		mmhos/cm	1	BGA0490	01/19/23	01/19/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/24/23 13:07

SS24@14'
2301334-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/19/23 14:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0492	01/19/23	01/19/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/19/23 14:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0376	94.1 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0382	95.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0419	105 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/19/23 14:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0493	01/19/23	01/19/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/19/23 14:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	8.61	68.9 %	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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/24/23 13:07

SS24@14'
2301334-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/19/23 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGA0496	01/20/23	01/20/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/19/23 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0226	67.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0237	71.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/19/23 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0687	0.0100	mg/L	1	BGA0494	01/19/23	01/21/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/19/23 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BGA0489	01/19/23	01/21/23	EPA 6020B	
Selenium	0.276	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/19/23 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.1		%	1	BGA0495	01/20/23	01/20/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/24/23 13:07

SS24@14'
2301334-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/19/23 14:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.510	0.0100		mmhos/cm	1	BGA0490	01/19/23	01/19/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/24/23 13:07

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 BGA0492 - EPA 5030 Soil MS

Blank (BGA0492-BLK1)

Prepared & Analyzed: 01/19/23

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	0.0558	"	0.0400	139	50-150
Surrogate: Toluene-d8	0.0425	"	0.0400	106	50-150
Surrogate: 4-Bromofluorobenzene	0.0590	"	0.0400	148	50-150

LCS (BGA0492-BS1)

Prepared & Analyzed: 01/19/23

Benzene	0.0670	0.0020	mg/kg	0.0750	89.4	70-130
Toluene	0.0850	0.0050	"	0.0750	113	70-130
Ethylbenzene	0.0813	0.0050	"	0.0750	108	70-130
m,p-Xylene	0.171	0.010	"	0.150	114	70-130
o-Xylene	0.0852	0.0050	"	0.0750	114	70-130
1,2,4-Trimethylbenzene	0.0831	0.0050	"	0.0750	111	70-130
1,3,5-Trimethylbenzene	0.0846	0.0050	"	0.0750	113	70-130
Naphthalene	0.0532	0.0038	"	0.0750	70.9	70-130

Surrogate: 1,2-Dichloroethane-d4	0.0371	"	0.0400	92.8	50-150
Surrogate: Toluene-d8	0.0456	"	0.0400	114	50-150
Surrogate: 4-Bromofluorobenzene	0.0414	"	0.0400	103	50-150

Matrix Spike (BGA0492-MS1)

Source: 2301334-01

Prepared & Analyzed: 01/19/23

Benzene	0.0646	0.0020	mg/kg	0.0750	ND	86.1	70-130
Toluene	0.0678	0.0050	"	0.0750	ND	90.4	70-130
Ethylbenzene	0.0774	0.0050	"	0.0750	ND	103	70-130
m,p-Xylene	0.153	0.010	"	0.150	ND	102	70-130
o-Xylene	0.0785	0.0050	"	0.0750	ND	105	70-130
1,2,4-Trimethylbenzene	0.0729	0.0050	"	0.0750	ND	97.2	70-130
1,3,5-Trimethylbenzene	0.0718	0.0050	"	0.0750	ND	95.8	70-130
Naphthalene	0.0624	0.0038	"	0.0750	ND	83.2	70-130

Surrogate: 1,2-Dichloroethane-d4	0.0328	"	0.0400	82.1	50-150
Surrogate: Toluene-d8	0.0373	"	0.0400	93.2	50-150
Surrogate: 4-Bromofluorobenzene	0.0404	"	0.0400	101	50-150

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/24/23 13:07

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 BGA0492 - EPA 5030 Soil MS

Matrix Spike Dup (BGA0492-MSD1)	Source: 2301334-01			Prepared & Analyzed: 01/19/23						
Benzene	0.0680	0.0020	mg/kg	0.0750	ND	90.6	70-130	5.11	30	
Toluene	0.0745	0.0050	"	0.0750	ND	99.3	70-130	9.40	30	
Ethylbenzene	0.0807	0.0050	"	0.0750	ND	108	70-130	4.21	30	
m,p-Xylene	0.164	0.010	"	0.150	ND	109	70-130	6.51	30	
o-Xylene	0.0814	0.0050	"	0.0750	ND	109	70-130	3.64	30	
1,2,4-Trimethylbenzene	0.0760	0.0050	"	0.0750	ND	101	70-130	4.15	30	
1,3,5-Trimethylbenzene	0.0770	0.0050	"	0.0750	ND	103	70-130	6.90	30	
Naphthalene	0.0670	0.0038	"	0.0750	ND	89.3	70-130	7.10	30	
Surrogate: 1,2-Dichloroethane-d4	0.0331		"	0.0400		82.6	50-150			
Surrogate: Toluene-d8	0.0395		"	0.0400		98.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0377		"	0.0400		94.3	50-150			

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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/24/23 13:07

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 BGA0493 - EPA 3550A

Blank (BGA0493-BLK1)

Prepared & Analyzed: 01/19/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	16.5		"	12.5		132	30-150			

LCS (BGA0493-BS1)

Prepared & Analyzed: 01/19/23

C10-C28 (DRO)	450	50	mg/kg	500		90.0	70-130			
Surrogate: o-Terphenyl	15.3		"	12.5		122	30-150			

Matrix Spike (BGA0493-MS1)

Source: 2301334-01

Prepared & Analyzed: 01/19/23

C10-C28 (DRO)	467	50	mg/kg	500	22.7	88.8	70-130			
Surrogate: o-Terphenyl	16.5		"	12.5		132	30-150			

Matrix Spike Dup (BGA0493-MSD1)

Source: 2301334-01

Prepared & Analyzed: 01/19/23

C10-C28 (DRO)	482	50	mg/kg	500	22.7	91.9	70-130	3.18	20	
Surrogate: o-Terphenyl	14.2		"	12.5		114	30-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/24/23 13:07

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGA0496 - EPA 5030 Soil MS

Blank (BGA0496-BLK1)

Prepared & Analyzed: 01/20/23

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	0.0316		"	0.0333		94.8	40-150			
Surrogate: Fluoranthene-d10	0.0361		"	0.0333		108	40-150			

LCS (BGA0496-BS1)

Prepared & Analyzed: 01/20/23

Acenaphthene	0.0333	0.00500	mg/kg	0.0333	100	31-137
Anthracene	0.0344	0.00500	"	0.0333	103	30-120
Benzo (a) anthracene	0.0314	0.00500	"	0.0333	94.1	30-120
Benzo (a) pyrene	0.0309	0.00500	"	0.0333	92.7	30-120
Benzo (b) fluoranthene	0.0304	0.00500	"	0.0333	91.3	30-120
Benzo (k) fluoranthene	0.0311	0.00500	"	0.0333	93.4	30-120
Chrysene	0.0320	0.00500	"	0.0333	96.1	30-120
Dibenz (a,h) anthracene	0.0283	0.00500	"	0.0333	84.9	30-120
Fluoranthene	0.0329	0.00500	"	0.0333	98.8	30-120
Fluorene	0.0334	0.00500	"	0.0333	100	30-120
Indeno (1,2,3-cd) pyrene	0.0309	0.00500	"	0.0333	92.7	30-120
Pyrene	0.0333	0.00500	"	0.0333	100	35-142
1-Methylnaphthalene	0.0330	0.00500	"	0.0333	99.1	35-142
2-Methylnaphthalene	0.0307	0.00500	"	0.0333	92.2	35-142
Surrogate: 2-Methylnaphthalene-d10	0.0317		"	0.0333	95.2	40-150
Surrogate: Fluoranthene-d10	0.0333		"	0.0333	99.9	40-150

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/24/23 13:07

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGA0496 - EPA 5030 Soil MS

Matrix Spike (BGA0496-MS1)

Source: 2301334-01

Prepared & Analyzed: 01/20/23

Acenaphthene	0.0201	0.00500	mg/kg	0.0333	ND	60.4	31-137		
Anthracene	0.0207	0.00500	"	0.0333	ND	62.0	30-120		
Benzo (a) anthracene	0.0184	0.00500	"	0.0333	ND	55.1	30-120		
Benzo (a) pyrene	0.0167	0.00500	"	0.0333	ND	50.0	30-120		
Benzo (b) fluoranthene	0.0167	0.00500	"	0.0333	ND	50.1	30-120		
Benzo (k) fluoranthene	0.0167	0.00500	"	0.0333	ND	50.2	30-120		
Chrysene	0.0178	0.00500	"	0.0333	ND	53.3	30-120		
Dibenz (a,h) anthracene	0.0155	0.00500	"	0.0333	ND	46.4	30-120		
Fluoranthene	0.0191	0.00500	"	0.0333	ND	57.4	30-120		
Fluorene	0.0202	0.00500	"	0.0333	ND	60.7	30-120		
Indeno (1,2,3-cd) pyrene	0.0162	0.00500	"	0.0333	ND	48.5	30-120		
Pyrene	0.0195	0.00500	"	0.0333	ND	58.5	35-142		
1-Methylnaphthalene	0.0193	0.00500	"	0.0333	ND	58.0	15-130		
2-Methylnaphthalene	0.0190	0.00500	"	0.0333	ND	57.0	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0197		"	0.0333		59.0	40-150		
Surrogate: Fluoranthene-d10	0.0195		"	0.0333		58.4	40-150		

Matrix Spike Dup (BGA0496-MSD1)

Source: 2301334-01

Prepared & Analyzed: 01/20/23

Acenaphthene	0.0211	0.00500	mg/kg	0.0333	ND	63.4	31-137	4.79	30
Anthracene	0.0205	0.00500	"	0.0333	ND	61.6	30-120	0.731	30
Benzo (a) anthracene	0.0192	0.00500	"	0.0333	ND	57.6	30-120	4.52	30
Benzo (a) pyrene	0.0177	0.00500	"	0.0333	ND	53.2	30-120	6.14	30
Benzo (b) fluoranthene	0.0178	0.00500	"	0.0333	ND	53.3	30-120	6.12	30
Benzo (k) fluoranthene	0.0177	0.00500	"	0.0333	ND	53.1	30-120	5.72	30
Chrysene	0.0186	0.00500	"	0.0333	ND	55.9	30-120	4.76	30
Dibenz (a,h) anthracene	0.0157	0.00500	"	0.0333	ND	47.0	30-120	1.15	30
Fluoranthene	0.0197	0.00500	"	0.0333	ND	59.2	30-120	3.09	30
Fluorene	0.0211	0.00500	"	0.0333	ND	63.3	30-120	4.23	30
Indeno (1,2,3-cd) pyrene	0.0181	0.00500	"	0.0333	ND	54.2	30-120	11.1	30
Pyrene	0.0199	0.00500	"	0.0333	ND	59.6	35-142	1.79	30
1-Methylnaphthalene	0.0216	0.00500	"	0.0333	ND	64.8	15-130	11.1	50
2-Methylnaphthalene	0.0194	0.00500	"	0.0333	ND	58.2	15-130	2.04	50
Surrogate: 2-Methylnaphthalene-d10	0.0221		"	0.0333		66.3	40-150		
Surrogate: Fluoranthene-d10	0.0200		"	0.0333		60.1	40-150		

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/24/23 13:07

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 BGA0494 - EPA 3050B

Blank (BGA0494-BLK1)

Prepared: 01/19/23 Analyzed: 01/21/23

Boron ND 0.0100 mg/L

LCS (BGA0494-BS1)

Prepared: 01/19/23 Analyzed: 01/21/23

Boron 5.11 0.0100 mg/L 5.00 102 80-120

Duplicate (BGA0494-DUP1)

Source: 2301287-01

Prepared: 01/19/23 Analyzed: 01/21/23

Boron 0.345 0.0100 mg/L 0.345 0.0512 20

Matrix Spike (BGA0494-MS1)

Source: 2301287-01

Prepared: 01/19/23 Analyzed: 01/21/23

Boron 4.86 0.0100 mg/L 5.00 0.345 90.4 75-125

Matrix Spike Dup (BGA0494-MSD1)

Source: 2301287-01

Prepared: 01/19/23 Analyzed: 01/21/23

Boron 4.84 0.0100 mg/L 5.00 0.345 89.8 75-125 0.554 25

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/24/23 13:07

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 BGA0489 - EPA 3050B

Blank (BGA0489-BLK1)

Prepared: 01/19/23 Analyzed: 01/21/23

Arsenic	ND	0.200	mg/kg wet
Selenium	ND	0.260	"

LCS (BGA0489-BS1)

Prepared: 01/19/23 Analyzed: 01/21/23

Arsenic	42.9	0.200	mg/kg wet	40.0	107	80-120
Selenium	3.94	0.260	"	4.00	98.4	80-120

Duplicate (BGA0489-DUP1)

Source: 2301137-05

Prepared: 01/19/23 Analyzed: 01/21/23

Arsenic	11.3	0.200	mg/kg dry	11.5	1.90	20
Selenium	3.24	0.260	"	3.22	0.435	20

Matrix Spike (BGA0489-MS1)

Source: 2301137-05

Prepared: 01/19/23 Analyzed: 01/21/23

Arsenic	59.9	0.200	mg/kg dry	43.0	11.5	113	75-125
Selenium	7.16	0.260	"	4.30	3.22	91.6	75-125

Matrix Spike Dup (BGA0489-MSD1)

Source: 2301137-05

Prepared: 01/19/23 Analyzed: 01/21/23

Arsenic	59.7	0.200	mg/kg dry	43.0	11.5	112	75-125	0.306	25
Selenium	7.20	0.260	"	4.30	3.22	92.7	75-125	0.660	25

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/24/23 13:07

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

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

Batch BGA0495 - General Preparation

Duplicate (BGA0495-DUP1)		Source: 2301328-01			Prepared & Analyzed: 01/20/23					
% Solids	85.3		%		88.1		3.29		20	

Summit Scientific



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/24/23 13:07

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013 - Quality Control
Summit Scientific

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

Batch BGA0490 - General Preparation

Blank (BGA0490-BLK1)

Prepared & Analyzed: 01/19/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGA0490-BS1)

Prepared & Analyzed: 01/19/23

Specific Conductance (EC) 0.144 0.0100 mmhos/cm 0.150 95.8 95-105

Duplicate (BGA0490-DUP1)

Source: 2301334-01

Prepared & Analyzed: 01/19/23

Specific Conductance (EC) 0.860 0.0100 mmhos/cm 0.859 0.140 20

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/24/23 13:07

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

January 25, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Jerke UP 8-7 Tank Battery

Work Order #2301351

Enclosed are the results of analyses for samples received by Summit Scientific on 01/20/23 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 "Scott Sheely", is written over a light blue rectangular background.

Scott Sheely For Paul Shrewsbury
President



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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/25/23 14:11

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS25@14'	2301351-01	Soil	01/20/23 11:00	01/20/23 18:00
SS26@2.5'	2301351-02	Soil	01/20/23 13:00	01/20/23 18:00
SS27@5'	2301351-03	Soil	01/20/23 13:05	01/20/23 18:00
SS28@10'	2301351-04	Soil	01/20/23 13:10	01/20/23 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.

2301351

Summit Scientific

S₂

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: Jerke Up 8-7 Tank Battery

Sampler Name: David Vigil

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions	
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	(1) pH, EC, SAR	Boron - HWS	TMBs (1,2,4) & (1,3,5)	(2) PAH - 915	(3) Metals - 915		
1	SS25 @ 14'	1/20/23	1100	3			X			X				X	X	X	X	X	X		pH, EC, SAR by saturated paste
2	SS26 @ 2.5'		1300	1										X	X	X	X	X			
3	SS27 @ 5'		1305	3										X	X	X	X	X	X		
4	SS28 @ 10'		1310	3										X	X	X	X	X	X		
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by: <i>David Vigil</i>	Date/Time: 1600 1/20/23	Received by: Tasman's Lock Box	Date/Time: 1600 1/20/23	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours 24 hours 48 hours	Notes: (1)-Only EC on SS25, SS27 and SS28 (2)-PAHs: benz(a), d:benz(a,h), Fluorene, 1-M, 2-M (3)-Metals: arsenic, selenium
Relinquished by: Tasman's Lock Box	Date/Time: 1800 1/20/23	Received by: <i>Jul Bor</i>	Date/Time: 1/20/23 1800	Sample Integrity: Temperature Upon Receipt: 1.2 Samples Intact: <input checked="" type="checkbox"/> Yes No	
Relinquished by:	Date/Time:	Received by:	Date/Time:		



Sample Receipt Checklist

S2 Work Order# 2301351Client: PDC/tasman Client Project ID: Jerky up 8-7 Tank Battery

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

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-------------------------------------	--------------------------	--------------------------	--------------------------

Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 1.2 Thermometer # 02

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

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.
Custodian Printed Name1-20-23 1:00
Date/Time



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/25/23 14:11

SS25@14'
2301351-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/20/23 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0516	01/21/23	01/22/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/20/23 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0434	108 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0423	106 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0435	109 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/20/23 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0517	"	01/22/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/20/23 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	14.7	118 %	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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/25/23 14:11

SS25@14'
2301351-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/20/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGA0532	01/23/23	01/24/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/20/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0189	56.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0286	85.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/20/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0327	0.0100	mg/L	1	BGA0526	01/22/23	01/23/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/20/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BGA0520	01/20/23	01/23/23	EPA 6020B	
Selenium	0.651	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/20/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.9		%	1	BGA0528	01/22/23	01/22/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/25/23 14:11

SS25@14'
2301351-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/20/23 11:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.328	0.0100		mmhos/cm	1	BGA0548	01/23/23	01/23/23	EPA 120.1	

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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/25/23 14:11

SS26@2.5'
2301351-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/20/23 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.327	0.0100	mg/L	1	BGA0526	01/22/23	01/23/23	EPA 6020B	

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

Date Sampled: **01/20/23 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	35.9	0.0597	mg/L dry	1	BGA0549	01/23/23	01/24/23	EPA 6020B	
Magnesium	25.2	0.0597	"	"	"	"	"	"	
Sodium	88.2	0.0597	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/20/23 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.76	0.00100	units	1	BGA0611	01/25/23	01/25/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/20/23 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.7		%	1	BGA0528	01/22/23	01/22/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/20/23 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.940	0.0100	mmhos/cm	1	BGA0582	01/24/23	01/24/23	EPA 120.1	

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

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/25/23 14:11

SS26@2.5'
2301351-02 (Soil)

Summit Scientific

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

Date Sampled: **01/20/23 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.12			pH Units	1	BGA0583	01/24/23	01/24/23	EPA 9045D	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/25/23 14:11

SS27@5'
2301351-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/20/23 13:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0516	01/21/23	01/22/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/20/23 13:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0386	96.5 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0363	90.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0427	107 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/20/23 13:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0517	"	01/22/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/20/23 13:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	13.1	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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/25/23 14:11

SS27@5'
2301351-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/20/23 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGA0532	01/23/23	01/24/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/20/23 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0165	49.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0285	85.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/20/23 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0447	0.0100	mg/L	1	BGA0526	01/22/23	01/23/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/20/23 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.599	0.200	mg/kg dry	1	BGA0520	01/20/23	01/23/23	EPA 6020B	
Selenium	0.468	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/20/23 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.7		%	1	BGA0528	01/22/23	01/22/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/25/23 14:11

SS27@5'
2301351-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/20/23 13:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.345	0.0100		mmhos/cm	1	BGA0548	01/23/23	01/23/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/25/23 14:11

SS28@10'
2301351-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/20/23 13:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0516	01/21/23	01/22/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/20/23 13:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0378	94.4 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0387	96.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0409	102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/20/23 13:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0517	"	01/22/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/20/23 13:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	14.3	114 %	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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/25/23 14:11

SS28@10'
2301351-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/20/23 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGA0532	01/23/23	01/24/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/20/23 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0168	50.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0271	81.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/20/23 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0374	0.0100	mg/L	1	BGA0526	01/22/23	01/23/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/20/23 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BGA0520	01/20/23	01/23/23	EPA 6020B	
Selenium	0.418	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/20/23 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.6		%	1	BGA0528	01/22/23	01/22/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/25/23 14:11

SS28@10'
2301351-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/20/23 13:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.402	0.0100		mmhos/cm	1	BGA0548	01/23/23	01/23/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/25/23 14:11

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 BGA0516 - EPA 5030 Soil MS

Blank (BGA0516-BLK1)

Prepared & Analyzed: 01/21/23

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	0.0465	"	0.0400	116	50-150
Surrogate: Toluene-d8	0.0576	"	0.0400	144	50-150
Surrogate: 4-Bromofluorobenzene	0.0542	"	0.0400	136	50-150

LCS (BGA0516-BS1)

Prepared & Analyzed: 01/21/23

Benzene	0.100	0.0020	mg/kg	0.100	100	70-130
Toluene	0.103	0.0050	"	0.100	103	70-130
Ethylbenzene	0.0886	0.0050	"	0.100	88.6	70-130
m,p-Xylene	0.191	0.010	"	0.200	95.3	70-130
o-Xylene	0.0970	0.0050	"	0.100	97.0	70-130
1,2,4-Trimethylbenzene	0.0975	0.0050	"	0.100	97.5	70-130
1,3,5-Trimethylbenzene	0.102	0.0050	"	0.100	102	70-130
Naphthalene	0.0909	0.0038	"	0.100	90.9	70-130

Surrogate: 1,2-Dichloroethane-d4	0.0436	"	0.0400	109	50-150
Surrogate: Toluene-d8	0.0523	"	0.0400	131	50-150
Surrogate: 4-Bromofluorobenzene	0.0439	"	0.0400	110	50-150

Matrix Spike (BGA0516-MS1)

Source: 2301342-01

Prepared & Analyzed: 01/21/23

Benzene	0.0994	0.0020	mg/kg	0.100	ND	99.4	70-130
Toluene	0.0709	0.0050	"	0.100	ND	70.9	70-130
Ethylbenzene	0.0825	0.0050	"	0.100	ND	82.5	70-130
m,p-Xylene	0.164	0.010	"	0.200	ND	82.1	70-130
o-Xylene	0.0819	0.0050	"	0.100	ND	81.9	70-130
1,2,4-Trimethylbenzene	0.0754	0.0050	"	0.100	ND	75.4	70-130
1,3,5-Trimethylbenzene	0.0743	0.0050	"	0.100	ND	74.3	70-130
Naphthalene	0.0938	0.0038	"	0.100	ND	93.8	70-130

Surrogate: 1,2-Dichloroethane-d4	0.0275	"	0.0400	68.8	50-150
Surrogate: Toluene-d8	0.0355	"	0.0400	88.6	50-150
Surrogate: 4-Bromofluorobenzene	0.0367	"	0.0400	91.7	50-150

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/25/23 14:11

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 BGA0516 - EPA 5030 Soil MS

Matrix Spike Dup (BGA0516-MSD1)	Source: 2301342-01			Prepared & Analyzed: 01/21/23						
Benzene	0.105	0.0020	mg/kg	0.100	ND	105	70-130	5.21	30	
Toluene	0.0761	0.0050	"	0.100	ND	76.1	70-130	7.14	30	
Ethylbenzene	0.0844	0.0050	"	0.100	ND	84.4	70-130	2.26	30	
m,p-Xylene	0.170	0.010	"	0.200	ND	84.9	70-130	3.32	30	
o-Xylene	0.0853	0.0050	"	0.100	ND	85.3	70-130	4.06	30	
1,2,4-Trimethylbenzene	0.0797	0.0050	"	0.100	ND	79.7	70-130	5.49	30	
1,3,5-Trimethylbenzene	0.0779	0.0050	"	0.100	ND	77.9	70-130	4.77	30	
Naphthalene	0.100	0.0038	"	0.100	ND	100	70-130	6.53	30	
Surrogate: 1,2-Dichloroethane-d4	0.0333		"	0.0400		83.2	50-150			
Surrogate: Toluene-d8	0.0377		"	0.0400		94.2	50-150			
Surrogate: 4-Bromofluorobenzene	0.0393		"	0.0400		98.2	50-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/25/23 14:11

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BGA0517 - EPA 3550A

Blank (BGA0517-BLK1)

Prepared & Analyzed: 01/21/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	12.6		"	12.5	101	30-150				

LCS (BGA0517-BS1)

Prepared & Analyzed: 01/21/23

C10-C28 (DRO)	613	50	mg/kg	500	123	70-130				
Surrogate: o-Terphenyl	12.8		"	12.5	102	30-150				

Matrix Spike (BGA0517-MS1)

Source: 2301342-01

Prepared & Analyzed: 01/21/23

C10-C28 (DRO)	593	50	mg/kg	500	34.7	112	70-130			
Surrogate: o-Terphenyl	13.6		"	12.5	109	30-150				

Matrix Spike Dup (BGA0517-MSD1)

Source: 2301342-01

Prepared & Analyzed: 01/21/23

C10-C28 (DRO)	589	50	mg/kg	500	34.7	111	70-130	0.645	20	
Surrogate: o-Terphenyl	13.5		"	12.5	108	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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/25/23 14:11

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGA0532 - EPA 5030 Soil MS

Blank (BGA0532-BLK1)

Prepared & Analyzed: 01/23/23

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	0.0171		"	0.0333		51.2	40-150			
Surrogate: Fluoranthene-d10	0.0285		"	0.0333		85.5	40-150			

LCS (BGA0532-BS1)

Prepared & Analyzed: 01/23/23

Acenaphthene	0.0300	0.00500	mg/kg	0.0333		89.9	31-137			
Anthracene	0.0297	0.00500	"	0.0333		89.2	30-120			
Benzo (a) anthracene	0.0259	0.00500	"	0.0333		77.6	30-120			
Benzo (a) pyrene	0.0260	0.00500	"	0.0333		77.9	30-120			
Benzo (b) fluoranthene	0.0272	0.00500	"	0.0333		81.5	30-120			
Benzo (k) fluoranthene	0.0311	0.00500	"	0.0333		93.2	30-120			
Chrysene	0.0313	0.00500	"	0.0333		93.9	30-120			
Dibenz (a,h) anthracene	0.0232	0.00500	"	0.0333		69.5	30-120			
Fluoranthene	0.0291	0.00500	"	0.0333		87.2	30-120			
Fluorene	0.0295	0.00500	"	0.0333		88.6	30-120			
Indeno (1,2,3-cd) pyrene	0.0239	0.00500	"	0.0333		71.8	30-120			
Pyrene	0.0306	0.00500	"	0.0333		91.7	35-142			
1-Methylnaphthalene	0.0264	0.00500	"	0.0333		79.2	35-142			
2-Methylnaphthalene	0.0210	0.00500	"	0.0333		62.9	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0290		"	0.0333		86.9	40-150			
Surrogate: Fluoranthene-d10	0.0302		"	0.0333		90.5	40-150			

