

TABLE 1
FIELD DATA SUMMARY TABLE
PDC ENERGY, INC. - 69175
GEMINI G FEDERAL 06-33 WELLHEAD, WELD COUNTY, COLORADO
REM # 34866

Sample ID	Sample Date	Depth (ft. bgs)	GPS Data Latitude/Longitude		PDOP Value	VOC Concentration (ppm)
WH01@5'	6/4/2024	5	40.337372	-104.716304	1.0	2.7
FL01R-W@4'	5/14/2024	4	40.337365	-104.716320	0.8	0.0
WH01-N@4'	6/4/2024	4	40.337390	-104.716301	0.9	1.3
WH01-E@4'	6/4/2024	4	40.337378	-104.716281	0.9	2.0
WH01-S@4'	6/4/2024	4	40.337360	-104.716303	0.9	2.4
WH01-W@4'	6/4/2024	4	40.337375	-104.716317	1.0	1.7
WHS01-N@0-6"	6/4/2024	0-0.5	40.337414	-104.716310	1.5	0.2
WHS01-E@0-6"	6/4/2024	0-0.5	40.337366	-104.716227	1.7	0.6
WHS01-S@0-6"	6/4/2024	0-0.5	40.337335	-104.716312	1.1	0.2
WHS01-W@0-6"	6/4/2024	0-0.5	40.337373	-104.716363	1.5	0.4
FL01-01@4'	5/13/2024	4	40.339408	-104.716215	1.0	0.2
FL01-02@5'	5/14/2024	5	40.339425	-104.715657	0.9	0.0
FL01-03@4'	5/14/2024	4	40.338937	-104.715667	1.0	0.0
FL01-04@4'	5/14/2024	4	40.338532	-104.715651	1.0	0.0
FL01-05@4'	5/14/2024	4	40.338121	-104.715637	1.0	0.0
FL01-06@4'	5/14/2024	4	40.337729	-104.715628	0.9	0.0
FL01-07@4'	5/14/2024	4	40.337305	-104.715633	0.8	0.0
FL01-08@4'	5/14/2024	4	40.337314	-104.716021	0.8	0.0
BKG01@4'	5/14/2024	4	40.337325	-104.716525	1.3	0.0
BKG01@5'	5/14/2024	5	40.337325	-104.716525	1.3	0.0
BKG01@0-6" ⁽³⁾	5/14/2024	0-0.5	40.339318	-104.715790	0.8	0.0
BKG01@2.5' ⁽³⁾	5/14/2024	2.5	40.339318	-104.715790	0.8	0.0
BKG01@3' ⁽³⁾	5/14/2024	3	40.339318	-104.715790	0.8	0.0
BKG01@4' ⁽³⁾	5/14/2024	4	40.339318	-104.715790	0.8	0.0
BKG01@5' ⁽³⁾	5/14/2024	5	40.339318	-104.715790	0.8	0.0

Notes:

1. Global Positioning System (GPS) data is provided in decimal degrees using North American Datum (NAD) 83 UTM Zone 13 North.
2. Volatile organic compound (VOC) concentrations are measured in the field using a photoionization detector (PID).
3. Background samples from the Former Gemini K 1-9, 10 Tank Battery decommissioning.

PDOP = Position Dilution of Precision

ppm = Parts per million

ft. = Feet

bgs = Below ground surface

TABLE 2
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA
PDC ENERGY, INC. - 69175
GEMINI G FEDERAL 06-33 WELLHEAD, WELD COUNTY, COLORADO
REM # 34866

Sample ID	Sample Date	Depth (ft. bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-Benzene (mg/kg)	Xylenes (mg/kg)	1,2,4-Trimethyl-Benzene (mg/kg)	1,3,5-Trimethyl-Benzene (mg/kg)	Naphthalene (mg/kg)	TPH (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			1.2	490	5.8	58	30	27	2	500	500**		
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500	500**		
WH01@5'	6/4/2024	5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	188	<0.50	110	78
FL01R-W@4'	5/14/2024	4	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50	<50
FL01-01@4'	5/13/2024	4	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50	<50
FL01-02@5'	5/14/2024	5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50	<50
FL01-07@4'	5/14/2024	4	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50	<50
FL01-08@4'	5/14/2024	4	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50	<50

Notes:

1. **Bold** values exceed the ECMC Table 915-1 limit(s)
2. Pink & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL)
3. * Indicates laboratory minimum detection limit in excess of SSL
4. ** Summation of GRO+DRO+ORO must be less than 500 mg/kg

ECMC = Colorado Energy & Carbon Management Commission

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

TPH GRO = Total petroleum hydrocarbons - gasoline range organics

TPH DRO = Total petroleum hydrocarbons - diesel range organics

TPH ORO = Total petroleum hydrocarbons - oil range organics

mg/kg = Milligrams per kilogram

ft. = Feet

bgs = Below ground surface

TABLE 3
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA
PDC ENERGY, INC. - 69175
GEMINI G FEDERAL 06-33 WELLHEAD, WELD COUNTY, COLORADO
REM # 34866

Sample ID	Sample Date	Depth (ft. bgs)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benzo (a) Anthracene (mg/kg)	Benzo (a) Pyrene (mg/kg)	Benzo (b) Fluoranthene (mg/kg)	Benzo (k) Fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo (a,h) Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno (1,2,3-cd) Pyrene (mg/kg)	Pyrene (mg/kg)	1-Methyl - Naphthalene (mg/kg)	2-Methyl- Naphthalene (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			360	1,800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			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
WH01@5'	6/4/2024	5	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FL01R-W@4'	5/14/2024	4	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FL01-01@4'	5/13/2024	4	<0.00500	<0.00500	<0.00500	0.00798	<0.00500	<0.00500	<0.00500	<0.00500	0.00571	<0.00500	0.0122	0.00549	<0.00500	<0.00500
FL01-02@5'	5/14/2024	5	<0.00500	<0.00500	<0.00500	0.00603	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00658	<0.00500	<0.00500	<0.00500
FL01-07@4'	5/14/2024	4	0.100	0.332	0.756	0.496	0.637	0.353	0.866	0.0617	1.75	0.124	0.593	2.23⁽⁴⁾	0.00782	0.0111
FL01-08@4'	5/14/2024	4	<0.00500	0.0140	0.0361	0.0253	0.0334	0.0104	0.0313	<0.00500	0.0716	0.00629	0.0370	0.0849	<0.00500	<0.00500

Notes:

- Bold** values exceed the ECMC Table 915-1 limit(s)
- Pink & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL)
- * Indicates laboratory minimum detection limit in excess of SSL
- The concentration for this analyte is an estimated value above the calibration range of this instrument

ECMC = Colorado Energy & Carbon Management Commission

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

ft. = Feet

bgs = Below ground surface

mg/kg = Milligrams per kilogram

TABLE 4
SUMMARY OF SOIL SUITABILITY FOR RECLAMATION
PDC ENERGY, INC. - 69175
GEMINI G FEDERAL 06-33 WELLHEAD, WELD COUNTY, COLORADO
REM # 34866

Sample ID	Sample Date	Depth (ft. bgs)	pH (Standard Units)	EC (mmhos/cm)	SAR (Standard Units)	Boron (mg/L)
ECMC Table 915-1 Soil Suitability Limits			6 - 8.3	<4	<6	2
WH01@5'	6/4/2024	5	8.34	0.563	0.216	<2.00
FL01R-W@4'	5/14/2024	4	8.62	0.197	0.0361	<2.00
FL01-01@4'	5/13/2024	4	8.63	0.295	0.830	<2.00
FL01-02@5'	5/14/2024	5	8.11	0.487	0.771	<2.00
FL01-07@4'	5/14/2024	4	8.38	0.212	0.340	<2.00
FL01-08@4'	5/14/2024	4	8.44	0.209	0.803	<2.00
BKG01@4'	5/14/2024	4	9.08	0.305	0.315	NA
BKG01@5'	5/14/2024	5	8.68	0.567	0.307	NA
BKG01@0-6" ⁽⁴⁾	5/14/2024	0-0.5	7.58	0.272	0.425	NA
BKG01@2.5' ⁽⁴⁾	5/14/2024	2.5	7.60	0.108	0.343	NA
BKG01@3' ⁽⁴⁾	5/14/2024	3	7.61	0.144	0.355	NA
BKG01@4' ⁽⁴⁾	5/14/2024	4	8.42	0.264	0.164	NA
BKG01@5' ⁽⁴⁾	5/14/2024	5	8.75	0.216	0.104	NA
Maximum Background Concentration			9.08	0.567	0.315	--

Notes:

1. **Bold** faced values exceed the ECMC Table 915-1 limit(s), but are within 1.25x background concentrations.
2. **Bold** faced values exceed the ECMC Table 915-1 limit(s) above native background concentrations.
3. Brown highlighted soil analytical values indicate a regulatory exceedance.
4. Background samples from the Former Gemini K 1-9, 10 Tank Battery decommissioning.

ECMC = Colorado Energy & Carbon Management Commission

EC = Electrical conductivity

SAR = Sodium adsorption ratio

mmhos/cm = millimhos per centimeter

mg/L = milligram per liter

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

ft. = Feet

bgs = Below ground surface

NA = Constituent not analyzed

TABLE 5
SUMMARY OF METALS IN SOIL CHEMISTRY DATA
PDC ENERGY, INC. - 69175
GEMINI G FEDERAL 06-33 WELLHEAD, WELD COUNTY, COLORADO
REM # 34866

Sample ID	Sample Date	Depth (ft. bgs)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) ^[4] (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
WH01@5'	6/4/2024	5	2.78	1,020	0.397	<0.30*	8.12	114	7.30	0.297	0.0479	32.9
FL01R-W@4'	5/14/2024	4	2.50	753	0.230	<0.30*	7.35	70.6	5.91	<0.260	0.0509	28.3
FL01-01@4'	5/13/2024	4	2.12	70.8	<0.200	<0.30*	5.89	6.81	5.90	<0.260	0.0426	26.9
FL01-02@5'	5/14/2024	5	2.15	56.9	0.275	<0.30*	8.38	11.2	5.23	<0.260	0.0953	36.3
FL01-07@4'	5/14/2024	4	3.02	195	0.349	<0.30*	9.95	15.1	6.90	<0.260	0.101	39.8
FL01-08@4'	5/14/2024	4	1.96	58.1	<0.200	<0.30*	5.69	5.91	5.42	<0.260	0.0539	24.7
BKG01@4'	5/14/2024	4	4.14	79.3	0.284	<0.30*	6.75	7.39	8.27	<0.260	0.0554	32.2
BKG01@5'	5/14/2024	5	2.74	73.0	0.200	<0.30*	5.27	5.97	6.04	<0.260	0.0623	26.3
BKG01@0-6" ⁽⁵⁾	5/14/2024	0-0.5 ⁽⁵⁾	2.45	41.0	0.382	<0.30*	11.2	15.3	5.29	<0.260	0.139	44.8
BKG01@2.5' ⁽⁵⁾	5/14/2024	2.5 ⁽⁵⁾	2.08	62.0	<0.200	<0.30*	5.91	6.39	6.42	<0.260	0.0440	28.2
BKG01@3' ⁽⁵⁾	5/14/2024	3 ⁽⁵⁾	2.12	66.2	<0.180	<0.30*	6.17	6.68	6.26	<0.234	0.0470	27.3
BKG01@4' ⁽⁵⁾	5/14/2024	4 ⁽⁵⁾	2.31	60.5	0.237	<0.30*	5.64	6.47	7.25	<0.260	0.0362	26.9
BKG01@5' ⁽⁵⁾	5/14/2024	5 ⁽⁵⁾	2.32	83.0	0.241	<0.30*	5.75	6.55	6.40	<0.260	0.0375	26.9
Maximum Background Concentration			4.14	83.0	0.382	0.30	11.2	15.3	8.27	0.260	0.139	44.8
Maximum Background Concentration X 1.25			5.18	104	0.478	0.38	14.0	19.1	10.3	0.325	0.174	56.0
Mean Background Concentration			2.59	66.4	0.246	0.30	6.67	7.82	6.56	0.260	0.0602	30.4
Mean Background Concentration X 1.25			3.24	83.0	0.308	0.38	8.34	9.78	8.20	0.325	0.0753	38.0

Notes:

- Bold** faced values exceed the ECMC Table 915-1 limit(s), but are within 1.25x background concentrations.
- Red** faced values exceed the ECMC Table 915-1 limit(s) above native background concentrations.
- Red & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL)
- Compound falls within ECMC Table 915-1 Footnote 9.
- Background samples from the Former Gemini K 1-9, 10 Tank Battery decommissioning.
- Non-detect background results accounted for in the highest background concentration by using the reporting limit.

ECMC = Colorado Energy & Carbon Management Commission

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

mg/kg = Milligrams per kilogram

ft. = Feet

bgs = Below ground surface

* Indicates laboratory minimum detection limit in excess of SSL

Attachment A

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 28, 2024

Karen Olson

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: PDC - Gemini G Federal 06-33 Wellhead

Work Order #2405197

Enclosed are the results of analyses for samples received by Summit Scientific on 05/13/24 17:56. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Natalie Tessier For Paul Shrewsbury

President



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

Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

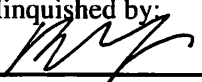
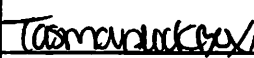

Reported:
05/28/24 11:29

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL01-01@4'	2405197-01	Soil	05/13/24 10:49	05/13/24 17:56

Client: PDC / Tasman		Project Manager: Karen Olson		Company: PDC Energy	
Address: 6855 W 119th Ave		E-Mail: karen.olson@chevron.com		Project Name/Location: Gemini 6 Federal 06-33 wellhead	
City/State/Zip: Broomfield / CO / 80020				AFE#: PA-900269	
Phone: 303-487-1228		Project Name: Gemini 6 Federal 06-33 wellhead		PO/Billing Codes:	
Sampler Name: Ryan Yawinsky		Project Number:		Contact: Karen Olson Delbert Pace	

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	1,2,4 & 1,3,5-TMB	TDS, Cl, SO4	Full 915 suite	
1	FL01-01e 4'	5/13/24	1049	3			X			X					X		
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	

Relinquished by: 	Date/Time: 5/13/24 1530	Received by: Tasman Lodebox	Date/Time: 5/13/24 1530	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: 	Date/Time: 5/13/24 1750	Received by: 	Date/Time: 5/13/24 1750	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	X Field Turb.	
Temperature Upon Receipt: 7.7	Corrected Temperature: 8	IR gun #: 1	HNO3 lot #:			

S2

Sample Receipt Checklist

SZ Work Order# 2405197

Client: Proctasman

Client Project ID: Gemini G federal wellhead 06-33

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

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

Temp (°C) 7.7 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"/>	
If custody seals are present, are they intact? (1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>on file</u>
Are samples due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely? (1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? (1)	<input checked="" type="checkbox"/>	<input 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 pff 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"/>	
<u>Additional Comments (if any):</u>				
(1) If NO, then contact the client before proceeding with analysis and note in case narrative.				

