



CDH Consulting, LLC
Thornton, Colorado
720.431.7468
www.CDHConsult.com

Wellhead Closure Investigation and Environmental Summary

SUDEN 34U-403 Wellhead
ECMC Remediation Project #42507
Weld County, Colorado

Attachments:

Field Form

Figure 1 – Site Location Map

Figure 2 – Soil Sample and Field Screening Locations Map

Figure 3 – Supplemental Site Investigation Map

Table 1 – Field Data Summary Table

Table 2 – Summary of Volatile Organic Soil Chemistry Data

Table 3 – Summary of Polycyclic Aromatic Hydrocarbon Soil Chemistry Data

Table 4 – Summary of Soil Suitability for Reclamation

Table 5 – Summary of Metals in Soil Chemistry Data

Photographic Log

Wellhead Closure Checklist

RBU Checklist



CDH Consulting, LLC
Thornton, Colorado
720.431.7468
www.CDHConsult.com

FIELD FORM

SITE NAME / REM: SUDEN 34U-403 #42507								DATE: 10/31 & 11/3/2025	WEATHER: 40F, Sunny	
TYPE OF WORK: Wellhead C&C								CLIENT: PDC Energy Inc.		
LAT/LONG: 40.36252, -104.53023								PERSONNEL: DT, NI		
ESTIMATED DEPTH TO GROUNDWATER: Groundwater not encountered								OTHER OBSERVATIONS:		
SOIL SAMPLING								FACILITY INFRASTRUCTURE		
Date	Soil Sample ID	Soil Type	PID (ppm)	Staining (Y/N)	Odor (Y/N)	Time	Sent to lab on Ice? (Y/N)	EQUIPMENT		Quantity
								Above Ground Storage Tank (AST)		0
10/31/2025	WH01@5'	SC	20.1	N	Y	15:31	N	Buried or Partially Buried Vessel		0
10/31/2025	WH01-N@4'	SC	0.9	N	N	15:32	N	Separator		0
10/31/2025	WH01-S@4'	SC	60.8	N	Y	15:33	Y	Emission Control Device (ECD)		0
10/31/2025	WH01-E@4'	SC	0.3	N	N	15:34	N	Dump Line		0
10/31/2025	WH01-W@4'	SC	0.6	N	N	15:35	N	Wellhead		1
10/31/2025	BKG01@4.5'	SP	1.3	N	N	15:03	Y	Flowline		1
10/31/2025	BKG02@4.5'	SP	2.8	N	N	14:41	Y	Third Party Equipment:		0
10/31/2025	BKG03@4.5'	SP	2.4	N	N	14:51	Y	Other:		0
10/31/2025	WC-1	SC	4.8	N	N	15:48	Y	Soil Loads Removed		
11/3/2025	FL01-R-W@4'	SW	0.5	N	N	12:47	Y	IMPACTED SOIL IDENTIFIED? Yes		
								ESTIMATED VOLUME OF IMPACTS: 6x7x5		
								Date	Number	CY
								10/31/2025	1	8
								Total Removed		8 CY
								Disposal Facility: Republic Services		
								Groundwater Recovery		
								DATE GW ENCOUNTERED:	DEPTH:	
								GROUNDWATER IN CONTACT WITH IMPACTED SOIL?		
								LNAPL OR SHEEN OBSERVED ON GW?		
GROUNDWATER SAMPLING								Date	BBLS	
Date/Time	Groundwater Sample ID	Depth Collected	Turbid?	Sheen?	Odor?	Photo?	Sent to lab on Ice? (Y/N)			
								Total Removed		
								Disposal Facility:		