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/25/23 14:11

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGA0532 - EPA 5030 Soil MS

Matrix Spike (BGA0532-MS1)

Source: 2301134-02

Prepared & Analyzed: 01/23/23

Acenaphthene	0.0203	0.00500	mg/kg	0.0333	ND	61.0	31-137		
Anthracene	0.0205	0.00500	"	0.0333	ND	61.4	30-120		
Benzo (a) anthracene	0.0212	0.00500	"	0.0333	ND	63.5	30-120		
Benzo (a) pyrene	0.0204	0.00500	"	0.0333	ND	61.3	30-120		
Benzo (b) fluoranthene	0.0183	0.00500	"	0.0333	ND	55.0	30-120		
Benzo (k) fluoranthene	0.0194	0.00500	"	0.0333	ND	58.3	30-120		
Chrysene	0.0207	0.00500	"	0.0333	ND	62.1	30-120		
Dibenz (a,h) anthracene	0.0200	0.00500	"	0.0333	ND	60.1	30-120		
Fluoranthene	0.0214	0.00500	"	0.0333	ND	64.1	30-120		
Fluorene	0.0206	0.00500	"	0.0333	ND	61.9	30-120		
Indeno (1,2,3-cd) pyrene	0.0211	0.00500	"	0.0333	ND	63.3	30-120		
Pyrene	0.0213	0.00500	"	0.0333	ND	64.0	35-142		
1-Methylnaphthalene	0.0192	0.00500	"	0.0333	ND	57.7	15-130		
2-Methylnaphthalene	0.0175	0.00500	"	0.0333	ND	52.5	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0206		"	0.0333		61.8	40-150		
Surrogate: Fluoranthene-d10	0.0224		"	0.0333		67.2	40-150		

Matrix Spike Dup (BGA0532-MSD1)

Source: 2301134-02

Prepared & Analyzed: 01/23/23

Acenaphthene	0.0192	0.00500	mg/kg	0.0333	ND	57.7	31-137	5.66	30
Anthracene	0.0179	0.00500	"	0.0333	ND	53.6	30-120	13.6	30
Benzo (a) anthracene	0.0193	0.00500	"	0.0333	ND	57.9	30-120	9.17	30
Benzo (a) pyrene	0.0180	0.00500	"	0.0333	ND	54.1	30-120	12.5	30
Benzo (b) fluoranthene	0.0162	0.00500	"	0.0333	ND	48.5	30-120	12.6	30
Benzo (k) fluoranthene	0.0167	0.00500	"	0.0333	ND	50.0	30-120	15.3	30
Chrysene	0.0185	0.00500	"	0.0333	ND	55.5	30-120	11.3	30
Dibenz (a,h) anthracene	0.0193	0.00500	"	0.0333	ND	57.8	30-120	3.96	30
Fluoranthene	0.0188	0.00500	"	0.0333	ND	56.4	30-120	12.7	30
Fluorene	0.0194	0.00500	"	0.0333	ND	58.2	30-120	6.18	30
Indeno (1,2,3-cd) pyrene	0.0194	0.00500	"	0.0333	ND	58.1	30-120	8.50	30
Pyrene	0.0186	0.00500	"	0.0333	ND	55.9	35-142	13.6	30
1-Methylnaphthalene	0.0167	0.00500	"	0.0333	ND	50.0	15-130	14.1	50
2-Methylnaphthalene	0.0162	0.00500	"	0.0333	ND	48.5	15-130	8.05	50
Surrogate: 2-Methylnaphthalene-d10	0.0174		"	0.0333		52.2	40-150		
Surrogate: Fluoranthene-d10	0.0201		"	0.0333		60.3	40-150		

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/25/23 14:11

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 BGA0526 - EPA 3050B

Blank (BGA0526-BLK1)

Prepared: 01/22/23 Analyzed: 01/23/23

Boron ND 0.0100 mg/L

LCS (BGA0526-BS1)

Prepared: 01/22/23 Analyzed: 01/23/23

Boron 5.06 0.0100 mg/L 5.00 101 80-120

Duplicate (BGA0526-DUP1)

Source: 2301134-02

Prepared: 01/22/23 Analyzed: 01/23/23

Boron 0.379 0.0100 mg/L 0.348 8.56 20

Matrix Spike (BGA0526-MS1)

Source: 2301134-02

Prepared: 01/22/23 Analyzed: 01/23/23

Boron 5.33 0.0100 mg/L 5.00 0.348 99.7 75-125

Matrix Spike Dup (BGA0526-MSD1)

Source: 2301134-02

Prepared: 01/22/23 Analyzed: 01/23/23

Boron 5.35 0.0100 mg/L 5.00 0.348 100 75-125 0.337 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.



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/25/23 14:11

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 BGA0520 - EPA 3050B

Blank (BGA0520-BLK1)

Prepared: 01/20/23 Analyzed: 01/23/23

Arsenic	ND	0.200	mg/kg wet
Selenium	ND	0.260	"

LCS (BGA0520-BS1)

Prepared: 01/20/23 Analyzed: 01/23/23

Arsenic	43.4	0.200	mg/kg wet	40.0	109	80-120
Selenium	4.78	0.260	"	4.00	119	80-120

Duplicate (BGA0520-DUP1)

Source: 2301134-02

Prepared: 01/20/23 Analyzed: 01/23/23

Arsenic	2.85	0.200	mg/kg dry	2.68	6.21	20
Selenium	0.458	0.260	"	0.405	12.4	20

Matrix Spike (BGA0520-MS1)

Source: 2301134-02

Prepared: 01/20/23 Analyzed: 01/23/23

Arsenic	57.1	0.200	mg/kg dry	44.1	2.68	123	75-125
Selenium	4.96	0.260	"	4.41	0.405	103	75-125

Matrix Spike Dup (BGA0520-MSD1)

Source: 2301134-02

Prepared: 01/20/23 Analyzed: 01/23/23

Arsenic	54.9	0.200	mg/kg dry	44.1	2.68	118	75-125	3.95	25
Selenium	4.68	0.260	"	4.41	0.405	97.0	75-125	5.71	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.



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

01/25/23 14:11

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 BGA0549 - General Preparation

Blank (BGA0549-BLK1)

Prepared: 01/23/23 Analyzed: 01/24/23

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

LCS (BGA0549-BS1)

Prepared: 01/23/23 Analyzed: 01/24/23

Calcium	5.42	0.0500	mg/L wet	5.00	108	70-130
Magnesium	5.21	0.0500	"	5.00	104	70-130
Sodium	5.26	0.0500	"	5.00	105	70-130

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: Jerke UP 8-7 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

01/25/23 14:11

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

Summit Scientific

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

Batch BGA0528 - General Preparation

Duplicate (BGA0528-DUP1)		Source: 2301134-02		Prepared & Analyzed: 01/22/23						
% Solids	90.8		%		90.7			0.114	20	

Summit Scientific



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/25/23 14:11

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 BGA0582 - General Preparation

Blank (BGA0582-BLK1)

Prepared & Analyzed: 01/24/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGA0582-BS1)

Prepared & Analyzed: 01/24/23

Specific Conductance (EC) 0.155 0.0100 mmhos/cm 0.150 103 95-105

Duplicate (BGA0582-DUP1)

Source: 2301134-02

Prepared & Analyzed: 01/24/23

Specific Conductance (EC) 0.660 0.0100 mmhos/cm 0.672 1.70 20

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: Jerke UP 8-7 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/25/23 14:11

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

Summit Scientific

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

Batch BGA0583 - General Preparation

LCS (BGA0583-BS1)

Prepared & Analyzed: 01/24/23

pH	9.12	pH Units	9.18	99.3	95-105
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Duplicate (BGA0583-DUP1)

Source: 2301134-02

Prepared & Analyzed: 01/24/23

pH	7.75	pH Units	7.69	0.777	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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/25/23 14:11

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013 - Quality Control
Summit Scientific

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

Batch BGA0548 - General Preparation

Blank (BGA0548-BLK1)

Prepared & Analyzed: 01/23/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGA0548-BS1)

Prepared & Analyzed: 01/23/23

Specific Conductance (EC) 0.152 0.0100 mmhos/cm 0.150 102 95-105

Duplicate (BGA0548-DUP1)

Source: 2301351-01

Prepared & Analyzed: 01/23/23

Specific Conductance (EC) 0.325 0.0100 mmhos/cm 0.328 0.950 20

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/25/23 14:11

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

January 26, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Jerke UP 8-7 Tank Battery

Work Order #2301423

Enclosed are the results of analyses for samples received by Summit Scientific on 01/24/23 18:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely", is written over a light blue rectangular background.

Scott Sheely For Paul Shrewsbury

President



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 14:10

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS29@5'	2301423-01	Soil	01/24/23 09:40	01/24/23 18:45
SS30@10'	2301423-02	Soil	01/24/23 09:45	01/24/23 18:45
SS31@14'	2301423-03	Soil	01/24/23 10:00	01/24/23 18:45
SS32@14'	2301423-04	Soil	01/24/23 11:20	01/24/23 18:45
SS33@14'	2301423-05	Soil	01/24/23 13:00	01/24/23 18:45
SS34@5'	2301423-06	Soil	01/24/23 15:00	01/24/23 18:45
SS35@10'	2301423-07	Soil	01/24/23 15:05	01/24/23 18:45
SS36@14'	2301423-08	Soil	01/24/23 15:10	01/24/23 18:45

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.

2301423

Summit Scientific

S₂

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: Jerke Up 8-7 Tank Battery

Sampler Name: David Vigliani

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions	
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	(1) pH, EC, SAR	Boron - HWS	TMBS (1,2,4) & (1,3,5)	(2) PAH - 915	(3) Metals - 915		
1	SS29 @5'	1/24/23	0940	3			X			X				X	X	X	X	X	X		
2	SS30 @10'		0945																		
3	SS31 @14'		1000																		
4	SS32 @14'		1120																		
5	SS33 @14'		1300																		
6	SS34 @5' DV SS34 @5'		1500																		
7	SS35 @10'		1505																		
8	SS36 @14'		1510																		
9																					
10																					

Relinquished by: <i>David Vigliani</i>	Date/Time: 1/24/23 1700	Received by: Tasman's Lock Box	Date/Time: 1/24/23 1700	Turn Around Time (Check) 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"/>	Notes: (1) - Only EC (2) - PAHs: benz(a), dibenz(a,h), Fluorene, 1-M, 2-M (3) Metals: arsenic, Selenium
Relinquished by: Tasman's Lock Box	Date/Time: 1/24/23 1845	Received by: <i>John Br</i>	Date/Time: 1/24/23 1845	Sample Integrity: Temperature Upon Receipt: 1.5 Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Relinquished by:	Date/Time:	Received by:	Date/Time:		

S₂

Sample Receipt Checklist

S2 Work Order# 2301423Client: PDL/Tasman Client Project ID: Jerke UP 8-7 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: _____
☐ ☒ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 1.5 Thermometer # 1

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

Additional Comments (if any):

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

 Custodian Printed Name

1.24.23
 Date/Time



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 14:10

SS29@5'
2301423-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/24/23 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGA0595	01/24/23	01/25/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/24/23 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0491	123 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0394	98.5 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0418	105 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/24/23 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0596	01/24/23	01/25/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/24/23 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	9.15	73.2 %	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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 14:10

SS29@5'
2301423-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/24/23 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGA0604	01/25/23	01/26/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/24/23 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0216	64.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0222	66.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/24/23 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.329	0.0100	mg/L	1	BGA0597	01/24/23	01/26/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/24/23 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	17.0	0.200	mg/kg dry	1	BGA0619	01/25/23	01/25/23	EPA 6020B	
Selenium	0.660	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/24/23 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.0		%	1	BGA0626	01/25/23	01/25/23	Calculation	

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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 14:10

SS29@5'
2301423-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/24/23 09:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.583	0.0100		mmhos/cm	1	BGA0624	01/25/23	01/25/23	EPA 120.1	

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 14:10

SS30@10'
2301423-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/24/23 09:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0595	01/24/23	01/25/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/24/23 09:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0485	121 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0388	97.1 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0419	105 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/24/23 09:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0596	01/24/23	01/25/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/24/23 09:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.06	72.5 %	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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 14:10

SS30@10'
2301423-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/24/23 09:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGA0604	01/25/23	01/26/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/24/23 09:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0205	61.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0225	67.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/24/23 09:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	0.0786	0.0100	mg/L	1	BGA0597	01/24/23	01/26/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/24/23 09:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	0.303	0.200	mg/kg dry	1	BGA0619	01/25/23	01/25/23	EPA 6020B	
Selenium	0.323	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/24/23 09:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
% Solids	82.5		%	1	BGA0626	01/25/23	01/25/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 14:10

SS30@10'
2301423-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/24/23 09:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.451	0.0100		mmhos/cm	1	BGA0624	01/25/23	01/25/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 14:10

SS31@14'
2301423-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/24/23 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0595	01/24/23	01/25/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/24/23 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0515	129 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0391	97.6 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0411	103 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/24/23 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0596	01/24/23	01/25/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/24/23 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.01	72.1 %	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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 14:10

SS31@14'
2301423-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/24/23 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGA0604	01/25/23	01/26/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/24/23 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0205	61.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0204	61.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/24/23 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	0.126	0.0100	mg/L	1	BGA0597	01/24/23	01/26/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/24/23 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	0.589	0.200	mg/kg dry	1	BGA0619	01/25/23	01/25/23	EPA 6020B	
Selenium	0.837	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/24/23 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
% Solids	85.6		%	1	BGA0626	01/25/23	01/25/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 14:10

SS31@14'
2301423-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/24/23 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.456	0.0100		mmhos/cm	1	BGA0624	01/25/23	01/25/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 14:10

SS32@14'
2301423-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/24/23 11:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0595	01/24/23	01/25/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/24/23 11:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0478	119 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0388	97.1 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0413	103 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/24/23 11:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0596	01/24/23	01/25/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/24/23 11:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.58	76.6 %	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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 14:10

SS32@14'
2301423-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/24/23 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGA0604	01/25/23	01/26/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/24/23 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0182	54.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0189	56.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/24/23 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0978	0.0100	mg/L	1	BGA0597	01/24/23	01/26/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/24/23 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.261	0.200	mg/kg dry	1	BGA0619	01/25/23	01/25/23	EPA 6020B	
Selenium	0.304	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/24/23 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.7		%	1	BGA0626	01/25/23	01/25/23	Calculation	

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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 14:10

SS32@14'
2301423-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/24/23 11:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.235	0.0100		mmhos/cm	1	BGA0624	01/25/23	01/25/23	EPA 120.1	

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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 14:10

SS33@14'
2301423-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/24/23 13:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0595	01/24/23	01/25/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/24/23 13:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0508	127 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0388	97.1 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0412	103 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/24/23 13:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0596	01/24/23	01/25/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/24/23 13:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	8.59	68.8 %	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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 14:10

SS33@14'
2301423-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/24/23 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGA0604	01/25/23	01/26/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/24/23 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0201	60.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0222	66.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/24/23 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.115	0.0100	mg/L	1	BGA0597	01/24/23	01/26/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/24/23 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.551	0.200	mg/kg dry	1	BGA0619	01/25/23	01/25/23	EPA 6020B	
Selenium	0.439	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/24/23 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.2		%	1	BGA0626	01/25/23	01/25/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 14:10

SS33@14'
2301423-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/24/23 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.314	0.0100		mmhos/cm	1	BGA0624	01/25/23	01/25/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 14:10

SS34@5'
2301423-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/24/23 15:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0595	01/24/23	01/25/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/24/23 15:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0470	118 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0394	98.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0407	102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/24/23 15:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0596	01/24/23	01/25/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/24/23 15:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	8.71	69.7 %	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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 14:10

SS34@5'
2301423-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/24/23 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGA0604	01/25/23	01/26/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/24/23 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0217	65.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0222	66.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/24/23 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.114	0.0100	mg/L	1	BGA0597	01/24/23	01/26/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/24/23 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.925	0.200	mg/kg dry	1	BGA0619	01/25/23	01/25/23	EPA 6020B	
Selenium	0.753	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/24/23 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.1		%	1	BGA0626	01/25/23	01/25/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 14:10

SS34@5'
2301423-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/24/23 15:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.474	0.0100		mmhos/cm	1	BGA0624	01/25/23	01/25/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 14:10

SS35@10'
2301423-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/24/23 15:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0595	01/24/23	01/25/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/24/23 15:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0488	122 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0388	96.9 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0418	104 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/24/23 15:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0596	01/24/23	01/25/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/24/23 15:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.36	74.9 %	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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 14:10

SS35@10'
2301423-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/24/23 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGA0604	01/25/23	01/26/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/24/23 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0197	59.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0219	65.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/24/23 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0918	0.0100	mg/L	1	BGA0597	01/24/23	01/26/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/24/23 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BGA0619	01/25/23	01/25/23	EPA 6020B	
Selenium	0.573	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/24/23 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.7		%	1	BGA0626	01/25/23	01/25/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 14:10

SS35@10'
2301423-07 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/24/23 15:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.701	0.0100		mmhos/cm	1	BGA0624	01/25/23	01/25/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 14:10

SS36@14'
2301423-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/24/23 15:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0595	01/24/23	01/25/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/24/23 15:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0482	120 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0388	97.0 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0410	103 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/24/23 15:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0596	01/24/23	01/25/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/24/23 15:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	8.51	68.1 %	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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 14:10

SS36@14'
2301423-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/24/23 15:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGA0604	01/25/23	01/26/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/24/23 15:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0196	58.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0208	62.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/24/23 15:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.109	0.0100	mg/L	1	BGA0597	01/24/23	01/26/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/24/23 15:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.644	0.200	mg/kg dry	1	BGA0619	01/25/23	01/25/23	EPA 6020B	
Selenium	0.531	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/24/23 15:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	79.0		%	1	BGA0626	01/25/23	01/25/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 14:10

SS36@14'
2301423-08 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/24/23 15:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.298	0.0100		mmhos/cm	1	BGA0624	01/25/23	01/25/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 14:10

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 BGA0595 - EPA 5030 Soil MS

Blank (BGA0595-BLK1)

Prepared: 01/24/23 Analyzed: 01/25/23

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	0.0320		"	0.0400		80.0	50-150			
Surrogate: Toluene-d8	0.0397		"	0.0400		99.2	50-150			
Surrogate: 4-Bromofluorobenzene	0.0358		"	0.0400		89.4	50-150			

LCS (BGA0595-BS1)

Prepared: 01/24/23 Analyzed: 01/25/23

Benzene	0.105	0.0020	mg/kg	0.125		84.0	70-130			
Toluene	0.147	0.0050	"	0.125		118	70-130			
Ethylbenzene	0.120	0.0050	"	0.125		95.9	70-130			
m,p-Xylene	0.243	0.010	"	0.250		97.0	70-130			
o-Xylene	0.117	0.0050	"	0.125		93.4	70-130			
1,2,4-Trimethylbenzene	0.153	0.0050	"	0.125		122	70-130			
1,3,5-Trimethylbenzene	0.158	0.0050	"	0.125		126	70-130			
Naphthalene	0.111	0.0038	"	0.125		88.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0369		"	0.0400		92.3	50-150			
Surrogate: Toluene-d8	0.0406		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0561		"	0.0400		140	50-150			

Matrix Spike (BGA0595-MS1)

Source: 2301401-01

Prepared: 01/24/23 Analyzed: 01/25/23

Benzene	0.0999	0.0020	mg/kg	0.125	ND	79.9	70-130			
Toluene	0.116	0.0050	"	0.125	ND	93.0	70-130			
Ethylbenzene	0.110	0.0050	"	0.125	ND	88.4	70-130			
m,p-Xylene	0.191	0.010	"	0.250	ND	76.5	70-130			
o-Xylene	0.0926	0.0050	"	0.125	ND	74.0	70-130			
1,2,4-Trimethylbenzene	0.102	0.0050	"	0.125	ND	81.7	70-130			
1,3,5-Trimethylbenzene	0.107	0.0050	"	0.125	ND	85.4	70-130			
Naphthalene	0.114	0.0038	"	0.125	ND	91.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0306		"	0.0400		76.4	50-150			
Surrogate: Toluene-d8	0.0428		"	0.0400		107	50-150			
Surrogate: 4-Bromofluorobenzene	0.0464		"	0.0400		116	50-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 14:10

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 BGA0595 - EPA 5030 Soil MS

Matrix Spike Dup (BGA0595-MSD1)	Source: 2301401-01			Prepared: 01/24/23 Analyzed: 01/25/23						
Benzene	0.102	0.0020	mg/kg	0.125	ND	81.7	70-130	2.26	30	
Toluene	0.0911	0.0050	"	0.125	ND	72.9	70-130	24.2	30	
Ethylbenzene	0.114	0.0050	"	0.125	ND	91.5	70-130	3.47	30	
m,p-Xylene	0.202	0.010	"	0.250	ND	80.7	70-130	5.25	30	
o-Xylene	0.0952	0.0050	"	0.125	ND	76.2	70-130	2.81	30	
1,2,4-Trimethylbenzene	0.106	0.0050	"	0.125	ND	84.9	70-130	3.89	30	
1,3,5-Trimethylbenzene	0.112	0.0050	"	0.125	ND	89.8	70-130	4.93	30	
Naphthalene	0.0890	0.0038	"	0.125	ND	71.2	70-130	25.1	30	
Surrogate: 1,2-Dichloroethane-d4	0.0590		"	0.0400		147	50-150			
Surrogate: Toluene-d8	0.0428		"	0.0400		107	50-150			
Surrogate: 4-Bromofluorobenzene	0.0475		"	0.0400		119	50-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 14:10

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 BGA0596 - EPA 3550A

Blank (BGA0596-BLK1)

Prepared: 01/24/23 Analyzed: 01/25/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	13.8		"	12.5		110	30-150			

LCS (BGA0596-BS1)

Prepared: 01/24/23 Analyzed: 01/25/23

C10-C28 (DRO)	544	50	mg/kg	500		109	70-130			
Surrogate: o-Terphenyl	14.3		"	12.5		115	30-150			

Matrix Spike (BGA0596-MS1)

Source: 2301401-01

Prepared: 01/24/23 Analyzed: 01/25/23

C10-C28 (DRO)	484	50	mg/kg	500	31.9	90.4	70-130			
Surrogate: o-Terphenyl	9.64		"	12.5		77.1	30-150			

Matrix Spike Dup (BGA0596-MSD1)

Source: 2301401-01

Prepared: 01/24/23 Analyzed: 01/25/23

C10-C28 (DRO)	489	50	mg/kg	500	31.9	91.5	70-130	1.11	20	
Surrogate: o-Terphenyl	11.9		"	12.5		94.9	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: Jerke UP 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 14:10

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGA0604 - EPA 5030 Soil MS

Blank (BGA0604-BLK1)

Prepared & Analyzed: 01/25/23

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	0.0267		"	0.0333		80.2	40-150			
Surrogate: Fluoranthene-d10	0.0282		"	0.0333		84.5	40-150			

LCS (BGA0604-BS1)

Prepared & Analyzed: 01/25/23

Acenaphthene	0.0288	0.00500	mg/kg	0.0333		86.3	31-137			
Anthracene	0.0293	0.00500	"	0.0333		87.9	30-120			
Benzo (a) anthracene	0.0283	0.00500	"	0.0333		85.0	30-120			
Benzo (a) pyrene	0.0284	0.00500	"	0.0333		85.3	30-120			
Benzo (b) fluoranthene	0.0283	0.00500	"	0.0333		84.8	30-120			
Benzo (k) fluoranthene	0.0293	0.00500	"	0.0333		87.8	30-120			
Chrysene	0.0292	0.00500	"	0.0333		87.6	30-120			
Dibenz (a,h) anthracene	0.0270	0.00500	"	0.0333		80.9	30-120			
Fluoranthene	0.0285	0.00500	"	0.0333		85.6	30-120			
Fluorene	0.0288	0.00500	"	0.0333		86.4	30-120			
Indeno (1,2,3-cd) pyrene	0.0283	0.00500	"	0.0333		84.8	30-120			
Pyrene	0.0308	0.00500	"	0.0333		92.3	35-142			
1-Methylnaphthalene	0.0306	0.00500	"	0.0333		91.8	35-142			
2-Methylnaphthalene	0.0280	0.00500	"	0.0333		84.1	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0277		"	0.0333		83.0	40-150			
Surrogate: Fluoranthene-d10	0.0292		"	0.0333		87.6	40-150			

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 14:10

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 BGA0604 - EPA 5030 Soil MS

Matrix Spike (BGA0604-MS1)

Source: 2301355-01

Prepared & Analyzed: 01/25/23

Acenaphthene	0.0230	0.00500	mg/kg	0.0333	ND	68.9	31-137				
Anthracene	0.0224	0.00500	"	0.0333	ND	67.3	30-120				
Benzo (a) anthracene	0.0243	0.00500	"	0.0333	ND	73.0	30-120				
Benzo (a) pyrene	0.0232	0.00500	"	0.0333	ND	69.6	30-120				
Benzo (b) fluoranthene	0.0238	0.00500	"	0.0333	ND	71.3	30-120				
Benzo (k) fluoranthene	0.0234	0.00500	"	0.0333	ND	70.2	30-120				
Chrysene	0.0242	0.00500	"	0.0333	ND	72.6	30-120				
Dibenz (a,h) anthracene	0.0219	0.00500	"	0.0333	ND	65.6	30-120				
Fluoranthene	0.0241	0.00500	"	0.0333	ND	72.2	30-120				
Fluorene	0.0234	0.00500	"	0.0333	ND	70.2	30-120				
Indeno (1,2,3-cd) pyrene	0.0229	0.00500	"	0.0333	ND	68.7	30-120				
Pyrene	0.0257	0.00500	"	0.0333	ND	77.1	35-142				
1-Methylnaphthalene	0.0259	0.00500	"	0.0333	ND	77.7	15-130				
2-Methylnaphthalene	0.0212	0.00500	"	0.0333	ND	63.5	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0245		"	0.0333		73.4	40-150				
Surrogate: Fluoranthene-d10	0.0230		"	0.0333		69.0	40-150				