SN
Custodian Printed Name

5/13/24
Date/Time



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

Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
05/28/24 11:29

FL01-01@4'
2405197-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/13/24 10:49**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BHE0431	05/14/24	05/15/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/13/24 10:49**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0245	61.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0426	106 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0400	100 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/13/24 10:49**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BHE0432	05/14/24	05/16/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/13/24 10:49**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	7.76	62.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
05/28/24 11:29

FL01-01@4'
2405197-01 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **05/13/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHE0428	05/14/24	05/14/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	0.00798	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	0.00571	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.0122	0.00500	"	"	"	"	"	"	
Pyrene	0.00549	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **05/13/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0228	68.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0208	62.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **05/13/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHE0441	05/14/24	05/24/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **05/13/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

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FL01-01@4'
2405197-01 (Soil)

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Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	2.12	0.200	mg/kg dry	1	BHE0478	05/15/24	05/17/24	EPA 6020B
Barium	70.8	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	5.89	0.400	"	"	"	"	"	"
Lead	6.81	0.200	"	"	"	"	"	"
Nickel	5.90	0.400	"	"	"	"	"	"
Silver	0.0426	0.0200	"	"	"	"	"	"
Zinc	26.9	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **05/13/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHE0444	05/14/24	05/15/24	EPA 7196A	

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

Date Sampled: **05/13/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	30.8	0.0500	mg/L dry	1	BHE0452	05/14/24	05/16/24	EPA 6020B	
Magnesium	6.18	0.0500	"	"	"	"	"	"	
Sodium	19.3	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **05/13/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.830	0.00100	units	1	BHE0549	05/17/24	05/17/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

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05/28/24 11:29

FL01-01@4'
2405197-01 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/13/24 10:49**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	88.0			%	1	BHE0436	05/14/24	05/15/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/13/24 10:49**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.295	0.0100		mmhos/cm	1	BHE0453	05/14/24	05/15/24	EPA 120.1	

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

Date Sampled: **05/13/24 10:49**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.63			pH Units	1	BHE0454	05/14/24	05/15/24	EPA 9045D	

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Project Number: [none]
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Reported:
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Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BHE0431 - EPA 5030 Soil MS

Blank (BHE0431-BLK1)

Prepared & Analyzed: 05/14/24

Benzene	ND	0.0020	mg/kg								
Toluene	ND	0.0050	"								
Ethylbenzene	ND	0.0050	"								
Xylenes (total)	ND	0.010	"								
1,2,4-Trimethylbenzene	ND	0.0050	"								
1,3,5-Trimethylbenzene	ND	0.0050	"								
Naphthalene	ND	0.0038	"								
Gasoline Range Hydrocarbons	ND	0.50	"								
Surrogate: 1,2-Dichloroethane-d4	0.0328		"	0.0400		82.1	50-150				
Surrogate: Toluene-d8	0.0380		"	0.0400		94.9	50-150				
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.5	50-150				

LCS (BHE0431-BS1)

Prepared & Analyzed: 05/14/24

Benzene	0.0858	0.0020	mg/kg	0.100		85.8	70-130				
Toluene	0.104	0.0050	"	0.100		104	70-130				
Ethylbenzene	0.107	0.0050	"	0.100		107	70-130				
m,p-Xylene	0.209	0.010	"	0.200		105	70-130				
o-Xylene	0.102	0.0050	"	0.100		102	70-130				
1,2,4-Trimethylbenzene	0.0967	0.0050	"	0.100		96.7	70-130				
1,3,5-Trimethylbenzene	0.0988	0.0050	"	0.100		98.8	70-130				
Naphthalene	0.0833	0.0038	"	0.100		83.3	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0346		"	0.0400		86.6	50-150				
Surrogate: Toluene-d8	0.0415		"	0.0400		104	50-150				
Surrogate: 4-Bromofluorobenzene	0.0403		"	0.0400		101	50-150				

Matrix Spike (BHE0431-MS1)

Source: 2405186-01

Prepared & Analyzed: 05/14/24

Benzene	0.0830	0.0020	mg/kg	0.100	ND	83.0	70-130				
Toluene	0.103	0.0050	"	0.100	ND	103	70-130				
Ethylbenzene	0.103	0.0050	"	0.100	ND	103	70-130				
m,p-Xylene	0.202	0.010	"	0.200	ND	101	70-130				
o-Xylene	0.0980	0.0050	"	0.100	ND	98.0	70-130				
1,2,4-Trimethylbenzene	0.0923	0.0050	"	0.100	ND	92.3	70-130				
1,3,5-Trimethylbenzene	0.0946	0.0050	"	0.100	ND	94.6	70-130				
Naphthalene	0.0837	0.0038	"	0.100	ND	83.7	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0322		"	0.0400		80.4	50-150				
Surrogate: Toluene-d8	0.0412		"	0.0400		103	50-150				
Surrogate: 4-Bromofluorobenzene	0.0388		"	0.0400		96.9	50-150				

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Project Number: [none]
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Volatile Organic Compounds by EPA Method 8260B - Quality Control

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

Batch BHE0431 - EPA 5030 Soil MS

Matrix Spike Dup (BHE0431-MSD1)	Source: 2405186-01			Prepared & Analyzed: 05/14/24						
Benzene	0.0947	0.0020	mg/kg	0.100	ND	94.7	70-130	13.1	30	
Toluene	0.114	0.0050	"	0.100	ND	114	70-130	10.5	30	
Ethylbenzene	0.120	0.0050	"	0.100	ND	120	70-130	15.2	30	
m,p-Xylene	0.232	0.010	"	0.200	ND	116	70-130	13.6	30	
o-Xylene	0.111	0.0050	"	0.100	ND	111	70-130	12.4	30	
1,2,4-Trimethylbenzene	0.104	0.0050	"	0.100	ND	104	70-130	11.9	30	
1,3,5-Trimethylbenzene	0.107	0.0050	"	0.100	ND	107	70-130	12.7	30	
Naphthalene	0.0908	0.0038	"	0.100	ND	90.8	70-130	8.22	30	
Surrogate: 1,2-Dichloroethane-d4	0.0317		"	0.0400		79.2	50-150			
Surrogate: Toluene-d8	0.0406		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0406		"	0.0400		102	50-150			

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Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
05/28/24 11:29

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BHE0432 - EPA 3550A

Blank (BHE0432-BLK1)

Prepared: 05/14/24 Analyzed: 05/15/24

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	13.5		"	12.5		108		30-150			

LCS (BHE0432-BS1)

Prepared: 05/14/24 Analyzed: 05/15/24

C10-C28 (DRO)	484	50	mg/kg	500		96.8		70-130			
Surrogate: <i>o</i> -Terphenyl	13.5		"	12.5		108		30-150			

Matrix Spike (BHE0432-MS1)

Source: 2405186-01

Prepared: 05/14/24 Analyzed: 05/15/24

C10-C28 (DRO)	438	50	mg/kg	500	43.1	78.9		70-130			
Surrogate: <i>o</i> -Terphenyl	9.76		"	12.5		78.1		30-150			

Matrix Spike Dup (BHE0432-MSD1)

Source: 2405186-01

Prepared: 05/14/24 Analyzed: 05/15/24

C10-C28 (DRO)	444	50	mg/kg	500	43.1	80.2		70-130	1.42	20	
Surrogate: <i>o</i> -Terphenyl	9.65		"	12.5		77.2		30-150			

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Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
05/28/24 11:29

PAH by EPA Method 8270D SIM - Quality Control

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

Batch BHE0428 - EPA 5030 Soil MS

Blank (BHE0428-BLK1)

Prepared & Analyzed: 05/14/24

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0324</i>		"	<i>0.0333</i>		<i>97.3</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0371</i>		"	<i>0.0333</i>		<i>111</i>	<i>40-150</i>			

LCS (BHE0428-BS1)

Prepared & Analyzed: 05/14/24

Acenaphthene	0.0334	0.00500	mg/kg	0.0333	100	31-137
Anthracene	0.0319	0.00500	"	0.0333	95.7	30-120
Benzo (a) anthracene	0.0306	0.00500	"	0.0333	91.9	30-120
Benzo (a) pyrene	0.0263	0.00500	"	0.0333	79.0	30-120
Benzo (b) fluoranthene	0.0262	0.00500	"	0.0333	78.5	30-120
Benzo (k) fluoranthene	0.0327	0.00500	"	0.0333	98.0	30-120
Chrysene	0.0348	0.00500	"	0.0333	104	30-120
Dibenz (a,h) anthracene	0.0238	0.00500	"	0.0333	71.4	30-120
Fluoranthene	0.0333	0.00500	"	0.0333	100	30-120
Fluorene	0.0330	0.00500	"	0.0333	98.9	30-120
Indeno (1,2,3-cd) pyrene	0.0239	0.00500	"	0.0333	71.7	30-120
Pyrene	0.0357	0.00500	"	0.0333	107	35-142
1-Methylnaphthalene	0.0324	0.00500	"	0.0333	97.2	35-142
2-Methylnaphthalene	0.0328	0.00500	"	0.0333	98.5	35-142
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0367</i>		"	<i>0.0333</i>	<i>110</i>	<i>40-150</i>
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0369</i>		"	<i>0.0333</i>	<i>111</i>	<i>40-150</i>

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Project Number: [none]
Project Manager: Karen Olson

Reported:
05/28/24 11:29

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 BHE0428 - EPA 5030 Soil MS

Matrix Spike (BHE0428-MS1)

Source: 2405186-01

Prepared & Analyzed: 05/14/24

Acenaphthene	0.0205	0.00500	mg/kg	0.0333	ND	61.4	31-137			
Anthracene	0.0207	0.00500	"	0.0333	ND	62.1	30-120			
Benzo (a) anthracene	0.0213	0.00500	"	0.0333	ND	63.8	30-120			
Benzo (a) pyrene	0.0206	0.00500	"	0.0333	ND	61.9	30-120			
Benzo (b) fluoranthene	0.0165	0.00500	"	0.0333	ND	49.4	30-120			
Benzo (k) fluoranthene	0.0201	0.00500	"	0.0333	ND	60.2	30-120			
Chrysene	0.0216	0.00500	"	0.0333	ND	64.7	30-120			
Dibenz (a,h) anthracene	0.0243	0.00500	"	0.0333	ND	72.8	30-120			
Fluoranthene	0.0209	0.00500	"	0.0333	ND	62.6	30-120			
Fluorene	0.0208	0.00500	"	0.0333	ND	62.3	30-120			
Indeno (1,2,3-cd) pyrene	0.0193	0.00500	"	0.0333	ND	57.8	30-120			
Pyrene	0.0231	0.00500	"	0.0333	ND	69.3	35-142			
1-Methylnaphthalene	0.0214	0.00500	"	0.0333	ND	64.1	15-130			
2-Methylnaphthalene	0.0225	0.00500	"	0.0333	ND	67.5	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0254		"	0.0333		76.1	40-150			
Surrogate: Fluoranthene-d10	0.0240		"	0.0333		72.0	40-150			

Matrix Spike Dup (BHE0428-MSD1)

Source: 2405186-01

Prepared & Analyzed: 05/14/24

Acenaphthene	0.0211	0.00500	mg/kg	0.0333	ND	63.2	31-137	2.84	30
Anthracene	0.0216	0.00500	"	0.0333	ND	64.8	30-120	4.26	30
Benzo (a) anthracene	0.0227	0.00500	"	0.0333	ND	68.1	30-120	6.51	30
Benzo (a) pyrene	0.0220	0.00500	"	0.0333	ND	66.1	30-120	6.63	30
Benzo (b) fluoranthene	0.0181	0.00500	"	0.0333	ND	54.3	30-120	9.34	30
Benzo (k) fluoranthene	0.0202	0.00500	"	0.0333	ND	60.5	30-120	0.474	30
Chrysene	0.0222	0.00500	"	0.0333	ND	66.6	30-120	2.83	30
Dibenz (a,h) anthracene	0.0263	0.00500	"	0.0333	ND	78.8	30-120	7.92	30
Fluoranthene	0.0210	0.00500	"	0.0333	ND	63.1	30-120	0.699	30
Fluorene	0.0233	0.00500	"	0.0333	ND	70.0	30-120	11.7	30
Indeno (1,2,3-cd) pyrene	0.0203	0.00500	"	0.0333	ND	60.9	30-120	5.25	30
Pyrene	0.0241	0.00500	"	0.0333	ND	72.4	35-142	4.45	30
1-Methylnaphthalene	0.0174	0.00500	"	0.0333	ND	52.3	15-130	20.2	50
2-Methylnaphthalene	0.0196	0.00500	"	0.0333	ND	58.8	15-130	13.7	50
Surrogate: 2-Methylnaphthalene-d10	0.0226		"	0.0333		67.8	40-150		
Surrogate: Fluoranthene-d10	0.0239		"	0.0333		71.7	40-150		

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Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
05/28/24 11:29

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

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

Batch BHE0441 - EPA 3050B

Blank (BHE0441-BLK1)

Prepared: 05/14/24 Analyzed: 05/24/24

Boron ND 2.00 mg/L

LCS (BHE0441-BS1)

Prepared: 05/14/24 Analyzed: 05/24/24

Boron 5.06 2.00 mg/L 5.00 101 80-120

Duplicate (BHE0441-DUP1)

Source: 2405196-01

Prepared: 05/14/24 Analyzed: 05/24/24

Boron 0.290 2.00 mg/L 0.290 0.192 20

Matrix Spike (BHE0441-MS1)

Source: 2405196-01

Prepared: 05/14/24 Analyzed: 05/24/24

Boron 5.39 2.00 mg/L 4.97 0.290 103 75-125

Matrix Spike Dup (BHE0441-MSD1)

Source: 2405196-01

Prepared: 05/14/24 Analyzed: 05/24/24

Boron 5.45 2.00 mg/L 4.97 0.290 104 75-125 1.11 25

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Project Number: [none]
Project Manager: Karen Olson

Reported:
05/28/24 11:29

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHE0478 - EPA 3050B

Blank (BHE0478-BLK1)

Prepared: 05/15/24 Analyzed: 05/17/24

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

LCS (BHE0478-BS1)

Prepared: 05/15/24 Analyzed: 05/17/24

Arsenic	37.8	0.200	mg/kg wet	40.0	94.6	80-120
Barium	38.9	0.400	"	40.0	97.3	80-120
Cadmium	1.89	0.200	"	2.00	94.5	80-120
Copper	38.8	0.400	"	40.0	97.1	80-120
Lead	19.4	0.200	"	20.0	96.8	80-120
Nickel	38.3	0.400	"	40.0	95.7	80-120
Silver	1.91	0.0200	"	2.00	95.5	80-120
Zinc	37.7	0.400	"	40.0	94.3	80-120
Selenium	3.98	0.260	"	4.00	99.6	80-120

Duplicate (BHE0478-DUP1)

Source: 2405192-01

Prepared: 05/15/24 Analyzed: 05/17/24

Arsenic	4.49	0.200	mg/kg dry	4.64	3.35	20
Barium	110	0.400	"	109	0.733	20
Cadmium	0.189	0.200	"	0.189	0.0763	20
Copper	8.30	0.400	"	8.05	3.09	20
Lead	7.65	0.200	"	7.59	0.836	20
Nickel	9.44	0.400	"	9.36	0.927	20
Silver	0.0364	0.0200	"	0.0360	0.987	20
Zinc	31.0	0.400	"	31.2	0.436	20
Selenium	ND	0.260	"	ND		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.



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

Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
05/28/24 11:29

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHE0478 - EPA 3050B

Matrix Spike (BHE0478-MS1)

Source: 2405192-01

Prepared: 05/15/24 Analyzed: 05/17/24

Arsenic	42.7	0.200	mg/kg dry	42.1	4.64	90.5	75-125				
Barium	134	0.400	"	42.1	109	59.9	75-125				QM-07
Cadmium	2.25	0.200	"	2.10	0.189	98.1	75-125				
Copper	46.0	0.400	"	42.1	8.05	90.2	75-125				
Lead	27.4	0.200	"	21.0	7.59	94.4	75-125				
Nickel	47.3	0.400	"	42.1	9.36	90.1	75-125				
Silver	2.06	0.0200	"	2.10	0.0360	96.2	75-125				
Zinc	66.9	0.400	"	42.1	31.2	85.1	75-125				
Selenium	3.27	0.260	"	4.21	ND	77.7	75-125				

Matrix Spike Dup (BHE0478-MSD1)

Source: 2405192-01

Prepared: 05/15/24 Analyzed: 05/17/24

Arsenic	41.9	0.200	mg/kg dry	42.1	4.64	88.6	75-125	1.92	25		
Barium	128	0.400	"	42.1	109	45.7	75-125	4.56	25		QM-07
Cadmium	2.16	0.200	"	2.10	0.189	93.5	75-125	4.39	25		
Copper	45.4	0.400	"	42.1	8.05	88.9	75-125	1.23	25		
Lead	26.4	0.200	"	21.0	7.59	89.4	75-125	3.88	25		
Nickel	46.6	0.400	"	42.1	9.36	88.5	75-125	1.43	25		
Silver	1.98	0.0200	"	2.10	0.0360	92.4	75-125	4.00	25		
Zinc	66.2	0.400	"	42.1	31.2	83.2	75-125	1.14	25		
Selenium	3.27	0.260	"	4.21	ND	77.7	75-125	0.0257	25		

Post Spike (BHE0478-PS1)

Source: 2405192-01

Prepared: 05/15/24 Analyzed: 05/17/24

Arsenic	126		ug/l	100	10.3	116	75-125				
Barium	361		"	100	242	119	75-125				
Cadmium	5.51		"	5.00	0.420	102	75-125				
Copper	123		"	100	17.9	106	75-125				
Lead	65.5		"	50.0	16.8	97.3	75-125				
Nickel	129		"	100	20.8	108	75-125				
Silver	5.17		"	5.00	0.0800	102	75-125				
Zinc	186		"	100	69.1	117	75-125				
Selenium	9.79		"	10.0	0.237	95.5	75-125				

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.



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

Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
05/28/24 11:29

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BHE0444 - 3060A Mod

Blank (BHE0444-BLK1)

Prepared: 05/14/24 Analyzed: 05/15/24

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BHE0444-BS1)

Prepared: 05/14/24 Analyzed: 05/15/24

Chromium, Hexavalent 25.6 0.30 mg/kg wet 25.0 103 80-120

Duplicate (BHE0444-DUP1)

Source: 2405196-01

Prepared: 05/14/24 Analyzed: 05/15/24

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BHE0444-MS1)

Source: 2405196-01

Prepared: 05/14/24 Analyzed: 05/15/24

Chromium, Hexavalent 26.0 0.30 mg/kg dry 27.3 ND 95.0 75-125

Matrix Spike Dup (BHE0444-MSD1)

Source: 2405196-01

Prepared: 05/14/24 Analyzed: 05/15/24

Chromium, Hexavalent 26.0 0.30 mg/kg dry 27.3 ND 95.0 75-125 0.00 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.



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

Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
05/28/24 11:29

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

Summit Scientific

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

Batch BHE0452 - General Preparation

Blank (BHE0452-BLK1)

Prepared: 05/14/24 Analyzed: 05/16/24

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

LCS (BHE0452-BS1)

Prepared: 05/14/24 Analyzed: 05/16/24

Calcium	5.12	0.0500	mg/L wet	5.00	102	70-130				
Magnesium	4.79	0.0500	"	5.00	95.8	70-130				
Sodium	4.77	0.0500	"	5.00	95.5	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.