CDH Consulting, LLC
Thornton, Colorado
720.431.7468
www.CDHConsult.com

FIGURES

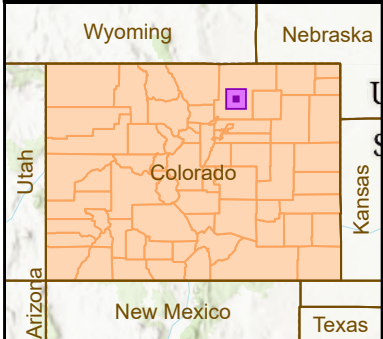
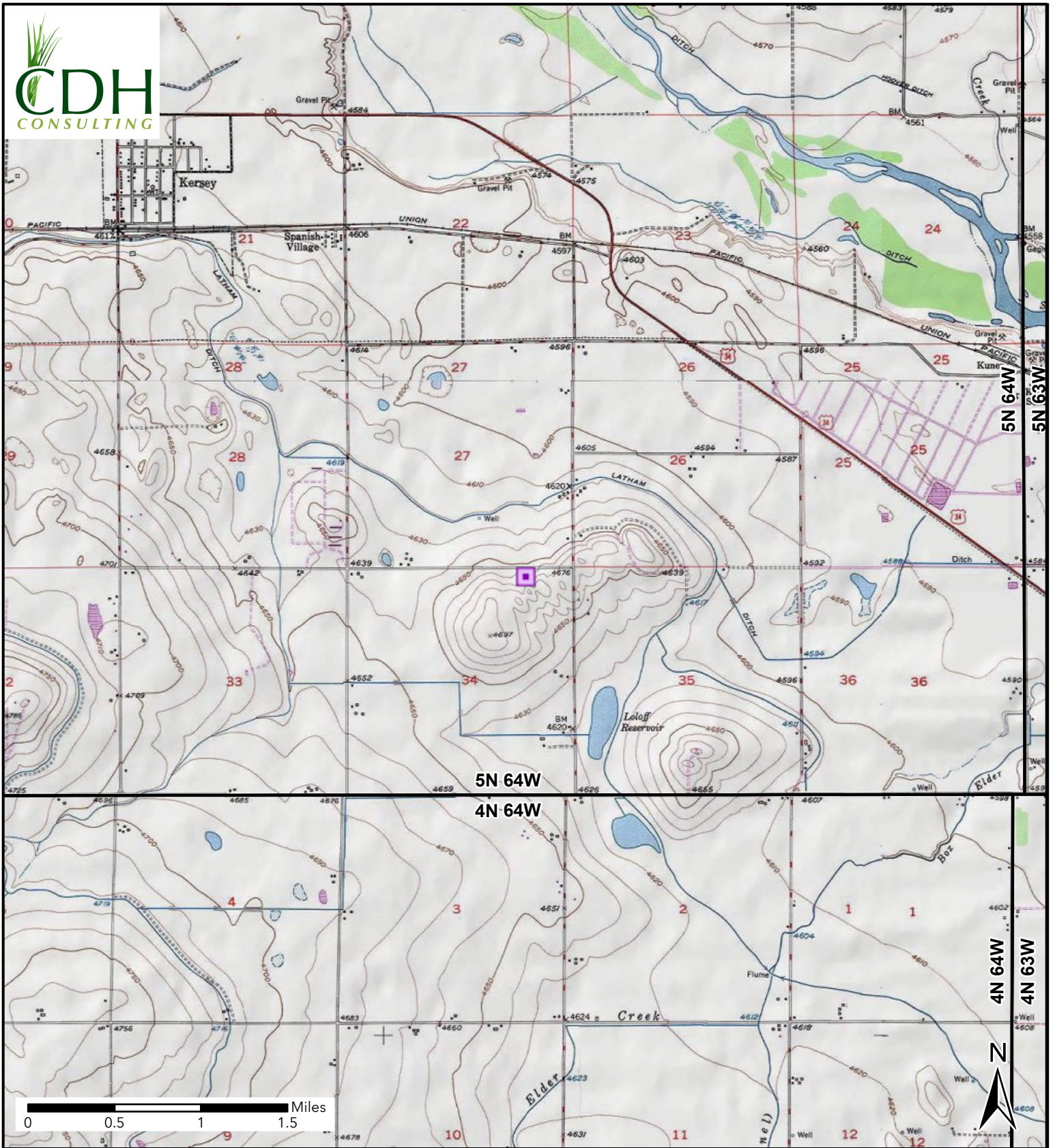