Matrix Spike Dup (BGA0604-MSD1)

Source: 2301355-01

Prepared & Analyzed: 01/25/23

Acenaphthene	0.0223	0.00500	mg/kg	0.0333	ND	66.9	31-137	2.81	30
Anthracene	0.0229	0.00500	"	0.0333	ND	68.7	30-120	2.03	30
Benzo (a) anthracene	0.0237	0.00500	"	0.0333	ND	71.0	30-120	2.85	30
Benzo (a) pyrene	0.0228	0.00500	"	0.0333	ND	68.5	30-120	1.53	30
Benzo (b) fluoranthene	0.0234	0.00500	"	0.0333	ND	70.3	30-120	1.36	30
Benzo (k) fluoranthene	0.0231	0.00500	"	0.0333	ND	69.2	30-120	1.46	30
Chrysene	0.0235	0.00500	"	0.0333	ND	70.6	30-120	2.71	30
Dibenz (a,h) anthracene	0.0210	0.00500	"	0.0333	ND	63.0	30-120	3.96	30
Fluoranthene	0.0239	0.00500	"	0.0333	ND	71.6	30-120	0.866	30
Fluorene	0.0224	0.00500	"	0.0333	ND	67.2	30-120	4.39	30
Indeno (1,2,3-cd) pyrene	0.0220	0.00500	"	0.0333	ND	66.1	30-120	3.84	30
Pyrene	0.0248	0.00500	"	0.0333	ND	74.4	35-142	3.53	30
1-Methylnaphthalene	0.0227	0.00500	"	0.0333	ND	68.1	15-130	13.2	50
2-Methylnaphthalene	0.0224	0.00500	"	0.0333	ND	67.3	15-130	5.82	50
Surrogate: 2-Methylnaphthalene-d10	0.0229		"	0.0333		68.7	40-150		
Surrogate: Fluoranthene-d10	0.0233		"	0.0333		70.0	40-150		

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 14:10

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 BGA0597 - EPA 3050B

Blank (BGA0597-BLK1)

Prepared: 01/24/23 Analyzed: 01/26/23

Boron ND 0.0100 mg/L

LCS (BGA0597-BS1)

Prepared: 01/24/23 Analyzed: 01/26/23

Boron 4.94 0.0100 mg/L 5.00 98.7 80-120

Duplicate (BGA0597-DUP1)

Source: 2301401-01

Prepared: 01/24/23 Analyzed: 01/26/23

Boron 0.0455 0.0100 mg/L 0.0486 6.67 20

Matrix Spike (BGA0597-MS1)

Source: 2301401-01

Prepared: 01/24/23 Analyzed: 01/26/23

Boron 4.92 0.0100 mg/L 5.00 0.0486 97.5 75-125

Matrix Spike Dup (BGA0597-MSD1)

Source: 2301401-01

Prepared: 01/24/23 Analyzed: 01/26/23

Boron 4.74 0.0100 mg/L 5.00 0.0486 93.7 75-125 3.93 25

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 14:10

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 BGA0619 - EPA 3050B

Blank (BGA0619-BLK1)

Prepared & Analyzed: 01/25/23

Arsenic	ND	0.200	mg/kg wet
Selenium	ND	0.260	"

LCS (BGA0619-BS1)

Prepared & Analyzed: 01/25/23

Arsenic	41.9	0.200	mg/kg wet	40.0	105	80-120
Selenium	3.68	0.260	"	4.00	91.9	80-120

Duplicate (BGA0619-DUP1)

Source: 2301401-01

Prepared & Analyzed: 01/25/23

Arsenic	ND	0.200	mg/kg dry	ND			20
Selenium	0.678	0.260	"	0.765		12.0	20

Matrix Spike (BGA0619-MS1)

Source: 2301401-01

Prepared & Analyzed: 01/25/23

Arsenic	45.6	0.200	mg/kg dry	46.7	ND	97.6	75-125
Selenium	4.80	0.260	"	4.67	0.765	86.5	75-125

Matrix Spike Dup (BGA0619-MSD1)

Source: 2301401-01

Prepared & Analyzed: 01/25/23

Arsenic	44.5	0.200	mg/kg dry	46.7	ND	95.3	75-125	2.35	25
Selenium	4.53	0.260	"	4.67	0.765	80.6	75-125	5.90	25

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

01/26/23 14:10

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

Summit Scientific

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

Batch BGA0626 - General Preparation

Duplicate (BGA0626-DUP1)			Source: 2301401-01			Prepared & Analyzed: 01/25/23					
% Solids	85.3		%			85.7			0.505	20	

Summit Scientific



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 14:10

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013 - Quality Control
Summit Scientific

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

Batch BGA0624 - General Preparation

Blank (BGA0624-BLK1)

Prepared & Analyzed: 01/25/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGA0624-BS1)

Prepared & Analyzed: 01/25/23

Specific Conductance (EC) 0.149 0.0100 mmhos/cm 0.150 99.5 95-105

Duplicate (BGA0624-DUP1)

Source: 2301423-01

Prepared & Analyzed: 01/25/23

Specific Conductance (EC) 0.559 0.0100 mmhos/cm 0.583 4.19 20

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/26/23 14:10

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 80401

303.277.9310

January 31, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Jerke UP 8-7 Tank Battery

Work Order # 2301456

Enclosed are the results of analyses for samples received by Summit Scientific on 01/25/23 18:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mikayla Axtell For Paul Shrewsbury

President



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/31/23 11:19

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS37@2.5'	2301456-01	Soil	01/25/23 12:00	01/25/23 18:00
SS38@5'	2301456-02	Soil	01/25/23 12:05	01/25/23 18:00
SS39@10'	2301456-03	Soil	01/25/23 12:10	01/25/23 18:00
SS40@14'	2301456-04	Soil	01/25/23 13:00	01/25/23 18:00
SS41@5'	2301456-05	Soil	01/25/23 13:20	01/25/23 18:00
SS42@10'	2301456-06	Soil	01/25/23 13:25	01/25/23 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

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

Client:	PDC / Tasman
Address:	6855 W 119th Ave
City/State/Zip:	Broomfield/ CO/ 80

Project Manager: Mark Longhurst
E-Mail: mark.longhurst@PDCE.com

Phone: 303-487-1228

Project Name: Jerke Up 8-7 Tank Battery

Sampler Name: David Vigil

Project Number:

					Preservative				Matrix				Analysis Requested							Special Instructions		
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	pH, EC, SAR (1)	Boron - HWS	TMBs (1,2,4) & (1,3,5)	PAH - 915 (2)	Metals - 915 (3)		pH, EC, SAR by saturated paste	
1	SS37 @ 2.5'	1/25/23	1200	1			X			X					X	X						
2	SS38 @ 5'		1205	3			X			X			X	X	X	X	X	X	X	X		
3	SS39 @ 10'		1210				X			X												
4	SS40 @ 14'		1300				X			X												
5	SS41 @ 5'		1320				X			X												
6	SS42 @ 10'		1325				X			X												
7																						
8																						
9																						
10																						
Relinquished by:		Date/Time:		Received by:		Date/Time:		Turn Around Time		(Check)		Notes:										
Tasman's Lock Box		1/25/23 1550		Tasman's Lock Box		1/25/23 1550		Same Day X		72 hours		(1) Only EC on SS38-SS42										
Relinquished by:		Date/Time:		Received by:		Date/Time:		24 hours		Standard		(2) PAHs: benz(a), dibenz(a,h), Fluorene, 1-M, 2-M										
Tasman's Lock Box		1/25/23 1500		Tasman's Lock Box		1/25/23 1800		48 hours														
Relinquished by:		Date/Time:		Received by:		Date/Time:		Sample Integrity:		Temperature Upon Receipt:		(3) Metals: arsenic, selenium										
										0.2												
								Samples Intact: Yes No														

S₂

Sample Receipt Checklist

S2 Work Order# 2301456Client: PDL / Tasman

Client Project ID:

Jerke UP 8-7 Tank Battery

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

Airbill #:

☐ ☒ ☐ ☐ ☐

Matrix (Check all that apply)

Air

☐

Soil/Solid

☒

Water

☐

Other

☐

Temp (°C)

0.2

Thermometer #

1

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


 Custodian Printed Name

1-25-23
 Date/Time



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:19

SS37@2.5'
2301456-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/25/23 12:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.116	0.0100		mg/L	1	BGA0632	01/25/23	01/27/23	EPA 6020B	

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

Date Sampled: **01/25/23 12:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Calcium	19.4	0.0563		mg/L dry	1	BGA0653	01/26/23	01/29/23	EPA 6020B	
Magnesium	26.0	0.0563		"	"	"	"	"	"	
Sodium	82.9	0.0563		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/25/23 12:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Sodium Adsorption Ratio	2.89	0.00100		units	1	BGA0731	01/30/23	01/30/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/25/23 12:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	88.8			%	1	BGA0646	01/26/23	01/26/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/25/23 12:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.751	0.0100		mmhos/cm	1	BGA0689	01/27/23	01/27/23	EPA 120.1	

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

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:19

SS37@2.5'
2301456-01 (Soil)

Summit Scientific

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

Date Sampled: **01/25/23 12:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.96			pH Units	1	BGA0685	01/27/23	01/27/23	EPA 9045D	

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:19

SS38@5'
2301456-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/25/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0628	01/25/23	01/25/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/25/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		92.5 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		110 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		119 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/25/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0629	01/25/23	01/25/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/25/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		60.2 %		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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:19

SS38@5'
2301456-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/25/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzo (a) anthracene	ND	0.00500		mg/kg	1	BGA0635	01/26/23	01/27/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/25/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		74.6 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		56.6 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/25/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.120	0.0100		mg/L	1	BGA0632	01/25/23	01/27/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/25/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	3.91	0.200		mg/kg dry	1	BGA0633	01/25/23	01/27/23	EPA 6020B	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/25/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	80.7			%	1	BGA0646	01/26/23	01/26/23	Calculation	

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:19

SS38@5'
2301456-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/25/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.450	0.0100		mmhos/cm	1	BGA0683	01/27/23	01/27/23	EPA 120.1	

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:19

SS39@10'
2301456-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/25/23 12:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0628	01/25/23	01/25/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/25/23 12:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		93.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		114 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		127 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/25/23 12:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0629	01/25/23	01/25/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/25/23 12:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		61.1 %		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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:19

SS39@10'
2301456-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/25/23 12:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzo (a) anthracene	ND	0.00500		mg/kg	1	BGA0635	01/26/23	01/27/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/25/23 12:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		67.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		53.3 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/25/23 12:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.0831	0.0100		mg/L	1	BGA0632	01/25/23	01/27/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/25/23 12:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	1.10	0.200		mg/kg dry	1	BGA0633	01/25/23	01/27/23	EPA 6020B	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/25/23 12:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	81.6			%	1	BGA0646	01/26/23	01/26/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:19

SS39@10'
2301456-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/25/23 12:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.506	0.0100		mmhos/cm	1	BGA0683	01/27/23	01/27/23	EPA 120.1	

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:19

SS40@14'
2301456-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/25/23 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0628	01/25/23	01/25/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/25/23 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		111 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		112 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		128 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/25/23 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0629	01/25/23	01/25/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/25/23 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		60.9 %		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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:19

SS40@14'
2301456-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/25/23 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzo (a) anthracene	ND	0.00500		mg/kg	1	BGA0635	01/26/23	01/27/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/25/23 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		74.0 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		62.0 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/25/23 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.0708	0.0100		mg/L	1	BGA0632	01/25/23	01/27/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/25/23 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.561	0.200		mg/kg dry	1	BGA0633	01/25/23	01/27/23	EPA 6020B	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/25/23 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	87.9			%	1	BGA0646	01/26/23	01/26/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:19

SS40@14'
2301456-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/25/23 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.338	0.0100		mmhos/cm	1	BGA0683	01/27/23	01/27/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:19

SS41@5'
2301456-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/25/23 13:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0628	01/25/23	01/25/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/25/23 13:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		92.5 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		113 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		122 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/25/23 13:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0629	01/25/23	01/25/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/25/23 13:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		65.7 %		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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:19

SS41@5'
2301456-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/25/23 13:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzo (a) anthracene	ND	0.00500		mg/kg	1	BGA0635	01/26/23	01/27/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/25/23 13:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		65.6 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		55.7 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/25/23 13:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.103	0.0100		mg/L	1	BGA0632	01/25/23	01/27/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/25/23 13:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	2.26	0.200		mg/kg dry	1	BGA0633	01/25/23	01/27/23	EPA 6020B	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/25/23 13:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	89.7			%	1	BGA0646	01/26/23	01/26/23	Calculation	

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:19

SS41@5'
2301456-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/25/23 13:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.461	0.0100		mmhos/cm	1	BGA0683	01/27/23	01/27/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:19

SS42@10'
2301456-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/25/23 13:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0628	01/25/23	01/25/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/25/23 13:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		134 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		128 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		136 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/25/23 13:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0629	01/25/23	01/25/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/25/23 13:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		64.6 %		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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:19

SS42@10'
2301456-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/25/23 13:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzo (a) anthracene	ND	0.00500		mg/kg	1	BGA0635	01/26/23	01/27/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/25/23 13:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		75.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		60.5 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/25/23 13:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.0720	0.0100		mg/L	1	BGA0632	01/25/23	01/27/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/25/23 13:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.686	0.200		mg/kg dry	1	BGA0633	01/25/23	01/27/23	EPA 6020B	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/25/23 13:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	82.0			%	1	BGA0646	01/26/23	01/26/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:19

SS42@10'
2301456-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/25/23 13:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.461	0.0100		mmhos/cm	1	BGA0683	01/27/23	01/27/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:19

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 BGA0628 - EPA 5030 Soil MS

Blank (BGA0628-BLK1)

Prepared: 01/25/23 Analyzed: 01/26/23

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	0.0518		"	0.0400		130	50-150			
Surrogate: Toluene-d8	0.0398		"	0.0400		99.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0426		"	0.0400		106	50-150			

LCS (BGA0628-BS1)

Prepared: 01/25/23 Analyzed: 01/26/23

Benzene	0.118	0.0020	mg/kg	0.125		94.5	70-130			
Toluene	0.120	0.0050	"	0.125		95.6	70-130			
Ethylbenzene	0.142	0.0050	"	0.125		113	70-130			
m,p-Xylene	0.265	0.010	"	0.250		106	70-130			
o-Xylene	0.127	0.0050	"	0.125		102	70-130			
1,2,4-Trimethylbenzene	0.145	0.0050	"	0.125		116	70-130			
1,3,5-Trimethylbenzene	0.144	0.0050	"	0.125		115	70-130			
Naphthalene	0.122	0.0038	"	0.125		97.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0530		"	0.0400		133	50-150			
Surrogate: Toluene-d8	0.0403		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0411		"	0.0400		103	50-150			

Matrix Spike (BGA0628-MS1)

Source: 2301395-03

Prepared: 01/25/23 Analyzed: 01/26/23

Benzene	0.110	0.0020	mg/kg	0.125	ND	87.6	70-130			
Toluene	0.113	0.0050	"	0.125	ND	90.0	70-130			
Ethylbenzene	0.136	0.0050	"	0.125	ND	108	70-130			
m,p-Xylene	0.257	0.010	"	0.250	0.0126	97.8	70-130			
o-Xylene	0.127	0.0050	"	0.125	ND	102	70-130			
1,2,4-Trimethylbenzene	0.155	0.0050	"	0.125	0.00963	116	70-130			
1,3,5-Trimethylbenzene	0.142	0.0050	"	0.125	0.00636	108	70-130			
Naphthalene	0.195	0.0038	"	0.125	0.0721	98.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0519		"	0.0400		130	50-150			
Surrogate: Toluene-d8	0.0400		"	0.0400		99.9	50-150			
Surrogate: 4-Bromofluorobenzene	0.0412		"	0.0400		103	50-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:19

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 BGA0628 - EPA 5030 Soil MS

Matrix Spike Dup (BGA0628-MSD1)		Source: 2301395-03			Prepared: 01/25/23 Analyzed: 01/26/23					
Benzene	0.115	0.0020	mg/kg	0.125	ND	92.2	70-130	5.13	30	
Toluene	0.119	0.0050	"	0.125	ND	95.1	70-130	5.44	30	
Ethylbenzene	0.140	0.0050	"	0.125	ND	112	70-130	3.10	30	
m,p-Xylene	0.270	0.010	"	0.250	0.0126	103	70-130	4.98	30	
o-Xylene	0.129	0.0050	"	0.125	ND	103	70-130	1.48	30	
1,2,4-Trimethylbenzene	0.162	0.0050	"	0.125	0.00963	122	70-130	4.40	30	
1,3,5-Trimethylbenzene	0.145	0.0050	"	0.125	0.00636	111	70-130	2.40	30	
Naphthalene	0.198	0.0038	"	0.125	0.0721	101	70-130	1.60	30	
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	0.0526		"	0.0400		131	50-150			
Surrogate: Toluene-d8	0.0409		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0410		"	0.0400		103	50-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:19

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 BGA0629 - EPA 3550A

Blank (BGA0629-BLK1)

Prepared: 01/25/23 Analyzed: 01/26/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	12.6		"	12.5		101	30-150			

LCS (BGA0629-BS1)

Prepared: 01/25/23 Analyzed: 01/26/23

C10-C28 (DRO)	461	50	mg/kg	500		92.2	70-130			
Surrogate: o-Terphenyl	12.9		"	12.5		103	30-150			

Matrix Spike (BGA0629-MS1)

Source: 2301395-03

Prepared: 01/25/23 Analyzed: 01/26/23

C10-C28 (DRO)	437	50	mg/kg	500	ND	87.4	70-130			
Surrogate: o-Terphenyl	12.5		"	12.5		99.9	30-150			

Matrix Spike Dup (BGA0629-MSD1)

Source: 2301395-03

Prepared: 01/25/23 Analyzed: 01/26/23

C10-C28 (DRO)	421	50	mg/kg	500	ND	84.2	70-130	3.76	20	
Surrogate: o-Terphenyl	12.6		"	12.5		101	30-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:19

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGA0635 - EPA 5030 Soil MS

Blank (BGA0635-BLK1)

Prepared & Analyzed: 01/26/23

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	0.0310		"	0.0333		93.1		40-150			
Surrogate: Fluoranthene-d10	0.0261		"	0.0333		78.4		40-150			

LCS (BGA0635-BS1)

Prepared & Analyzed: 01/26/23

Acenaphthene	0.0383	0.00500	mg/kg	0.0333		115		31-137			
Anthracene	0.0326	0.00500	"	0.0333		97.7		30-120			
Benzo (a) anthracene	0.0247	0.00500	"	0.0333		74.2		30-120			
Benzo (a) pyrene	0.0294	0.00500	"	0.0333		88.1		30-120			
Benzo (b) fluoranthene	0.0268	0.00500	"	0.0333		80.5		30-120			
Benzo (k) fluoranthene	0.0375	0.00500	"	0.0333		112		30-120			
Chrysene	0.0292	0.00500	"	0.0333		87.7		30-120			
Dibenz (a,h) anthracene	0.0278	0.00500	"	0.0333		83.3		30-120			
Fluoranthene	0.0335	0.00500	"	0.0333		100		30-120			
Fluorene	0.0383	0.00500	"	0.0333		115		30-120			
Indeno (1,2,3-cd) pyrene	0.0266	0.00500	"	0.0333		79.7		30-120			
Pyrene	0.0299	0.00500	"	0.0333		89.7		35-142			
1-Methylnaphthalene	0.0293	0.00500	"	0.0333		87.9		35-142			
2-Methylnaphthalene	0.0326	0.00500	"	0.0333		97.7		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0301		"	0.0333		90.4		40-150			
Surrogate: Fluoranthene-d10	0.0334		"	0.0333		100		40-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:19

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGA0635 - EPA 5030 Soil MS

Matrix Spike (BGA0635-MS1)

Source: 2301456-02

Prepared & Analyzed: 01/26/23

Acenaphthene	0.0250	0.00500	mg/kg	0.0333	ND	74.9	31-137		
Anthracene	0.0234	0.00500	"	0.0333	ND	70.2	30-120		
Benzo (a) anthracene	0.0214	0.00500	"	0.0333	ND	64.3	30-120		
Benzo (a) pyrene	0.0221	0.00500	"	0.0333	ND	66.3	30-120		
Benzo (b) fluoranthene	0.0224	0.00500	"	0.0333	ND	67.3	30-120		
Benzo (k) fluoranthene	0.0255	0.00500	"	0.0333	ND	76.5	30-120		
Chrysene	0.0211	0.00500	"	0.0333	ND	63.4	30-120		
Dibenz (a,h) anthracene	0.0214	0.00500	"	0.0333	ND	64.2	30-120		
Fluoranthene	0.0249	0.00500	"	0.0333	ND	74.8	30-120		
Fluorene	0.0278	0.00500	"	0.0333	ND	83.3	30-120		
Indeno (1,2,3-cd) pyrene	0.0201	0.00500	"	0.0333	ND	60.3	30-120		
Pyrene	0.0231	0.00500	"	0.0333	ND	69.4	35-142		
1-Methylnaphthalene	0.0248	0.00500	"	0.0333	ND	74.3	15-130		
2-Methylnaphthalene	0.0246	0.00500	"	0.0333	ND	73.7	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0245		"	0.0333		73.5	40-150		
Surrogate: Fluoranthene-d10	0.0266		"	0.0333		79.8	40-150		

Matrix Spike Dup (BGA0635-MSD1)

Source: 2301456-02

Prepared & Analyzed: 01/26/23

Acenaphthene	0.0254	0.00500	mg/kg	0.0333	ND	76.3	31-137	1.91	30
Anthracene	0.0219	0.00500	"	0.0333	ND	65.8	30-120	6.58	30
Benzo (a) anthracene	0.0204	0.00500	"	0.0333	ND	61.2	30-120	4.95	30
Benzo (a) pyrene	0.0207	0.00500	"	0.0333	ND	62.2	30-120	6.47	30
Benzo (b) fluoranthene	0.0186	0.00500	"	0.0333	ND	55.9	30-120	18.5	30
Benzo (k) fluoranthene	0.0247	0.00500	"	0.0333	ND	74.1	30-120	3.14	30
Chrysene	0.0203	0.00500	"	0.0333	ND	60.9	30-120	3.94	30
Dibenz (a,h) anthracene	0.0207	0.00500	"	0.0333	ND	62.0	30-120	3.51	30
Fluoranthene	0.0238	0.00500	"	0.0333	ND	71.4	30-120	4.59	30
Fluorene	0.0251	0.00500	"	0.0333	ND	75.3	30-120	10.0	30
Indeno (1,2,3-cd) pyrene	0.0205	0.00500	"	0.0333	ND	61.5	30-120	1.88	30
Pyrene	0.0220	0.00500	"	0.0333	ND	66.0	35-142	5.04	30
1-Methylnaphthalene	0.0217	0.00500	"	0.0333	ND	65.2	15-130	13.1	50
2-Methylnaphthalene	0.0243	0.00500	"	0.0333	ND	72.9	15-130	1.20	50
Surrogate: 2-Methylnaphthalene-d10	0.0226		"	0.0333		67.7	40-150		
Surrogate: Fluoranthene-d10	0.0245		"	0.0333		73.6	40-150		

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:19

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 BGA0632 - EPA 3050B

Blank (BGA0632-BLK1)

Prepared: 01/25/23 Analyzed: 01/27/23

Boron ND 0.0100 mg/L

LCS (BGA0632-BS1)

Prepared: 01/25/23 Analyzed: 01/27/23

Boron 5.78 0.0100 mg/L 5.00 116 80-120

Duplicate (BGA0632-DUP1)

Source: 2301432-01

Prepared: 01/25/23 Analyzed: 01/27/23

Boron 0.121 0.0100 mg/L 0.122 0.428 20

Matrix Spike (BGA0632-MS1)

Source: 2301432-01

Prepared: 01/25/23 Analyzed: 01/27/23

Boron 6.21 0.0100 mg/L 5.00 0.122 122 75-125

Matrix Spike Dup (BGA0632-MSD1)

Source: 2301432-01

Prepared: 01/25/23 Analyzed: 01/27/23

Boron 6.31 0.0100 mg/L 5.00 0.122 124 75-125 1.61 25

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:19

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 BGA0633 - EPA 3050B

Blank (BGA0633-BLK1)

Prepared: 01/25/23 Analyzed: 01/26/23

Arsenic	ND	0.200	mg/kg wet
Selenium	ND	0.260	"

LCS (BGA0633-BS1)

Prepared: 01/25/23 Analyzed: 01/26/23

Arsenic	40.3	0.200	mg/kg wet	40.0	101	80-120
Selenium	4.68	0.260	"	4.00	117	80-120

Duplicate (BGA0633-DUP1)

Source: 2301455-01

Prepared: 01/25/23 Analyzed: 01/27/23

Arsenic	0.269	0.200	mg/kg dry	ND			200	20	QR-03
Selenium	ND	0.260	"	0.225			200	20	QR-01

Matrix Spike (BGA0633-MS1)

Source: 2301455-01

Prepared: 01/25/23 Analyzed: 01/26/23

Arsenic	49.1	0.200	mg/kg dry	48.2	ND	102	75-125
Selenium	5.04	0.260	"	4.82	0.225	100	75-125

Matrix Spike Dup (BGA0633-MSD1)

Source: 2301455-01

Prepared: 01/25/23 Analyzed: 01/26/23

Arsenic	53.6	0.200	mg/kg dry	48.2	ND	111	75-125	8.61	25
Selenium	5.38	0.260	"	4.82	0.225	107	75-125	6.54	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.