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

Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
 Project Manager: Karen Olson

Reported:
 05/28/24 11:29

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 BHE0436 - General Preparation

Duplicate (BHE0436-DUP1)	Source: 2405185-01	Prepared: 05/14/24	Analyzed: 05/15/24
% Solids	93.3	%	95.4
			2.21
			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.



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

Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
05/28/24 11:29

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

Summit Scientific

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

Batch BHE0453 - General Preparation

Blank (BHE0453-BLK1)

Prepared: 05/14/24 Analyzed: 05/15/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BHE0453-BS1)

Prepared: 05/14/24 Analyzed: 05/15/24

Specific Conductance (EC) 0.155 0.0100 mmhos/cm 0.150 103 95-105

Duplicate (BHE0453-DUP1)

Source: 2405190-01

Prepared: 05/14/24 Analyzed: 05/15/24

Specific Conductance (EC) 0.180 0.0100 mmhos/cm 0.178 0.783 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.



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

Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
05/28/24 11:29

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

Summit Scientific

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

Batch BHE0454 - General Preparation

LCS (BHE0454-BS1)

Prepared: 05/14/24 Analyzed: 05/15/24

pH	9.17	pH Units	9.18	99.9	95-105
----	------	----------	------	------	--------

Duplicate (BHE0454-DUP1)

Source: 2405190-01

Prepared: 05/14/24 Analyzed: 05/15/24

pH	8.69	pH Units	8.67	0.230	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.



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

Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
05/28/24 11:29

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

June 13, 2024

Karen Olson

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: PDC - Gemini G Federal 06-33 Wellhead

Work Order #2405215

Enclosed are the results of analyses for samples received by Summit Scientific on 05/14/24 18:06. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Natalie Tessier For Paul Shrewsbury

President



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

Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

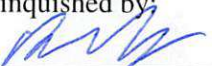

Reported:
06/13/24 11:24

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BKG01@4'	2405215-01	Soil	05/14/24 14:18	05/14/24 18:06
BKG01@5'	2405215-02	Soil	05/14/24 14:20	05/14/24 18:06
FL01-02@5'	2405215-03	Soil	05/14/24 08:54	05/14/24 18:06
FL01-07@4'	2405215-04	Soil	05/14/24 11:43	05/14/24 18:06
FL01-08@4'	2405215-05	Soil	05/14/24 12:30	05/14/24 18:06
FL01R-W@4'	2405215-06	Soil	05/14/24 12:38	05/14/24 18:06

Client: PDC / Tasman		Send Data To: Project Manager: Karen Olson		Send Invoice To: Company: PDC Energy	
Address: 6855 W 119th Ave		E-Mail: karen.olson@chevron.com		Project Name/Location: Gemini 6 Federal 06-33 wellhead	
City/State/Zip: Broomfield / CO / 80020				AFE#: PX-900269	
Phone: 303-487-1228		Project Name: Gemini 6 Federal 06-33 wellhead		PO/Billing Codes:	
Sampler Name: Ryan Yavinsky		Project Number:		Contact: M Karen Olson Deldert Pace	

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	1,2,4 & 1,3,5-TMB	TDS, Cl, SO4	Full 915 suite		915-Metals
1	BK601@4'	5/14/24	1418	3			X			X						X	X	
2	BK601@5'		1420													X	X	
3	FL01-02@5'		0854												X			
4	FL01-07@4'		1143												X			
5	FL01-08@4'		1230												X			
6	FL01R-W@4'		1238												X			
7																		
8																		
9																		
10																		
11																		
12																		
13																		
14																		
15																		

Relinquished by: 	Date/Time: 5/14/24 1625	Received by: Tasman Lockbox	Date/Time: 5/14/24 1625	TAT Business Days	Field DO	Notes:
Relinquished by: Tasman Lockbox	Date/Time: 5/14/24 1800	Received by: 	Date/Time: 5/14/24 1800	Same Day	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day	Field ORP	
Relinquished by:	Date/Time:	Received by:	Date/Time:	2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
Temperature Upon Receipt: 7.1	Corrected Temperature: 0	IR gun #: 1	HNO3 lot #:	Standard	X	Field Turb.

S₂

Sample Receipt Checklist

S2 Work Order# 2405215

Client: Pectasman

Client Project ID: Gemini G Federal ac-33 wellhead

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

Airbill #: _____

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"/>	on 20E
Are samples due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? (1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? (1)	<input checked="" type="checkbox"/>	<input 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 pff in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				
(1) If NO, then contact the client before proceeding with analysis and note in case narrative.				

AS
Custodian Printed Name

5/14/24
Date/Time



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

Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/13/24 11:24

BKG01@4'
2405215-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **05/14/24 14:18**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	4.14	0.200	mg/kg dry	1	BHE0533	05/16/24	05/17/24	EPA 6020B	
Barium	79.3	0.400	"	"	"	"	"	"	
Cadmium	0.284	0.200	"	"	"	"	"	"	
Copper	6.75	0.400	"	"	"	"	"	"	
Lead	7.39	0.200	"	"	"	"	"	"	
Nickel	8.27	0.400	"	"	"	"	"	"	
Silver	0.0554	0.0200	"	"	"	"	"	"	
Zinc	32.2	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **05/14/24 14:18**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHE0480	05/15/24	05/15/24	EPA 7196A	

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

Date Sampled: **05/14/24 14:18**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	1170	0.0500	mg/L dry	1	BHE0471	05/15/24	06/13/24	EPA 6020B	
Magnesium	36.3	0.0500	"	"	"	"	"	"	
Sodium	40.1	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **05/14/24 14:18**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	0.315	0.00100	units	1	BHF0378	06/13/24	06/13/24	Calculation	

Summit Scientific

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

Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/13/24 11:24

BKG01@4'
2405215-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/14/24 14:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	96.7			%	1	BHE0467	05/15/24	05/15/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/14/24 14:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.305	0.0100		mmhos/cm	1	BHE0473	05/15/24	05/16/24	EPA 120.1	

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

Date Sampled: **05/14/24 14:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	9.08			pH Units	1	BHE0472	05/15/24	05/16/24	EPA 9045D	

Summit Scientific

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

Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/13/24 11:24

BKG01@5'
2405215-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **05/14/24 14:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.74	0.200	mg/kg dry	1	BHE0533	05/16/24	05/17/24	EPA 6020B	
Barium	73.0	0.400	"	"	"	"	"	"	
Cadmium	0.200	0.200	"	"	"	"	"	"	
Copper	5.27	0.400	"	"	"	"	"	"	
Lead	5.97	0.200	"	"	"	"	"	"	
Nickel	6.04	0.400	"	"	"	"	"	"	
Silver	0.0623	0.0200	"	"	"	"	"	"	
Zinc	26.3	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **05/14/24 14:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHE0480	05/15/24	05/15/24	EPA 7196A	

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

Date Sampled: **05/14/24 14:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	6800	0.0500	mg/L dry	1	BHE0471	05/15/24	06/13/24	EPA 6020B	
Magnesium	171	0.0500	"	"	"	"	"	"	
Sodium	93.7	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **05/14/24 14:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	0.307	0.00100	units	1	BHF0378	06/13/24	06/13/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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

Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/13/24 11:24

BKG01@5'
2405215-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/14/24 14:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	97.5			%	1	BHE0467	05/15/24	05/15/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/14/24 14:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.567	0.0100		mmhos/cm	1	BHE0473	05/15/24	05/16/24	EPA 120.1	

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

Date Sampled: **05/14/24 14:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.68			pH Units	1	BHE0472	05/15/24	05/16/24	EPA 9045D	

Summit Scientific

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

Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/13/24 11:24

FL01-02@5'
2405215-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/14/24 08:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHE0485	05/15/24	05/16/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/14/24 08:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0365	91.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0382	95.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0352	88.1 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/14/24 08:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHE0487	05/15/24	05/16/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/14/24 08:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	6.28	50.2 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
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Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/13/24 11:24

FL01-02@5'
2405215-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **05/14/24 08:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHE0466	05/15/24	05/15/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	0.00603	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	0.00658	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **05/14/24 08:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0266	79.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0166	49.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **05/14/24 08:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHE0469	05/15/24	06/07/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **05/14/24 08:54**

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

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

Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/13/24 11:24

FL01-02@5'
2405215-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	2.15	0.200	mg/kg dry	1	BHE0533	05/16/24	05/17/24	EPA 6020B
Barium	56.9	0.400	"	"	"	"	"	"
Cadmium	0.275	0.200	"	"	"	"	"	"
Copper	8.38	0.400	"	"	"	"	"	"
Lead	11.2	0.200	"	"	"	"	"	"
Nickel	5.23	0.400	"	"	"	"	"	"
Silver	0.0953	0.0200	"	"	"	"	"	"
Zinc	36.3	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **05/14/24 08:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHE0480	05/15/24	05/15/24	EPA 7196A	

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

Date Sampled: **05/14/24 08:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	33.9	0.0500	mg/L dry	1	BHE0471	05/15/24	06/13/24	EPA 6020B	
Magnesium	8.23	0.0500	"	"	"	"	"	"	
Sodium	19.3	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **05/14/24 08:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.771	0.00100	units	1	BHF0378	06/13/24	06/13/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/14/24 08:54**

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

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

Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/13/24 11:24

FL01-02@5'
2405215-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	95.2	%	1	BHE0467	05/15/24	05/15/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/14/24 08:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.487	0.0100	mmhos/cm	1	BHE0473	05/15/24	05/16/24	EPA 120.1	

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

Date Sampled: **05/14/24 08:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.11		pH Units	1	BHE0472	05/15/24	05/16/24	EPA 9045D	

Summit Scientific

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Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/13/24 11:24

FL01-07@4'
2405215-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/14/24 11:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHE0485	05/15/24	05/16/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/14/24 11:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0371	92.8 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0385	96.3 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0362	90.4 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/14/24 11:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHE0487	05/15/24	05/16/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/14/24 11:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	8.24	65.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/13/24 11:24

FL01-07@4'
2405215-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **05/14/24 11:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	0.100	0.00500	mg/kg	1	BHE0466	05/15/24	05/15/24	EPA 8270D SIM	
Anthracene	0.332	0.0500	"	10	"	"	05/16/24	"	
Benzo (a) anthracene	0.756	0.0500	"	"	"	"	"	"	
Benzo (a) pyrene	0.496	0.0500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.637	0.0500	"	"	"	"	"	"	
Benzo (k) fluoranthene	0.353	0.0500	"	"	"	"	"	"	
Chrysene	0.866	0.0500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	0.0617	0.00500	"	1	"	"	05/15/24	"	
Fluoranthene	1.75	0.0500	"	10	"	"	05/16/24	"	
Fluorene	0.124	0.00500	"	1	"	"	05/15/24	"	
Indeno (1,2,3-cd) pyrene	0.593	0.0500	"	10	"	"	05/16/24	"	
Pyrene	2.23	0.0500	"	"	"	"	"	"	E
1-Methylnaphthalene	0.00782	0.00500	"	1	"	"	05/15/24	"	
2-Methylnaphthalene	0.0111	0.00500	"	"	"	"	"	"	

Date Sampled: **05/14/24 11:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0241	72.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0233	70.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **05/14/24 11:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHE0469	05/15/24	06/07/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **05/14/24 11:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.02	0.200	mg/kg dry	1	BHE0533	05/16/24	05/17/24	EPA 6020B	

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

Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/13/24 11:24

FL01-07@4'
2405215-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Barium	195	0.400	mg/kg dry	1	BHE0533	05/16/24	05/17/24	EPA 6020B
Cadmium	0.349	0.200	"	"	"	"	"	"
Copper	9.95	0.400	"	"	"	"	"	"
Lead	15.1	0.200	"	"	"	"	"	"
Nickel	6.90	0.400	"	"	"	"	"	"
Silver	0.101	0.0200	"	"	"	"	"	"
Zinc	39.8	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **05/14/24 11:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHE0480	05/15/24	05/15/24	EPA 7196A	

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

Date Sampled: **05/14/24 11:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	254	0.0500	mg/L dry	1	BHE0471	05/15/24	06/13/24	EPA 6020B	
Magnesium	26.7	0.0500	"	"	"	"	"	"	
Sodium	21.3	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **05/14/24 11:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.340	0.00100	units	1	BHF0378	06/13/24	06/13/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/14/24 11:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	96.9		%	1	BHE0467	05/15/24	05/15/24	Calculation	

Summit Scientific

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

Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/13/24 11:24

FL01-07@4'
2405215-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/14/24 11:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.212	0.0100	mmhos/cm	1	BHE0473	05/15/24	05/16/24	EPA 120.1	

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

Date Sampled: **05/14/24 11:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.38		pH Units	1	BHE0472	05/15/24	05/16/24	EPA 9045D	

Summit Scientific

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

Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/13/24 11:24

FL01-08@4'
2405215-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/14/24 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHE0485	05/15/24	05/16/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/14/24 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0366	91.5 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0388	97.0 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0365	91.4 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/14/24 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHE0487	05/15/24	05/16/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/14/24 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	6.72	53.8 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/13/24 11:24

FL01-08@4'
2405215-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **05/14/24 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHE0466	05/15/24	05/15/24	EPA 8270D SIM	
Anthracene	0.0140	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	0.0361	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	0.0253	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.0334	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	0.0104	0.00500	"	"	"	"	"	"	
Chrysene	0.0313	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.0716	0.00500	"	"	"	"	"	"	
Fluorene	0.00629	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.0370	0.00500	"	"	"	"	"	"	
Pyrene	0.0849	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **05/14/24 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0224	67.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0233	69.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **05/14/24 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHE0469	05/15/24	06/07/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **05/14/24 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/13/24 11:24

FL01-08@4'
2405215-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	1.96	0.200	mg/kg dry	1	BHE0533	05/16/24	05/17/24	EPA 6020B
Barium	58.1	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	5.69	0.400	"	"	"	"	"	"
Lead	5.91	0.200	"	"	"	"	"	"
Nickel	5.42	0.400	"	"	"	"	"	"
Silver	0.0539	0.0200	"	"	"	"	"	"
Zinc	24.7	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **05/14/24 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHE0480	05/15/24	05/15/24	EPA 7196A	

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

Date Sampled: **05/14/24 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	38.4	0.0500	mg/L dry	1	BHE0471	05/15/24	06/13/24	EPA 6020B	
Magnesium	11.9	0.0500	"	"	"	"	"	"	
Sodium	22.2	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **05/14/24 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.803	0.00100	units	1	BHF0378	06/13/24	06/13/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/13/24 11:24

FL01-08@4'
2405215-05 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/14/24 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	89.8			%	1	BHE0467	05/15/24	05/15/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/14/24 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.209	0.0100		mmhos/cm	1	BHE0473	05/15/24	05/16/24	EPA 120.1	

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

Date Sampled: **05/14/24 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.44			pH Units	1	BHE0472	05/15/24	05/16/24	EPA 9045D	

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Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

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FL01R-W@4'
2405215-06 (Soil)

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Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/14/24 12:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHE0485	05/15/24	05/16/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/14/24 12:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0373	93.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0377	94.3 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0358	89.4 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/14/24 12:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHE0487	05/15/24	05/16/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/14/24 12:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	5.40	43.2 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

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06/13/24 11:24

FL01R-W@4'
2405215-06 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **05/14/24 12:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHE0466	05/15/24	05/15/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **05/14/24 12:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0238	71.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0226	67.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **05/14/24 12:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHE0469	05/15/24	06/07/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **05/14/24 12:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/13/24 11:24

FL01R-W@4'
2405215-06 (Soil)

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Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.50	0.200	mg/kg dry	1	BHE0533	05/16/24	05/17/24	EPA 6020B	
Barium	753	0.400	"	"	"	"	"	"	
Cadmium	0.230	0.200	"	"	"	"	"	"	
Copper	7.35	0.400	"	"	"	"	"	"	
Lead	70.6	0.200	"	"	"	"	"	"	
Nickel	5.91	0.400	"	"	"	"	"	"	
Silver	0.0509	0.0200	"	"	"	"	"	"	
Zinc	28.3	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **05/14/24 12:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHE0480	05/15/24	05/15/24	EPA 7196A	

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

Date Sampled: **05/14/24 12:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	177	0.0500	mg/L dry	1	BHE0471	05/15/24	06/13/24	EPA 6020B	
Magnesium	6.91	0.0500	"	"	"	"	"	"	
Sodium	1.80	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **05/14/24 12:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0361	0.00100	units	1	BHF0378	06/13/24	06/13/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/14/24 12:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/13/24 11:24

FL01R-W@4'
2405215-06 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

% Solids	93.4	%	1	BHE0467	05/15/24	05/15/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/14/24 12:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.197	0.0100	mmhos/cm	1	BHE0473	05/15/24	05/16/24	EPA 120.1	

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

Date Sampled: **05/14/24 12:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.62		pH Units	1	BHE0472	05/15/24	05/16/24	EPA 9045D	

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Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/13/24 11:24

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BHE0485 - EPA 5030 Soil MS

Blank (BHE0485-BLK1)

Prepared: 05/15/24 Analyzed: 05/16/24

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0342		"	0.0400		85.4	50-150			
Surrogate: Toluene-d8	0.0381		"	0.0400		95.3	50-150			
Surrogate: 4-Bromofluorobenzene	0.0351		"	0.0400		87.8	50-150			