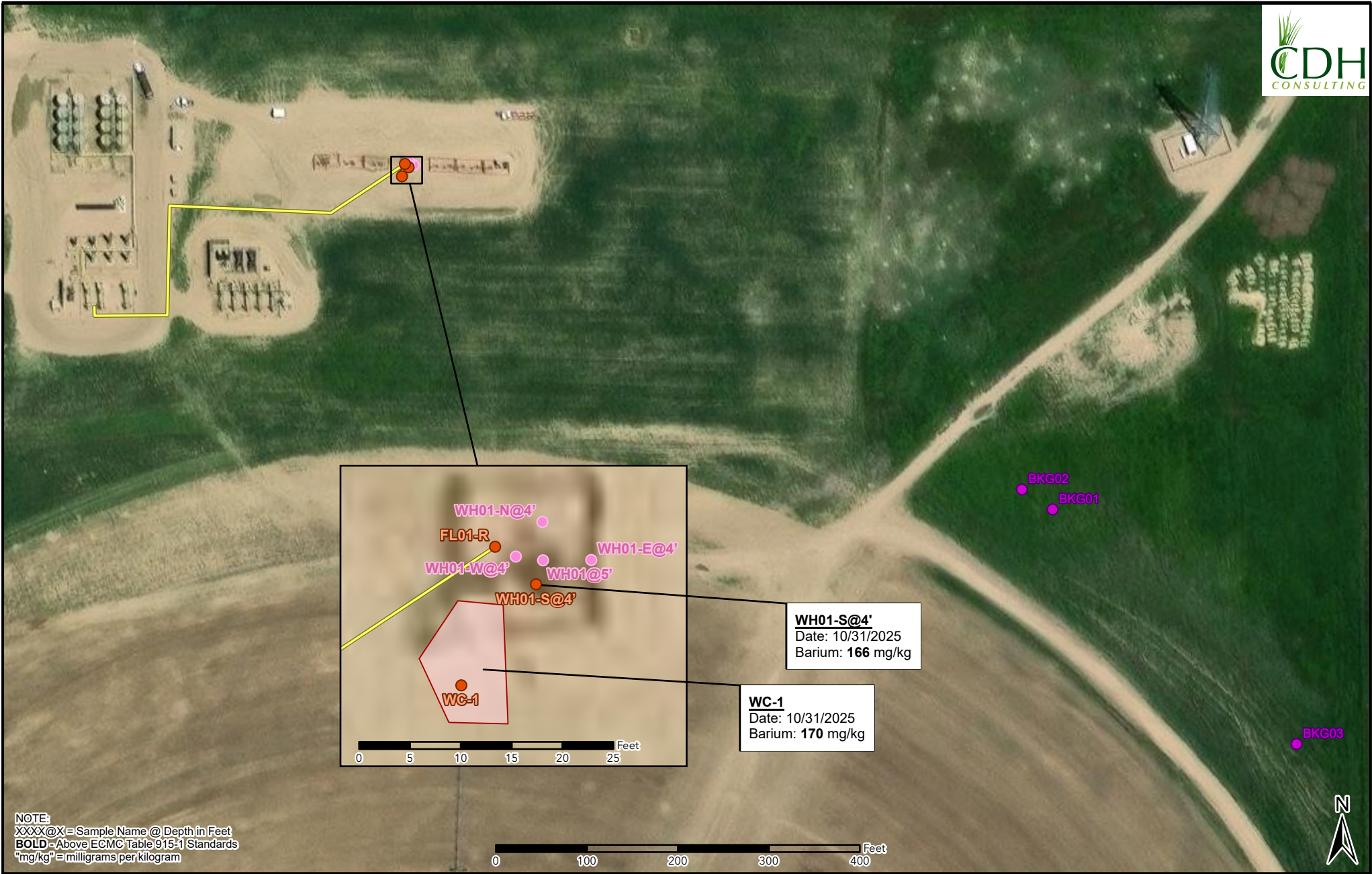


Figure 1
Site Location
SUDEN 34U-403
NENE SEC 34-T5N-R64W
Weld County, Colorado
PDC Energy Inc

 Site Location



NOTE:
XXXX@X = Sample Name @ Depth in Feet
BOLD - Above EC/MC Table 915-1 Standards
"mg/kg" = milligrams per kilogram



Figure 2
Sample Location Map
SUDEN 34U-403
NENE SEC 34-T5N-R64W
Weld County, Colorado
PDC Energy Inc.