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:19

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 BGA0653 - General Preparation

Blank (BGA0653-BLK1)

Prepared: 01/26/23 Analyzed: 01/29/23

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

LCS (BGA0653-BS1)

Prepared: 01/26/23 Analyzed: 01/29/23

Calcium	6.15	0.0500	mg/L wet	5.00	123	70-130
Magnesium	5.24	0.0500	"	5.00	105	70-130
Sodium	5.08	0.0500	"	5.00	102	70-130

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:19

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

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

Batch BGA0646 - General Preparation

Duplicate (BGA0646-DUP1)		Source: 2301455-01		Prepared & Analyzed: 01/26/23	
% Solids	84.5		%	83.0	1.68 20

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:19

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 BGA0689 - General Preparation

Blank (BGA0689-BLK1)

Prepared & Analyzed: 01/27/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGA0689-BS1)

Prepared & Analyzed: 01/27/23

Specific Conductance (EC) 0.149 0.0100 mmhos/cm 0.150 99.3 95-105

Duplicate (BGA0689-DUP1)

Source: 2301446-05

Prepared & Analyzed: 01/27/23

Specific Conductance (EC) 0.863 0.0100 mmhos/cm 0.865 0.243 20

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:19

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

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

Batch BGA0685 - General Preparation

LCS (BGA0685-BS1)

Prepared & Analyzed: 01/27/23

pH	9.05	pH Units	9.18	98.6	95-105
----	------	----------	------	------	--------

Duplicate (BGA0685-DUP1)

Source: 2301446-05

Prepared & Analyzed: 01/27/23

pH	8.20	pH Units	8.12	0.980	20
----	------	----------	------	-------	----

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:19

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013 - Quality Control
Summit Scientific

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

Batch BGA0683 - General Preparation

Blank (BGA0683-BLK1)

Prepared & Analyzed: 01/27/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGA0683-BS1)

Prepared & Analyzed: 01/27/23

Specific Conductance (EC) 0.149 0.0100 mmhos/cm 0.150 99.3 95-105

Duplicate (BGA0683-DUP1)

Source: 2301456-02

Prepared & Analyzed: 01/27/23

Specific Conductance (EC) 0.440 0.0100 mmhos/cm 0.450 2.16 20

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:19

Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QR-01	Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
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 80401

303.277.9310

February 02, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Jerke UP 8-7 Tank Battery

Work Order # 2301474

Enclosed are the results of analyses for samples received by Summit Scientific on 01/26/23 17:55. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mikayla Axtell For Paul Shrewsbury

President



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS43@14'	2301474-01	Soil	01/26/23 09:15	01/26/23 17:55
SS44@14'	2301474-02	Soil	01/26/23 09:50	01/26/23 17:55
SS45@14'	2301474-03	Soil	01/26/23 10:20	01/26/23 17:55
SS46@2.5'	2301474-04	Soil	01/26/23 10:45	01/26/23 17:55
SS47@5'	2301474-05	Soil	01/26/23 10:50	01/26/23 17:55
SS48@10'	2301474-06	Soil	01/26/23 10:55	01/26/23 17:55
SS49@14'	2301474-07	Soil	01/26/23 11:25	01/26/23 17:55
SS50@5'	2301474-08	Soil	01/26/23 12:00	01/26/23 17:55
SS51@10'	2301474-09	Soil	01/26/23 12:05	01/26/23 17:55
WC02@10'	2301474-10	Soil	01/26/23 12:50	01/26/23 17:55
SS52@5'	2301474-11	Soil	01/26/23 14:00	01/26/23 17:55
SS53@10'	2301474-12	Soil	01/26/23 14:05	01/26/23 17:55

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

S₂

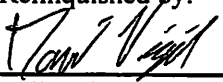
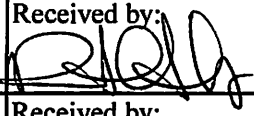
4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

2301474.1

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: Jerke Up 8-7 Tank Battery
Sampler Name: David Vigil Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	(1) pH, EC, SAR	Boron - HWS	TMBs (1,2,4) & (1,3,5)	(2) PAH - 915	(3) Metals - 915	
1	SS43 @ 14'	1/26/23	0915	3			X			X				X	X	X	X	X	X	
2	SS44 @ 14'		0950	3			X			X				X	X	X	X	X	X	
3	SS45 @ 14'		1020	3			X			X				X	X	X	X	X	X	
4	SS46 @ 2.5'		1045	1			X			X				X	X	X	X	X	X	
5	SS47 @ 5'		1050	3			X			X				X	X	X	X	X	X	
6	SS48 @ 10'		1055	3			X			X				X	X	X	X	X	X	
7	SS49 @ 14'		1125	3			X			X				X	X	X	X	X	X	
8	SS50 @ 5'		1200	3			X			X				X	X	X	X	X	X	
9	SS51 @ 10'		1205	3			X			X				X	X	X	X	X	X	
10	WCO2 @ 10' ★	↓	1250	3			X			X				X	X	X	X	X	X	

Relinquished by: 	Date/Time: 1600 1/26/23	Received by: Tasman's Lock Box	Date/Time: 1600 1/26/23	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard 48 hours <input type="checkbox"/>	Notes: (1) Only EC on SS43-45 and SS47-51 (2) PAHs: benz(a), dibenz(a,h), Fluorene, 1-m, 2-m (3) Metals: arsenic, Selenium ★ Full 915 for WCO2
Relinquished by: Tasman's Lock Box	Date/Time: 12023 1755	Received by: 	Date/Time: 12023 1755	Sample Integrity:	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Temperature Upon Receipt: 7.6 Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Summit Scientific

S₂

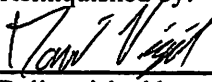

2301474.2

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: Jerke Up 8-7 Tank Battery
Sampler Name: David Vigil Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions		
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	(1) pH, EC, SAR	Boron - HWS	TMBs (1,2,4) & (1,3,5)	(2) PAH - 915	(3) Metals - 915			
1	SS52 @ 5'	1/26/23	1400	3			X			X				X	X	X	X	X	X	X		
2	SS53 @ 10'	↓	1405	↓			↓			↓				↓	↓	↓	↓	↓	↓	↓		
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Relinquished by: 	Date/Time: 1600 1/26/23	Received by: Tasman's Lock Box	Date/Time: 1600 1/26/23	Turn Around Time Same Day <input checked="" type="checkbox"/> 72 hours 24 hours 48 hours	(Check) 72 hours Standard	Notes: (1) - only EC (2) - PAHs: benz(a), dibenz(a,h), Fluorene, 1-M, 2-M (3) Metals: arsenic, selenium
Relinquished by: Tasman's Lock Box	Date/Time: 1200 1/26/23	Received by: 	Date/Time: 1200 1/26/23	Sample Integrity:		
Relinquished by:	Date/Time:	Received by:	Date/Time:	Temperature Upon Receipt: 7.6	Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

S₂2/2
Sample Receipt Checklist

S2 Work Order# 2301474

Client: Proctorman Client Project ID: Jerice up 8-7 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐☐ ☐ ☐ ☐ ☐Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 7.4Thermometer # 1

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

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

Custodian Printed Name

Date/Time

1.26.23



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

SS43@14'
2301474-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/26/23 09:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0664	01/26/23	01/26/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/26/23 09:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		87.3 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		98.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/26/23 09:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0665	01/26/23	01/26/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/26/23 09:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		110 %		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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

SS43@14'
2301474-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/26/23 09:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzo (a) anthracene	ND	0.00500		mg/kg	1	BGA0669	01/27/23	01/28/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/26/23 09:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		76.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		61.0 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/26/23 09:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.141	0.0100		mg/L	1	BGA0666	01/26/23	01/28/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/26/23 09:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.345	0.200		mg/kg dry	1	BGA0674	01/27/23	01/28/23	EPA 6020B	
Selenium	0.329	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/26/23 09:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	83.8			%	1	BGA0688	01/27/23	01/30/23	Calculation	

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

SS43@14'
2301474-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/26/23 09:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.317	0.0100		mmhos/cm	1	BGA0683	01/27/23	01/27/23	EPA 120.1	

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

SS44@14'
2301474-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/26/23 09:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0664	01/26/23	01/26/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/26/23 09:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		83.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		96.8 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/26/23 09:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0665	01/26/23	01/26/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/26/23 09:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		112 %		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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

SS44@14'
2301474-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/26/23 09:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzo (a) anthracene	ND	0.00500		mg/kg	1	BGA0669	01/27/23	01/28/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/26/23 09:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		76.4 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		60.2 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/26/23 09:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.0881	0.0100		mg/L	1	BGA0666	01/26/23	01/28/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/26/23 09:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.469	0.200		mg/kg dry	1	BGA0674	01/27/23	01/28/23	EPA 6020B	
Selenium	0.285	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/26/23 09:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	87.3			%	1	BGA0688	01/27/23	01/30/23	Calculation	

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

SS44@14'
2301474-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/26/23 09:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.344	0.0100		mmhos/cm	1	BGA0683	01/27/23	01/27/23	EPA 120.1	

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

SS45@14'
2301474-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/26/23 10:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0664	01/26/23	01/26/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/26/23 10:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		83.6 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		97.6 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.6 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/26/23 10:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0665	01/26/23	01/26/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/26/23 10:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		111 %		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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

SS45@14'
2301474-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/26/23 10:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzo (a) anthracene	ND	0.00500		mg/kg	1	BGA0669	01/27/23	01/28/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/26/23 10:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		65.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		48.5 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/26/23 10:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.0878	0.0100		mg/L	1	BGA0666	01/26/23	01/28/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/26/23 10:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	ND	0.200		mg/kg dry	1	BGA0674	01/27/23	01/28/23	EPA 6020B	
Selenium	0.402	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/26/23 10:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	85.2			%	1	BGA0688	01/27/23	01/30/23	Calculation	

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

SS45@14'
2301474-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/26/23 10:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.306	0.0100		mmhos/cm	1	BGA0683	01/27/23	01/27/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

SS46@2.5'
2301474-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/26/23 10:45**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Boron	0.107	0.0100			mg/L	1	BGA0666	01/26/23	01/28/23	EPA 6020B	

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

Date Sampled: **01/26/23 10:45**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Calcium	49.2	0.0589			mg/L dry	1	BGA0653	01/26/23	01/30/23	EPA 6020B	
Magnesium	27.7	0.0589			"	"	"	"	"	"	
Sodium	59.3	0.0589			"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/26/23 10:45**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Sodium Adsorption Ratio	1.68	0.00100			units	1	BGA0731	01/30/23	01/30/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/26/23 10:45**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
% Solids	84.9				%	1	BGA0688	01/27/23	01/30/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/26/23 10:45**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Specific Conductance (EC)	0.795	0.0100			mmhos/cm	1	BGA0689	01/27/23	01/27/23	EPA 120.1	

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

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

SS46@2.5'
2301474-04 (Soil)

Summit Scientific

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

Date Sampled: **01/26/23 10:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.01			pH Units	1	BGA0685	01/27/23	01/27/23	EPA 9045D	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

SS47@5'
2301474-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/26/23 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0664	01/26/23	01/26/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/26/23 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		85.0 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		95.6 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.7 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/26/23 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0665	01/26/23	01/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/26/23 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		115 %		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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

SS47@5'
2301474-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/26/23 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzo (a) anthracene	ND	0.00500		mg/kg	1	BGA0669	01/27/23	01/28/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/26/23 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		70.3 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		50.1 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/26/23 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.0600	0.0100		mg/L	1	BGA0666	01/26/23	01/28/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/26/23 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	2.17	0.200		mg/kg dry	1	BGA0674	01/27/23	01/28/23	EPA 6020B	
Selenium	0.482	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/26/23 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	87.7			%	1	BGA0688	01/27/23	01/30/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

SS47@5'
2301474-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/26/23 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.450	0.0100		mmhos/cm	1	BGA0683	01/27/23	01/27/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

SS48@10'
2301474-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/26/23 10:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0664	01/26/23	01/27/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/26/23 10:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		84.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		96.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.4 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/26/23 10:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0665	01/26/23	01/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/26/23 10:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		112 %		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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

SS48@10'
2301474-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/26/23 10:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzo (a) anthracene	ND	0.00500		mg/kg	1	BGA0669	01/27/23	01/28/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/26/23 10:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		77.3 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		63.9 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/26/23 10:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.0591	0.0100		mg/L	1	BGA0666	01/26/23	01/28/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/26/23 10:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	1.14	0.200		mg/kg dry	1	BGA0674	01/27/23	01/28/23	EPA 6020B	
Selenium	0.430	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/26/23 10:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	85.3			%	1	BGA0688	01/27/23	01/30/23	Calculation	

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

SS48@10'
2301474-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/26/23 10:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.478	0.0100		mmhos/cm	1	BGA0683	01/27/23	01/27/23	EPA 120.1	

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

SS49@14'
2301474-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/26/23 11:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0664	01/26/23	01/27/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/26/23 11:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		82.5 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		96.2 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.0 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/26/23 11:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0665	01/26/23	01/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/26/23 11:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		116 %		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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

SS49@14'
2301474-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/26/23 11:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzo (a) anthracene	ND	0.00500		mg/kg	1	BGA0669	01/27/23	01/28/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/26/23 11:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		76.2 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		66.0 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/26/23 11:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.0681	0.0100		mg/L	1	BGA0666	01/26/23	01/28/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/26/23 11:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.256	0.200		mg/kg dry	1	BGA0674	01/27/23	01/28/23	EPA 6020B	
Selenium	0.313	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/26/23 11:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	87.1			%	1	BGA0688	01/27/23	01/30/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

SS49@14'
2301474-07 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/26/23 11:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.328	0.0100		mmhos/cm	1	BGA0683	01/27/23	01/27/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

SS50@5'
2301474-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/26/23 12:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0664	01/26/23	01/27/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/26/23 12:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		87.6 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		98.1 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		111 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/26/23 12:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0665	01/26/23	01/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/26/23 12:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		112 %		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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

SS50@5'
2301474-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/26/23 12:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (a) anthracene	ND	0.00500		mg/kg	1	BGA0669	01/27/23	01/28/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/26/23 12:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		58.2 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		50.0 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/26/23 12:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0623	0.0100		mg/L	1	BGA0666	01/26/23	01/28/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/26/23 12:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.77	0.200		mg/kg dry	1	BGA0674	01/27/23	01/28/23	EPA 6020B	
Selenium	0.475	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/26/23 12:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.6			%	1	BGA0688	01/27/23	01/30/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

SS50@5'
2301474-08 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/26/23 12:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.581	0.0100		mmhos/cm	1	BGA0683	01/27/23	01/27/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

SS51@10'
2301474-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/26/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0664	01/26/23	01/27/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/26/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		84.9 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		97.4 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		133 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/26/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0665	01/26/23	01/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/26/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		101 %		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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

SS51@10'
2301474-09 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/26/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzo (a) anthracene	ND	0.00500		mg/kg	1	BGA0669	01/27/23	01/28/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/26/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		67.5 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		60.8 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/26/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.0856	0.0100		mg/L	1	BGA0666	01/26/23	01/28/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/26/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.360	0.200		mg/kg dry	1	BGA0674	01/27/23	01/28/23	EPA 6020B	
Selenium	0.358	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/26/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	82.4			%	1	BGA0688	01/27/23	01/30/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

SS51@10'
2301474-09 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/26/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.562	0.0100		mmhos/cm	1	BGA0683	01/27/23	01/27/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

WC02@10'
2301474-10 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/26/23 12:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGA0664	01/26/23	01/27/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	0.010	0.0050		"	"	"	"	"	"	
Xylenes (total)	0.085	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	3.3	0.050		"	10	"	"	"	"	
1,3,5-Trimethylbenzene	2.3	0.050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	1	"	"	"	"	
Gasoline Range Hydrocarbons	190	5.0		"	10	"	"	"	"	

Date Sampled: **01/26/23 12:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		93.1 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		135 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/26/23 12:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	74	50		mg/kg	1	BGA0665	01/26/23	01/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/26/23 12:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		101 %		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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

WC02@10'
2301474-10 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/26/23 12:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGA0669	01/27/23	01/28/23	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	0.0424	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	0.0893	0.00500		"	"	"	"	"	"	

Date Sampled: **01/26/23 12:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		77.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		60.7 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/26/23 12:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0718	0.0100		mg/L	1	BGA0666	01/26/23	01/28/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/26/23 12:50**

Analyte	Result	Reporting Limit	MDL	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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

WC02@10'
2301474-10 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.245	0.206	mg/kg dry	1	BGA0674	01/27/23	01/28/23	EPA 6020B	
Barium	21.5	0.489	0.386	"	"	"	"	"	"	
Cadmium	0.0304	0.245	0.00880	"	"	"	"	"	"	
Copper	2.33	0.489	0.0256	"	"	"	"	"	"	
Lead	2.35	0.245	0.0672	"	"	"	"	"	"	
Nickel	2.05	0.489	0.0746	"	"	"	"	"	"	
Selenium	0.385	0.260	0.175	"	"	"	"	"	"	
Silver	0.0139	0.0245	0.00326	"	"	"	"	"	"	
Zinc	10.4	0.489	0.325	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: 01/26/23 12:50

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGA0690	01/27/23	01/27/23	EPA 7196A	

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

Date Sampled: 01/26/23 12:50

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	95.0	0.0611		mg/L dry	1	BGA0677	01/27/23	01/30/23	EPA 6020B	
Magnesium	59.9	0.0611		"	"	"	"	"	"	
Sodium	138	0.0611		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 01/26/23 12:50

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.73	0.00100		units	1	BGA0753	01/31/23	01/31/23	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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

WC02@10'
2301474-10 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/26/23 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	81.8			%	1	BGA0688	01/27/23	01/30/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/26/23 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	1.69	0.0100		mmhos/cm	1	BGA0701	01/28/23	01/28/23	EPA 120.1	

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

Date Sampled: **01/26/23 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.89			pH Units	1	BGA0702	01/28/23	01/28/23	EPA 9045D	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

SS52@5'
2301474-11 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/26/23 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0664	01/26/23	01/27/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/26/23 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		92.5 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		96.2 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/26/23 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0665	01/26/23	01/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/26/23 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		117 %		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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

SS52@5'
2301474-11 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/26/23 14:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (a) anthracene	ND	0.00500		mg/kg	1	BGA0669	01/27/23	01/28/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/26/23 14:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		65.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		56.6 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/26/23 14:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0867	0.0100		mg/L	1	BGA0666	01/26/23	01/28/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/26/23 14:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.67	0.200		mg/kg dry	1	BGA0674	01/27/23	01/28/23	EPA 6020B	
Selenium	0.424	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/26/23 14:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.7			%	1	BGA0688	01/27/23	01/30/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

SS52@5'
2301474-11 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/26/23 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.408	0.0100		mmhos/cm	1	BGA0683	01/27/23	01/27/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

SS53@10'
2301474-12 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/26/23 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0664	01/26/23	01/27/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/26/23 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		84.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		98.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/26/23 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0665	01/26/23	01/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/26/23 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		116 %		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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

SS53@10'
2301474-12 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/26/23 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzo (a) anthracene	ND	0.00500		mg/kg	1	BGA0669	01/27/23	01/28/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/26/23 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		57.2 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		44.0 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/26/23 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.0596	0.0100		mg/L	1	BGA0666	01/26/23	01/28/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/26/23 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.369	0.200		mg/kg dry	1	BGA0674	01/27/23	01/28/23	EPA 6020B	
Selenium	0.461	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/26/23 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	84.6			%	1	BGA0688	01/27/23	01/30/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

SS53@10'
2301474-12 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/26/23 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.397	0.0100		mmhos/cm	1	BGA0683	01/27/23	01/27/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

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 BGA0664 - EPA 5030 Soil MS

Blank (BGA0664-BLK1)

Prepared: 01/26/23 Analyzed: 01/27/23

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	0.0523		"	0.0400		131	50-150			
Surrogate: Toluene-d8	0.0574		"	0.0400		143	50-150			
Surrogate: 4-Bromofluorobenzene	0.0583		"	0.0400		146	50-150			

LCS (BGA0664-BS1)

Prepared: 01/26/23 Analyzed: 01/27/23

Benzene	0.0808	0.0020	mg/kg	0.100		80.8	70-130			
Toluene	0.101	0.0050	"	0.100		101	70-130			
Ethylbenzene	0.103	0.0050	"	0.100		103	70-130			
m,p-Xylene	0.236	0.010	"	0.200		118	70-130			
o-Xylene	0.115	0.0050	"	0.100		115	70-130			
1,2,4-Trimethylbenzene	0.124	0.0050	"	0.100		124	70-130			
1,3,5-Trimethylbenzene	0.130	0.0050	"	0.100		130	70-130			
Naphthalene	0.0757	0.0038	"	0.100		75.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0442		"	0.0400		111	50-150			
Surrogate: Toluene-d8	0.0562		"	0.0400		141	50-150			
Surrogate: 4-Bromofluorobenzene	0.0487		"	0.0400		122	50-150			

Matrix Spike (BGA0664-MS1)

Source: 2301468-01

Prepared: 01/26/23 Analyzed: 01/27/23

Benzene	0.0817	0.0020	mg/kg	0.100	ND	81.7	70-130			
Toluene	0.118	0.0050	"	0.100	ND	118	70-130			
Ethylbenzene	0.101	0.0050	"	0.100	ND	101	70-130			
m,p-Xylene	0.224	0.010	"	0.200	ND	112	70-130			
o-Xylene	0.107	0.0050	"	0.100	ND	107	70-130			
1,2,4-Trimethylbenzene	0.114	0.0050	"	0.100	ND	114	70-130			
1,3,5-Trimethylbenzene	0.118	0.0050	"	0.100	ND	118	70-130			
Naphthalene	0.0723	0.0038	"	0.100	ND	72.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0481		"	0.0400		120	50-150			
Surrogate: Toluene-d8	0.0518		"	0.0400		129	50-150			
Surrogate: 4-Bromofluorobenzene	0.0450		"	0.0400		112	50-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

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 BGA0664 - EPA 5030 Soil MS

Matrix Spike Dup (BGA0664-MSD1)		Source: 2301468-01			Prepared: 01/26/23 Analyzed: 01/27/23					
Benzene	0.0853	0.0020	mg/kg	0.100	ND	85.3	70-130	4.28	30	
Toluene	0.119	0.0050	"	0.100	ND	119	70-130	0.607	30	
Ethylbenzene	0.0996	0.0050	"	0.100	ND	99.6	70-130	1.17	30	
m,p-Xylene	0.215	0.010	"	0.200	ND	107	70-130	4.05	30	
o-Xylene	0.104	0.0050	"	0.100	ND	104	70-130	3.47	30	
1,2,4-Trimethylbenzene	0.109	0.0050	"	0.100	ND	109	70-130	4.66	30	
1,3,5-Trimethylbenzene	0.113	0.0050	"	0.100	ND	113	70-130	4.33	30	
Naphthalene	0.0740	0.0038	"	0.100	ND	74.0	70-130	2.30	30	
Surrogate: 1,2-Dichloroethane-d4		0.0470	"	0.0400		118	50-150			
Surrogate: Toluene-d8		0.0514	"	0.0400		129	50-150			
Surrogate: 4-Bromofluorobenzene		0.0449	"	0.0400		112	50-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

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 BGA0665 - EPA 3550A

Blank (BGA0665-BLK1)

Prepared: 01/26/23 Analyzed: 01/27/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	9.62		"	12.5		77.0	30-150			

LCS (BGA0665-BS1)

Prepared: 01/26/23 Analyzed: 01/27/23

C10-C28 (DRO)	407	50	mg/kg	500		81.4	70-130			
Surrogate: o-Terphenyl	10.1		"	12.5		80.4	30-150			

Matrix Spike (BGA0665-MS1)

Source: 2301468-01

Prepared: 01/26/23 Analyzed: 01/27/23

C10-C28 (DRO)	465	50	mg/kg	500	13.9	90.1	70-130			
Surrogate: o-Terphenyl	8.73		"	12.5		69.8	30-150			

Matrix Spike Dup (BGA0665-MSD1)

Source: 2301468-01

Prepared: 01/26/23 Analyzed: 01/27/23

C10-C28 (DRO)	403	50	mg/kg	500	13.9	77.8	70-130	14.2	20	
Surrogate: o-Terphenyl	7.19		"	12.5		57.6	30-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGA0669 - EPA 5030 Soil MS

Blank (BGA0669-BLK1)

Prepared: 01/27/23 Analyzed: 01/28/23

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	0.0239		"	0.0333		71.7	40-150			
Surrogate: Fluoranthene-d10	0.0400		"	0.0333		120	40-150			

LCS (BGA0669-BS1)

Prepared: 01/27/23 Analyzed: 01/28/23

Acenaphthene	0.0311	0.00500	mg/kg	0.0333	93.3	31-137
Anthracene	0.0306	0.00500	"	0.0333	91.8	30-120
Benzo (a) anthracene	0.0287	0.00500	"	0.0333	86.0	30-120
Benzo (a) pyrene	0.0313	0.00500	"	0.0333	93.9	30-120
Benzo (b) fluoranthene	0.0278	0.00500	"	0.0333	83.4	30-120
Benzo (k) fluoranthene	0.0301	0.00500	"	0.0333	90.3	30-120
Chrysene	0.0327	0.00500	"	0.0333	98.2	30-120
Dibenz (a,h) anthracene	0.0256	0.00500	"	0.0333	76.7	30-120
Fluoranthene	0.0305	0.00500	"	0.0333	91.5	30-120
Fluorene	0.0310	0.00500	"	0.0333	93.0	30-120
Indeno (1,2,3-cd) pyrene	0.0262	0.00500	"	0.0333	78.6	30-120
Pyrene	0.0340	0.00500	"	0.0333	102	35-142
1-Methylnaphthalene	0.0289	0.00500	"	0.0333	86.6	35-142
2-Methylnaphthalene	0.0235	0.00500	"	0.0333	70.4	35-142
Surrogate: 2-Methylnaphthalene-d10	0.0300		"	0.0333	90.0	40-150
Surrogate: Fluoranthene-d10	0.0315		"	0.0333	94.5	40-150

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

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 BGA0669 - EPA 5030 Soil MS

Matrix Spike (BGA0669-MS1)

Source: 2301473-01

Prepared: 01/27/23 Analyzed: 01/28/23

Acenaphthene	0.0227	0.00500	mg/kg	0.0333	ND	68.0	31-137				
Anthracene	0.0248	0.00500	"	0.0333	ND	74.3	30-120				
Benzo (a) anthracene	0.0262	0.00500	"	0.0333	ND	78.5	30-120				
Benzo (a) pyrene	0.0238	0.00500	"	0.0333	ND	71.3	30-120				
Benzo (b) fluoranthene	0.0216	0.00500	"	0.0333	ND	64.8	30-120				
Benzo (k) fluoranthene	0.0220	0.00500	"	0.0333	ND	66.0	30-120				
Chrysene	0.0238	0.00500	"	0.0333	ND	71.4	30-120				
Dibenz (a,h) anthracene	0.0181	0.00500	"	0.0333	ND	54.3	30-120				
Fluoranthene	0.0249	0.00500	"	0.0333	ND	74.8	30-120				
Fluorene	0.0236	0.00500	"	0.0333	ND	70.9	30-120				
Indeno (1,2,3-cd) pyrene	0.0188	0.00500	"	0.0333	ND	56.4	30-120				
Pyrene	0.0261	0.00500	"	0.0333	ND	78.4	35-142				
1-Methylnaphthalene	0.0228	0.00500	"	0.0333	ND	68.4	15-130				
2-Methylnaphthalene	0.0201	0.00500	"	0.0333	ND	60.3	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0244		"	0.0333		73.2	40-150				
Surrogate: Fluoranthene-d10	0.0266		"	0.0333		79.7	40-150				

Matrix Spike Dup (BGA0669-MSD1)

Source: 2301473-01

Prepared: 01/27/23 Analyzed: 01/28/23

Acenaphthene	0.0200	0.00500	mg/kg	0.0333	ND	60.1	31-137	12.3	30
Anthracene	0.0209	0.00500	"	0.0333	ND	62.8	30-120	16.7	30
Benzo (a) anthracene	0.0227	0.00500	"	0.0333	ND	68.0	30-120	14.3	30
Benzo (a) pyrene	0.0225	0.00500	"	0.0333	ND	67.6	30-120	5.34	30
Benzo (b) fluoranthene	0.0176	0.00500	"	0.0333	ND	52.8	30-120	20.4	30
Benzo (k) fluoranthene	0.0180	0.00500	"	0.0333	ND	54.1	30-120	19.9	30
Chrysene	0.0210	0.00500	"	0.0333	ND	63.0	30-120	12.5	30
Dibenz (a,h) anthracene	0.0180	0.00500	"	0.0333	ND	53.9	30-120	0.588	30
Fluoranthene	0.0218	0.00500	"	0.0333	ND	65.4	30-120	13.5	30
Fluorene	0.0208	0.00500	"	0.0333	ND	62.5	30-120	12.5	30
Indeno (1,2,3-cd) pyrene	0.0188	0.00500	"	0.0333	ND	56.3	30-120	0.245	30
Pyrene	0.0222	0.00500	"	0.0333	ND	66.5	35-142	16.4	30
1-Methylnaphthalene	0.0197	0.00500	"	0.0333	ND	59.0	15-130	14.8	50
2-Methylnaphthalene	0.0198	0.00500	"	0.0333	ND	59.5	15-130	1.42	50
Surrogate: 2-Methylnaphthalene-d10	0.0213		"	0.0333		64.0	40-150		
Surrogate: Fluoranthene-d10	0.0226		"	0.0333		67.9	40-150		

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

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 BGA0666 - EPA 3050B

Blank (BGA0666-BLK1)

Prepared: 01/26/23 Analyzed: 01/27/23

Boron ND 0.0100 mg/L

LCS (BGA0666-BS1)

Prepared: 01/26/23 Analyzed: 01/27/23

Boron 5.67 0.0100 mg/L 5.00 113 80-120

Duplicate (BGA0666-DUP1)

Source: 2301392-01

Prepared: 01/26/23 Analyzed: 01/27/23

Boron 0.336 0.0100 mg/L 0.334 0.588 20

Matrix Spike (BGA0666-MS1)

Source: 2301392-01

Prepared: 01/26/23 Analyzed: 01/28/23

Boron 5.92 0.0100 mg/L 5.00 0.334 112 75-125

Matrix Spike Dup (BGA0666-MSD1)

Source: 2301392-01

Prepared: 01/26/23 Analyzed: 01/28/23

Boron 6.04 0.0100 mg/L 5.00 0.334 114 75-125 2.09 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.