LCS (BHE0485-BS1)

Prepared: 05/15/24 Analyzed: 05/16/24

Benzene	0.0989	0.0020	mg/kg	0.100		98.9	70-130			
Toluene	0.0975	0.0050	"	0.100		97.5	70-130			
Ethylbenzene	0.105	0.0050	"	0.100		105	70-130			
m,p-Xylene	0.218	0.010	"	0.200		109	70-130			
o-Xylene	0.110	0.0050	"	0.100		110	70-130			
1,2,4-Trimethylbenzene	0.100	0.0050	"	0.100		100	70-130			
1,3,5-Trimethylbenzene	0.101	0.0050	"	0.100		101	70-130			
Naphthalene	0.0877	0.0038	"	0.100		87.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0343		"	0.0400		85.7	50-150			
Surrogate: Toluene-d8	0.0382		"	0.0400		95.6	50-150			
Surrogate: 4-Bromofluorobenzene	0.0360		"	0.0400		90.1	50-150			

Matrix Spike (BHE0485-MS1)

Source: 2405211-01

Prepared: 05/15/24 Analyzed: 05/16/24

Benzene	0.0197	0.0020	mg/kg	0.100	ND	19.7	70-130			QM-05
Toluene	0.0153	0.0050	"	0.100	ND	15.3	70-130			QM-05
Ethylbenzene	0.0133	0.0050	"	0.100	ND	13.3	70-130			QM-05
m,p-Xylene	0.0718	0.010	"	0.200	ND	35.9	70-130			QM-05
o-Xylene	0.0333	0.0050	"	0.100	ND	33.3	70-130			QM-05
1,2,4-Trimethylbenzene	0.00984	0.0050	"	0.100	ND	9.84	70-130			QM-05
1,3,5-Trimethylbenzene	0.0704	0.0050	"	0.100	ND	70.4	70-130			
Naphthalene	0.0513	0.0038	"	0.100	ND	51.3	70-130			QM-05
Surrogate: 1,2-Dichloroethane-d4	0.0346		"	0.0400		86.5	50-150			
Surrogate: Toluene-d8	0.0364		"	0.0400		91.0	50-150			
Surrogate: 4-Bromofluorobenzene	0.0358		"	0.0400		89.5	50-150			

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Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/13/24 11:24

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BHE0485 - EPA 5030 Soil MS

Matrix Spike Dup (BHE0485-MSD1)	Source: 2405211-01			Prepared: 05/15/24 Analyzed: 05/16/24						
Benzene	0.0123	0.0020	mg/kg	0.100	ND	12.3	70-130	46.7	30	QM-05
Toluene	0.00978	0.0050	"	0.100	ND	9.78	70-130	44.0	30	QM-05
Ethylbenzene	0.00975	0.0050	"	0.100	ND	9.75	70-130	30.5	30	QM-05
m,p-Xylene	0.0516	0.010	"	0.200	ND	25.8	70-130	32.7	30	QM-05
o-Xylene	0.0188	0.0050	"	0.100	ND	18.8	70-130	55.4	30	QM-05
1,2,4-Trimethylbenzene	0.00618	0.0050	"	0.100	ND	6.18	70-130	45.7	30	QM-05
1,3,5-Trimethylbenzene	0.0709	0.0050	"	0.100	ND	70.9	70-130	0.594	30	
Naphthalene	0.0416	0.0038	"	0.100	ND	41.6	70-130	20.9	30	QM-05
Surrogate: 1,2-Dichloroethane-d4	0.0346		"	0.0400		86.6	50-150			
Surrogate: Toluene-d8	0.0353		"	0.0400		88.3	50-150			
Surrogate: 4-Bromofluorobenzene	0.0373		"	0.0400		93.2	50-150			

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Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/13/24 11:24

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BHE0487 - EPA 3550A

Blank (BHE0487-BLK1)

Prepared: 05/15/24 Analyzed: 05/16/24

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	10.8		"	12.5		86.8	30-150				

LCS (BHE0487-BS1)

Prepared: 05/15/24 Analyzed: 05/16/24

C10-C28 (DRO)	440	50	mg/kg	500		88.0	70-130				
Surrogate: <i>o</i> -Terphenyl	10.1		"	12.5		80.8	30-150				

Matrix Spike (BHE0487-MS1)

Source: 2405204-21

Prepared: 05/15/24 Analyzed: 05/16/24

C10-C28 (DRO)	469	50	mg/kg	500	ND	93.7	70-130				
Surrogate: <i>o</i> -Terphenyl	6.64		"	12.5		53.1	30-150				

Matrix Spike Dup (BHE0487-MSD1)

Source: 2405204-21

Prepared: 05/15/24 Analyzed: 05/16/24

C10-C28 (DRO)	406	50	mg/kg	500	ND	81.1	70-130	14.4	20		
Surrogate: <i>o</i> -Terphenyl	6.34		"	12.5		50.7	30-150				

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Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/13/24 11:24

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 BHE0466 - EPA 5030 Soil MS

Blank (BHE0466-BLK1)

Prepared & Analyzed: 05/15/24

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0324		"	0.0333		97.1	40-150			
Surrogate: Fluoranthene-d10	0.0280		"	0.0333		83.9	40-150			

LCS (BHE0466-BS1)

Prepared & Analyzed: 05/15/24

Acenaphthene	0.0351	0.00500	mg/kg	0.0333		105	31-137			
Anthracene	0.0361	0.00500	"	0.0333		108	30-120			
Benzo (a) anthracene	0.0317	0.00500	"	0.0333		95.0	30-120			
Benzo (a) pyrene	0.0295	0.00500	"	0.0333		88.5	30-120			
Benzo (b) fluoranthene	0.0264	0.00500	"	0.0333		79.3	30-120			
Benzo (k) fluoranthene	0.0307	0.00500	"	0.0333		92.0	30-120			
Chrysene	0.0359	0.00500	"	0.0333		108	30-120			
Dibenz (a,h) anthracene	0.0273	0.00500	"	0.0333		81.8	30-120			
Fluoranthene	0.0353	0.00500	"	0.0333		106	30-120			
Fluorene	0.0345	0.00500	"	0.0333		104	30-120			
Indeno (1,2,3-cd) pyrene	0.0164	0.00500	"	0.0333		49.3	30-120			
Pyrene	0.0384	0.00500	"	0.0333		115	35-142			
1-Methylnaphthalene	0.0345	0.00500	"	0.0333		104	35-142			
2-Methylnaphthalene	0.0351	0.00500	"	0.0333		105	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0384		"	0.0333		115	40-150			
Surrogate: Fluoranthene-d10	0.0394		"	0.0333		118	40-150			

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Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/13/24 11:24

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 BHE0466 - EPA 5030 Soil MS

Matrix Spike (BHE0466-MS1)	Source: 2405211-01			Prepared & Analyzed: 05/15/24								
Acenaphthene	0.0140	0.00500	mg/kg	0.0333	ND	41.9	31-137					
Anthracene	0.0151	0.00500	"	0.0333	ND	45.2	30-120					
Benzo (a) anthracene	0.0155	0.00500	"	0.0333	ND	46.5	30-120					
Benzo (a) pyrene	0.0169	0.00500	"	0.0333	ND	50.8	30-120					
Benzo (b) fluoranthene	0.0135	0.00500	"	0.0333	ND	40.5	30-120					
Benzo (k) fluoranthene	0.0153	0.00500	"	0.0333	ND	45.9	30-120					
Chrysene	0.0152	0.00500	"	0.0333	ND	45.5	30-120					
Dibenz (a,h) anthracene	0.0143	0.00500	"	0.0333	ND	43.0	30-120					
Fluoranthene	0.0154	0.00500	"	0.0333	ND	46.1	30-120					
Fluorene	0.0144	0.00500	"	0.0333	ND	43.1	30-120					
Indeno (1,2,3-cd) pyrene	0.0141	0.00500	"	0.0333	ND	42.2	30-120					
Pyrene	0.0172	0.00500	"	0.0333	ND	51.5	35-142					
1-Methylnaphthalene	0.0148	0.00500	"	0.0333	ND	44.4	15-130					
2-Methylnaphthalene	0.0143	0.00500	"	0.0333	ND	42.9	15-130					
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0145</i>		<i>"</i>	<i>0.0333</i>		<i>43.4</i>	<i>40-150</i>					
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0152</i>		<i>"</i>	<i>0.0333</i>		<i>45.5</i>	<i>40-150</i>					

Matrix Spike Dup (BHE0466-MSD1)	Source: 2405211-01			Prepared & Analyzed: 05/15/24								
Acenaphthene	0.0154	0.00500	mg/kg	0.0333	ND	46.1	31-137	9.60	30			
Anthracene	0.0172	0.00500	"	0.0333	ND	51.6	30-120	13.4	30			
Benzo (a) anthracene	0.0165	0.00500	"	0.0333	ND	49.5	30-120	6.20	30			
Benzo (a) pyrene	0.0164	0.00500	"	0.0333	ND	49.3	30-120	2.81	30			
Benzo (b) fluoranthene	0.0146	0.00500	"	0.0333	ND	43.8	30-120	7.83	30			
Benzo (k) fluoranthene	0.0135	0.00500	"	0.0333	ND	40.5	30-120	12.5	30			
Chrysene	0.0156	0.00500	"	0.0333	ND	46.7	30-120	2.67	30			
Dibenz (a,h) anthracene	0.0221	0.00500	"	0.0333	ND	66.3	30-120	42.6	30			QR-02
Fluoranthene	0.0164	0.00500	"	0.0333	ND	49.3	30-120	6.74	30			
Fluorene	0.0163	0.00500	"	0.0333	ND	48.8	30-120	12.4	30			
Indeno (1,2,3-cd) pyrene	0.0154	0.00500	"	0.0333	ND	46.3	30-120	9.29	30			
Pyrene	0.0180	0.00500	"	0.0333	ND	54.0	35-142	4.70	30			
1-Methylnaphthalene	0.0182	0.00500	"	0.0333	ND	54.5	15-130	20.3	50			
2-Methylnaphthalene	0.0171	0.00500	"	0.0333	ND	51.2	15-130	17.7	50			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0179</i>		<i>"</i>	<i>0.0333</i>		<i>53.7</i>	<i>40-150</i>					
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0168</i>		<i>"</i>	<i>0.0333</i>		<i>50.5</i>	<i>40-150</i>					

Summit Scientific

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

Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/13/24 11:24

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

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

Batch BHE0469 - EPA 3050B

Blank (BHE0469-BLK1)

Prepared: 05/15/24 Analyzed: 06/07/24

Boron ND 2.00 mg/L

LCS (BHE0469-BS1)

Prepared: 05/15/24 Analyzed: 06/07/24

Boron 4.97 2.00 mg/L 5.00 99.4 80-120

Duplicate (BHE0469-DUP1)

Source: 2405215-03

Prepared: 05/15/24 Analyzed: 06/07/24

Boron 0.195 2.00 mg/L 0.185 5.51 20

Matrix Spike (BHE0469-MS1)

Source: 2405215-03

Prepared: 05/15/24 Analyzed: 06/07/24

Boron 4.92 2.00 mg/L 4.99 0.185 95.0 75-125

Matrix Spike Dup (BHE0469-MSD1)

Source: 2405215-03

Prepared: 05/15/24 Analyzed: 06/07/24

Boron 5.14 2.00 mg/L 4.99 0.185 99.5 75-125 4.46 25

Summit Scientific

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

Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/13/24 11:24

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHE0533 - EPA 3050B

Blank (BHE0533-BLK1)

Prepared: 05/16/24 Analyzed: 05/17/24

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

LCS (BHE0533-BS1)

Prepared: 05/16/24 Analyzed: 05/17/24

Arsenic	43.9	0.200	mg/kg wet	40.0	110	80-120
Barium	43.4	0.400	"	40.0	109	80-120
Cadmium	2.04	0.200	"	2.00	102	80-120
Copper	42.9	0.400	"	40.0	107	80-120
Lead	20.7	0.200	"	20.0	103	80-120
Nickel	42.3	0.400	"	40.0	106	80-120
Silver	2.05	0.0200	"	2.00	102	80-120
Zinc	43.1	0.400	"	40.0	108	80-120
Selenium	4.45	0.260	"	4.00	111	80-120

Duplicate (BHE0533-DUP1)

Source: 2405204-21

Prepared: 05/16/24 Analyzed: 05/17/24

Arsenic	2.62	0.200	mg/kg dry	2.95	11.8	20
Barium	88.3	0.400	"	92.7	4.82	20
Cadmium	0.307	0.200	"	0.288	6.48	20
Copper	39.5	0.400	"	40.7	3.18	20
Lead	14.1	0.200	"	13.9	2.03	20
Nickel	21.6	0.400	"	21.0	2.74	20
Silver	0.0933	0.0200	"	0.0921	1.34	20
Zinc	72.2	0.400	"	69.4	3.87	20
Selenium	ND	0.260	"	ND		20

Summit Scientific

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

Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/13/24 11:24

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHE0533 - EPA 3050B

Matrix Spike (BHE0533-MS1)

Source: 2405204-21

Prepared: 05/16/24 Analyzed: 05/17/24

Arsenic	60.3	0.200	mg/kg dry	62.2	2.95	92.2	75-125			
Barium	130	0.400	"	62.2	92.7	59.5	75-125			QM-07
Cadmium	2.99	0.200	"	3.11	0.288	86.9	75-125			
Copper	86.7	0.400	"	62.2	40.7	73.9	75-125			QM-07
Lead	38.9	0.200	"	31.1	13.9	80.5	75-125			
Nickel	72.0	0.400	"	62.2	21.0	81.9	75-125			
Silver	2.73	0.0200	"	3.11	0.0921	84.8	75-125			
Zinc	114	0.400	"	62.2	69.4	71.9	75-125			QM-07
Selenium	5.03	0.260	"	6.22	ND	80.8	75-125			

Matrix Spike Dup (BHE0533-MSD1)

Source: 2405204-21

Prepared: 05/16/24 Analyzed: 05/17/24

Arsenic	70.7	0.200	mg/kg dry	62.2	2.95	109	75-125	15.9	25	
Barium	149	0.400	"	62.2	92.7	89.9	75-125	13.6	25	
Cadmium	3.48	0.200	"	3.11	0.288	103	75-125	15.3	25	
Copper	102	0.400	"	62.2	40.7	98.2	75-125	16.1	25	
Lead	45.6	0.200	"	31.1	13.9	102	75-125	15.9	25	
Nickel	84.4	0.400	"	62.2	21.0	102	75-125	15.9	25	
Silver	3.25	0.0200	"	3.11	0.0921	101	75-125	17.3	25	
Zinc	134	0.400	"	62.2	69.4	103	75-125	15.7	25	
Selenium	5.76	0.260	"	6.22	ND	92.7	75-125	13.7	25	

Post Spike (BHE0533-PS1)

Source: 2405204-21

Prepared: 05/16/24 Analyzed: 05/17/24

Arsenic	111		ug/l	100	4.74	107	75-125			
Barium	237		"	100	149	87.8	75-125			
Cadmium	5.51		"	5.00	0.463	101	75-125			
Copper	163		"	100	65.5	97.5	75-125			
Lead	71.2		"	50.0	22.3	97.8	75-125			
Nickel	132		"	100	33.8	98.1	75-125			
Silver	5.06		"	5.00	0.148	98.2	75-125			
Zinc	211		"	100	112	99.4	75-125			
Selenium	9.00		"	10.0	0.111	88.9	75-125			

Summit Scientific

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

Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/13/24 11:24

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BHE0480 - 3060A Mod

Blank (BHE0480-BLK1)

Prepared & Analyzed: 05/15/24

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BHE0480-BS1)

Prepared & Analyzed: 05/15/24

Chromium, Hexavalent 26.2 0.30 mg/kg wet 25.0 105 80-120

Duplicate (BHE0480-DUP1)

Source: 2405215-01

Prepared & Analyzed: 05/15/24

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BHE0480-MS1)

Source: 2405215-01

Prepared & Analyzed: 05/15/24

Chromium, Hexavalent 25.4 0.30 mg/kg dry 25.8 ND 98.4 75-125

Matrix Spike Dup (BHE0480-MSD1)

Source: 2405215-01

Prepared & Analyzed: 05/15/24

Chromium, Hexavalent 25.5 0.30 mg/kg dry 25.8 ND 98.6 75-125 0.203 20

Summit Scientific

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

Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/13/24 11:24

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

Summit Scientific

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

Batch BHE0471 - General Preparation

Blank (BHE0471-BLK1)

Prepared: 05/15/24 Analyzed: 06/13/24

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

LCS (BHE0471-BS1)

Prepared: 05/15/24 Analyzed: 06/13/24

Calcium	5.40	0.0500	mg/L wet	5.00		108	70-130			
Magnesium	5.10	0.0500	"	5.00		102	70-130			
Sodium	4.93	0.0500	"	5.00		98.5	70-130			

Summit Scientific

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

Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
 Project Manager: Karen Olson

Reported:
 06/13/24 11:24

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 BHE0467 - General Preparation

Duplicate (BHE0467-DUP1)		Source: 2405205-01		Prepared & Analyzed: 05/15/24	
% Solids	88.7	%		89.4	0.751 20

Summit Scientific

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

Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/13/24 11:24

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

Summit Scientific

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

Batch BHE0473 - General Preparation

Blank (BHE0473-BLK1)

Prepared: 05/15/24 Analyzed: 05/16/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BHE0473-BS1)

Prepared: 05/15/24 Analyzed: 05/16/24

Specific Conductance (EC) 0.153 0.0100 mmhos/cm 0.150 102 95-105

Duplicate (BHE0473-DUP1)

Source: 2405210-01

Prepared: 05/15/24 Analyzed: 05/16/24

Specific Conductance (EC) 0.0453 0.0100 mmhos/cm 0.0453 0.00 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.