- Soil Sample
- Screening Point
- Background Sample
- Flowline Abandoned In Place
- Stockpile Extent





Figure 3
Supplemental Site Investigation Map
 SUDEN 34U-403
 NENE SEC 34-T5N-R64W
 Weld County, Colorado
 PDC Energy Inc.

- Soil Sample
- Background Sample
- Screening Point
- Flowline Abandoned In Place
- Stockpile Extent



CDH Consulting, LLC
Thornton, Colorado
720.431.7468
www.CDHConsult.com

TABLES

TABLE 1
FIELD DATA SUMMARY TABLE
PDC 69175
SUDEN 34U-403, WELD COUNTY, COLORADO
REM # 42507

Sample ID	Sample Date	Depth (ft)	GPS Data		PDOP Value	VOC Concentration (ppm)
			Latitude	Longitude		
WH01@5'	10/31/2025	5	40.362513	-104.530232	0.800000	20.1
WH01-N@4'	10/31/2025	4	40.362524	-104.530232	1.000000	0.9
WH01-S@4'	10/31/2025	4	40.362507	-104.530234	0.900000	60.8
WH01-E@4'	10/31/2025	4	40.362513	-104.530215	0.900000	0.3
WH01-W@4'	10/31/2025	4	40.362514	-104.530241	0.900000	0.6
WC-1	10/31/2025	-	NM	NM	NM	4.8
FL01-R@4'	11/3/2025	4	40.362517	-104.530249	0.800000	0.5
BKG01@4.5'	10/31/2025	4.5	40.361465	-104.527701	1.100000	1.3
BKG02@4.5'	10/31/2025	4.5	40.361525	-104.527822	1.100000	2.8
BKG03@4.5'	10/31/2025	4.5	40.360753	-104.526744	1.500000	2.4

1. Global Positioning System (GPS) data is provided in decimal degrees using North American Datum (NAD) 83 UTMZone 13 North.

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

PDOP = Position Dilution of Precision

ppm = Parts per million

ft = Feet

TABLE 2
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA
PDC 69175
SUDEN 34U-403, WELD COUNTY, COLORADO
REM # 42507

Sample ID	Sample Date	Depth (ft)	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-S@4'	10/31/2025	4	<0.0011	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0023	334	4.95	319	9.67
WC-1	10/31/2025	-	<0.0011	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0022	138	<0.21	112	26.1
FLO1-R@4'	11/3/2025	4	<0.0011	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	18.4	<0.22	7.5	10.9

1. Bold values exceed the ECMC Table 915-1 limit(s)
 2. Red & 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
 5. Samples are reported as dry weight unless otherwise indicated in the laboratory PDF report(s).
- (<) = 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

TABLE 3
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA
PDC 69175
SUDEN 34U-403, WELD COUNTY, COLORADO
REM # 42507

Sample ID	Sample Date	Depth (ft)	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	1800	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-S@4'	10/31/2025	4	<0.0046	<0.0046	<0.0057	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	0.0587	<0.0046	<0.0046
WC-1	10/31/2025	-	<0.0045	<0.0045	<0.0056	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045
FL01-R@4'	11/3/2025	4	<0.0044	<0.0044	<0.0055	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044

1. Bold values exceed the ECMC Table 915-1 limit(s)
 2. Red & 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. Samples are reported as dry weight unless otherwise indicated in the laboratory PDF report(s).
- (<) = Analytical result is less than the indicated laboratory reporting limit.
mg/kg = Milligrams per kilogram
ft = Feet

TABLE 4
SUMMARY OF SOIL SUITABILITY FOR RECLAMATION
PDC 69175
SUDEN 34U-403, WELD COUNTY, COLORADO
REM # 42507

Sample ID	Sample Date	Depth (ft)	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-S@4'	10/31/2025	4	7.75	0.66	0.947	<0.50
WC-1	10/31/2025	-	7.80	1.4	1.39	<0.50
FL01-R@4'	11/3/2025	4	7.60	1.1	0.296	<0.50
BKG01@4.5'	10/31/2025	4.5	7.79	1.2	0.521	<0.50
BKG02@4.5'	10/31/2025	4.5	8.03	0.29	0.106	<0.50
BKG03@4.5'	10/31/2025	4.5	7.85	1.5	0.272	<0.50
Maximum Background Concentration			8.03	1.5	0.521	NA

1. **Bold** faced values exceed the ECMC Table 915-1 limit(s), but are within background concentrations.