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

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 BGA0674 - EPA 3050B

Blank (BGA0674-BLK1)

Prepared: 01/27/23 Analyzed: 01/28/23

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

LCS (BGA0674-BS1)

Prepared: 01/27/23 Analyzed: 01/28/23

Arsenic	45.2	0.200	mg/kg wet	40.0	113	80-120
Arsenic	45.2	0.200	"	40.0	113	80-120
Barium	40.5	0.400	"	40.0	101	80-120
Cadmium	2.00	0.200	"	2.00	99.8	80-120
Copper	39.0	0.400	"	40.0	97.4	80-120
Lead	19.2	0.200	"	20.0	95.9	80-120
Nickel	39.0	0.400	"	40.0	97.4	80-120
Selenium	4.46	0.260	"	4.00	111	80-120
Selenium	4.46	0.260	"	4.00	111	80-120
Silver	1.95	0.0200	"	2.00	97.6	80-120
Zinc	42.7	0.400	"	40.0	107	80-120

Duplicate (BGA0674-DUP1)

Source: 2301419-01

Prepared: 01/27/23 Analyzed: 01/28/23

Arsenic	3.16	0.242	mg/kg dry	4.99	44.8	20	QR-03
Arsenic	3.16	0.200	"	4.99	44.8	20	QR-03
Barium	20.5	0.483	"	35.1	52.7	20	QR-03
Cadmium	0.376	0.242	"	0.724	63.1	20	QR-03
Copper	15.7	0.483	"	20.8	27.7	20	QR-03
Lead	13.3	0.242	"	16.6	22.2	20	QR-03
Nickel	14.8	0.483	"	32.3	74.2	20	QR-03
Selenium	0.867	0.260	"	0.963	10.4	20	
Selenium	0.867	0.260	"	0.963	10.4	20	
Silver	0.0690	0.0242	"	0.0714	3.48	20	
Zinc	57.2	0.483	"	110	62.8	20	QR-03

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

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 BGA0674 - EPA 3050B

Matrix Spike (BGA0674-MS1)		Source: 2301419-01			Prepared: 01/27/23 Analyzed: 01/28/23					
Arsenic	55.6	0.200	mg/kg dry	48.3	4.99	105	75-125			
Arsenic	55.6	0.242	"	48.3	4.99	105	75-125			
Barium	73.4	0.483	"	48.3	35.1	79.3	75-125			
Cadmium	2.87	0.242	"	2.42	0.724	88.8	75-125			
Copper	61.8	0.483	"	48.3	20.8	84.9	75-125			
Lead	35.2	0.242	"	24.2	16.6	76.7	75-125			
Nickel	60.0	0.483	"	48.3	32.3	57.5	75-125			QM-05
Selenium	5.10	0.260	"	4.83	0.963	85.6	75-125			
Selenium	5.10	0.260	"	4.83	0.963	85.6	75-125			
Silver	2.35	0.0242	"	2.42	0.0714	94.3	75-125			
Zinc	111	0.483	"	48.3	110	2.86	75-125			QM-05

Matrix Spike Dup (BGA0674-MSD1)		Source: 2301419-01			Prepared: 01/27/23 Analyzed: 01/28/23					
Arsenic	53.8	0.242	mg/kg dry	48.3	4.99	101	75-125	3.29	25	
Arsenic	53.8	0.200	"	48.3	4.99	101	75-125	3.29	25	
Barium	68.0	0.483	"	48.3	35.1	68.1	75-125	7.67	25	QM-05
Cadmium	2.85	0.242	"	2.42	0.724	88.1	75-125	0.601	25	
Copper	62.7	0.483	"	48.3	20.8	86.8	75-125	1.48	25	
Lead	36.1	0.242	"	24.2	16.6	80.6	75-125	2.63	25	
Nickel	65.2	0.483	"	48.3	32.3	68.2	75-125	8.27	25	QM-05
Selenium	5.05	0.260	"	4.83	0.963	84.5	75-125	1.08	25	
Selenium	5.05	0.260	"	4.83	0.963	84.5	75-125	1.08	25	
Silver	2.29	0.0242	"	2.42	0.0714	91.7	75-125	2.72	25	
Zinc	122	0.483	"	48.3	110	25.4	75-125	9.36	25	QM-05

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

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 BGA0690 - 3060A Mod

Blank (BGA0690-BLK1)

Prepared & Analyzed: 01/27/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGA0690-BS1)

Prepared & Analyzed: 01/27/23

Chromium, Hexavalent 25.6 0.30 mg/kg wet 25.0 102 80-120

Duplicate (BGA0690-DUP1)

Source: 2301419-01

Prepared & Analyzed: 01/27/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGA0690-MS1)

Source: 2301419-01

Prepared & Analyzed: 01/27/23

Chromium, Hexavalent 29.0 0.30 mg/kg dry 30.2 ND 96.0 75-125

Matrix Spike Dup (BGA0690-MSD1)

Source: 2301419-01

Prepared & Analyzed: 01/27/23

Chromium, Hexavalent 29.2 0.30 mg/kg dry 30.2 ND 96.8 75-125 0.830 20

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

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 BGA0653 - General Preparation

Blank (BGA0653-BLK1)

Prepared: 01/26/23 Analyzed: 01/29/23

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

LCS (BGA0653-BS1)

Prepared: 01/26/23 Analyzed: 01/29/23

Calcium	6.15	0.0500	mg/L wet	5.00	123	70-130
Magnesium	5.24	0.0500	"	5.00	105	70-130
Sodium	5.08	0.0500	"	5.00	102	70-130

Batch BGA0677 - General Preparation

Blank (BGA0677-BLK1)

Prepared: 01/27/23 Analyzed: 01/30/23

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

LCS (BGA0677-BS1)

Prepared: 01/27/23 Analyzed: 01/30/23

Calcium	5.69	0.0500	mg/L wet	5.00	114	70-130
Magnesium	5.13	0.0500	"	5.00	103	70-130
Sodium	4.92	0.0500	"	5.00	98.5	70-130

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

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

Summit Scientific

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

Batch BGA0688 - General Preparation

Duplicate (BGA0688-DUP1)		Source: 2301458-06		Prepared: 01/27/23 Analyzed: 01/30/23	
% Solids	83.4		%	83.1	0.303 20

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

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 BGA0689 - General Preparation

Blank (BGA0689-BLK1)

Prepared & Analyzed: 01/27/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGA0689-BS1)

Prepared & Analyzed: 01/27/23

Specific Conductance (EC) 0.149 0.0100 mmhos/cm 0.150 99.3 95-105

Duplicate (BGA0689-DUP1)

Source: 2301446-05

Prepared & Analyzed: 01/27/23

Specific Conductance (EC) 0.863 0.0100 mmhos/cm 0.865 0.243 20

Batch BGA0701 - General Preparation

Blank (BGA0701-BLK1)

Prepared & Analyzed: 01/28/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGA0701-BS1)

Prepared & Analyzed: 01/28/23

Specific Conductance (EC) 0.146 0.0100 mmhos/cm 0.150 97.0 95-105

Duplicate (BGA0701-DUP1)

Source: 2301278-17

Prepared & Analyzed: 01/28/23

Specific Conductance (EC) 0.178 0.0100 mmhos/cm 0.179 0.616 20

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

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 BGA0685 - General Preparation

LCS (BGA0685-BS1)

Prepared & Analyzed: 01/27/23

pH	9.05		pH Units	9.18		98.6	95-105
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Duplicate (BGA0685-DUP1)

Source: 2301446-05

Prepared & Analyzed: 01/27/23

pH	8.20		pH Units	8.12		0.980	20
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Batch BGA0702 - General Preparation

LCS (BGA0702-BS1)

Prepared & Analyzed: 01/28/23

pH	9.00		pH Units	9.18		98.0	95-105
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Duplicate (BGA0702-DUP1)

Source: 2301463-01

Prepared & Analyzed: 01/28/23

pH	7.79		pH Units	7.78		0.128	20
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Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 09:46

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013 - Quality Control
Summit Scientific

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

Batch BGA0683 - General Preparation

Blank (BGA0683-BLK1)

Prepared & Analyzed: 01/27/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGA0683-BS1)

Prepared & Analyzed: 01/27/23

Specific Conductance (EC) 0.149 0.0100 mmhos/cm 0.150 99.3 95-105

Duplicate (BGA0683-DUP1)

Source: 2301456-02

Prepared & Analyzed: 01/27/23

Specific Conductance (EC) 0.440 0.0100 mmhos/cm 0.450 2.16 20

Summit Scientific

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PDC Energy

1775 Sherman St. STE. 3000

Denver CO, 80203

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

02/02/23 09:46

Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
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 80401

303.277.9310

February 01, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Jerke UP 8-7 Tank Battery

Work Order # 2301500

Enclosed are the results of analyses for samples received by Summit Scientific on 01/27/23 17:55. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely", is written over a light blue rectangular background.

Scott Sheely For Paul Shrewsbury

President



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS54@14'	2301500-01	Soil	01/27/23 11:10	01/27/23 17:55
SS55@14'	2301500-02	Soil	01/27/23 11:50	01/27/23 17:55
SS56@14'	2301500-03	Soil	01/27/23 12:20	01/27/23 17:55
SS57@14'	2301500-04	Soil	01/27/23 12:30	01/27/23 17:55
SS58@5'	2301500-05	Soil	01/27/23 12:45	01/27/23 17:55
SS59@10'	2301500-06	Soil	01/27/23 12:50	01/27/23 17:55
SS60@5'	2301500-07	Soil	01/27/23 14:10	01/27/23 17:55
SS61@10'	2301500-08	Soil	01/27/23 14:15	01/27/23 17:55
SS62@14'	2301500-09	Soil	01/27/23 14:20	01/27/23 17:55
SS63@2.5'	2301500-10	Soil	01/27/23 14:30	01/27/23 17:55

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.

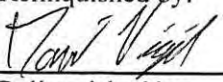
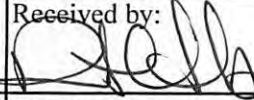
Summit Scientific

S₂

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: Jerke Up 8-7 Tank Battery
Sampler Name: David Vig.1 Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions						
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	pH, EC, SAR	Boron - HWS	TMBs (1,2,4) & (1,3,5)	PAH - 915		Metals - 915					
1	SS54 @ 14'	1/27/23	1110	3			X			X				X	X	X	X	X	X	pH, EC, SAR by saturated paste					
2	SS55 @ 14'		1115 ⁰⁰ 1150										X	X	X	X	X	X							
3	SS56 @ 14'		1220										X	X	X	X	X	X							
4	SS57 @ 14'		1230										X	X	X	X	X	X							
5	SS58 @ 5'		1245										X	X	X	X	X	X							
6	SS59 @ 10'		1250										X	X	X	X	X	X							
7	SS60 @ 5'		1410										X	X	X	X	X	X							
8	SS61 @ 10'		1415										X	X	X	X	X	X							
9	SS62 @ 14'		1420										X	X	X	X	X	X							
10	SS63 @ 2.5'		1430	1									X	X	X	X	X	X							
Relinquished by: 		Date/Time: 1/27/23 1615		Received by: Tasman's Lock Box		Date/Time: 1/27/23 1615		Turn Around Time (Check)		Same Day X 72 hours		24 hours		Standard		48 hours		Sample Integrity:		Temperature Upon Receipt: 7.1		Samples Intact: (Yes) No		Notes:	
Relinquished by: Tasman's Lock Box		Date/Time: 12723 1755		Received by: 		Date/Time: 12723 1755																		(1) Only EC on SS54-SS62	
Relinquished by:		Date/Time:		Received by:		Date/Time:																		(2) PAHs: benz(a), dibenz(a,h), Fluorene, 1-M, 2-M	
																						(3) Metals: uranyl, Selenium			

S₂

Sample Receipt Checklist

S2 Work Order# 2301500Client: Pdc / TasmanClient Project ID: Jerice Up 8-7 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐

Airbill #: _____

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------

Matrix (Check all that apply)

Air ☐Soil/Solid ☒Water ☐Other ☐

Temp (°C)

7.1

Thermometer #

1

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

Additional Comments (if any):

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

 Custodian Printed Name

1.27.23
 Date/Time



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

SS54@14'
2301500-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/27/23 11:10**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Benzene	ND	0.0020			mg/kg	1	BGA0697	01/27/23	01/28/23	EPA 8260B	
Toluene	ND	0.0050			"	"	"	"	"	"	
Ethylbenzene	ND	0.0050			"	"	"	"	"	"	
Xylenes (total)	ND	0.010			"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050			"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050			"	"	"	"	"	"	
Naphthalene	ND	0.0038			"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50			"	"	"	"	"	"	

Date Sampled: **01/27/23 11:10**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Surrogate: 1,2-Dichloroethane-d4		94.6 %			50-150		"	"	"	"	
Surrogate: Toluene-d8		97.3 %			50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		111 %			50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/27/23 11:10**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
C10-C28 (DRO)	ND	50			mg/kg	1	BGA0698	01/27/23	01/28/23	EPA 8015M	
C28-C36 (ORO)	ND	50			"	"	"	"	"	"	

Date Sampled: **01/27/23 11:10**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Surrogate: o-Terphenyl		66.2 %			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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

SS54@14'
2301500-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/27/23 11:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzo (a) anthracene	ND	0.00500		mg/kg	1	BGA0712	01/30/23	01/30/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/27/23 11:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		65.6 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		62.0 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/27/23 11:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.363	0.0100		mg/L	1	BGA0663	01/27/23	01/30/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/27/23 11:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	2.39	0.200		mg/kg dry	1	BGA0732	01/30/23	01/31/23	EPA 6020B	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/27/23 11:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	86.3			%	1	BGA0728	01/30/23	01/30/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

SS54@14'
2301500-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/27/23 11:10**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Specific Conductance (EC)	0.476	0.0100			mmhos/cm	1	BGA0710	01/29/23	01/29/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

SS55@14'
2301500-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/27/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0697	01/27/23	01/28/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/27/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		99.6 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		104 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		111 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/27/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0698	01/27/23	01/28/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/27/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		65.5 %		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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

SS55@14'
2301500-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/27/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzo (a) anthracene	ND	0.00500		mg/kg	1	BGA0712	01/30/23	01/30/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/27/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		59.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		52.7 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/27/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.0919	0.0100		mg/L	1	BGA0663	01/27/23	01/30/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/27/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	2.11	0.200		mg/kg dry	1	BGA0732	01/30/23	01/31/23	EPA 6020B	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/27/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	84.8			%	1	BGA0728	01/30/23	01/30/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

SS55@14'
2301500-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/27/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.496	0.0100		mmhos/cm	1	BGA0710	01/29/23	01/29/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

SS56@14'
2301500-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/27/23 12:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.0045	0.0020		mg/kg	1	BGA0697	01/27/23	01/28/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	0.041	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.014	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.0091	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1.1	0.50		"	"	"	"	"	"	

Date Sampled: **01/27/23 12:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		86.6 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		99.7 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/27/23 12:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0698	01/27/23	01/28/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/27/23 12:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		77.3 %		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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

SS56@14'
2301500-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/27/23 12:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzo (a) anthracene	ND	0.00500		mg/kg	1	BGA0712	01/30/23	01/30/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/27/23 12:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		60.8 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		52.5 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/27/23 12:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.0708	0.0100		mg/L	1	BGA0663	01/27/23	01/30/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/27/23 12:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	2.32	0.200		mg/kg dry	1	BGA0732	01/30/23	01/31/23	EPA 6020B	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/27/23 12:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	78.7			%	1	BGA0728	01/30/23	01/30/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

SS56@14'
2301500-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/27/23 12:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.535	0.0100		mmhos/cm	1	BGA0710	01/29/23	01/29/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

SS57@14'
2301500-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/27/23 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0697	01/27/23	01/28/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/27/23 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		95.3 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		103 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		111 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/27/23 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0698	01/27/23	01/28/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/27/23 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		67.4 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

SS57@14'
2301500-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/27/23 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzo (a) anthracene	ND	0.00500		mg/kg	1	BGA0712	01/30/23	01/31/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/27/23 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		67.6 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		60.7 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/27/23 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.0699	0.0100		mg/L	1	BGA0663	01/27/23	01/30/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/27/23 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.491	0.200		mg/kg dry	1	BGA0732	01/30/23	01/31/23	EPA 6020B	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/27/23 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	86.3			%	1	BGA0728	01/30/23	01/30/23	Calculation	

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

SS57@14'
2301500-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/27/23 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.434	0.0100		mmhos/cm	1	BGA0710	01/29/23	01/29/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

SS58@5'
2301500-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/27/23 12:45**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGA0697	01/27/23	01/28/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	0.079	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.064	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.042	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1.0	0.50		"	"	"	"	"	"	

Date Sampled: **01/27/23 12:45**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		105 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		112 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/27/23 12:45**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0698	01/27/23	01/28/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/27/23 12:45**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		71.1 %		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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

SS58@5'
2301500-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/27/23 12:45**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (a) anthracene	ND	0.00500		mg/kg	1	BGA0712	01/30/23	01/31/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/27/23 12:45**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		60.4 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		58.9 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/27/23 12:45**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.312	0.0100		mg/L	1	BGA0663	01/27/23	01/30/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/27/23 12:45**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.77	0.200		mg/kg dry	1	BGA0732	01/30/23	01/31/23	EPA 6020B	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/27/23 12:45**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.8			%	1	BGA0728	01/30/23	01/30/23	Calculation	

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

SS58@5'
2301500-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/27/23 12:45**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Specific Conductance (EC)	0.521	0.0100			mmhos/cm	1	BGA0710	01/29/23	01/29/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

SS59@10'
2301500-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/27/23 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0697	01/27/23	01/28/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/27/23 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		123 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		106 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		122 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/27/23 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0698	01/27/23	01/28/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/27/23 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		75.9 %		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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

SS59@10'
2301500-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/27/23 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzo (a) anthracene	ND	0.00500		mg/kg	1	BGA0712	01/30/23	01/31/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/27/23 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		68.3 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		60.4 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/27/23 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.0822	0.0100		mg/L	1	BGA0663	01/27/23	01/30/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/27/23 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	3.18	0.200		mg/kg dry	1	BGA0732	01/30/23	01/31/23	EPA 6020B	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/27/23 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	80.7			%	1	BGA0728	01/30/23	01/30/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

SS59@10'
2301500-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/27/23 12:50**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Specific Conductance (EC)	0.713	0.0100			mmhos/cm	1	BGA0710	01/29/23	01/29/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

SS60@5'
2301500-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/27/23 14:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0697	01/27/23	01/28/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/27/23 14:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		122 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		112 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		118 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/27/23 14:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0698	01/27/23	01/28/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/27/23 14:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		81.8 %		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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

SS60@5'
2301500-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/27/23 14:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzo (a) anthracene	ND	0.00500		mg/kg	1	BGA0712	01/30/23	01/31/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/27/23 14:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		61.8 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		55.0 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/27/23 14:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.102	0.0100		mg/L	1	BGA0663	01/27/23	01/30/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/27/23 14:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	3.97	0.200		mg/kg dry	1	BGA0732	01/30/23	01/31/23	EPA 6020B	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/27/23 14:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	87.2			%	1	BGA0728	01/30/23	01/30/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

SS60@5'
2301500-07 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/27/23 14:10**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Specific Conductance (EC)	0.536	0.0100			mmhos/cm	1	BGA0710	01/29/23	01/29/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

SS61@10'
2301500-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/27/23 14:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0697	01/27/23	01/28/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/27/23 14:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		115 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		114 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		117 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/27/23 14:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0698	01/27/23	01/28/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/27/23 14:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		72.9 %		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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

SS61@10'
2301500-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/27/23 14:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzo (a) anthracene	ND	0.00500		mg/kg	1	BGA0712	01/30/23	01/31/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/27/23 14:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		71.0 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		58.7 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/27/23 14:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.0585	0.0100		mg/L	1	BGA0663	01/27/23	01/30/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/27/23 14:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.731	0.200		mg/kg dry	1	BGA0732	01/30/23	01/31/23	EPA 6020B	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/27/23 14:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	83.2			%	1	BGA0728	01/30/23	01/30/23	Calculation	

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

SS61@10'
2301500-08 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/27/23 14:15**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Specific Conductance (EC)	0.576	0.0100			mmhos/cm	1	BGA0710	01/29/23	01/29/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

SS62@14'
2301500-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/27/23 14:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0697	01/27/23	01/28/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/27/23 14:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		93.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		111 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/27/23 14:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0698	01/27/23	01/28/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/27/23 14:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		70.4 %		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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

SS62@14'
2301500-09 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/27/23 14:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzo (a) anthracene	ND	0.00500		mg/kg	1	BGA0712	01/30/23	01/31/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/27/23 14:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		64.3 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		57.4 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/27/23 14:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.0816	0.0100		mg/L	1	BGA0663	01/27/23	01/30/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/27/23 14:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.451	0.200		mg/kg dry	1	BGA0732	01/30/23	01/31/23	EPA 6020B	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/27/23 14:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	85.8			%	1	BGA0728	01/30/23	01/30/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

SS62@14'
2301500-09 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/27/23 14:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.473	0.0100		mmhos/cm	1	BGA0710	01/29/23	01/29/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

SS63@2.5'
2301500-10 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/27/23 14:30**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Boron	0.0660	0.0100			mg/L	1	BGA0663	01/27/23	01/30/23	EPA 6020B	

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

Date Sampled: **01/27/23 14:30**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Calcium	65.3	0.0556			mg/L dry	1	BGA0700	01/28/23	01/30/23	EPA 6020B	
Magnesium	24.6	0.0556			"	"	"	"	"	"	
Sodium	75.1	0.0556			"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/27/23 14:30**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Sodium Adsorption Ratio	2.01	0.00100			units	1	BGA0769	01/31/23	01/31/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/27/23 14:30**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
% Solids	90.0				%	1	BGA0728	01/30/23	01/30/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/27/23 14:30**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Specific Conductance (EC)	0.950	0.0100			mmhos/cm	1	BGA0706	01/29/23	01/29/23	EPA 120.1	

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

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

SS63@2.5'
2301500-10 (Soil)

Summit Scientific

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

Date Sampled: **01/27/23 14:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.63			pH Units	1	BGA0705	01/29/23	01/29/23	EPA 9045D	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

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 BGA0697 - EPA 5030 Soil MS

Blank (BGA0697-BLK1)