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

Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/13/24 11:24

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

Summit Scientific

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

Batch BHE0472 - General Preparation

LCS (BHE0472-BS1)

Prepared: 05/15/24 Analyzed: 05/16/24

pH 9.17 pH Units 9.18 99.9 95-105

Duplicate (BHE0472-DUP1)

Source: 2405210-01

Prepared: 05/15/24 Analyzed: 05/16/24

pH 7.54 pH Units 7.66 1.58 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.



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

Project: PDC - Gemini G Federal 06-33 Wellhead

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/13/24 11:24

Notes and Definitions

- QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
- 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

June 20, 2024

Karen Olson

Tasman Geosciences

6855 W. 119th Ave.

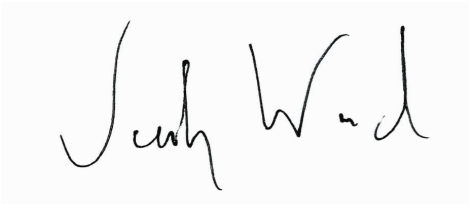
Broomfield, CO 80020

RE: PDC - Gemini G Federal 06-33

Work Order #2406027

Enclosed are the results of analyses for samples received by Summit Scientific on 06/04/24 17:43. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in blue ink that reads "Jacob Wood". The signature is written in a cursive style with a large initial 'J' and a distinct 'W'.

Jacob Wood For Paul Shrewsbury

President



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

Project: PDC - Gemini G Federal 06-33

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/20/24 11:43

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH01@5'	2406027-01	Soil	06/04/24 11:28	06/04/24 17:43

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.

Client: Noble/Tasman		Project Manager: Karen Olson		Company: PDC Energy	
Address: 6855 W. 119th Ave.		E-Mail: karen.olson@chevron.com		Project Name/Location:	
City/State/Zip: Broomfield/CO/ 80020		Project Name: Gemini G Federal 06-33		AFE#: 9X-900269	
Phone: 231-292-2576		Project Number: Wellhead		PO/Billing Codes:	
Sampler Name: Elyse Hossink		Project Number:		Contact: Karen Olson	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested							Special Instructions		
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	Metals - 915	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS		HOLD	
1	WH01 @ 5'	6/4/24	1128	3			X			X			X	X	X	X	X	X	X		SAR, EC, pH by saturated paste
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					

Relinquished by: <i>Elyse Hossink</i>	Date/Time: 06/04/2024	Received by: Tasman Lock Box	Date/Time: 06/04/2024	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: <i>Tasman Lock Box</i>	Date/Time: 06/24/24	Received by: <i>[Signature]</i>	Date/Time: 06/24/24	1 Day	Field ORP	
	1743		1743	2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: 7.2	Corrected Temperature: 8	IR gun #: 1	HNO3 lot #:			

S₂

Sample Receipt Checklist

S2 Work Order# 2406027

Client: Nadjet Cosman

Client Project ID: Gemini G federal ^{Wellhead} 06-33

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

-

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

Temp (°C) 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"/>	<u>outside</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 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 checked="" 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

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

AS
Custodian Printed Name

6/4/24
Date/Time



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

Project: PDC - Gemini G Federal 06-33

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/20/24 11:43

WH01@5'
2406027-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/04/24 11:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHF0117	06/05/24	06/06/24	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **06/04/24 11:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0434	108 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0397	99.3 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0386	96.6 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/04/24 11:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	110	50		mg/kg	1	BHF0119	06/05/24	06/06/24	EPA 8015M	
C28-C36 (ORO)	78	50		"	"	"	"	"	"	

Date Sampled: **06/04/24 11:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	9.72	77.7 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Gemini G Federal 06-33

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/20/24 11:43

WH01@5'
2406027-01 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **06/04/24 11:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHF0098	06/05/24	06/05/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **06/04/24 11:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0289	86.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0224	67.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/04/24 11:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHF0145	06/06/24	06/11/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/04/24 11:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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WH01@5'
2406027-01 (Soil)

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Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	2.78	0.200	mg/kg dry	1	BHF0113	06/05/24	06/08/24	EPA 6020B
Barium	1020	0.400	"	"	"	"	"	"
Cadmium	0.397	0.200	"	"	"	"	"	"
Copper	8.12	0.400	"	"	"	"	"	"
Lead	114	0.200	"	"	"	"	"	"
Nickel	7.30	0.400	"	"	"	"	"	"
Silver	0.0479	0.0200	"	"	"	"	"	"
Zinc	32.9	0.400	"	"	"	"	"	"
Selenium	0.297	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/04/24 11:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0106	06/05/24	06/05/24	EPA 7196A	

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

Date Sampled: **06/04/24 11:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	52.7	0.0500	mg/L dry	1	BHF0040	06/04/24	06/14/24	EPA 6020B	
Magnesium	10.2	0.0500	"	"	"	"	"	"	
Sodium	6.53	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/04/24 11:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.216	0.00100	units	1	BHF0423	06/14/24	06/14/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/04/24 11:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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WH01@5'
2406027-01 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

% Solids	90.1	%	1	BHF0114	06/05/24	06/05/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/04/24 11:28**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.563	0.0100	mmhos/cm	1	BHF0081	06/04/24	06/05/24	EPA 120.1	I-04

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

Date Sampled: **06/04/24 11:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.34		pH Units	1	BHF0093	06/04/24	06/05/24	EPA 9045D	

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Project Number: [none]
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Reported:
06/20/24 11:43

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BHF0117 - EPA 5030 Soil MS

Blank (BHF0117-BLK1)

Prepared: 06/05/24 Analyzed: 06/06/24

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0426		"	0.0400		107	50-150			
<i>Surrogate: Toluene-d8</i>	0.0399		"	0.0400		99.8	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0385		"	0.0400		96.2	50-150			

LCS (BHF0117-BS1)

Prepared: 06/05/24 Analyzed: 06/06/24

Benzene	0.125	0.0020	mg/kg	0.100		125	70-130			
Toluene	0.124	0.0050	"	0.100		124	70-130			
Ethylbenzene	0.123	0.0050	"	0.100		123	70-130			
m,p-Xylene	0.252	0.010	"	0.200		126	70-130			
o-Xylene	0.118	0.0050	"	0.100		118	70-130			
1,2,4-Trimethylbenzene	0.123	0.0050	"	0.100		123	70-130			
1,3,5-Trimethylbenzene	0.125	0.0050	"	0.100		125	70-130			
Naphthalene	0.108	0.0038	"	0.100		108	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0430		"	0.0400		107	50-150			
<i>Surrogate: Toluene-d8</i>	0.0398		"	0.0400		99.4	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0398		"	0.0400		99.5	50-150			

Matrix Spike (BHF0117-MS1)

Source: 2406027-01

Prepared: 06/05/24 Analyzed: 06/06/24

Benzene	0.117	0.0020	mg/kg	0.100	ND	117	70-130			
Toluene	0.116	0.0050	"	0.100	ND	116	70-130			
Ethylbenzene	0.115	0.0050	"	0.100	ND	115	70-130			
m,p-Xylene	0.234	0.010	"	0.200	ND	117	70-130			
o-Xylene	0.109	0.0050	"	0.100	ND	109	70-130			
1,2,4-Trimethylbenzene	0.111	0.0050	"	0.100	ND	111	70-130			
1,3,5-Trimethylbenzene	0.112	0.0050	"	0.100	ND	112	70-130			
Naphthalene	0.101	0.0038	"	0.100	ND	101	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0412		"	0.0400		103	50-150			
<i>Surrogate: Toluene-d8</i>	0.0393		"	0.0400		98.3	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0394		"	0.0400		98.6	50-150			

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Project: PDC - Gemini G Federal 06-33

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/20/24 11:43

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BHF0117 - EPA 5030 Soil MS

Matrix Spike Dup (BHF0117-MSD1)	Source: 2406027-01			Prepared: 06/05/24 Analyzed: 06/06/24						
Benzene	0.116	0.0020	mg/kg	0.100	ND	116	70-130	1.16	30	
Toluene	0.111	0.0050	"	0.100	ND	111	70-130	3.75	30	
Ethylbenzene	0.107	0.0050	"	0.100	ND	107	70-130	7.04	30	
m,p-Xylene	0.215	0.010	"	0.200	ND	107	70-130	8.57	30	
o-Xylene	0.102	0.0050	"	0.100	ND	102	70-130	7.29	30	
1,2,4-Trimethylbenzene	0.0975	0.0050	"	0.100	ND	97.5	70-130	13.1	30	
1,3,5-Trimethylbenzene	0.0982	0.0050	"	0.100	ND	98.2	70-130	13.2	30	
Naphthalene	0.0901	0.0038	"	0.100	ND	90.1	70-130	11.8	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0416</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0392</i>		<i>"</i>	<i>0.0400</i>		<i>97.9</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0397</i>		<i>"</i>	<i>0.0400</i>		<i>99.2</i>	<i>50-150</i>			

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Project: PDC - Gemini G Federal 06-33

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/20/24 11:43

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BHF0119 - EPA 3550A

Blank (BHF0119-BLK1)

Prepared & Analyzed: 06/05/24

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	14.7		"	12.5		118	30-150				

LCS (BHF0119-BS1)

Prepared & Analyzed: 06/05/24

C10-C28 (DRO)	470	50	mg/kg	500		94.0	70-130				
Surrogate: <i>o</i> -Terphenyl	13.1		"	12.5		104	30-150				

Matrix Spike (BHF0119-MS1)

Source: 2406027-01

Prepared & Analyzed: 06/05/24

C10-C28 (DRO)	423	50	mg/kg	500	108	63.0	70-130				QM-07
Surrogate: <i>o</i> -Terphenyl	11.6		"	12.5		92.8	30-150				

Matrix Spike Dup (BHF0119-MSD1)

Source: 2406027-01

Prepared & Analyzed: 06/05/24

C10-C28 (DRO)	417	50	mg/kg	500	108	61.7	70-130	1.49	20		QM-07
Surrogate: <i>o</i> -Terphenyl	12.2		"	12.5		97.6	30-150				

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Project: PDC - Gemini G Federal 06-33

Project Number: [none]
Project Manager: Karen Olson

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06/20/24 11:43

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 BHF0098 - EPA 5030 Soil MS

Blank (BHF0098-BLK1)

Prepared & Analyzed: 06/05/24

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0157</i>		"	<i>0.0333</i>		<i>47.2</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0415</i>		"	<i>0.0333</i>		<i>125</i>	<i>40-150</i>			

LCS (BHF0098-BS1)

Prepared & Analyzed: 06/05/24

Acenaphthene	0.0210	0.00500	mg/kg	0.0333		63.1	31-137			
Anthracene	0.0217	0.00500	"	0.0333		65.2	30-120			
Benzo (a) anthracene	0.0226	0.00500	"	0.0333		67.9	30-120			
Benzo (a) pyrene	0.0199	0.00500	"	0.0333		59.6	30-120			
Benzo (b) fluoranthene	0.0208	0.00500	"	0.0333		62.4	30-120			
Benzo (k) fluoranthene	0.0228	0.00500	"	0.0333		68.3	30-120			
Chrysene	0.0234	0.00500	"	0.0333		70.2	30-120			
Dibenz (a,h) anthracene	0.0160	0.00500	"	0.0333		48.1	30-120			
Fluoranthene	0.0215	0.00500	"	0.0333		64.5	30-120			
Fluorene	0.0216	0.00500	"	0.0333		64.9	30-120			
Indeno (1,2,3-cd) pyrene	0.0176	0.00500	"	0.0333		52.9	30-120			
Pyrene	0.0317	0.00500	"	0.0333		95.0	35-142			
1-Methylnaphthalene	0.0189	0.00500	"	0.0333		56.7	35-142			
2-Methylnaphthalene	0.0184	0.00500	"	0.0333		55.3	35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0187</i>		"	<i>0.0333</i>		<i>56.0</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0228</i>		"	<i>0.0333</i>		<i>68.3</i>	<i>40-150</i>			

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Project: PDC - Gemini G Federal 06-33

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/20/24 11:43

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 BHF0098 - EPA 5030 Soil MS

Matrix Spike (BHF0098-MS1)	Source: 2406023-01			Prepared & Analyzed: 06/05/24						
Acenaphthene	0.0178	0.00500	mg/kg	0.0333	ND	53.3	31-137			
Anthracene	0.0204	0.00500	"	0.0333	ND	61.3	30-120			
Benzo (a) anthracene	0.0214	0.00500	"	0.0333	ND	64.1	30-120			
Benzo (a) pyrene	0.0182	0.00500	"	0.0333	ND	54.7	30-120			
Benzo (b) fluoranthene	0.0192	0.00500	"	0.0333	ND	57.7	30-120			
Benzo (k) fluoranthene	0.0203	0.00500	"	0.0333	ND	60.9	30-120			
Chrysene	0.0209	0.00500	"	0.0333	ND	62.8	30-120			
Dibenz (a,h) anthracene	0.0140	0.00500	"	0.0333	ND	42.1	30-120			
Fluoranthene	0.0200	0.00500	"	0.0333	ND	59.9	30-120			
Fluorene	0.0194	0.00500	"	0.0333	ND	58.3	30-120			
Indeno (1,2,3-cd) pyrene	0.0153	0.00500	"	0.0333	ND	45.9	30-120			
Pyrene	0.0258	0.00500	"	0.0333	ND	77.4	35-142			
1-Methylnaphthalene	0.0162	0.00500	"	0.0333	ND	48.5	15-130			
2-Methylnaphthalene	0.0160	0.00500	"	0.0333	ND	48.0	15-130			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0167</i>		<i>"</i>	<i>0.0333</i>		<i>50.0</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0220</i>		<i>"</i>	<i>0.0333</i>		<i>66.1</i>	<i>40-150</i>			

Matrix Spike Dup (BHF0098-MSD1)	Source: 2406023-01			Prepared & Analyzed: 06/05/24						
Acenaphthene	0.0144	0.00500	mg/kg	0.0333	ND	43.3	31-137	20.7	30	
Anthracene	0.0158	0.00500	"	0.0333	ND	47.4	30-120	25.6	30	
Benzo (a) anthracene	0.0162	0.00500	"	0.0333	ND	48.7	30-120	27.4	30	
Benzo (a) pyrene	0.0137	0.00500	"	0.0333	ND	41.0	30-120	28.5	30	
Benzo (b) fluoranthene	0.0146	0.00500	"	0.0333	ND	43.7	30-120	27.4	30	
Benzo (k) fluoranthene	0.0151	0.00500	"	0.0333	ND	45.4	30-120	29.1	30	
Chrysene	0.0160	0.00500	"	0.0333	ND	48.0	30-120	26.8	30	
Dibenz (a,h) anthracene	0.0163	0.00500	"	0.0333	ND	49.0	30-120	15.1	30	
Fluoranthene	0.0150	0.00500	"	0.0333	ND	45.0	30-120	28.2	30	
Fluorene	0.0159	0.00500	"	0.0333	ND	47.6	30-120	20.2	30	
Indeno (1,2,3-cd) pyrene	0.0136	0.00500	"	0.0333	ND	40.9	30-120	11.5	30	
Pyrene	0.0206	0.00500	"	0.0333	ND	61.7	35-142	22.5	30	
1-Methylnaphthalene	0.0142	0.00500	"	0.0333	ND	42.7	15-130	12.7	50	
2-Methylnaphthalene	0.0138	0.00500	"	0.0333	ND	41.5	15-130	14.5	50	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0140</i>		<i>"</i>	<i>0.0333</i>		<i>42.1</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0160</i>		<i>"</i>	<i>0.0333</i>		<i>48.0</i>	<i>40-150</i>			

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.