2. **Bold** faced values exceed the ECMC Table 915-1 limit(s) and native background concentrations.

3. Brown highlighted soil analytical values indicate a regulatory exceedance.

4. Samples are reported as dry weight unless otherwise indicated in the laboratory PDF report(s).

ft = Feet

EC = Electrical Conductivity

SAR = Sodium adsorption ratio

mmhos/cm = millimhos per centimeter

mg/L = milligrams per liter

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

AP = Analysis pending

NA = Not analyzed

TABLE 5
SUMMARY OF METALS IN SOIL CHEMISTRY DATA
PDC 69175
SUDEN 34U-403, WELD COUNTY, COLORADO
REM # 42507

Sample ID	Sample Date	Depth (ft)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			0.68	15000	71	0.3	3100	400	1500	390	390	23000
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-S@4'	10/31/2025	4	4.4	166	0.11	<0.45*	5.8	7.7	7.9	<0.16	<0.081	27.9
WC-1	10/31/2025	-	4.6	170	0.17	<0.44*	6.5	7.7	7.7	<0.17	<0.087	30.2
FL01-R@4'	11/3/2025	4	5.1	121	0.12	<0.46*	6.1	7.4	7.8	<0.15	<0.077	28.1
BKG01@4.5'	10/31/2025	4.5	5.6	102	0.11	<0.43*	6.4	8.1	8.1	<0.17	<0.087	30.1
BKG02@4.5'	10/31/2025	4.5	4.0	121	0.13	<0.42*	6.0	7.5	8.0	<0.18	<0.089	26.9
BKG03@4.5'	10/31/2025	4.5	2.8	71.1	0.12	<0.42*	4.8	6.3	5.7	<0.18	<0.088	20.1
1.25x Maximum Background Concentration			7.0	151	0.16	NA	8.0	10.1	10.1	NA	NA	37.6

1. **Bold** faced values exceed the ECMC Table 915-1 limit(s), but are within 1.25x background concentrations.
2. **Red** faced values exceed the ECMC Table 915-1 limit(s) and native background concentrations.
3. Red & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL).
4. Non-detect background results accounted for in the highest background concentration by using the reporting limit.
5. Samples are reported as dry weight unless otherwise indicated in the laboratory PDF report(s).