Prepared: 01/27/23 Analyzed: 01/28/23

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	0.0588		"	0.0400		147	50-150			
Surrogate: Toluene-d8	0.0384		"	0.0400		95.9	50-150			
Surrogate: 4-Bromofluorobenzene	0.0343		"	0.0400		85.6	50-150			

LCS (BGA0697-BS1)

Prepared: 01/27/23 Analyzed: 01/28/23

Benzene	0.0871	0.0020	mg/kg	0.100		87.1	70-130			
Toluene	0.102	0.0050	"	0.100		102	70-130			
Ethylbenzene	0.101	0.0050	"	0.100		101	70-130			
m,p-Xylene	0.237	0.010	"	0.200		119	70-130			
o-Xylene	0.111	0.0050	"	0.100		111	70-130			
1,2,4-Trimethylbenzene	0.0953	0.0050	"	0.100		95.3	70-130			
1,3,5-Trimethylbenzene	0.0992	0.0050	"	0.100		99.2	70-130			
Naphthalene	0.0942	0.0038	"	0.100		94.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0526		"	0.0400		131	50-150			
Surrogate: Toluene-d8	0.0584		"	0.0400		146	50-150			
Surrogate: 4-Bromofluorobenzene	0.0479		"	0.0400		120	50-150			

Matrix Spike (BGA0697-MS1)

Source: 2301492-01

Prepared: 01/27/23 Analyzed: 01/28/23

Benzene	0.0827	0.0020	mg/kg	0.100	ND	82.7	70-130			
Toluene	0.0898	0.0050	"	0.100	ND	89.8	70-130			
Ethylbenzene	0.0976	0.0050	"	0.100	ND	97.6	70-130			
m,p-Xylene	0.202	0.010	"	0.200	ND	101	70-130			
o-Xylene	0.0961	0.0050	"	0.100	ND	96.1	70-130			
1,2,4-Trimethylbenzene	0.0941	0.0050	"	0.100	ND	94.1	70-130			
1,3,5-Trimethylbenzene	0.0975	0.0050	"	0.100	ND	97.5	70-130			
Naphthalene	0.0980	0.0038	"	0.100	ND	98.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0347		"	0.0400		86.7	50-150			
Surrogate: Toluene-d8	0.0407		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0411		"	0.0400		103	50-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

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 BGA0697 - EPA 5030 Soil MS

Matrix Spike Dup (BGA0697-MSD1)	Source: 2301492-01			Prepared: 01/27/23 Analyzed: 01/28/23						
Benzene	0.0823	0.0020	mg/kg	0.100	ND	82.3	70-130	0.509	30	
Toluene	0.0873	0.0050	"	0.100	ND	87.3	70-130	2.78	30	
Ethylbenzene	0.0967	0.0050	"	0.100	ND	96.7	70-130	0.926	30	
m,p-Xylene	0.201	0.010	"	0.200	ND	100	70-130	0.566	30	
o-Xylene	0.0961	0.0050	"	0.100	ND	96.1	70-130	0.0312	30	
1,2,4-Trimethylbenzene	0.0918	0.0050	"	0.100	ND	91.8	70-130	2.42	30	
1,3,5-Trimethylbenzene	0.0953	0.0050	"	0.100	ND	95.3	70-130	2.30	30	
Naphthalene	0.101	0.0038	"	0.100	ND	101	70-130	3.49	30	
Surrogate: 1,2-Dichloroethane-d4	0.0343		"	0.0400		85.6	50-150			
Surrogate: Toluene-d8	0.0395		"	0.0400		98.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0406		"	0.0400		101	50-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

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 BGA0698 - EPA 3550A

Blank (BGA0698-BLK1)

Prepared & Analyzed: 01/27/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	14.0		"	12.5		112	30-150			

LCS (BGA0698-BS1)

Prepared & Analyzed: 01/27/23

C10-C28 (DRO)	491	50	mg/kg	500		98.1	70-130			
Surrogate: o-Terphenyl	4.30		"	12.5		34.4	30-150			

Matrix Spike (BGA0698-MS1)

Source: 2301492-01

Prepared & Analyzed: 01/27/23

C10-C28 (DRO)	523	50	mg/kg	500	ND	105	70-130			
Surrogate: o-Terphenyl	13.0		"	12.5		104	30-150			

Matrix Spike Dup (BGA0698-MSD1)

Source: 2301492-01

Prepared & Analyzed: 01/27/23

C10-C28 (DRO)	499	50	mg/kg	500	ND	99.8	70-130	4.73	20	
Surrogate: o-Terphenyl	12.8		"	12.5		103	30-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGA0712 - EPA 5030 Soil MS

Blank (BGA0712-BLK1)

Prepared & Analyzed: 01/30/23

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	0.0322		"	0.0333		96.5	40-150			
Surrogate: Fluoranthene-d10	0.0282		"	0.0333		84.5	40-150			

LCS (BGA0712-BS1)

Prepared & Analyzed: 01/30/23

Acenaphthene	0.0367	0.00500	mg/kg	0.0333	110	31-137
Anthracene	0.0347	0.00500	"	0.0333	104	30-120
Benzo (a) anthracene	0.0288	0.00500	"	0.0333	86.5	30-120
Benzo (a) pyrene	0.0365	0.00500	"	0.0333	110	30-120
Benzo (b) fluoranthene	0.0331	0.00500	"	0.0333	99.2	30-120
Benzo (k) fluoranthene	0.0382	0.00500	"	0.0333	115	30-120
Chrysene	0.0311	0.00500	"	0.0333	93.4	30-120
Dibenz (a,h) anthracene	0.0262	0.00500	"	0.0333	78.5	30-120
Fluoranthene	0.0370	0.00500	"	0.0333	111	30-120
Fluorene	0.0360	0.00500	"	0.0333	108	30-120
Indeno (1,2,3-cd) pyrene	0.0329	0.00500	"	0.0333	98.7	30-120
Pyrene	0.0312	0.00500	"	0.0333	93.6	35-142
1-Methylnaphthalene	0.0305	0.00500	"	0.0333	91.6	35-142
2-Methylnaphthalene	0.0313	0.00500	"	0.0333	93.9	35-142
Surrogate: 2-Methylnaphthalene-d10	0.0314		"	0.0333	94.3	40-150
Surrogate: Fluoranthene-d10	0.0353		"	0.0333	106	40-150

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGA0712 - EPA 5030 Soil MS

Matrix Spike (BGA0712-MS1)

Source: 2301395-04

Prepared & Analyzed: 01/30/23

Acenaphthene	0.0238	0.00500	mg/kg	0.0333	ND	71.4	31-137		
Anthracene	0.0174	0.00500	"	0.0333	ND	52.2	30-120		
Benzo (a) anthracene	0.0157	0.00500	"	0.0333	ND	47.1	30-120		
Benzo (a) pyrene	0.0163	0.00500	"	0.0333	ND	48.8	30-120		
Benzo (b) fluoranthene	0.0157	0.00500	"	0.0333	0.00196	41.1	30-120		
Benzo (k) fluoranthene	0.0181	0.00500	"	0.0333	ND	54.4	30-120		
Chrysene	0.0157	0.00500	"	0.0333	ND	47.1	30-120		
Dibenz (a,h) anthracene	0.0141	0.00500	"	0.0333	ND	42.3	30-120		
Fluoranthene	0.0172	0.00500	"	0.0333	ND	51.7	30-120		
Fluorene	0.0167	0.00500	"	0.0333	ND	50.0	30-120		
Indeno (1,2,3-cd) pyrene	0.0145	0.00500	"	0.0333	ND	43.5	30-120		
Pyrene	0.0167	0.00500	"	0.0333	ND	50.1	35-142		
1-Methylnaphthalene	0.0165	0.00500	"	0.0333	ND	49.6	15-130		
2-Methylnaphthalene	0.0186	0.00500	"	0.0333	ND	55.9	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0161		"	0.0333		48.2	40-150		
Surrogate: Fluoranthene-d10	0.0177		"	0.0333		53.2	40-150		

Matrix Spike Dup (BGA0712-MSD1)

Source: 2301395-04

Prepared & Analyzed: 01/30/23

Acenaphthene	0.0181	0.00500	mg/kg	0.0333	ND	54.4	31-137	27.0	30
Anthracene	0.0144	0.00500	"	0.0333	ND	43.3	30-120	18.6	30
Benzo (a) anthracene	0.0148	0.00500	"	0.0333	ND	44.3	30-120	6.02	30
Benzo (a) pyrene	0.0166	0.00500	"	0.0333	ND	50.0	30-120	2.25	30
Benzo (b) fluoranthene	0.0147	0.00500	"	0.0333	0.00196	38.1	30-120	6.57	30
Benzo (k) fluoranthene	0.0166	0.00500	"	0.0333	ND	49.8	30-120	8.88	30
Chrysene	0.0145	0.00500	"	0.0333	ND	43.5	30-120	7.86	30
Dibenz (a,h) anthracene	0.0164	0.00500	"	0.0333	ND	49.2	30-120	15.0	30
Fluoranthene	0.0140	0.00500	"	0.0333	ND	41.9	30-120	21.0	30
Fluorene	0.0143	0.00500	"	0.0333	ND	43.0	30-120	15.0	30
Indeno (1,2,3-cd) pyrene	0.0141	0.00500	"	0.0333	ND	42.4	30-120	2.63	30
Pyrene	0.0140	0.00500	"	0.0333	ND	42.1	35-142	17.5	30
1-Methylnaphthalene	0.0160	0.00500	"	0.0333	ND	48.1	15-130	2.92	50
2-Methylnaphthalene	0.0189	0.00500	"	0.0333	ND	56.8	15-130	1.54	50
Surrogate: 2-Methylnaphthalene-d10	0.0156		"	0.0333		46.7	40-150		
Surrogate: Fluoranthene-d10	0.0143		"	0.0333		43.0	40-150		

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

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 BGA0663 - EPA 3050B

Blank (BGA0663-BLK1)

Prepared: 01/27/23 Analyzed: 01/30/23

Boron ND 0.0100 mg/L

LCS (BGA0663-BS1)

Prepared: 01/27/23 Analyzed: 01/30/23

Boron 5.14 0.0100 mg/L 5.00 103 80-120

Duplicate (BGA0663-DUP1)

Source: 2301458-07

Prepared: 01/27/23 Analyzed: 01/30/23

Boron 0.478 0.0100 mg/L 0.535 11.3 20

Matrix Spike (BGA0663-MS1)

Source: 2301458-07

Prepared: 01/27/23 Analyzed: 01/30/23

Boron 5.06 0.0100 mg/L 5.00 0.535 90.4 75-125

Matrix Spike Dup (BGA0663-MSD1)

Source: 2301458-07

Prepared: 01/27/23 Analyzed: 01/30/23

Boron 5.01 0.0100 mg/L 5.00 0.535 89.5 75-125 0.931 25

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

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 BGA0732 - EPA 3050B

Blank (BGA0732-BLK1)

Prepared: 01/30/23 Analyzed: 01/31/23

Arsenic	ND	0.200	mg/kg wet
Selenium	ND	0.260	"

LCS (BGA0732-BS1)

Prepared: 01/30/23 Analyzed: 01/31/23

Arsenic	34.5	0.200	mg/kg wet	40.0	86.2	80-120
Selenium	3.37	0.260	"	4.00	84.3	80-120

Duplicate (BGA0732-DUP1)

Source: 2301499-01

Prepared: 01/30/23 Analyzed: 01/31/23

Arsenic	0.307	0.200	mg/kg dry	0.363	16.6	20
Selenium	ND	0.260	"	ND		20

Matrix Spike (BGA0732-MS1)

Source: 2301499-01

Prepared: 01/30/23 Analyzed: 01/31/23

Arsenic	45.9	0.200	mg/kg dry	47.5	0.363	95.9	75-125
Selenium	4.38	0.260	"	4.75	ND	92.2	75-125

Matrix Spike Dup (BGA0732-MSD1)

Source: 2301499-01

Prepared: 01/30/23 Analyzed: 01/31/23

Arsenic	47.4	0.200	mg/kg dry	47.5	0.363	99.0	75-125	3.14	25
Selenium	3.91	0.260	"	4.75	ND	82.4	75-125	11.3	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.



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

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 BGA0700 - General Preparation

Blank (BGA0700-BLK1)

Prepared: 01/28/23 Analyzed: 01/30/23

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

LCS (BGA0700-BS1)

Prepared: 01/28/23 Analyzed: 01/30/23

Calcium	6.42	0.0500	mg/L wet	5.00	128	70-130
Magnesium	5.32	0.0500	"	5.00	106	70-130
Sodium	5.38	0.0500	"	5.00	108	70-130

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

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

Summit Scientific

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

Batch BGA0728 - General Preparation

Duplicate (BGA0728-DUP1)		Source: 2301492-01		Prepared & Analyzed: 01/30/23	
% Solids	82.2		%	82.4	0.274 20

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

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 BGA0706 - General Preparation

Blank (BGA0706-BLK1)

Prepared & Analyzed: 01/29/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGA0706-BS1)

Prepared & Analyzed: 01/29/23

Specific Conductance (EC) 0.144 0.0100 mmhos/cm 0.150 96.3 95-105

Duplicate (BGA0706-DUP1)

Source: 2301492-01

Prepared & Analyzed: 01/29/23

Specific Conductance (EC) 6.19 0.0100 mmhos/cm 6.25 0.965 20

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: Jerke UP 8-7 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

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

Summit Scientific

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

Batch BGA0705 - General Preparation

LCS (BGA0705-BS1)

Prepared & Analyzed: 01/29/23

pH	9.11	pH Units	9.18	99.2	95-105
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Duplicate (BGA0705-DUP1)

Source: 2301492-01

Prepared & Analyzed: 01/29/23

pH	7.88	pH Units	7.72	2.05	20
----	------	----------	------	------	----

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013 - Quality Control
Summit Scientific

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

Batch BGA0710 - General Preparation

Blank (BGA0710-BLK1)

Prepared & Analyzed: 01/29/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGA0710-BS1)

Prepared & Analyzed: 01/29/23

Specific Conductance (EC) 0.144 0.0100 mmhos/cm 0.150 96.3 95-105

Duplicate (BGA0710-DUP1)

Source: 2301500-01

Prepared & Analyzed: 01/29/23

Specific Conductance (EC) 0.495 0.0100 mmhos/cm 0.476 3.87 20

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:19

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 80401

303.277.9310

February 02, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Jerke UP 8-7 Tank Battery

Work Order # 2301523

Enclosed are the results of analyses for samples received by Summit Scientific on 01/30/23 17:58. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely", is written over a light blue rectangular background.

Scott Sheely For Paul Shrewsbury

President



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 14:01

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS64@14.5'	2301523-01	Soil	01/30/23 13:15	01/30/23 17:58

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.

2301523

Summit Scientific

S₂

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

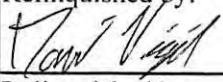
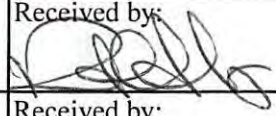
Phone: 303-487-1228

Project Name: Jerke Up 8-7 Tank Battery

Sampler Name: David Vigliani

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions		
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	pH, EC, SAR (1)	Boron - HWS	TMBs (1,2,4) & (1,3,5)	PAH - 915 (2)		Metals - 915 (3)	
1	SS64 @ 14.5'	1/30/23	1315	3			X			X				X	X	X	X	X	X	X	pH, EC, SAR by saturated paste
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by: 	Date/Time: 1/30/23 1500	Received by: Tasman's Lock Box	Date/Time: 1/30/23 1500	Turn Around Time (Check)	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"/> Sample Integrity: Temperature Upon Receipt: 5.1 Samples Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Notes: (1)-only EC (2)PAHs: benz(a), dibenz(a,h), Fluorene, 1-M, 2-M (3)metals: arsenic, selenium
Relinquished by: Tasman's Lock Box	Date/Time: 1/30/23 1758	Received by: 	Date/Time: 1/30/23 1758			
Relinquished by:	Date/Time:	Received by:	Date/Time:			

S₂

Sample Receipt Checklist

S2 Work Order# 2301523Client: PDC/tasman Client Project ID: Jerke up 8-7 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #:

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 5.1Thermometer # 1

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

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

Custodian Printed Name

Date/Time

1.30.23



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 14:01

SS64@14.5'
2301523-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/30/23 13:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0740	01/30/23	01/30/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/30/23 13:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		96.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		96.8 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/30/23 13:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0741	01/30/23	01/30/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/30/23 13:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		120 %		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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 14:01

SS64@14.5'
2301523-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/30/23 13:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzo (a) anthracene	ND	0.00500		mg/kg	1	BGA0744	01/31/23	01/31/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/30/23 13:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		63.2 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		88.7 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/30/23 13:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.165	0.0100		mg/L	1	BGA0743	01/30/23	02/01/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/30/23 13:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	1.25	0.200		mg/kg dry	1	BGA0742	01/30/23	01/31/23	EPA 6020B	
Selenium	0.392	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/30/23 13:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	81.0			%	1	BGA0754	01/31/23	01/31/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 14:01

SS64@14.5'
2301523-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **01/30/23 13:15**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Specific Conductance (EC)	0.633	0.0100			mmhos/cm	1	BGA0748	01/31/23	01/31/23	EPA 120.1	

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 14:01

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 BGA0740 - EPA 5030 Soil MS

Blank (BGA0740-BLK1)

Prepared: 01/30/23 Analyzed: 01/31/23

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	0.0541		"	0.0400		135	50-150			
Surrogate: Toluene-d8	0.0504		"	0.0400		126	50-150			
Surrogate: 4-Bromofluorobenzene	0.0532		"	0.0400		133	50-150			

LCS (BGA0740-BS1)

Prepared: 01/30/23 Analyzed: 01/31/23

Benzene	0.0837	0.0020	mg/kg	0.100		83.7	70-130			
Toluene	0.0837	0.0050	"	0.100		83.7	70-130			
Ethylbenzene	0.0968	0.0050	"	0.100		96.8	70-130			
m,p-Xylene	0.197	0.010	"	0.200		98.7	70-130			
o-Xylene	0.0940	0.0050	"	0.100		94.0	70-130			
1,2,4-Trimethylbenzene	0.0872	0.0050	"	0.100		87.2	70-130			
1,3,5-Trimethylbenzene	0.0919	0.0050	"	0.100		91.9	70-130			
Naphthalene	0.0868	0.0038	"	0.100		86.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0292		"	0.0400		72.9	50-150			
Surrogate: Toluene-d8	0.0384		"	0.0400		95.9	50-150			
Surrogate: 4-Bromofluorobenzene	0.0409		"	0.0400		102	50-150			

Matrix Spike (BGA0740-MS1)

Source: 2301523-01

Prepared: 01/30/23 Analyzed: 01/31/23

Benzene	0.0792	0.0020	mg/kg	0.100	ND	79.2	70-130			
Toluene	0.0773	0.0050	"	0.100	ND	77.3	70-130			
Ethylbenzene	0.0945	0.0050	"	0.100	ND	94.5	70-130			
m,p-Xylene	0.186	0.010	"	0.200	ND	93.2	70-130			
o-Xylene	0.0909	0.0050	"	0.100	ND	90.9	70-130			
1,2,4-Trimethylbenzene	0.0833	0.0050	"	0.100	ND	83.3	70-130			
1,3,5-Trimethylbenzene	0.0861	0.0050	"	0.100	ND	86.1	70-130			
Naphthalene	0.0911	0.0038	"	0.100	ND	91.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0300		"	0.0400		75.1	50-150			
Surrogate: Toluene-d8	0.0367		"	0.0400		91.6	50-150			
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400		101	50-150			

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 14:01

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 BGA0740 - EPA 5030 Soil MS

Matrix Spike Dup (BGA0740-MSD1)	Source: 2301523-01			Prepared: 01/30/23 Analyzed: 01/31/23						
Benzene	0.0799	0.0020	mg/kg	0.100	ND	79.9	70-130	0.905	30	
Toluene	0.0765	0.0050	"	0.100	ND	76.5	70-130	0.975	30	
Ethylbenzene	0.0966	0.0050	"	0.100	ND	96.6	70-130	2.17	30	
m,p-Xylene	0.194	0.010	"	0.200	ND	97.1	70-130	4.08	30	
o-Xylene	0.0926	0.0050	"	0.100	ND	92.6	70-130	1.83	30	
1,2,4-Trimethylbenzene	0.0846	0.0050	"	0.100	ND	84.6	70-130	1.57	30	
1,3,5-Trimethylbenzene	0.0894	0.0050	"	0.100	ND	89.4	70-130	3.69	30	
Naphthalene	0.0932	0.0038	"	0.100	ND	93.2	70-130	2.25	30	
Surrogate: 1,2-Dichloroethane-d4	0.0292		"	0.0400		73.1	50-150			
Surrogate: Toluene-d8	0.0352		"	0.0400		88.1	50-150			
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400		100	50-150			

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 14:01

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 BGA0741 - EPA 3550A

Blank (BGA0741-BLK1)

Prepared: 01/30/23 Analyzed: 01/31/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	13.9		"	12.5		111	30-150			

LCS (BGA0741-BS1)

Prepared: 01/30/23 Analyzed: 01/31/23

C10-C28 (DRO)	527	50	mg/kg	500		105	70-130			
Surrogate: o-Terphenyl	14.8		"	12.5		118	30-150			

Matrix Spike (BGA0741-MS1)

Source: 2301523-01

Prepared: 01/30/23 Analyzed: 01/31/23

C10-C28 (DRO)	536	50	mg/kg	500	ND	107	70-130			
Surrogate: o-Terphenyl	14.7		"	12.5		118	30-150			

Matrix Spike Dup (BGA0741-MSD1)

Source: 2301523-01

Prepared: 01/30/23 Analyzed: 01/31/23

C10-C28 (DRO)	544	50	mg/kg	500	ND	109	70-130	1.55	20	
Surrogate: o-Terphenyl	15.0		"	12.5		120	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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 14:01

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 BGA0744 - EPA 5030 Soil MS

Blank (BGA0744-BLK1)

Prepared & Analyzed: 01/31/23

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	0.0297	"	0.0333	89.2	40-150
Surrogate: Fluoranthene-d10	0.0321	"	0.0333	96.4	40-150

LCS (BGA0744-BS1)

Prepared & Analyzed: 01/31/23

Acenaphthene	0.0314	0.00500	mg/kg	0.0333	94.3	31-137
Anthracene	0.0322	0.00500	"	0.0333	96.5	30-120
Benzo (a) anthracene	0.0263	0.00500	"	0.0333	79.0	30-120
Benzo (a) pyrene	0.0231	0.00500	"	0.0333	69.3	30-120
Benzo (b) fluoranthene	0.0227	0.00500	"	0.0333	68.2	30-120
Benzo (k) fluoranthene	0.0227	0.00500	"	0.0333	68.1	30-120
Chrysene	0.0271	0.00500	"	0.0333	81.4	30-120
Dibenz (a,h) anthracene	0.0224	0.00500	"	0.0333	67.3	30-120
Fluoranthene	0.0306	0.00500	"	0.0333	91.8	30-120
Fluorene	0.0303	0.00500	"	0.0333	91.0	30-120
Indeno (1,2,3-cd) pyrene	0.0243	0.00500	"	0.0333	73.0	30-120
Pyrene	0.0281	0.00500	"	0.0333	84.3	35-142
1-Methylnaphthalene	0.0322	0.00500	"	0.0333	96.7	35-142
2-Methylnaphthalene	0.0311	0.00500	"	0.0333	93.2	35-142

Surrogate: 2-Methylnaphthalene-d10	0.0292	"	0.0333	87.6	40-150
Surrogate: Fluoranthene-d10	0.0313	"	0.0333	93.8	40-150

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 14:01

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGA0744 - EPA 5030 Soil MS

Matrix Spike (BGA0744-MS1)

Source: 2301510-01

Prepared & Analyzed: 01/31/23

Acenaphthene	0.0201	0.00500	mg/kg	0.0333	ND	60.2	31-137		
Anthracene	0.0189	0.00500	"	0.0333	ND	56.6	30-120		
Benzo (a) anthracene	0.0165	0.00500	"	0.0333	ND	49.4	30-120		
Benzo (a) pyrene	0.0134	0.00500	"	0.0333	ND	40.1	30-120		
Benzo (b) fluoranthene	0.0139	0.00500	"	0.0333	ND	41.6	30-120		
Benzo (k) fluoranthene	0.0158	0.00500	"	0.0333	ND	47.3	30-120		
Chrysene	0.0165	0.00500	"	0.0333	ND	49.4	30-120		
Dibenz (a,h) anthracene	0.0154	0.00500	"	0.0333	ND	46.3	30-120		
Fluoranthene	0.0196	0.00500	"	0.0333	ND	58.9	30-120		
Fluorene	0.0199	0.00500	"	0.0333	ND	59.7	30-120		
Indeno (1,2,3-cd) pyrene	0.0150	0.00500	"	0.0333	ND	45.1	30-120		
Pyrene	0.0171	0.00500	"	0.0333	ND	51.4	35-142		
1-Methylnaphthalene	0.0205	0.00500	"	0.0333	ND	61.5	15-130		
2-Methylnaphthalene	0.0233	0.00500	"	0.0333	ND	69.8	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0188		"	0.0333		56.3	40-150		
Surrogate: Fluoranthene-d10	0.0199		"	0.0333		59.8	40-150		

Matrix Spike Dup (BGA0744-MSD1)

Source: 2301510-01

Prepared & Analyzed: 01/31/23

Acenaphthene	0.0178	0.00500	mg/kg	0.0333	ND	53.4	31-137	12.0	30
Anthracene	0.0178	0.00500	"	0.0333	ND	53.3	30-120	5.94	30
Benzo (a) anthracene	0.0152	0.00500	"	0.0333	ND	45.5	30-120	8.16	30
Benzo (a) pyrene	0.0154	0.00500	"	0.0333	ND	46.3	30-120	14.3	30
Benzo (b) fluoranthene	0.0141	0.00500	"	0.0333	ND	42.2	30-120	1.32	30
Benzo (k) fluoranthene	0.0151	0.00500	"	0.0333	ND	45.2	30-120	4.43	30
Chrysene	0.0152	0.00500	"	0.0333	ND	45.6	30-120	8.04	30
Dibenz (a,h) anthracene	0.0144	0.00500	"	0.0333	ND	43.2	30-120	6.85	30
Fluoranthene	0.0200	0.00500	"	0.0333	ND	59.9	30-120	1.79	30
Fluorene	0.0185	0.00500	"	0.0333	ND	55.4	30-120	7.59	30
Indeno (1,2,3-cd) pyrene	0.0171	0.00500	"	0.0333	ND	51.4	30-120	13.0	30
Pyrene	0.0145	0.00500	"	0.0333	ND	43.6	35-142	16.5	30
1-Methylnaphthalene	0.0205	0.00500	"	0.0333	ND	61.5	15-130	0.0716	50
2-Methylnaphthalene	0.0214	0.00500	"	0.0333	ND	64.3	15-130	8.19	50
Surrogate: 2-Methylnaphthalene-d10	0.0165		"	0.0333		49.6	40-150		
Surrogate: Fluoranthene-d10	0.0203		"	0.0333		60.8	40-150		