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

Project: PDC - Gemini G Federal 06-33

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/20/24 11:43

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

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

Batch BHF0145 - EPA 3050B

Blank (BHF0145-BLK1)

Prepared: 06/06/24 Analyzed: 06/11/24

Boron ND 2.00 mg/L

LCS (BHF0145-BS1)

Prepared: 06/06/24 Analyzed: 06/11/24

Boron 4.98 2.00 mg/L 5.00 99.5 80-120

Duplicate (BHF0145-DUP1)

Source: 2406027-01

Prepared: 06/06/24 Analyzed: 06/11/24

Boron 0.178 2.00 mg/L 0.224 22.5 20 QR-01

Matrix Spike (BHF0145-MS1)

Source: 2406027-01

Prepared: 06/06/24 Analyzed: 06/11/24

Boron 4.85 2.00 mg/L 5.04 0.224 91.9 75-125

Matrix Spike Dup (BHF0145-MSD1)

Source: 2406027-01

Prepared: 06/06/24 Analyzed: 06/11/24

Boron 5.24 2.00 mg/L 5.04 0.224 99.7 75-125 7.74 25

Summit Scientific

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

Project: PDC - Gemini G Federal 06-33

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/20/24 11:43

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHF0113 - EPA 3050B

Blank (BHF0113-BLK1)

Prepared: 06/05/24 Analyzed: 06/08/24

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

LCS (BHF0113-BS1)

Prepared: 06/05/24 Analyzed: 06/08/24

Arsenic	36.1	0.200	mg/kg wet	38.5	93.9	80-120
Barium	37.5	0.400	"	38.5	97.4	80-120
Cadmium	1.87	0.200	"	1.92	97.4	80-120
Copper	37.0	0.400	"	38.5	96.2	80-120
Lead	18.9	0.200	"	19.2	98.2	80-120
Nickel	36.7	0.400	"	38.5	95.4	80-120
Silver	1.88	0.0200	"	1.92	97.6	80-120
Zinc	36.3	0.400	"	38.5	94.4	80-120
Selenium	4.01	0.260	"	3.85	104	80-120

Duplicate (BHF0113-DUP1)

Source: 2406027-01

Prepared: 06/05/24 Analyzed: 06/08/24

Arsenic	2.75	0.200	mg/kg dry	2.78	1.08	20	
Barium	721	0.400	"	1020	34.1	20	QR-04
Cadmium	0.229	0.200	"	0.397	53.5	20	QR-04
Copper	8.28	0.400	"	8.12	1.98	20	
Lead	250	0.200	"	114	74.8	20	QR-04
Nickel	6.48	0.400	"	7.30	12.0	20	
Silver	0.0533	0.0200	"	0.0479	10.6	20	
Zinc	32.3	0.400	"	32.9	1.90	20	
Selenium	0.248	0.260	"	0.297	18.2	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.



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

Project: PDC - Gemini G Federal 06-33

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/20/24 11:43

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHF0113 - EPA 3050B

Matrix Spike (BHF0113-MS1)	Source: 2406027-01			Prepared: 06/05/24 Analyzed: 06/08/24								
Arsenic	42.6	0.200	mg/kg dry	42.7	2.78	93.3	75-125					
Barium	795	0.400	"	42.7	1020	NR	75-125					QM-07
Cadmium	2.32	0.200	"	2.14	0.397	90.0	75-125					
Copper	46.9	0.400	"	42.7	8.12	90.8	75-125					
Lead	109	0.200	"	21.4	114	NR	75-125					QM-07
Nickel	46.1	0.400	"	42.7	7.30	90.8	75-125					
Silver	2.05	0.0200	"	2.14	0.0479	93.9	75-125					
Zinc	73.1	0.400	"	42.7	32.9	94.0	75-125					
Selenium	4.86	0.260	"	4.27	0.297	107	75-125					

Matrix Spike Dup (BHF0113-MSD1)	Source: 2406027-01			Prepared: 06/05/24 Analyzed: 06/08/24								
Arsenic	43.0	0.200	mg/kg dry	43.0	2.78	93.5	75-125	0.872	25			
Barium	839	0.400	"	43.0	1020	NR	75-125	5.35	25			QM-07
Cadmium	2.37	0.200	"	2.15	0.397	91.7	75-125	2.22	25			
Copper	47.8	0.400	"	43.0	8.12	92.3	75-125	1.98	25			
Lead	109	0.200	"	21.5	114	NR	75-125	0.678	25			QM-07
Nickel	47.2	0.400	"	43.0	7.30	92.7	75-125	2.33	25			
Silver	2.10	0.0200	"	2.15	0.0479	95.2	75-125	2.05	25			
Zinc	72.1	0.400	"	43.0	32.9	91.0	75-125	1.37	25			
Selenium	4.92	0.260	"	4.30	0.297	107	75-125	1.22	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.



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

Project: PDC - Gemini G Federal 06-33

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/20/24 11:43

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BHF0106 - 3060A Mod

Blank (BHF0106-BLK1)

Prepared & Analyzed: 06/05/24

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BHF0106-BS1)

Prepared & Analyzed: 06/05/24

Chromium, Hexavalent 25.2 0.30 mg/kg wet 25.0 101 80-120

Duplicate (BHF0106-DUP1)

Source: 2405494-01

Prepared & Analyzed: 06/05/24

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BHF0106-MS1)

Source: 2405494-01

Prepared & Analyzed: 06/05/24

Chromium, Hexavalent 26.2 0.30 mg/kg dry 29.0 ND 90.4 75-125

Matrix Spike Dup (BHF0106-MSD1)

Source: 2405494-01

Prepared & Analyzed: 06/05/24

Chromium, Hexavalent 27.2 0.30 mg/kg dry 30.5 ND 89.4 75-125 3.77 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.



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

Project: PDC - Gemini G Federal 06-33

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/20/24 11:43

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

Summit Scientific

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

Batch BHF0040 - General Preparation

Blank (BHF0040-BLK1)

Prepared: 06/03/24 Analyzed: 06/13/24

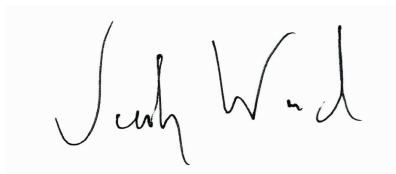
Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							

LCS (BHF0040-BS1)

Prepared: 06/03/24 Analyzed: 06/13/24

Calcium	5.30	0.0500	mg/L wet	5.00		106	70-130			
Magnesium	5.08	0.0500	"	5.00		102	70-130			
Sodium	5.19	0.0500	"	5.00		104	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.



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

Project: PDC - Gemini G Federal 06-33

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/20/24 11:43

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 BHF0114 - General Preparation

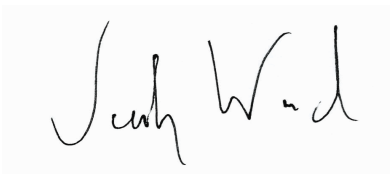
Duplicate (BHF0114-DUP1)

Source: 2405485-01

Prepared & Analyzed: 06/05/24

% Solids	82.5		%		83.5			1.20	20	
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Summit Scientific



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

Project: PDC - Gemini G Federal 06-33

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/20/24 11:43

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

Summit Scientific

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

Batch BHF0081 - General Preparation

Blank (BHF0081-BLK1)

Prepared: 06/04/24 Analyzed: 06/05/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BHF0081-BS1)

Prepared: 06/04/24 Analyzed: 06/05/24

Specific Conductance (EC) 0.154 0.0100 mmhos/cm 0.150 103 95-105

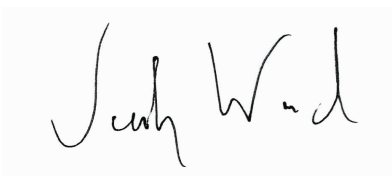
Duplicate (BHF0081-DUP1)

Source: 2405485-01

Prepared: 06/04/24 Analyzed: 06/05/24

Specific Conductance (EC) 0.172 0.0100 mmhos/cm 0.180 4.43 20

Summit Scientific



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

Project: PDC - Gemini G Federal 06-33

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/20/24 11:43

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

Summit Scientific

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

Batch BHF0093 - General Preparation

LCS (BHF0093-BS1)

Prepared: 06/04/24 Analyzed: 06/05/24

pH	9.20	pH Units	9.18	100	95-105
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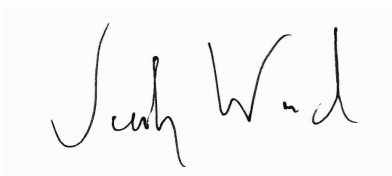
Duplicate (BHF0093-DUP1)

Source: 2406027-01

Prepared: 06/04/24 Analyzed: 06/05/24

pH	8.27	pH Units	8.34	0.843	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.



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

Project: PDC - Gemini G Federal 06-33

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/20/24 11:43

Notes and Definitions

- QR-04 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
- 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.
- 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.
- I-04 Sample was analyzed out of recommended holding time per clients request.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

June 11, 2024

Karen Olson

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: PDC - Gemini K 1-9, 10 Tank Battery

Work Order #2405217

Enclosed are the results of analyses for samples received by Summit Scientific on 05/14/24 18:06. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Natalie Tessier For Paul Shrewsbury

President



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

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

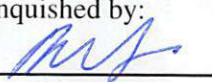

Reported:
06/11/24 09:01

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BKG01@0-6"	2405217-01	Soil	05/14/24 09:23	05/14/24 18:06
BKG01@2.5'	2405217-02	Soil	05/14/24 09:24	05/14/24 18:06
BKG01@3'	2405217-03	Soil	05/14/24 09:25	05/14/24 18:06
BKG01@4'	2405217-04	Soil	05/14/24 09:26	05/14/24 18:06
BKG01@5'	2405217-05	Soil	05/14/24 09:27	05/14/24 18:06
PWV01-B@5'	2405217-06	Soil	05/14/24 10:00	05/14/24 18:06
PWV01-E@2.5'	2405217-08	Soil	05/14/24 10:02	05/14/24 18:06
PWV02-B@5'	2405217-10	Soil	05/14/24 10:04	05/14/24 18:06
PWV02-N@2.5'	2405217-11	Soil	05/14/24 10:05	05/14/24 18:06
PWV03-B@5'	2405217-13	Soil	05/14/24 10:07	05/14/24 18:06
PWV03-N@2.5'	2405217-14	Soil	05/14/24 10:08	05/14/24 18:06

Client: PDC / Tasman		Project Manager: Karen Olson		Send Invoice To:	
Address: 6855 W 119th Ave		E-Mail: karen.olson@chevron.com		Company: PDC Energy	
City/State/Zip: Broomfield / CO / 80020				Project Name/Location: Gemini K 1-9, 10 Tank Battery	
Phone: 303-487-1228		Project Name: Gemini K 1-9, 10 Tank Battery		AFE#: PX-900269	
Sampler Name: Ryan Yavinsky		Project Number:		PO/Billing Codes:	
				Contact: M Karen Olson Delbert Pace	

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	1,2,4 & 1,3,5-TMB	TDS, Cl, SO4	Full 915 suite		HOLD	915-Metals
1	BK601@0-6"	5/14/24	0923	3			X			X							X	X	
2	BK601@2.5'		0924																
3	BK601@3'		0925																
4	BK601@4'		0926																
5	BK601@5'		0927																
6	PW01-B@5'		1000											X					
7	PW01-N@2.5'		1001												X				
8	PW01-E@2.5'		1002											X					
9	PW01-S@2.5'		1003												X				
10	PW02-B@5'		1004											X					
11	PW02-N@2.5'		1005											X					
12	PW02-S@2.5'		1006												X				
13	PW03-B@5'		1007											X					
14	PW03-N@2.5'		1008											X					
15	PW03-S@2.5'		1009												X				

Relinquished by: 	Date/Time: 5/14/24 1625	Received by: Tasman Lockbox	Date/Time: 5/14/24 1625	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: Tasman Lockbox	Date/Time: 5/14/24 1800	Received by: 	Date/Time: 5/14/24 1800	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	X Field Turb.	
Temperature Upon Receipt: 7.1	Corrected Temperature: 8	IR gun #: 1	HNO3 lot #:			

Client: PDC / Tasman		Send Data To:		Send Invoice To:	
Address: 6855 W 119th Ave		Project Manager: Karen Olson		Company: PDC Energy	
City/State/Zip: Broomfield / CO / 80020		E-Mail: karen.olson@chevron.com		Project Name/Location: Gemini K 1-9, 10 Tank Battery	
Phone: 303-487-1228		Project Name: Gemini K 1-9, 10 Tank Battery		AFE#: PX-900269	
Sampler Name: Ryan Yavinsky		Project Number:		PO/Billing Codes:	
				Contact: Karen Olson Delbert Pace	

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	1,2,4 & 1,3,5-TMB	TDS, Cl, SO4	
1	PW003 → WE2.5'	5/14/24	1010	3			X			X					X	
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																

Relinquished by: <i>[Signature]</i>	Date/Time: 5/14/24 1625	Received by: Tasman Lockbox <i>[Signature]</i>	Date/Time: 5/14/24 1625	TAT Business Days	Field DO	Notes:	
				Same Day	Field EC		
				1 Day	Field ORP		
				2 Days	Field pH		
Relinquished by: Tasman Lockbox	Date/Time: 5/14/24 1800	Received by: <i>[Signature]</i>	Date/Time: 5/14/24 1800	3 Days	Field Temp.		
				Standard	Field Turb. <input checked="" type="checkbox"/>		
Temperature Upon Receipt: 7.1	Corrected Temperature: \ominus	IR gun #: 1	HNO3 lot #:				

S2

2/2

Sample Receipt Checklist

S2 Work Order# 2405217

Client: Port Casman

Client Project ID: Greninik 19, 10 Tank Battery

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

Shipping method selection boxes

Airbill #: _____

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

Temp (°C) 7.1

Thermometer # 1

Checklist table with columns: Yes, No, N/A, Comments (if any). Rows include: If samples require cooling, is the temperature < 6°C? (1), If custody seals are present, are they intact? (1), Are samples due within 48 hours present?, Are water samples with short hold times present?, Is a chain-of-custody (COC) form present and filled out completely? (1), Were all samples received intact? (1), Was adequate sample volume provided? (1), Does the COC agree with the number and type of sample bottles received? (1), Do the sample IDs on the bottle labels match the COC? (1), For volatiles in water - is there headspace present? If yes, contact client and note in narrative., Are samples preserved that require preservation (excluding cooling)? (1) Note the type of preservative in the comments column - HCl, H2SO4, NaOH, HNO3, etc., If samples are acid preserved for metals, is the pH <= 2? (1) Record the pH in Comments., If dissolved metals are requested, were samples field filtered? Additional Comments (if any):

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

AS

Custodian Printed Name

5/14/24

Date/Time



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

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

BKG01@0-6"
2405217-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **05/14/24 09:23**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.45	0.200	mg/kg dry	1	BHE0479	05/15/24	05/22/24	EPA 6020B	
Barium	41.0	0.400	"	"	"	"	"	"	
Cadmium	0.382	0.200	"	"	"	"	"	"	
Copper	11.2	0.400	"	"	"	"	"	"	
Lead	15.3	0.200	"	"	"	"	"	"	
Nickel	5.29	0.400	"	"	"	"	"	"	
Silver	0.139	0.0200	"	"	"	"	"	"	
Zinc	44.8	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **05/14/24 09:23**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHE0480	05/15/24	05/15/24	EPA 7196A	

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

Date Sampled: **05/14/24 09:23**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	218	0.0500	mg/L dry	1	BHE0495	05/15/24	05/26/24	EPA 6020B	
Magnesium	48.9	0.0500	"	"	"	"	"	"	
Sodium	26.7	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **05/14/24 09:23**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	0.425	0.00100	units	1	BHE0832	05/28/24	05/28/24	Calculation	

Summit Scientific

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

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

BKG01@0-6''
2405217-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/14/24 09:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.3		%	1	BHE0474	05/15/24	05/15/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/14/24 09:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.272	0.0100	mmhos/cm	1	BHE0497	05/15/24	05/21/24	EPA 120.1	

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

Date Sampled: **05/14/24 09:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.58		pH Units	1	BHE0496	05/15/24	05/21/24	EPA 9045D	

Summit Scientific

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

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

BKG01@2.5'
2405217-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.08	0.200	mg/kg dry	1	BHE0479	05/15/24	05/22/24	EPA 6020B	
Barium	62.0	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	5.91	0.400	"	"	"	"	"	"	
Lead	6.39	0.200	"	"	"	"	"	"	
Nickel	6.42	0.400	"	"	"	"	"	"	
Silver	0.0440	0.0200	"	"	"	"	"	"	
Zinc	28.2	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHE0480	05/15/24	05/15/24	EPA 7196A	

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

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	235	0.0500	mg/L dry	1	BHE0495	05/15/24	05/26/24	EPA 6020B	
Magnesium	60.2	0.0500	"	"	"	"	"	"	
Sodium	22.8	0.0500	"	"	"	"	"	"	

Calculated Analysis

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	0.343	0.00100	units	1	BHE0832	05/28/24	05/28/24	Calculation	

Summit Scientific

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

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

BKG01@2.5'
2405217-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	94.4			%	1	BHE0474	05/15/24	05/15/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.108	0.0100		mmhos/cm	1	BHE0497	05/15/24	05/21/24	EPA 120.1	

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

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.60			pH Units	1	BHE0496	05/15/24	05/21/24	EPA 9045D	

Summit Scientific

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

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

BKG01@3'
2405217-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **05/14/24 09:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.12	0.180	mg/kg dry	1	BHE0479	05/15/24	05/22/24	EPA 6020B	
Barium	66.2	0.360	"	"	"	"	"	"	
Cadmium	ND	0.180	"	"	"	"	"	"	
Copper	6.17	0.360	"	"	"	"	"	"	
Lead	6.68	0.180	"	"	"	"	"	"	
Nickel	6.26	0.360	"	"	"	"	"	"	
Silver	0.0470	0.0180	"	"	"	"	"	"	
Zinc	27.3	0.360	"	"	"	"	"	"	
Selenium	ND	0.234	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **05/14/24 09:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHE0480	05/15/24	05/15/24	EPA 7196A	