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

mg/kg = Milligrams per kilogram

ft = Feet

* Indicates laboratory minimum detection limit in excess of SSL

AP = Analysis pending

NA = Not analyzed



CDH Consulting, LLC
Thornton, Colorado
720.431.7468
www.CDHConsult.com

PHOTOGRAPHIC LOG

Photographic Log
SUDEN 34U-403 – REM# 42507
PDC Energy Inc.
10/31, 11/3/2025

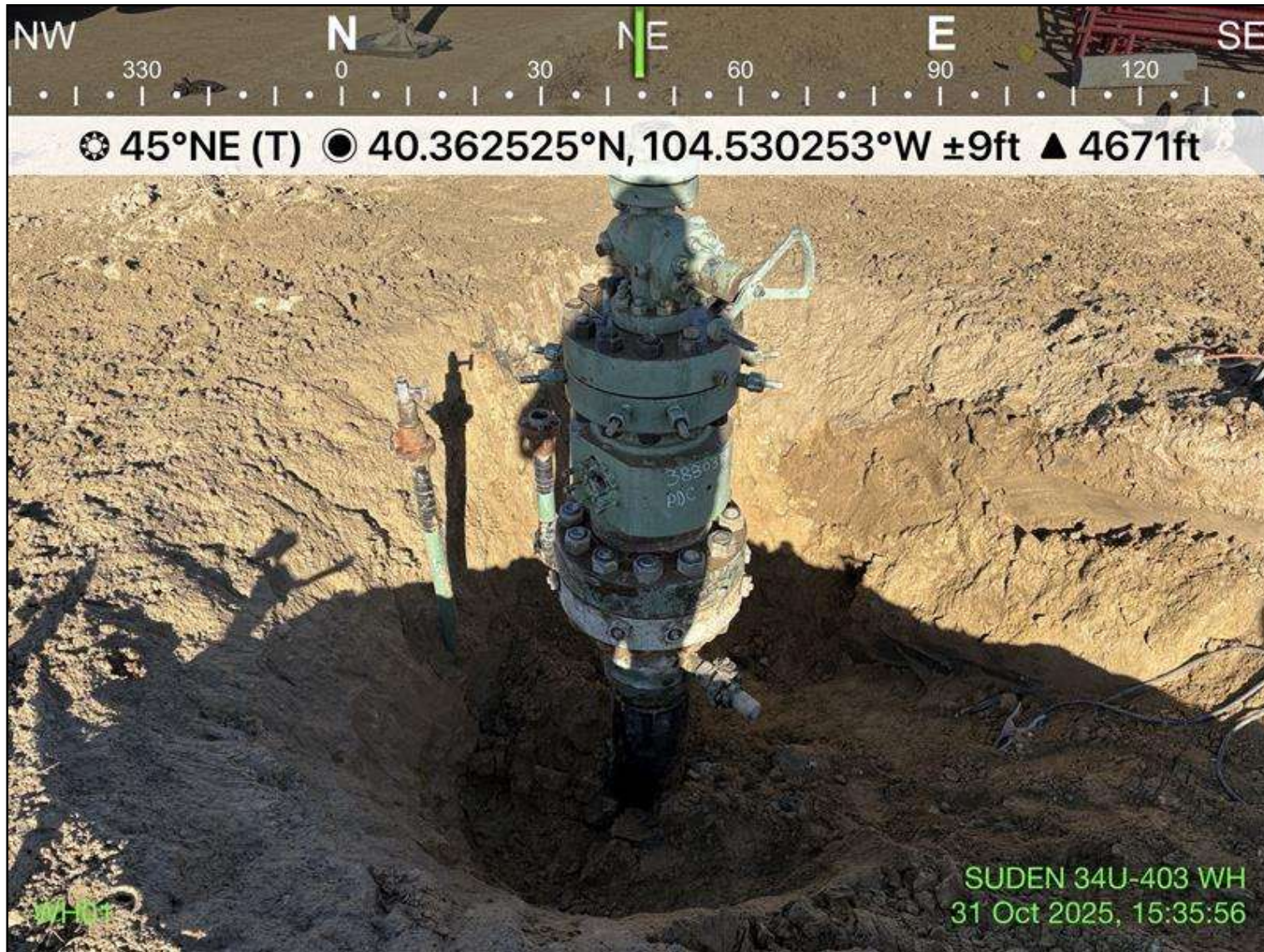


Photo 1: View of wellhead excavation, facing northeast

Photographic Log
SUDEN 34U-403 – REM# 42507
PDC Energy Inc.
10/31, 11/3/2025



Photo 2: View of wellhead excavation, facing southeast

Photographic Log
SUDEN 34U-403 – REM# 42507
PDC Energy Inc.
10/31, 11/3/2025



Photo 3: View of flowline riser, facing southeast

Photographic Log
SUDEN 34U-403 – REM# 42507
PDC Energy Inc.
10/31, 11/3/2025



Photo 4: View of wellhead excavation, facing northwest