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 14:01

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 BGA0743 - EPA 3050B

Blank (BGA0743-BLK1)

Prepared: 01/30/23 Analyzed: 02/01/23

Boron ND 0.0100 mg/L

LCS (BGA0743-BS1)

Prepared: 01/30/23 Analyzed: 02/01/23

Boron 4.33 0.0100 mg/L 5.00 86.6 80-120

Duplicate (BGA0743-DUP1)

Source: 2301460-03

Prepared: 01/30/23 Analyzed: 02/01/23

Boron 0.158 0.0100 mg/L 0.168 6.33 20

Matrix Spike (BGA0743-MS1)

Source: 2301460-03

Prepared: 01/30/23 Analyzed: 02/01/23

Boron 4.58 0.0100 mg/L 5.00 0.168 88.2 75-125

Matrix Spike Dup (BGA0743-MSD1)

Source: 2301460-03

Prepared: 01/30/23 Analyzed: 02/01/23

Boron 4.71 0.0100 mg/L 5.00 0.168 90.8 75-125 2.77 25

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 14:01

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 BGA0742 - EPA 3050B

Blank (BGA0742-BLK1)

Prepared: 01/30/23 Analyzed: 01/31/23

Arsenic	ND	0.200	mg/kg wet
Selenium	ND	0.260	"

LCS (BGA0742-BS1)

Prepared: 01/30/23 Analyzed: 01/31/23

Arsenic	39.3	0.200	mg/kg wet	40.0	98.4	80-120
Selenium	3.73	0.260	"	4.00	93.3	80-120

Duplicate (BGA0742-DUP1)

Source: 2301506-01

Prepared: 01/30/23 Analyzed: 01/31/23

Arsenic	3.14	0.200	mg/kg dry	3.41	8.41	20
Selenium	0.799	0.260	"	0.867	8.17	20

Matrix Spike (BGA0742-MS1)

Source: 2301506-01

Prepared: 01/30/23 Analyzed: 01/31/23

Arsenic	52.1	0.200	mg/kg dry	52.2	3.41	93.3	75-125
Selenium	4.82	0.260	"	5.22	0.867	75.9	75-125

Matrix Spike Dup (BGA0742-MSD1)

Source: 2301506-01

Prepared: 01/30/23 Analyzed: 01/31/23

Arsenic	51.6	0.200	mg/kg dry	52.2	3.41	92.4	75-125	0.917	25	
Selenium	4.69	0.260	"	5.22	0.867	73.4	75-125	2.76	25	QM-05

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: Jerke UP 8-7 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/02/23 14:01

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

Summit Scientific

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

Batch BGA0754 - General Preparation

Duplicate (BGA0754-DUP1)

Source: 2301522-01

Prepared & Analyzed: 01/31/23

% Solids	87.1	%	87.4	0.299	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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/02/23 14:01

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013 - Quality Control
Summit Scientific

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

Batch BGA0748 - General Preparation

Blank (BGA0748-BLK1)

Prepared & Analyzed: 01/31/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGA0748-BS1)

Prepared & Analyzed: 01/31/23

Specific Conductance (EC) 0.149 0.0100 mmhos/cm 0.150 99.4 95-105

Duplicate (BGA0748-DUP1)

Source: 2301522-01

Prepared & Analyzed: 01/31/23

Specific Conductance (EC) 1.91 0.0100 mmhos/cm 1.92 0.835 20

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: Jerke UP 8-7 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

02/02/23 14:01

Notes and Definitions

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.

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 80401

303.277.9310

February 03, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Jerke UP 8-7 Tank Battery

Work Order # 2302012

Enclosed are the results of analyses for samples received by Summit Scientific on 02/01/23 17:38. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely", is written over a light blue rectangular background.

Scott Sheely For Paul Shrewsbury

President



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/03/23 13:24

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS65@6'	2302012-01	Soil	02/01/23 10:35	02/01/23 17:38
SS66@5'	2302012-02	Soil	02/01/23 12:55	02/01/23 17:38
SS67@5'	2302012-03	Soil	02/01/23 13:00	02/01/23 17:38
SS68@5'	2302012-04	Soil	02/01/23 13:05	02/01/23 17:38

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

S₂

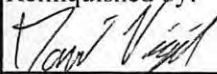
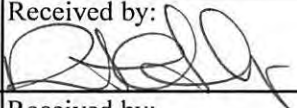
2302012

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: Jerke Up 8-7 Tank Battery
Sampler Name: David Vig.1 Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions	
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	pH, EC, SAR	Boron - HWS	TMBs (1,2,4) & (1,3,5)	PAH - 915	Metals - 915		
1	SS6506'	2/1/23	1035	3			X			X				X	X	X	X	X	X	X	pH, EC, SAR by saturated paste
2	SS6605'	↓	1255	↓			↓			↓				↓	↓	↓	↓	↓	↓	↓	
3	SS6705'	↓	1300	↓			↓			↓				↓	↓	↓	↓	↓	↓	↓	
4	SS6805'	↓	1305	↓			↓			↓				↓	↓	↓	↓	↓	↓	↓	
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by: 	Date/Time: 2/1/23 1530	Received by: Tasman's Lock Box	Date/Time: 2/1/23 1530	Turn Around Time (Check)	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 2/2/23 1738	Received by: 	Date/Time: 2/2/23 1738	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"/>	(1)-Only EC (2)-PAH: benz(a), dibenz(a,h), Fluorene, 1-M, 2-M (3)-Metals: arsenic, selenium
Relinquished by:	Date/Time:	Received by:	Date/Time:	Temperature Upon Receipt: 7.8 Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

S₂

Sample Receipt Checklist

S2 Work Order# 2302012Client: Pachasman

Client Project ID:

Jerke up 8-7 tank Battery

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

Airbill #:

☐ ☒ ☐ ☐ ☐

Matrix (Check all that apply)

Air

☐

Soil

☒

Water

☐

Other

☐

Temp (°C)


7.8

Thermometer #

1

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

Additional Comments (if any):

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

 Custodian Printed Name

2.1.23
 Date/Time



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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:24

SS65@6'
2302012-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/01/23 10:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0021	02/01/23	02/01/23	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: **02/01/23 10:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		93.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		99.2 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		110 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/01/23 10:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0022	02/01/23	02/01/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/01/23 10:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		116 %		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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:24

SS65@6'
2302012-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/01/23 10:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzo (a) anthracene	ND	0.00500		mg/kg	1	BGB0024	02/02/23	02/02/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/01/23 10:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		64.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		74.4 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/01/23 10:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.0333	0.0100		mg/L	1	BGB0020	02/01/23	02/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **02/01/23 10:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	2.78	0.200		mg/kg dry	1	BGB0023	02/01/23	02/03/23	EPA 6020B	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/01/23 10:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	97.2			%	1	BGB0038	02/02/23	02/02/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:24

SS65@6'
2302012-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **02/01/23 10:35**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Specific Conductance (EC)	0.498	0.0100			mmhos/cm	1	BGB0043	02/02/23	02/02/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:24

SS66@5'
2302012-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/01/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0021	02/01/23	02/01/23	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: **02/01/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		110 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		99.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		114 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/01/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0022	02/01/23	02/01/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/01/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		121 %		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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:24

SS66@5'
2302012-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/01/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzo (a) anthracene	ND	0.00500		mg/kg	1	BGB0024	02/02/23	02/03/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/01/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		56.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		69.3 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/01/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.188	0.0100		mg/L	1	BGB0020	02/01/23	02/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **02/01/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.783	0.200		mg/kg dry	1	BGB0023	02/01/23	02/03/23	EPA 6020B	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/01/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	89.2			%	1	BGB0038	02/02/23	02/02/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:24

SS66@5'
2302012-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **02/01/23 12:55**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Specific Conductance (EC)	0.490	0.0100			mmhos/cm	1	BGB0043	02/02/23	02/02/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:24

SS67@5'
2302012-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/01/23 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0021	02/01/23	02/01/23	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: **02/01/23 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		101 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		113 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/01/23 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0022	02/01/23	02/01/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/01/23 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		117 %		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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:24

SS67@5'
2302012-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/01/23 13:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (a) anthracene	ND	0.00500		mg/kg	1	BGB0024	02/02/23	02/03/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/01/23 13:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		49.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		70.7 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/01/23 13:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.195	0.0100		mg/L	1	BGB0020	02/01/23	02/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **02/01/23 13:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.92	0.200		mg/kg dry	1	BGB0023	02/01/23	02/03/23	EPA 6020B	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/01/23 13:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.8			%	1	BGB0038	02/02/23	02/02/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:24

SS67@5'
2302012-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **02/01/23 13:00**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Specific Conductance (EC)	0.387	0.0100			mmhos/cm	1	BGB0043	02/02/23	02/02/23	EPA 120.1	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:24

SS68@5'
2302012-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/01/23 13:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0021	02/01/23	02/01/23	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: **02/01/23 13:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		86.9 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		94.2 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.2 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/01/23 13:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0022	02/01/23	02/01/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/01/23 13:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		121 %		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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:24

SS68@5'
2302012-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/01/23 13:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzo (a) anthracene	ND	0.00500		mg/kg	1	BGB0024	02/02/23	02/03/23	EPA 8270D SIM	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/01/23 13:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		69.0 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		71.3 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/01/23 13:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.114	0.0100		mg/L	1	BGB0020	02/01/23	02/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **02/01/23 13:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	1.46	0.200		mg/kg dry	1	BGB0023	02/01/23	02/03/23	EPA 6020B	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/01/23 13:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	92.9			%	1	BGB0038	02/02/23	02/02/23	Calculation	

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:24

SS68@5'
2302012-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **02/01/23 13:05**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Specific Conductance (EC)	1.91	0.0100			mmhos/cm	1	BGB0043	02/02/23	02/02/23	EPA 120.1	

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:24

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 BGB0021 - EPA 5030 Soil MS

Blank (BGB0021-BLK1)

Prepared: 02/01/23 Analyzed: 02/02/23

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	0.0502		"	0.0400		126	50-150			
Surrogate: Toluene-d8	0.0510		"	0.0400		128	50-150			
Surrogate: 4-Bromofluorobenzene	0.0507		"	0.0400		127	50-150			

LCS (BGB0021-BS1)

Prepared: 02/01/23 Analyzed: 02/02/23

Benzene	0.0796	0.0020	mg/kg	0.100		79.6	70-130			
Toluene	0.0820	0.0050	"	0.100		82.0	70-130			
Ethylbenzene	0.0913	0.0050	"	0.100		91.3	70-130			
m,p-Xylene	0.189	0.010	"	0.200		94.7	70-130			
o-Xylene	0.0914	0.0050	"	0.100		91.4	70-130			
1,2,4-Trimethylbenzene	0.0848	0.0050	"	0.100		84.8	70-130			
1,3,5-Trimethylbenzene	0.0896	0.0050	"	0.100		89.6	70-130			
Naphthalene	0.0855	0.0038	"	0.100		85.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0297		"	0.0400		74.2	50-150			
Surrogate: Toluene-d8	0.0383		"	0.0400		95.7	50-150			
Surrogate: 4-Bromofluorobenzene	0.0397		"	0.0400		99.3	50-150			

Matrix Spike (BGB0021-MS1)

Source: 2302011-01

Prepared: 02/01/23 Analyzed: 02/02/23

Benzene	0.0804	0.0020	mg/kg	0.100	ND	80.4	70-130			
Toluene	0.0788	0.0050	"	0.100	ND	78.8	70-130			
Ethylbenzene	0.0919	0.0050	"	0.100	ND	91.9	70-130			
m,p-Xylene	0.186	0.010	"	0.200	ND	93.2	70-130			
o-Xylene	0.0914	0.0050	"	0.100	ND	91.4	70-130			
1,2,4-Trimethylbenzene	0.0831	0.0050	"	0.100	ND	83.1	70-130			
1,3,5-Trimethylbenzene	0.0859	0.0050	"	0.100	ND	85.9	70-130			
Naphthalene	0.0883	0.0038	"	0.100	ND	88.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0338		"	0.0400		84.4	50-150			
Surrogate: Toluene-d8	0.0370		"	0.0400		92.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.4	50-150			

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: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:24

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 BGB0021 - EPA 5030 Soil MS

Matrix Spike Dup (BGB0021-MSD1)	Source: 2302011-01			Prepared: 02/01/23 Analyzed: 02/02/23						
Benzene	0.0849	0.0020	mg/kg	0.100	ND	84.9	70-130	5.44	30	
Toluene	0.0823	0.0050	"	0.100	ND	82.3	70-130	4.28	30	
Ethylbenzene	0.100	0.0050	"	0.100	ND	100	70-130	8.74	30	
m,p-Xylene	0.200	0.010	"	0.200	ND	99.8	70-130	6.82	30	
o-Xylene	0.0976	0.0050	"	0.100	ND	97.6	70-130	6.64	30	
1,2,4-Trimethylbenzene	0.0853	0.0050	"	0.100	ND	85.3	70-130	2.60	30	
1,3,5-Trimethylbenzene	0.0911	0.0050	"	0.100	ND	91.1	70-130	5.97	30	
Naphthalene	0.0890	0.0038	"	0.100	ND	89.0	70-130	0.812	30	
Surrogate: 1,2-Dichloroethane-d4	0.0318		"	0.0400		79.4	50-150			
Surrogate: Toluene-d8	0.0370		"	0.0400		92.6	50-150			
Surrogate: 4-Bromofluorobenzene	0.0387		"	0.0400		96.8	50-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:24

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 BGB0022 - EPA 3550A

Blank (BGB0022-BLK1)

Prepared: 02/01/23 Analyzed: 02/02/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	14.9		"	12.5	119		30-150			

LCS (BGB0022-BS1)

Prepared: 02/01/23 Analyzed: 02/02/23

C10-C28 (DRO)	555	50	mg/kg	500	111		70-130			
Surrogate: o-Terphenyl	14.9		"	12.5	119		30-150			

Matrix Spike (BGB0022-MS1)

Source: 2302011-01

Prepared: 02/01/23 Analyzed: 02/02/23

C10-C28 (DRO)	530	50	mg/kg	500	36.0	98.8	70-130			
Surrogate: o-Terphenyl	14.3		"	12.5	115		30-150			

Matrix Spike Dup (BGB0022-MSD1)

Source: 2302011-01

Prepared: 02/01/23 Analyzed: 02/02/23

C10-C28 (DRO)	575	50	mg/kg	500	36.0	108	70-130	8.18	20	
Surrogate: o-Terphenyl	14.8		"	12.5	119		30-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:24

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGB0024 - EPA 5030 Soil MS

Blank (BGB0024-BLK1)

Prepared & Analyzed: 02/02/23

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	0.0290		"	0.0333		87.0	40-150			
Surrogate: Fluoranthene-d10	0.0321		"	0.0333		96.3	40-150			

LCS (BGB0024-BS1)

Prepared & Analyzed: 02/02/23

Acenaphthene	0.0320	0.00500	mg/kg	0.0333		95.9	31-137			
Anthracene	0.0330	0.00500	"	0.0333		99.1	30-120			
Benzo (a) anthracene	0.0278	0.00500	"	0.0333		83.4	30-120			
Benzo (a) pyrene	0.0250	0.00500	"	0.0333		75.1	30-120			
Benzo (b) fluoranthene	0.0253	0.00500	"	0.0333		75.9	30-120			
Benzo (k) fluoranthene	0.0252	0.00500	"	0.0333		75.5	30-120			
Chrysene	0.0290	0.00500	"	0.0333		86.9	30-120			
Dibenz (a,h) anthracene	0.0223	0.00500	"	0.0333		67.0	30-120			
Fluoranthene	0.0329	0.00500	"	0.0333		98.8	30-120			
Fluorene	0.0331	0.00500	"	0.0333		99.3	30-120			
Indeno (1,2,3-cd) pyrene	0.0253	0.00500	"	0.0333		75.9	30-120			
Pyrene	0.0314	0.00500	"	0.0333		94.1	35-142			
1-Methylnaphthalene	0.0288	0.00500	"	0.0333		86.3	35-142			
2-Methylnaphthalene	0.0307	0.00500	"	0.0333		92.1	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0260		"	0.0333		78.1	40-150			
Surrogate: Fluoranthene-d10	0.0336		"	0.0333		101	40-150			

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:24

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 BGB0024 - EPA 5030 Soil MS

Matrix Spike (BGB0024-MS1)

Source: 2301417-01

Prepared & Analyzed: 02/02/23

Acenaphthene	0.0334	0.00500	mg/kg	0.0333	ND	100	31-137		
Anthracene	0.0320	0.00500	"	0.0333	ND	95.9	30-120		
Benzo (a) anthracene	0.0256	0.00500	"	0.0333	ND	76.7	30-120		
Benzo (a) pyrene	0.0199	0.00500	"	0.0333	ND	59.6	30-120		
Benzo (b) fluoranthene	0.0213	0.00500	"	0.0333	ND	63.8	30-120		
Benzo (k) fluoranthene	0.0202	0.00500	"	0.0333	ND	60.7	30-120		
Chrysene	0.0247	0.00500	"	0.0333	ND	74.1	30-120		
Dibenz (a,h) anthracene	0.0176	0.00500	"	0.0333	ND	52.9	30-120		
Fluoranthene	0.0314	0.00500	"	0.0333	ND	94.1	30-120		
Fluorene	0.0335	0.00500	"	0.0333	ND	101	30-120		
Indeno (1,2,3-cd) pyrene	0.0190	0.00500	"	0.0333	ND	57.0	30-120		
Pyrene	0.0276	0.00500	"	0.0333	ND	82.7	35-142		
1-Methylnaphthalene	0.0390	0.00500	"	0.0333	ND	117	15-130		
2-Methylnaphthalene	0.0345	0.00500	"	0.0333	ND	103	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0375		"	0.0333		112	40-150		
Surrogate: Fluoranthene-d10	0.0327		"	0.0333		98.0	40-150		

Matrix Spike Dup (BGB0024-MSD1)

Source: 2301417-01

Prepared & Analyzed: 02/02/23

Acenaphthene	0.0326	0.00500	mg/kg	0.0333	ND	97.9	31-137	2.31	30
Anthracene	0.0298	0.00500	"	0.0333	ND	89.3	30-120	7.11	30
Benzo (a) anthracene	0.0240	0.00500	"	0.0333	ND	72.0	30-120	6.24	30
Benzo (a) pyrene	0.0180	0.00500	"	0.0333	ND	54.0	30-120	9.97	30
Benzo (b) fluoranthene	0.0183	0.00500	"	0.0333	ND	55.0	30-120	14.8	30
Benzo (k) fluoranthene	0.0179	0.00500	"	0.0333	ND	53.7	30-120	12.2	30
Chrysene	0.0228	0.00500	"	0.0333	ND	68.5	30-120	7.76	30
Dibenz (a,h) anthracene	0.0162	0.00500	"	0.0333	ND	48.7	30-120	8.24	30
Fluoranthene	0.0280	0.00500	"	0.0333	ND	84.0	30-120	11.4	30
Fluorene	0.0320	0.00500	"	0.0333	ND	96.1	30-120	4.45	30
Indeno (1,2,3-cd) pyrene	0.0165	0.00500	"	0.0333	ND	49.5	30-120	14.1	30
Pyrene	0.0265	0.00500	"	0.0333	ND	79.6	35-142	3.79	30
1-Methylnaphthalene	0.0380	0.00500	"	0.0333	ND	114	15-130	2.56	50
2-Methylnaphthalene	0.0323	0.00500	"	0.0333	ND	97.0	15-130	6.45	50
Surrogate: 2-Methylnaphthalene-d10	0.0338		"	0.0333		101	40-150		
Surrogate: Fluoranthene-d10	0.0290		"	0.0333		87.1	40-150		

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:24

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 BGB0020 - EPA 3050B

Blank (BGB0020-BLK1)

Prepared: 02/01/23 Analyzed: 02/03/23

Boron ND 0.0100 mg/L

LCS (BGB0020-BS1)

Prepared: 02/01/23 Analyzed: 02/03/23

Boron 4.46 0.0100 mg/L 5.00 89.2 80-120

Duplicate (BGB0020-DUP1)

Source: 2301513-01

Prepared: 02/01/23 Analyzed: 02/03/23

Boron 0.210 0.0100 mg/L 0.170 21.0 20 QM-05

Matrix Spike (BGB0020-MS1)

Source: 2301513-01

Prepared: 02/01/23 Analyzed: 02/03/23

Boron 4.67 0.0100 mg/L 5.00 0.170 90.0 75-125

Matrix Spike Dup (BGB0020-MSD1)

Source: 2301513-01

Prepared: 02/01/23 Analyzed: 02/03/23

Boron 4.68 0.0100 mg/L 5.00 0.170 90.3 75-125 0.358 25

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:24

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 BGB0023 - EPA 3050B

Blank (BGB0023-BLK1)

Prepared: 02/01/23 Analyzed: 02/03/23

Arsenic	ND	0.200	mg/kg wet
Selenium	ND	0.260	"

LCS (BGB0023-BS1)

Prepared: 02/01/23 Analyzed: 02/03/23

Arsenic	40.0	0.200	mg/kg wet	40.0	100	80-120
Selenium	4.07	0.260	"	4.00	102	80-120

Duplicate (BGB0023-DUP1)

Source: 2301417-01

Prepared: 02/01/23 Analyzed: 02/03/23

Arsenic	0.762	0.200	mg/kg dry	0.875	13.8	20
Selenium	ND	0.260	"	ND		20

Matrix Spike (BGB0023-MS1)

Source: 2301417-01

Prepared: 02/01/23 Analyzed: 02/03/23

Arsenic	35.8	0.200	mg/kg dry	50.8	0.875	68.8	75-125		QM-05
Selenium	3.60	0.260	"	5.08	ND	70.9	75-125		QM-05

Matrix Spike Dup (BGB0023-MSD1)

Source: 2301417-01

Prepared: 02/01/23 Analyzed: 02/03/23

Arsenic	38.4	0.200	mg/kg dry	50.8	0.875	73.8	75-125	6.85	25	QM-05
Selenium	3.64	0.260	"	5.08	ND	71.7	75-125	1.15	25	QM-05

Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/03/23 13:24

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

Summit Scientific

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

Batch BGB0038 - General Preparation

Duplicate (BGB0038-DUP1)

Source: 2301417-01

Prepared & Analyzed: 02/02/23

% Solids	79.6	%		78.7		1.15	20
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Summit Scientific

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

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:24

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013 - Quality Control
Summit Scientific

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

Batch BGB0043 - General Preparation

Blank (BGB0043-BLK1)

Prepared & Analyzed: 02/02/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGB0043-BS1)

Prepared & Analyzed: 02/02/23

Specific Conductance (EC) 0.151 0.0100 mmhos/cm 0.150 101 95-105

Duplicate (BGB0043-DUP1)

Source: 2301417-01

Prepared & Analyzed: 02/02/23

Specific Conductance (EC) 1.42 0.0100 mmhos/cm 1.48 3.65 20

Summit Scientific

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PDC Energy

1775 Sherman St. STE. 3000

Denver CO, 80203

Project: Jerke UP 8-7 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

02/03/23 13:24

Notes and Definitions

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.