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

Date Sampled: **05/14/24 09:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	320	0.0500	mg/L dry	1	BHE0495	05/15/24	05/26/24	EPA 6020B	
Magnesium	83.5	0.0500	"	"	"	"	"	"	
Sodium	27.6	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **05/14/24 09:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	0.355	0.00100	units	1	BHE0832	05/28/24	05/28/24	Calculation	

Summit Scientific

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

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

BKG01@3'
2405217-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/14/24 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.6		%	1	BHE0474	05/15/24	05/15/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/14/24 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.144	0.0100	mmhos/cm	1	BHE0497	05/15/24	05/21/24	EPA 120.1	

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

Date Sampled: **05/14/24 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.61		pH Units	1	BHE0496	05/15/24	05/21/24	EPA 9045D	

Summit Scientific

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

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

BKG01@4'
2405217-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **05/14/24 09:26**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.31	0.200	mg/kg dry	1	BHE0479	05/15/24	05/22/24	EPA 6020B	
Barium	60.5	0.400	"	"	"	"	"	"	
Cadmium	0.237	0.200	"	"	"	"	"	"	
Copper	5.64	0.400	"	"	"	"	"	"	
Lead	6.47	0.200	"	"	"	"	"	"	
Nickel	7.25	0.400	"	"	"	"	"	"	
Silver	0.0362	0.0200	"	"	"	"	"	"	
Zinc	26.9	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **05/14/24 09:26**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHE0480	05/15/24	05/15/24	EPA 7196A	

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

Date Sampled: **05/14/24 09:26**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	2080	0.0500	mg/L dry	1	BHE0495	05/15/24	05/26/24	EPA 6020B	
Magnesium	130	0.0500	"	"	"	"	"	"	
Sodium	28.6	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **05/14/24 09:26**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	0.164	0.00100	units	1	BHE0832	05/28/24	05/28/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

BKG01@4'
2405217-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/14/24 09:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	89.9			%	1	BHE0474	05/15/24	05/15/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/14/24 09:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.264	0.0100		mmhos/cm	1	BHE0497	05/15/24	05/21/24	EPA 120.1	

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

Date Sampled: **05/14/24 09:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.42			pH Units	1	BHE0496	05/15/24	05/21/24	EPA 9045D	

Summit Scientific

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

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

BKG01@5'
2405217-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **05/14/24 09:27**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.32	0.200	mg/kg dry	1	BHE0479	05/15/24	05/22/24	EPA 6020B	
Barium	83.0	0.400	"	"	"	"	"	"	
Cadmium	0.241	0.200	"	"	"	"	"	"	
Copper	5.75	0.400	"	"	"	"	"	"	
Lead	6.55	0.200	"	"	"	"	"	"	
Nickel	6.40	0.400	"	"	"	"	"	"	
Silver	0.0375	0.0200	"	"	"	"	"	"	
Zinc	26.9	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **05/14/24 09:27**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHE0480	05/15/24	05/15/24	EPA 7196A	

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

Date Sampled: **05/14/24 09:27**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	2960	0.0500	mg/L dry	1	BHE0495	05/15/24	05/26/24	EPA 6020B	
Magnesium	96.2	0.0500	"	"	"	"	"	"	
Sodium	21.0	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **05/14/24 09:27**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	0.104	0.00100	units	1	BHE0832	05/28/24	05/28/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

BKG01@5'
2405217-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/14/24 09:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.5		%	1	BHE0474	05/15/24	05/15/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/14/24 09:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.216	0.0100	mmhos/cm	1	BHE0497	05/15/24	05/21/24	EPA 120.1	

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

Date Sampled: **05/14/24 09:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.75		pH Units	1	BHE0496	05/15/24	05/21/24	EPA 9045D	

Summit Scientific

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

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

PWV01-B@5'
2405217-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/14/24 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHE0485	05/15/24	05/16/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/14/24 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0386	96.4 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0382	95.5 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0367	91.8 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/14/24 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHE0487	05/15/24	05/16/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/14/24 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	7.43	59.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

PWV01-B@5'
2405217-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **05/14/24 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHE0466	05/15/24	05/15/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **05/14/24 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0149	44.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0167	50.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **05/14/24 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHE0469	05/15/24	06/07/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **05/14/24 10:00**

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

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

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

PWV01-B@5'
2405217-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	2.09	0.200	mg/kg dry	1	BHE0479	05/15/24	05/22/24	EPA 6020B
Barium	165	0.400	"	"	"	"	"	"
Cadmium	0.288	0.200	"	"	"	"	"	"
Copper	6.07	0.400	"	"	"	"	"	"
Lead	5.92	0.200	"	"	"	"	"	"
Nickel	6.92	0.400	"	"	"	"	"	"
Silver	0.0377	0.0200	"	"	"	"	"	"
Zinc	33.0	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **05/14/24 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHE0480	05/15/24	05/15/24	EPA 7196A	

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

Date Sampled: **05/14/24 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	53.5	0.0500	mg/L dry	1	BHE0495	05/15/24	05/26/24	EPA 6020B	
Magnesium	8.36	0.0500	"	"	"	"	"	"	
Sodium	11.1	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **05/14/24 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.373	0.00100	units	1	BHE0832	05/28/24	05/28/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/14/24 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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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.



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

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

PWV01-B@5'
2405217-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	84.6	%	1	BHE0474	05/15/24	05/15/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/14/24 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.288	0.0100	mmhos/cm	1	BHE0497	05/15/24	05/21/24	EPA 120.1	

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

Date Sampled: **05/14/24 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.20		pH Units	1	BHE0496	05/15/24	05/21/24	EPA 9045D	

Summit Scientific

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

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

PWV01-E@2.5'
2405217-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/14/24 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHE0485	05/15/24	05/16/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/14/24 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0369	92.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0382	95.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0362	90.4 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/14/24 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHE0487	05/15/24	05/16/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/14/24 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	5.25	42.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

PWV01-E@2.5'
2405217-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **05/14/24 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHE0466	05/15/24	05/16/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	0.00916	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.00871	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	0.00529	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.00591	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.00864	0.00500	"	"	"	"	"	"	
Pyrene	0.00801	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **05/14/24 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0224	67.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0214	64.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **05/14/24 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHE0469	05/15/24	06/07/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **05/14/24 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

PWV01-E@2.5'
2405217-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	1.73	0.180	mg/kg dry	1	BHE0479	05/15/24	05/22/24	EPA 6020B
Barium	39.6	0.360	"	"	"	"	"	"
Cadmium	0.355	0.180	"	"	"	"	"	"
Copper	9.42	0.360	"	"	"	"	"	"
Lead	14.5	0.180	"	"	"	"	"	"
Nickel	4.08	0.360	"	"	"	"	"	"
Silver	0.126	0.0180	"	"	"	"	"	"
Zinc	56.4	0.360	"	"	"	"	"	"
Selenium	ND	0.234	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **05/14/24 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHE0480	05/15/24	05/15/24	EPA 7196A	

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

Date Sampled: **05/14/24 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	169	0.0500	mg/L dry	1	BHE0495	05/15/24	05/26/24	EPA 6020B	
Magnesium	33.9	0.0500	"	"	"	"	"	"	
Sodium	5.34	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **05/14/24 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0981	0.00100	units	1	BHE0832	05/28/24	05/28/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/14/24 10:02**

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

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

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

PWV01-E@2.5'
2405217-08 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	93.5	%	1	BHE0474	05/15/24	05/15/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/14/24 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.229	0.0100	mmhos/cm	1	BHE0497	05/15/24	05/21/24	EPA 120.1	

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

Date Sampled: **05/14/24 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.30		pH Units	1	BHE0496	05/15/24	05/21/24	EPA 9045D	

Summit Scientific

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

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

PWV02-B@5'
2405217-10 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/14/24 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHE0485	05/15/24	05/16/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/14/24 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0384	95.9 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0382	95.6 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0360	89.9 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/14/24 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHE0487	05/15/24	05/16/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/14/24 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	7.64	61.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

PWV02-B@5'
2405217-10 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **05/14/24 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHE0466	05/15/24	05/16/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **05/14/24 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0192	57.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0276	82.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **05/14/24 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHE0469	05/15/24	06/07/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **05/14/24 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

PWV02-B@5'
2405217-10 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	2.18	0.200	mg/kg dry	1	BHE0479	05/15/24	05/22/24	EPA 6020B
Barium	123	0.400	"	"	"	"	"	"
Cadmium	0.281	0.200	"	"	"	"	"	"
Copper	4.79	0.400	"	"	"	"	"	"
Lead	6.47	0.200	"	"	"	"	"	"
Nickel	6.80	0.400	"	"	"	"	"	"
Silver	0.0340	0.0200	"	"	"	"	"	"
Zinc	30.8	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **05/14/24 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHE0480	05/15/24	05/15/24	EPA 7196A	

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

Date Sampled: **05/14/24 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	228	0.0500	mg/L dry	1	BHE0495	05/15/24	05/26/24	EPA 6020B	
Magnesium	13.7	0.0500	"	"	"	"	"	"	
Sodium	2.35	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **05/14/24 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0409	0.00100	units	1	BHE0832	05/28/24	05/28/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/14/24 10:04**

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

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

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

PWV02-B@5'
2405217-10 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	87.0	%	1	BHE0474	05/15/24	05/15/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/14/24 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.160	0.0100	mmhos/cm	1	BHE0497	05/15/24	05/21/24	EPA 120.1	

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

Date Sampled: **05/14/24 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.58		pH Units	1	BHE0496	05/15/24	05/21/24	EPA 9045D	

Summit Scientific

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

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

PWV02-N@2.5'
2405217-11 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/14/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHE0485	05/15/24	05/16/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/14/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0392	98.1 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0385	96.2 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0363	90.7 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/14/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHE0487	05/15/24	05/17/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/14/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	6.25	50.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

PWV02-N@2.5'
2405217-11 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **05/14/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHE0466	05/15/24	05/16/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	"
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	"
Benzo (a) pyrene	0.00672	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	0.00675	0.00500	"	"	"	"	"	"	"
Pyrene	ND	0.00500	"	"	"	"	"	"	"
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	"
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	"

Date Sampled: **05/14/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0226	67.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0208	62.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **05/14/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHE0469	05/15/24	06/07/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **05/14/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

PWV02-N@2.5'
2405217-11 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	1.84	0.180	mg/kg dry	1	BHE0479	05/15/24	05/22/24	EPA 6020B
Barium	42.3	0.360	"	"	"	"	"	"
Cadmium	0.309	0.180	"	"	"	"	"	"
Copper	8.16	0.360	"	"	"	"	"	"
Lead	12.3	0.180	"	"	"	"	"	"
Nickel	3.99	0.360	"	"	"	"	"	"
Silver	0.0894	0.0180	"	"	"	"	"	"
Zinc	32.2	0.360	"	"	"	"	"	"
Selenium	ND	0.234	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **05/14/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHE0480	05/15/24	05/15/24	EPA 7196A	

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

Date Sampled: **05/14/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	467	0.0500	mg/L dry	1	BHE0495	05/15/24	05/26/24	EPA 6020B	
Magnesium	86.2	0.0500	"	"	"	"	"	"	
Sodium	4.14	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **05/14/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0462	0.00100	units	1	BHE0832	05/28/24	05/28/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/14/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

PWV02-N@2.5'
2405217-11 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	81.3	%	1	BHE0474	05/15/24	05/15/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/14/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.202	0.0100	mmhos/cm	1	BHE0497	05/15/24	05/21/24	EPA 120.1	

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

Date Sampled: **05/14/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.01		pH Units	1	BHE0496	05/15/24	05/21/24	EPA 9045D	

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

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

PWV03-B@5'
2405217-13 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/14/24 10:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHE0485	05/15/24	05/16/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/14/24 10:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0399	99.8 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0373	93.3 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0361	90.2 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/14/24 10:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHE0487	05/15/24	05/17/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/14/24 10:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	8.46	67.7 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

PWV03-B@5'
2405217-13 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **05/14/24 10:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHE0466	05/15/24	05/16/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **05/14/24 10:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0210	63.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0240	72.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **05/14/24 10:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHE0469	05/15/24	06/07/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **05/14/24 10:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

PWV03-B@5'
2405217-13 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.11	0.200	mg/kg dry	1	BHE0479	05/15/24	05/22/24	EPA 6020B	
Barium	88.9	0.400	"	"	"	"	"	"	
Cadmium	0.230	0.200	"	"	"	"	"	"	
Copper	6.49	0.400	"	"	"	"	"	"	
Lead	6.01	0.200	"	"	"	"	"	"	
Nickel	6.51	0.400	"	"	"	"	"	"	
Silver	0.0259	0.0200	"	"	"	"	"	"	
Zinc	26.8	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **05/14/24 10:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHE0480	05/15/24	05/15/24	EPA 7196A	

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

Date Sampled: **05/14/24 10:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	72.0	0.0500	mg/L dry	1	BHE0495	05/15/24	05/26/24	EPA 6020B	
Magnesium	11.6	0.0500	"	"	"	"	"	"	
Sodium	5.79	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **05/14/24 10:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.167	0.00100	units	1	BHE0832	05/28/24	05/28/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/14/24 10:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

PWV03-B@5'
2405217-13 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	90.6	%	1	BHE0474	05/15/24	05/15/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/14/24 10:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.151	0.0100	mmhos/cm	1	BHE0497	05/15/24	05/21/24	EPA 120.1	

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

Date Sampled: **05/14/24 10:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.72		pH Units	1	BHE0496	05/15/24	05/21/24	EPA 9045D	

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

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

PWV03-N@2.5'
2405217-14 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/14/24 10:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHE0485	05/15/24	05/16/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/14/24 10:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0379	94.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0386	96.5 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0364	91.1 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/14/24 10:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHE0487	05/15/24	05/17/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/14/24 10:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	5.92	47.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

PWV03-N@2.5'
2405217-14 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **05/14/24 10:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHE0466	05/15/24	05/16/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	"
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	"
Benzo (a) pyrene	0.00551	0.00500	"	"	"	"	"	"	"
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	"
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	"
Chrysene	ND	0.00500	"	"	"	"	"	"	"
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	"
Fluoranthene	ND	0.00500	"	"	"	"	"	"	"
Fluorene	ND	0.00500	"	"	"	"	"	"	"
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	"
Pyrene	ND	0.00500	"	"	"	"	"	"	"
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	"
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	"

Date Sampled: **05/14/24 10:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0195	58.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0206	61.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **05/14/24 10:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHE0469	05/15/24	06/07/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **05/14/24 10:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

PWV03-N@2.5'
2405217-14 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	2.01	0.200	mg/kg dry	1	BHE0479	05/15/24	05/22/24	EPA 6020B
Barium	44.3	0.400	"	"	"	"	"	"
Cadmium	0.235	0.200	"	"	"	"	"	"
Copper	7.23	0.400	"	"	"	"	"	"
Lead	8.74	0.200	"	"	"	"	"	"
Nickel	5.03	0.400	"	"	"	"	"	"
Silver	0.0591	0.0200	"	"	"	"	"	"
Zinc	31.9	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **05/14/24 10:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHE0480	05/15/24	05/15/24	EPA 7196A	

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

Date Sampled: **05/14/24 10:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	276	0.0500	mg/L dry	1	BHE0495	05/15/24	05/26/24	EPA 6020B	
Magnesium	25.9	0.0500	"	"	"	"	"	"	
Sodium	1.94	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **05/14/24 10:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0299	0.00100	units	1	BHE0832	05/28/24	05/28/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/14/24 10:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

PWV03-N@2.5'
2405217-14 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	89.9	%	1	BHE0474	05/15/24	05/15/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/14/24 10:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.136	0.0100	mmhos/cm	1	BHE0497	05/15/24	05/21/24	EPA 120.1	

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

Date Sampled: **05/14/24 10:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.49		pH Units	1	BHE0496	05/15/24	05/21/24	EPA 9045D	

Summit Scientific

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

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BHE0485 - EPA 5030 Soil MS

Blank (BHE0485-BLK1)

Prepared: 05/15/24 Analyzed: 05/16/24

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0342		"	0.0400		85.4	50-150			
Surrogate: Toluene-d8	0.0381		"	0.0400		95.3	50-150			
Surrogate: 4-Bromofluorobenzene	0.0351		"	0.0400		87.8	50-150			

LCS (BHE0485-BS1)

Prepared: 05/15/24 Analyzed: 05/16/24

Benzene	0.0989	0.0020	mg/kg	0.100		98.9	70-130			
Toluene	0.0975	0.0050	"	0.100		97.5	70-130			
Ethylbenzene	0.105	0.0050	"	0.100		105	70-130			
m,p-Xylene	0.218	0.010	"	0.200		109	70-130			
o-Xylene	0.110	0.0050	"	0.100		110	70-130			
1,2,4-Trimethylbenzene	0.100	0.0050	"	0.100		100	70-130			
1,3,5-Trimethylbenzene	0.101	0.0050	"	0.100		101	70-130			
Naphthalene	0.0877	0.0038	"	0.100		87.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0343		"	0.0400		85.7	50-150			
Surrogate: Toluene-d8	0.0382		"	0.0400		95.6	50-150			
Surrogate: 4-Bromofluorobenzene	0.0360		"	0.0400		90.1	50-150			

Matrix Spike (BHE0485-MS1)

Source: 2405211-01

Prepared: 05/15/24 Analyzed: 05/16/24

Benzene	0.0197	0.0020	mg/kg	0.100	ND	19.7	70-130			QM-05
Toluene	0.0153	0.0050	"	0.100	ND	15.3	70-130			QM-05
Ethylbenzene	0.0133	0.0050	"	0.100	ND	13.3	70-130			QM-05
m,p-Xylene	0.0718	0.010	"	0.200	ND	35.9	70-130			QM-05
o-Xylene	0.0333	0.0050	"	0.100	ND	33.3	70-130			QM-05
1,2,4-Trimethylbenzene	0.00984	0.0050	"	0.100	ND	9.84	70-130			QM-05
1,3,5-Trimethylbenzene	0.0704	0.0050	"	0.100	ND	70.4	70-130			
Naphthalene	0.0513	0.0038	"	0.100	ND	51.3	70-130			QM-05
Surrogate: 1,2-Dichloroethane-d4	0.0346		"	0.0400		86.5	50-150			
Surrogate: Toluene-d8	0.0364		"	0.0400		91.0	50-150			
Surrogate: 4-Bromofluorobenzene	0.0358		"	0.0400		89.5	50-150			

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

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BHE0485 - EPA 5030 Soil MS

Matrix Spike Dup (BHE0485-MSD1)	Source: 2405211-01			Prepared: 05/15/24 Analyzed: 05/16/24						
Benzene	0.0123	0.0020	mg/kg	0.100	ND	12.3	70-130	46.7	30	QM-05
Toluene	0.00978	0.0050	"	0.100	ND	9.78	70-130	44.0	30	QM-05
Ethylbenzene	0.00975	0.0050	"	0.100	ND	9.75	70-130	30.5	30	QM-05
m,p-Xylene	0.0516	0.010	"	0.200	ND	25.8	70-130	32.7	30	QM-05
o-Xylene	0.0188	0.0050	"	0.100	ND	18.8	70-130	55.4	30	QM-05
1,2,4-Trimethylbenzene	0.00618	0.0050	"	0.100	ND	6.18	70-130	45.7	30	QM-05
1,3,5-Trimethylbenzene	0.0709	0.0050	"	0.100	ND	70.9	70-130	0.594	30	
Naphthalene	0.0416	0.0038	"	0.100	ND	41.6	70-130	20.9	30	QM-05
Surrogate: 1,2-Dichloroethane-d4	0.0346		"	0.0400		86.6	50-150			
Surrogate: Toluene-d8	0.0353		"	0.0400		88.3	50-150			
Surrogate: 4-Bromofluorobenzene	0.0373		"	0.0400		93.2	50-150			

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BHE0487 - EPA 3550A

Blank (BHE0487-BLK1)

Prepared: 05/15/24 Analyzed: 05/16/24

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	10.8		"	12.5		86.8	30-150				

LCS (BHE0487-BS1)

Prepared: 05/15/24 Analyzed: 05/16/24

C10-C28 (DRO)	440	50	mg/kg	500		88.0	70-130				
Surrogate: <i>o</i> -Terphenyl	10.1		"	12.5		80.8	30-150				

Matrix Spike (BHE0487-MS1)

Source: 2405204-21

Prepared: 05/15/24 Analyzed: 05/16/24

C10-C28 (DRO)	469	50	mg/kg	500	ND	93.7	70-130				
Surrogate: <i>o</i> -Terphenyl	6.64		"	12.5		53.1	30-150				

Matrix Spike Dup (BHE0487-MSD1)

Source: 2405204-21

Prepared: 05/15/24 Analyzed: 05/16/24

C10-C28 (DRO)	406	50	mg/kg	500	ND	81.1	70-130	14.4	20		
Surrogate: <i>o</i> -Terphenyl	6.34		"	12.5		50.7	30-150				

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6855 W. 119th Ave.
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Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

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 BHE0466 - EPA 5030 Soil MS

Blank (BHE0466-BLK1)

Prepared & Analyzed: 05/15/24

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0324		"	0.0333		97.1	40-150			
Surrogate: Fluoranthene-d10	0.0280		"	0.0333		83.9	40-150			

LCS (BHE0466-BS1)

Prepared & Analyzed: 05/15/24

Acenaphthene	0.0351	0.00500	mg/kg	0.0333		105	31-137			
Anthracene	0.0361	0.00500	"	0.0333		108	30-120			
Benzo (a) anthracene	0.0317	0.00500	"	0.0333		95.0	30-120			
Benzo (a) pyrene	0.0295	0.00500	"	0.0333		88.5	30-120			
Benzo (b) fluoranthene	0.0264	0.00500	"	0.0333		79.3	30-120			
Benzo (k) fluoranthene	0.0307	0.00500	"	0.0333		92.0	30-120			
Chrysene	0.0359	0.00500	"	0.0333		108	30-120			
Dibenz (a,h) anthracene	0.0273	0.00500	"	0.0333		81.8	30-120			
Fluoranthene	0.0353	0.00500	"	0.0333		106	30-120			
Fluorene	0.0345	0.00500	"	0.0333		104	30-120			
Indeno (1,2,3-cd) pyrene	0.0164	0.00500	"	0.0333		49.3	30-120			
Pyrene	0.0384	0.00500	"	0.0333		115	35-142			
1-Methylnaphthalene	0.0345	0.00500	"	0.0333		104	35-142			
2-Methylnaphthalene	0.0351	0.00500	"	0.0333		105	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0384		"	0.0333		115	40-150			
Surrogate: Fluoranthene-d10	0.0394		"	0.0333		118	40-150			

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Tasman Geosciences
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Broomfield CO, 80020

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

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 BHE0466 - EPA 5030 Soil MS

Matrix Spike (BHE0466-MS1)

Source: 2405211-01

Prepared & Analyzed: 05/15/24

Acenaphthene	0.0140	0.00500	mg/kg	0.0333	ND	41.9	31-137			
Anthracene	0.0151	0.00500	"	0.0333	ND	45.2	30-120			
Benzo (a) anthracene	0.0155	0.00500	"	0.0333	ND	46.5	30-120			
Benzo (a) pyrene	0.0169	0.00500	"	0.0333	ND	50.8	30-120			
Benzo (b) fluoranthene	0.0135	0.00500	"	0.0333	ND	40.5	30-120			
Benzo (k) fluoranthene	0.0153	0.00500	"	0.0333	ND	45.9	30-120			
Chrysene	0.0152	0.00500	"	0.0333	ND	45.5	30-120			
Dibenz (a,h) anthracene	0.0143	0.00500	"	0.0333	ND	43.0	30-120			
Fluoranthene	0.0154	0.00500	"	0.0333	ND	46.1	30-120			
Fluorene	0.0144	0.00500	"	0.0333	ND	43.1	30-120			
Indeno (1,2,3-cd) pyrene	0.0141	0.00500	"	0.0333	ND	42.2	30-120			
Pyrene	0.0172	0.00500	"	0.0333	ND	51.5	35-142			
1-Methylnaphthalene	0.0148	0.00500	"	0.0333	ND	44.4	15-130			
2-Methylnaphthalene	0.0143	0.00500	"	0.0333	ND	42.9	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0145		"	0.0333		43.4	40-150			
Surrogate: Fluoranthene-d10	0.0152		"	0.0333		45.5	40-150			

Matrix Spike Dup (BHE0466-MSD1)

Source: 2405211-01

Prepared & Analyzed: 05/15/24

Acenaphthene	0.0154	0.00500	mg/kg	0.0333	ND	46.1	31-137	9.60	30	
Anthracene	0.0172	0.00500	"	0.0333	ND	51.6	30-120	13.4	30	
Benzo (a) anthracene	0.0165	0.00500	"	0.0333	ND	49.5	30-120	6.20	30	
Benzo (a) pyrene	0.0164	0.00500	"	0.0333	ND	49.3	30-120	2.81	30	
Benzo (b) fluoranthene	0.0146	0.00500	"	0.0333	ND	43.8	30-120	7.83	30	
Benzo (k) fluoranthene	0.0135	0.00500	"	0.0333	ND	40.5	30-120	12.5	30	
Chrysene	0.0156	0.00500	"	0.0333	ND	46.7	30-120	2.67	30	
Dibenz (a,h) anthracene	0.0221	0.00500	"	0.0333	ND	66.3	30-120	42.6	30	QR-02
Fluoranthene	0.0164	0.00500	"	0.0333	ND	49.3	30-120	6.74	30	
Fluorene	0.0163	0.00500	"	0.0333	ND	48.8	30-120	12.4	30	
Indeno (1,2,3-cd) pyrene	0.0154	0.00500	"	0.0333	ND	46.3	30-120	9.29	30	
Pyrene	0.0180	0.00500	"	0.0333	ND	54.0	35-142	4.70	30	
1-Methylnaphthalene	0.0182	0.00500	"	0.0333	ND	54.5	15-130	20.3	50	
2-Methylnaphthalene	0.0171	0.00500	"	0.0333	ND	51.2	15-130	17.7	50	
Surrogate: 2-Methylnaphthalene-d10	0.0179		"	0.0333		53.7	40-150			
Surrogate: Fluoranthene-d10	0.0168		"	0.0333		50.5	40-150			

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

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

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

Summit Scientific

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

Batch BHE0469 - EPA 3050B

Blank (BHE0469-BLK1)

Prepared: 05/15/24 Analyzed: 06/07/24

Boron ND 2.00 mg/L

LCS (BHE0469-BS1)

Prepared: 05/15/24 Analyzed: 06/07/24

Boron 4.97 2.00 mg/L 5.00 99.4 80-120

Duplicate (BHE0469-DUP1)

Source: 2405215-03

Prepared: 05/15/24 Analyzed: 06/07/24

Boron 0.195 2.00 mg/L 0.185 5.51 20

Matrix Spike (BHE0469-MS1)

Source: 2405215-03

Prepared: 05/15/24 Analyzed: 06/07/24

Boron 4.92 2.00 mg/L 4.99 0.185 95.0 75-125

Matrix Spike Dup (BHE0469-MSD1)

Source: 2405215-03

Prepared: 05/15/24 Analyzed: 06/07/24

Boron 5.14 2.00 mg/L 4.99 0.185 99.5 75-125 4.46 25

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHE0479 - EPA 3050B

Blank (BHE0479-BLK1)

Prepared: 05/15/24 Analyzed: 05/22/24

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

LCS (BHE0479-BS1)

Prepared: 05/15/24 Analyzed: 05/22/24

Arsenic	38.4	0.200	mg/kg wet	40.0	96.0	80-120
Barium	38.6	0.400	"	40.0	96.5	80-120
Cadmium	1.94	0.200	"	2.00	97.1	80-120
Copper	40.5	0.400	"	40.0	101	80-120
Lead	19.4	0.200	"	20.0	97.0	80-120
Nickel	38.9	0.400	"	40.0	97.2	80-120
Silver	1.94	0.0200	"	2.00	97.0	80-120
Zinc	38.3	0.400	"	40.0	95.6	80-120
Selenium	3.88	0.260	"	4.00	96.9	80-120

Duplicate (BHE0479-DUP1)

Source: 2405210-01

Prepared: 05/15/24 Analyzed: 05/22/24

Arsenic	1.35	0.200	mg/kg dry	1.34	1.05	20
Barium	33.2	0.400	"	34.3	3.37	20
Cadmium	0.155	0.200	"	0.158	2.45	20
Copper	5.40	0.400	"	5.50	1.88	20
Lead	7.63	0.200	"	9.33	20.1	20
Nickel	3.98	0.400	"	4.09	2.51	20
Silver	0.0374	0.0200	"	0.0377	0.903	20
Zinc	21.9	0.400	"	22.9	4.33	20
Selenium	ND	0.260	"	ND		20

QR-04

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6855 W. 119th Ave.
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Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHE0479 - EPA 3050B

Matrix Spike (BHE0479-MS1)

Source: 2405210-01

Prepared: 05/15/24 Analyzed: 05/22/24

Arsenic	42.1	0.200	mg/kg dry	42.5	1.34	95.8	75-125			
Barium	70.5	0.400	"	42.5	34.3	85.2	75-125			
Cadmium	2.22	0.200	"	2.13	0.158	96.8	75-125			
Copper	47.8	0.400	"	42.5	5.50	99.5	75-125			
Lead	28.9	0.200	"	21.3	9.33	91.9	75-125			
Nickel	45.3	0.400	"	42.5	4.09	96.9	75-125			
Silver	2.03	0.0200	"	2.13	0.0377	93.6	75-125			
Zinc	63.8	0.400	"	42.5	22.9	96.3	75-125			
Selenium	3.52	0.260	"	4.25	ND	82.9	75-125			

Matrix Spike Dup (BHE0479-MSD1)

Source: 2405210-01

Prepared: 05/15/24 Analyzed: 05/22/24

Arsenic	41.7	0.200	mg/kg dry	42.5	1.34	95.0	75-125	0.737	25
Barium	71.1	0.400	"	42.5	34.3	86.6	75-125	0.851	25
Cadmium	2.24	0.200	"	2.13	0.158	97.8	75-125	0.955	25
Copper	47.4	0.400	"	42.5	5.50	98.6	75-125	0.765	25
Lead	29.2	0.200	"	21.3	9.33	93.4	75-125	1.16	25
Nickel	45.0	0.400	"	42.5	4.09	96.1	75-125	0.763	25
Silver	2.06	0.0200	"	2.13	0.0377	95.0	75-125	1.39	25
Zinc	63.1	0.400	"	42.5	22.9	94.5	75-125	1.19	25
Selenium	3.56	0.260	"	4.25	ND	83.6	75-125	0.865	25

Post Spike (BHE0479-PS1)

Source: 2405210-01

Prepared: 05/15/24 Analyzed: 05/22/24

Arsenic	102		ug/l	100	3.06	99.4	75-125		
Barium	168		"	100	78.2	90.2	75-125		
Cadmium	5.30		"	5.00	0.361	98.7	75-125		
Copper	115		"	100	12.5	103	75-125		
Lead	70.3		"	50.0	21.3	98.1	75-125		
Nickel	109		"	100	9.31	99.6	75-125		
Silver	5.04		"	5.00	0.0860	99.1	75-125		
Zinc	150		"	100	52.2	98.1	75-125		
Selenium	9.27		"	10.0	0.172	91.0	75-125		

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BHE0480 - 3060A Mod

Blank (BHE0480-BLK1)

Prepared & Analyzed: 05/15/24

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BHE0480-BS1)

Prepared & Analyzed: 05/15/24

Chromium, Hexavalent 26.2 0.30 mg/kg wet 25.0 105 80-120

Duplicate (BHE0480-DUP1)

Source: 2405215-01

Prepared & Analyzed: 05/15/24

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BHE0480-MS1)

Source: 2405215-01

Prepared & Analyzed: 05/15/24

Chromium, Hexavalent 25.4 0.30 mg/kg dry 25.8 ND 98.4 75-125

Matrix Spike Dup (BHE0480-MSD1)

Source: 2405215-01

Prepared & Analyzed: 05/15/24

Chromium, Hexavalent 25.5 0.30 mg/kg dry 25.8 ND 98.6 75-125 0.203 20

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

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

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

Summit Scientific

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

Batch BHE0495 - General Preparation

Blank (BHE0495-BLK1)

Prepared: 05/15/24 Analyzed: 05/26/24

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

LCS (BHE0495-BS1)

Prepared: 05/15/24 Analyzed: 05/26/24

Calcium	5.71	0.0500	mg/L wet	5.00	114	70-130
Magnesium	5.09	0.0500	"	5.00	102	70-130
Sodium	5.34	0.0500	"	5.00	107	70-130

Summit Scientific

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Tasman Geosciences
 6855 W. 119th Ave.
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Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
 Project Manager: Karen Olson

Reported:
 06/11/24 09:01

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 BHE0474 - General Preparation

Duplicate (BHE0474-DUP1)	Source: 2405216-01			Prepared & Analyzed: 05/15/24							
% Solids	91.2		%		92.7				1.65	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.



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

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

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

Summit Scientific

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

Batch BHE0497 - General Preparation

Blank (BHE0497-BLK1)

Prepared: 05/15/24 Analyzed: 05/21/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BHE0497-BS1)

Prepared: 05/15/24 Analyzed: 05/21/24

Specific Conductance (EC) 0.154 0.0100 mmhos/cm 0.150 103 95-105

Duplicate (BHE0497-DUP1)

Source: 2405084-03

Prepared: 05/15/24 Analyzed: 05/21/24

Specific Conductance (EC) 1.61 0.0100 mmhos/cm 1.63 1.30 20

Summit Scientific

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

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

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

Summit Scientific

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

Batch BHE0496 - General Preparation

LCS (BHE0496-BS1)

Prepared: 05/15/24 Analyzed: 05/21/24

pH	9.16	pH Units	9.18	99.8	95-105
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Duplicate (BHE0496-DUP1)

Source: 2405084-03

Prepared: 05/15/24 Analyzed: 05/21/24

pH	8.24	pH Units	8.24	0.00	20
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Summit Scientific

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

Project: PDC - Gemini K 1-9, 10 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
06/11/24 09:01

Notes and Definitions

- QR-04 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
- QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
- QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. 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