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

Attachment B



Client: PDC

Date: 12/16/2022

Daily Forecast/Weather: Cloudy, 10's Personnel: AO, CJ

Description of Activities:

[illegible]











SITE NAME: Jerke Up 8-7							DATE: 1/10/2023	REM. PROJECT #: 25778	WEATHER: 40s sunny	
SITE DIRECTIONS: WCR 39 x 46, N 0.85 miles, W 2/10, S 2/10 into							CLIENT: PDC			
LEGALS AND LAT/LONG: 40.329066, -104.701334							TASMAN PERSONNEL: David Vigil			
SOIL TYPES: Well Graded Sand - SW							SURFACE GRADIENT: Southwest			
SOIL SAMPLING							FACILITY INFRASTRUCTURE			
Date/Time	Soil Sample ID	PID (ppm)	Visual	Olfactory	Photo?	Grab or Lab Sample?	EQUIPMENT		Quantity	
							Above Ground Storage Tank (AST)			
1/10/2023 10:20	TP01 @ 4'	469	HC Staining	HC Odor	Yes	Grab	Buried or Partially Buried Vessel			
1/10/2023 09:25	WC01 @ 10'	1779	HC Staining	Strong HC Odor	Yes	Lab	Separator			
1/10/2023 10:40	TP02 @ 10'	0.1	No Staining	No Odor	Yes	Grab	Emission Control Device (ECD)			
1/10/2023 12:00	TP03 @ 10'	3.6	No Staining	Organic Odor	Yes	Grab	Dump Line			
1/10/2023 12:10	TP04 @ 10'	1.6	No Staining	No Odor	Yes	Grab	Wellhead			
1/10/2023 12:40	TP05 @ 8'	199	HC Staining	HC Odor	Yes	Grab	Flowline			
1/10/2023 13:05	TP06 @ 10'	0.0	No Staining	No Odor	Yes	Grab	Other:			
1/10/2023 14:15	TP07 @ 10'	0.0	No Staining	No Odor	Yes	Grab	Soil Loads Removed			
1/11/2023 09:20	GS01 @ 10'	0.0	No Staining	No Odor	Yes	Grab	IMPACTED SOIL IDENTIFIED? Yes			
1/11/2023 12:15	GS02 @ 10'	329	HC Staining	Strong HC Odor	Yes	Grab	ESTIMATED VOLUME OF IMPACTS:			
1/11/2023 13:30	GS03 @ 10'	1176	HC Staining	Strong HC Odor	Yes	Grab	Date		Number	CY
1/12/2023 10:00	SS01 @ 14'	32.5	No Staining	Slight HC Odor	Yes	Lab	1/10/2023		2	20
1/12/2023 12:25	SS02 @ 14'	4.2	No Staining	No Odor	Yes	Lab	1/11/2023		24	240
1/13/2023 09:30	SS03 @ 14'	0.3	No Staining	No Odor	Yes	Lab	1/12/2023		31	310
1/13/2023 09:45	SS04 @ 5'	0.0	No Staining	No Odor	Yes	Lab	1/13/2023		29	290
1/13/2023 09:50	SS05 @ 10'	0.0	No Staining	No Odor	Yes	Lab	Total Removed		86	860
1/13/2023 10:05	SS06 @ 5'	0.0	No Staining	No Odor	Yes	Lab	Disposal Facility: WM - Ault			
1/13/2023 10:10	SS07 @ 10'	0.1	No Staining	No Odor	Yes	Lab	Groundwater Recovery			
1/13/2023 11:55	SS08 @ 14'	0.0	No Staining	No Odor	Yes	Lab	DATE GW ENCOUNTERED: 1/10/2023		DEPTH: 7	
1/13/2023 13:45	SS09 @ 14'	0.0	No Staining	No Odor	Yes	Lab	GROUNDWATER IN CONTACT WITH IMPACTED SOIL? Groundwater in contact with soil impacts.			
1/13/2023 14:30	SS10 @ 5'	3.7	No Staining	No Odor	Yes	Lab				
1/13/2023 14:35	SS11 @ 10'	0.0	No Staining	No Odor	Yes	Lab	LNAPL OR SHEEN OBSERVED ON GW?			
GROUNDWATER SAMPLING							Date		BBLS	
Date/Time	Groundwater Sample ID	Depth Collected	Turbid?	Sheen?	Odor?	Photo?	1/12/2023		80	
							1/13/2023		160	
							Total Removed		240	
							Disposal Facility: NGL C6			



Photographic Log



Equipment ID:TP01

Equipment Type:

Material:

Volume:

Contents:

Notes/Conditions:



Equipment ID:WC01

Equipment Type:

Material:

Volume:

Contents:

Notes/Conditions: Destroyed remediation well inside excavation

Photographic Log



Equipment ID:TP02

Equipment Type:

Material:

Volume:

Contents:

Notes/Conditions:



Equipment ID:TP03

Equipment Type:

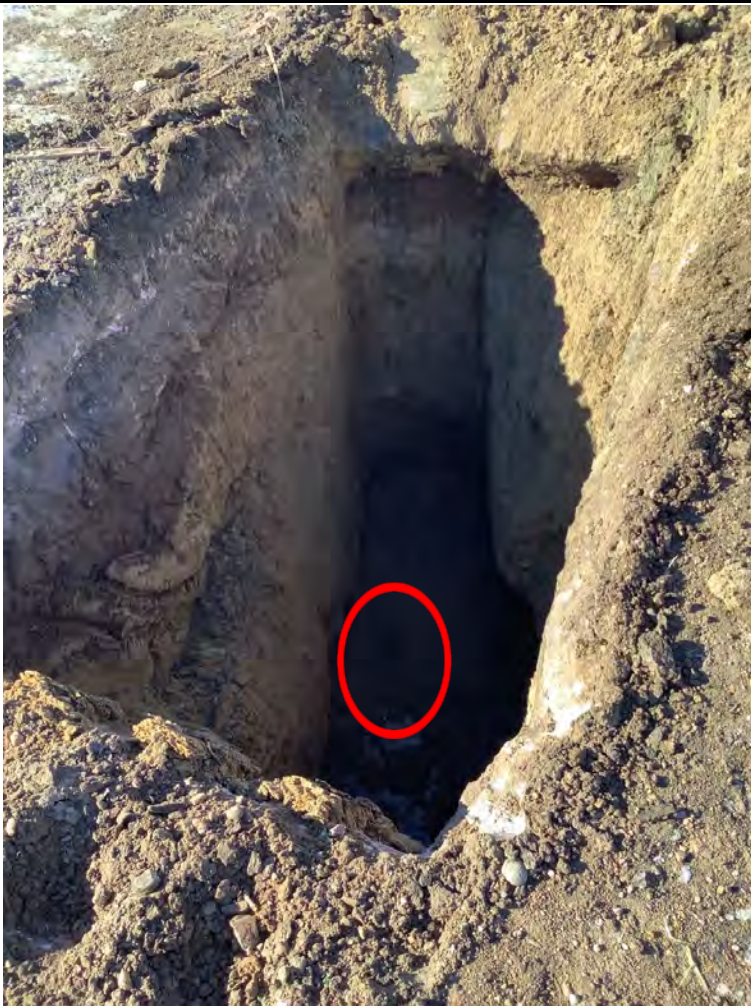
Material:

Volume:

Contents:

Notes/Conditions:

Photographic Log



Equipment ID:TP04

Equipment Type:

Material:

Volume:

Contents:

Notes/Conditions:



Equipment ID:TP05

Equipment Type:

Material:

Volume:

Contents:

Notes/Conditions:

Photographic Log



Equipment ID:TP06

Equipment Type:

Material:

Volume:

Contents:

Notes/Conditions:



Equipment ID:TP07

Equipment Type:

Material:

Volume:

Contents:

Notes/Conditions:

Photographic Log



Equipment ID:GS01

Equipment Type:

Material:

Volume:

Contents:

Notes/Conditions:



Equipment ID:GS02

Equipment Type:

Material:

Volume:

Contents:

Notes/Conditions:

Photographic Log



Equipment ID:GS03

Equipment Type:

Material:

Volume:

Contents:

Notes/Conditions:



Equipment ID:SS01

Equipment Type:

Material:

Volume:

Contents:

Notes/Conditions:

Photographic Log



Equipment ID:SS02

Equipment Type:

Material:

Volume:

Contents:

Notes/Conditions:



Equipment ID:SS03

Equipment Type:

Material:

Volume:

Contents:

Notes/Conditions:

Photographic Log



Equipment ID:SS04/SS05

Equipment Type:

Material:

Volume:

Contents:

Notes/Conditions:



Equipment ID:SS06/SS07

Equipment Type:





Material:

Volume:


Contents:

Notes/Conditions:

Photographic Log

					
Equipment ID: SS08		Equipment Type:			
Material:	Volume:	Contents:			
Notes/Conditions:					
					
Equipment ID: SS09		Equipment Type:			
Material:	Volume:	Contents:			
Notes/Conditions:					



Photographic Log

					
Equipment ID: SS10/SS11			Equipment Type:		
Material:	Volume:	Contents:	Material:	Volume:	Contents:
Notes/Conditions: SS10 underneath separator flowline. Separator dump line excavated/removed			Notes/Conditions:		



SITE NAME: Jerke Up 8-7							DATE: 1/16/2023	REM. PROJECT #: 25778		WEATHER: 40s sunny	
SITE DIRECTIONS: WCR 39 x 46, N 0.85 miles, W 2/10, S 2/10 into							CLIENT: PDC				
LEGALS AND LAT/LONG: 40.329066, -104.701334							TASMAN PERSONNEL: David Vigil				
SOIL TYPES: Well Graded Sand - SW							SURFACE GRADIENT: Southwest				
SOIL SAMPLING							FACILITY INFRASTRUCTURE				
Date/Time	Soil Sample ID	PID (ppm)	Visual	Olfactory	Photo?	Grab or Lab Sample?	EQUIPMENT		Quantity		
							Above Ground Storage Tank (AST)				
1/16/2023 09:40	SS12 @ 14'	8.9	No Staining	No Odor	Yes	Lab	Buried or Partially Buried Vessel				
1/16/2023 11:20	SS13 @ 5'	7.1	HC Staining	Slight HC Odor	Yes	Lab	Separator				
1/16/2023 11:25	SS14 @ 10'	24.0	HC Staining	Slight HC Odor	Yes	Lab	Emission Control Device (ECD)				
1/16/2023 12:50	SS15 @ 14'	5.5	No Staining	No Odor	Yes	Lab	Dump Line				
1/17/2023 09:50	SS16 @ 14'	1.4	No Staining	No Odor	Yes	Lab	Wellhead				
1/17/2023 10:10	SS17 @ 14.5'	1.8	No Staining	No Odor	Yes	Lab	Flowline				
1/17/2023 12:35	SS18 @ 14'	0.2	No Staining	No Odor	Yes	Lab	Other:				
1/19/2023 11:10	SS19 @ 5'	0.2	No Staining	No Odor	Yes	Lab	Soil Loads Removed				
1/19/2023 11:15	SS20 @ 10'	0.1	No Staining	No Odor	Yes	Lab	IMPACTED SOIL IDENTIFIED?				
1/19/2023 11:50	SS21 @ 14'	0.0	No Staining	No Odor	Yes	Lab	ESTIMATED VOLUME OF IMPACTS:				
1/19/2023 14:30	SS22 @ 5'	0.1	No Staining	No Odor	Yes	Lab	Date		Number	CY	
1/19/2023 14:35	SS23 @ 10'	0.0	No Staining	No Odor	Yes	Lab				860	
1/19/2023 14:40	SS24 @ 14'	0.4	No Staining	No Odor	Yes	Lab	1/16/2023		18	140	
							1/17/2023		38	380	
							1/19/2023		19	190	
							Total Removed		75	1570	
							Disposal Facility: WM - Ault				
							Groundwater Recovery				
							DATE GW ENCOUNTERED:			DEPTH:	
							GROUNDWATER IN CONTACT WITH IMPACTED SOIL?				
							LNAPL OR SHEEN OBSERVED ON GW?				
GROUNDWATER SAMPLING							Date		BBLS		
Date/Time	Groundwater Sample ID	Depth Collected	Turbid?	Sheen?	Odor?	Photo?			720		
							1/18/2023		800		
							1/19/2023		800		
							Total Removed		2320		
							Disposal Facility: NGL C6				

Photographic Log

							
Equipment ID:SS12		Equipment Type:		Equipment ID:SS13/14		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions:				Notes/Conditions:			

Photographic Log



Equipment ID:SS15

Equipment Type:

Material:

Volume:

Contents:

Notes/Conditions:



Equipment ID:SS17

Equipment Type:



Material:

Volume:

Contents:

Notes/Conditions:

Photographic Log

							
Equipment ID: SS16		Equipment Type:		Equipment ID: SS18		Equipment Type:	
Material:	Volume:	Contents:	Material:	Volume:	Contents:		
Notes/Conditions:			Notes/Conditions:				

Photographic Log



Equipment ID:SS19/SS20

Equipment Type:

Material:

Volume:

Contents:

Notes/Conditions:



Equipment ID:SS21

Equipment Type:

Material:

Volume:

Contents:

Notes/Conditions:

Photographic Log



Equipment ID: SS22-SS24		Equipment Type:		Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions:				Notes/Conditions:			



SITE NAME: Jerke Up 8-7							DATE: 1/20/2023		REM. PROJECT #: 25778		WEATHER:	
SITE DIRECTIONS: WCR 39 x 46, N 0.85 miles, W 2/10, S 2/10 into							CLIENT: PDC					
LEGALS AND LAT/LONG: 40.329066, -104.701334							TASMAN PERSONNEL: David vigil					
SOIL TYPES: Well Graded Sand - SW							SURFACE GRADIENT: Southwest					
SOIL SAMPLING							FACILITY INFRASTRUCTURE					
Date/Time	Soil Sample ID	PID (ppm)	Visual	Olfactory	Photo?	Grab or Lab Sample?	EQUIPMENT		Quantity			
							Above Ground Storage Tank (AST)					
1/20/2023 11:00	SS25 @ 14'	0.0	No Staining	No Odor	Yes	Lab	Buried or Partially Buried Vessel					
1/20/2023 13:00	SS26 @ 2.5'	0.0	No Staining	No Odor	Yes	Lab	Separator					
1/20/2023 13:05	SS27 @ 5'	0.0	No Staining	No Odor	Yes	Lab	Emission Control Device (ECD)					
1/20/2023 13:10	SS28 @ 10'	0.0	No Staining	No Odor	Yes	Lab	Dump Line					
1/24/2023 09:40	SS29 @ 5'	0.0	No Staining	No Odor	Yes	Lab	Wellhead					
1/24/2023 09:45	SS30 @ 10'	1.3	HC Staining	No Odor	Yes	Lab	Flowline					
1/24/2023 10:00	SS31 @ 14'	0.3	No Staining	No Odor	Yes	Lab	Other:					
1/24/2023 11:20	SS32 @ 14'	2.3	No Staining	No Odor	Yes	Lab	Soil Loads Removed					
1/24/2023 13:00	SS33 @ 14'	0.5	No Staining	No Odor	Yes	Lab	IMPACTED SOIL IDENTIFIED?					
1/24/2023 15:00	SS34 @ 5'	0.1	HC Staining	No Odor	Yes	Lab	ESTIMATED VOLUME OF IMPACTS:					
1/24/2023 15:05	SS35 @ 10'	0.0	No Staining	No Odor	Yes	Lab	Date		Number	CY		
1/24/2023 15:10	SS36 @ 14'	0.0	No Staining	No Odor	Yes	Lab	1/20/2023		26	260		
1/25/2023 12:00	SS37 @ 2.5'	0.1	No Staining	No Odor	Yes	Lab	1/24/2023		46	460		
1/25/2023 12:05	SS38 @ 5'	1.7	HC Staining	No Odor	Yes	Lab	1/25/2023		43	430		
1/25/2023 12:10	SS39 @ 10'	0.0	No Staining	No Odor	Yes	Lab						
1/25/2023 13:00	SS40 @ 14'	0.0	No Staining	No Odor	Yes	Lab	Total Removed		115	1150		
1/25/2023 13:20	SS41 @ 5'	1.8	HC Staining	No Odor	Yes	Lab	Disposal Facility: WM - Ault					
1/25/2023 13:25	SS42 @ 10'	0.0	No Staining	No Odor	Yes	Lab	Groundwater Recovery					
							DATE GW ENCOUNTERED:		DEPTH:			
							GROUNDWATER IN CONTACT WITH IMPACTED SOIL?					
							LNAPL OR SHEEN OBSERVED ON GW?					
GROUNDWATER SAMPLING							Date		BBLS			
Date/Time	Groundwater Sample ID	Depth Collected	Turbid?	Sheen?	Odor?	Photo?	1/20/2023		1145			
							1/24/2023		700			
							1/25/2023		1020			
							Total Removed		2865			
							Disposal Facility: NGL C6					

Photographic Log



Equipment ID:SS25

Equipment Type:

Material:

Volume:

Contents:

Notes/Conditions:



Equipment ID:SS26--SS28

Equipment Type:

Material:

Volume:





Contents:

Notes/Conditions:



Photographic Log

					
Equipment ID:SS29/SS30		Equipment Type:	Equipment ID:SS31		Equipment Type:
Material:	Volume:	Contents:	Material:	Volume:	Contents:
Notes/Conditions:			Notes/Conditions:		

Photographic Log

					
Equipment ID: SS32		Equipment Type:			
Material:	Volume:	Contents:			
Notes/Conditions:					
					
Equipment ID: SS33		Equipment Type:			
Material:	Volume:	Contents:			
Notes/Conditions:					

Photographic Log

							
Equipment ID: SS34-SS36		Equipment Type:		Equipment ID: SS37-SS40		Equipment Type:	
Material:		Volume:		Material:		Volume:	
Contents:				Contents:			
Notes/Conditions:				Notes/Conditions:			



Photographic Log

					
Equipment ID: SS41-SS42		Equipment Type:	Equipment ID:		Equipment Type:
Material:	Volume:	Contents:	Material:	Volume:	Contents:
Notes/Conditions:			Notes/Conditions:		





SITE NAME: Jerke Up 8-7							DATE: 1/26/2023	REM. PROJECT #: 25778		WEATHER: 30s sunny	
SITE DIRECTIONS: WCR 39 x 46, N 0.85 miles, W 2/10, S 2/10 into							CLIENT: PDC				
LEGALS AND LAT/LONG: 40.329066, -104.701334							TASMAN PERSONNEL: David Vigil				
SOIL TYPES: Well Graded Sand - SW							SURFACE GRADIENT: Southwest				
SOIL SAMPLING							FACILITY INFRASTRUCTURE				
Date/Time	Soil Sample ID	PID (ppm)	Visual	Olfactory	Photo?	Grab or Lab Sample?	EQUIPMENT		Quantity		
							Above Ground Storage Tank (AST)				
1/26/2023 09:15	SS43 @ 14'	0.0	No Staining	No Odor	Yes	Lab	Buried or Partially Buried Vessel				
1/26/2023 09:50	SS44 @ 14'	0.1	No Staining	No Odor	Yes	Lab	Separator				
1/26/2023 10:20	SS45 @ 14'	1.2	No Staining	No Odor	Yes	Lab	Emission Control Device (ECD)				
1/26/2023 10:45	SS46 @ 2.5'	0.6	No Staining	No Odor	Yes	Lab	Dump Line				
1/26/2023 10:50	SS47 @ 5'	1.7	HC Staining	No Odor	Yes	Lab	Wellhead				
1/26/2023 10:55	SS48 @ 10'	3.8	HC Staining	No Odor	Yes	Lab	Flowline				
1/26/2023 11:25	SS49 @ 14'	0.0	No Staining	No Odor	Yes	Lab	Other:				
1/26/2023 12:00	SS50 @ 5'	30.1	HC Staining	Slight HC Odor	Yes	Lab	Soil Loads Removed				
1/26/2023 12:05	SS51 @ 10'	19.9	HC Staining	Organic Odor	Yes	Lab	IMPACTED SOIL IDENTIFIED?				
1/26/2023 12:50	WC02 @ 10'	2011	HC Staining	Strong HC Odor	Yes	Lab	ESTIMATED VOLUME OF IMPACTS:				
1/26/2023 14:00	SS52 @ 5'	2.2	No Staining	No Odor	Yes	Lab	Date		Number	CY	
1/26/2023 14:05	SS53 @ 10'	5.2	No Staining	No Odor	Yes	Lab	1/26/2023		30	300	
1/27/2023 11:10	SS54 @ 14'	3.9	Organic Content	No Odor	Yes	Lab	1/27/2023		9	90	
1/27/2023 11:50	SS55 @ 14'	3.7	Organic Content	No Odor	Yes	Lab					
1/27/2023 12:20	SS56 @ 14'	1.5	No Staining	No Odor	Yes	Lab					
1/27/2023 12:30	SS57 @ 14'	0.0	No Staining	No Odor	Yes	Lab	Total Removed		39	390	
1/27/2023 12:45	SS58 @ 5'	612	HC Staining	HC Odor	Yes	Lab	Disposal Facility: WM - Ault				
1/27/2023 12:50	SS59 @ 10'	872	HC Staining	HC Odor	Yes	Lab	Groundwater Recovery				
1/27/2023 14:10	SS60 @ 5'	0.0	No Staining	No Odor	Yes	Lab	DATE GW ENCOUNTERED:		DEPTH:		
1/27/2023 14:15	SS61 @ 10'	0.0	No Staining	No Odor	Yes	Lab	GROUNDWATER IN CONTACT WITH IMPACTED SOIL?				
1/27/2023 14:20	SS62 @ 14'	0.7	No Staining	No Odor	Yes	Lab					
1/27/2023 14:30	SS63 @ 2.5'	0.0	No Staining	No Odor	Yes	Lab	LNAPL OR SHEEN OBSERVED ON GW?				
GROUNDWATER SAMPLING							Date		BBLS		
Date/Time	Groundwater Sample ID	Depth Collected	Turbid?	Sheen?	Odor?	Photo?	1/26/2023		960		
							1/27/2023		990		
							Total Removed		1950		
							Disposal Facility: NGL C6				

Photographic Log

							
Equipment ID: SS43		Equipment Type:		Equipment ID: SS44		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions:				Notes/Conditions:			

Photographic Log

							
Equipment ID: SS45		Equipment Type:		Equipment ID: SS46-SS49		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions:				Notes/Conditions:			

Photographic Log



Equipment ID:SS50/SS51

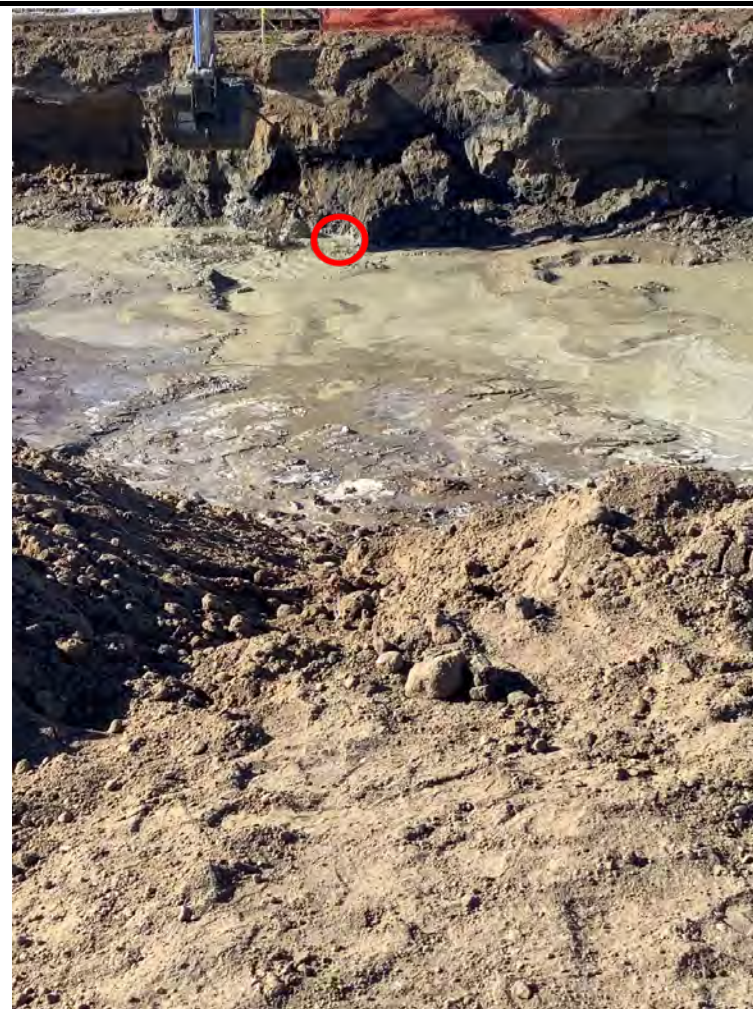
Equipment Type:

Material:

Volume:

Contents:

Notes/Conditions:



Equipment ID:WC02

Equipment Type:

Material:

Volume:

Contents:

Notes/Conditions:

Photographic Log



Equipment ID:SS52/SS53

Equipment Type:

Material:

Volume:

Contents:

Notes/Conditions:



Equipment ID:SS54

Equipment Type:

Material:

Volume:

Contents:

Notes/Conditions:

Photographic Log





							
Equipment ID:SS55		Equipment Type:		Equipment ID:SS56		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions:				Notes/Conditions:			

Photographic Log



Equipment ID:SS57		Equipment Type:		Equipment ID:SS58/SS59		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions:				Notes/Conditions:			

Photographic Log

					
Equipment ID: SS60-SS62		Equipment Type:			
Material:	Volume:	Contents:			
Notes/Conditions:					
					
Equipment ID: SS63		Equipment Type:			
Material:	Volume:	Contents:			
Notes/Conditions:					



SITE NAME: Jerke Up 8-7							DATE: 1/30/2023	REM. PROJECT #:		WEATHER:	
SITE DIRECTIONS:							CLIENT: PDC				
LEGALS AND LAT/LONG:							TASMAN PERSONNEL: David Vigil				
SOIL TYPES: Well Graded Sand - SW							SURFACE GRADIENT: Southwest				
SOIL SAMPLING							FACILITY INFRASTRUCTURE				
Date/Time	Soil Sample ID	PID (ppm)	Visual	Olfactory	Photo?	Grab or Lab Sample?	EQUIPMENT		Quantity		
							Above Ground Storage Tank (AST)				
1/30/2023 13:15	SS64 @ 14.5'	1.2	No Staining	No Odor	Yes	Lab	Buried or Partially Buried Vessel				
2/1/2023 10:35	SS65 @ 6'	272	Organic Content	HC Odor	Yes	Lab	Separator				
2/1/2023 12:55	SS66 @ 5'	274	HC Staining	Strong HC Odor	Yes	Lab	Emission Control Device (ECD)				
2/1/2023 13:00	SS67 @ 5'	192	HC Staining	No Odor	Yes	Lab	Dump Line				
2/1/2023 13:05	SS68 @ 5'	324	HC Staining	Strong HC Odor	Yes	Lab	Wellhead				
							Flowline				
							Other:				
							Soil Loads Removed				
							IMPACTED SOIL IDENTIFIED?				
							ESTIMATED VOLUME OF IMPACTS:				
							Date		Number	CY	
							1/30/2023		1	10	
							2/1/2023		4	40	
							Total Removed		5	50	
							Disposal Facility: WM - Ault				
							Groundwater Recovery				
							DATE GW ENCOUNTERED:		DEPTH:		
							GROUNDWATER IN CONTACT WITH IMPACTED SOIL?				
							LNAPL OR SHEEN OBSERVED ON GW?				
GROUNDWATER SAMPLING							Date		BBLS		
Date/Time	Groundwater Sample ID	Depth Collected	Turbid?	Sheen?	Odor?	Photo?	1/30/2023		420		
							2/1/2023		100		
							Total Removed		520		
							Disposal Facility: NGL C6				

Photographic Log



Equipment ID:SS64

Equipment Type:

Material:

Volume:

Contents:

Notes/Conditions:



Equipment ID:SS65

Equipment Type:



Material:

Volume:


Contents:

Notes/Conditions:

Photographic Log

					
Equipment ID: SS66		Equipment Type:			
Material:	Volume:	Contents:		Material:	Volume:
Notes/Conditions:			Notes/Conditions:		

Photographic Log

									
						Equipment ID: SS68		Equipment Type:	
						Material:	Volume:	Contents:	
						Notes/Conditions:			
Equipment ID:		Equipment Type:							
Material:	Volume:	Contents:							
Notes/Conditions:									