Photographic Log
SUDEN 34U-403 – REM# 42507
PDC Energy Inc.
10/31, 11/3/2025



Photo 5: View of waste characterization stockpile, facing northeast

Photographic Log
SUDEN 34U-403 – REM# 42507
PDC Energy Inc.
10/31, 11/3/2025



Photo 6: View of wellhead excavation, facing west

Photographic Log
SUDEN 34U-403 – REM# 42507
PDC Energy Inc.
10/31, 11/3/2025



Photo 7: View of wellhead flowline riser sample location, facing southwest

Photographic Log
SUDEN 34U-403 – REM# 42507
PDC Energy Inc.
10/31, 11/3/2025



Photo 8: View of background sample location BKG01, facing southwest

Photographic Log
SUDEN 34U-403 – REM# 42507
PDC Energy Inc.
10/31, 11/3/2025

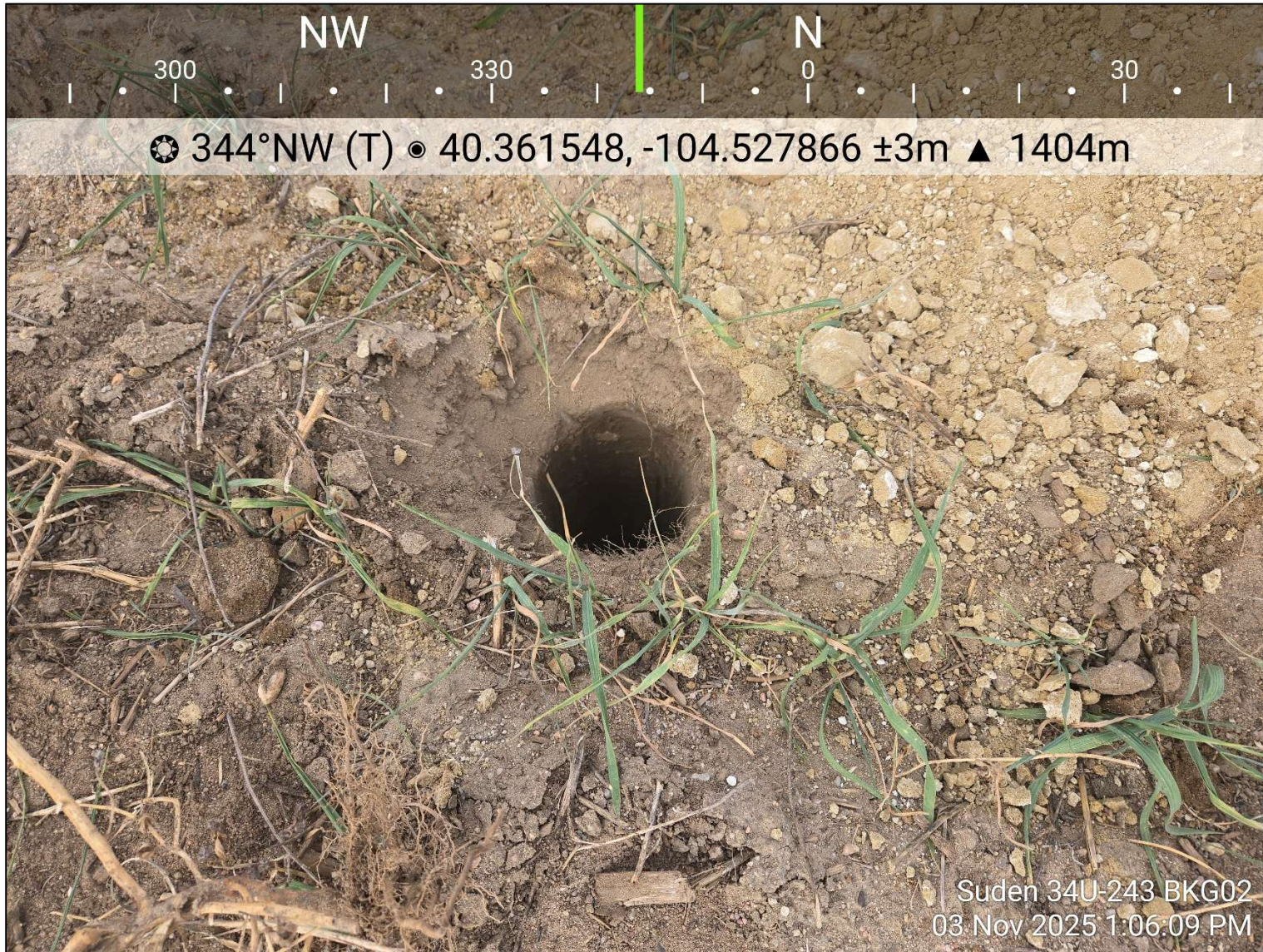


Photo 9: View of background sample location BKG02, facing north

Photographic Log
SUDEN 34U-403 – REM# 42507
PDC Energy Inc.
10/31, 11/3/2025

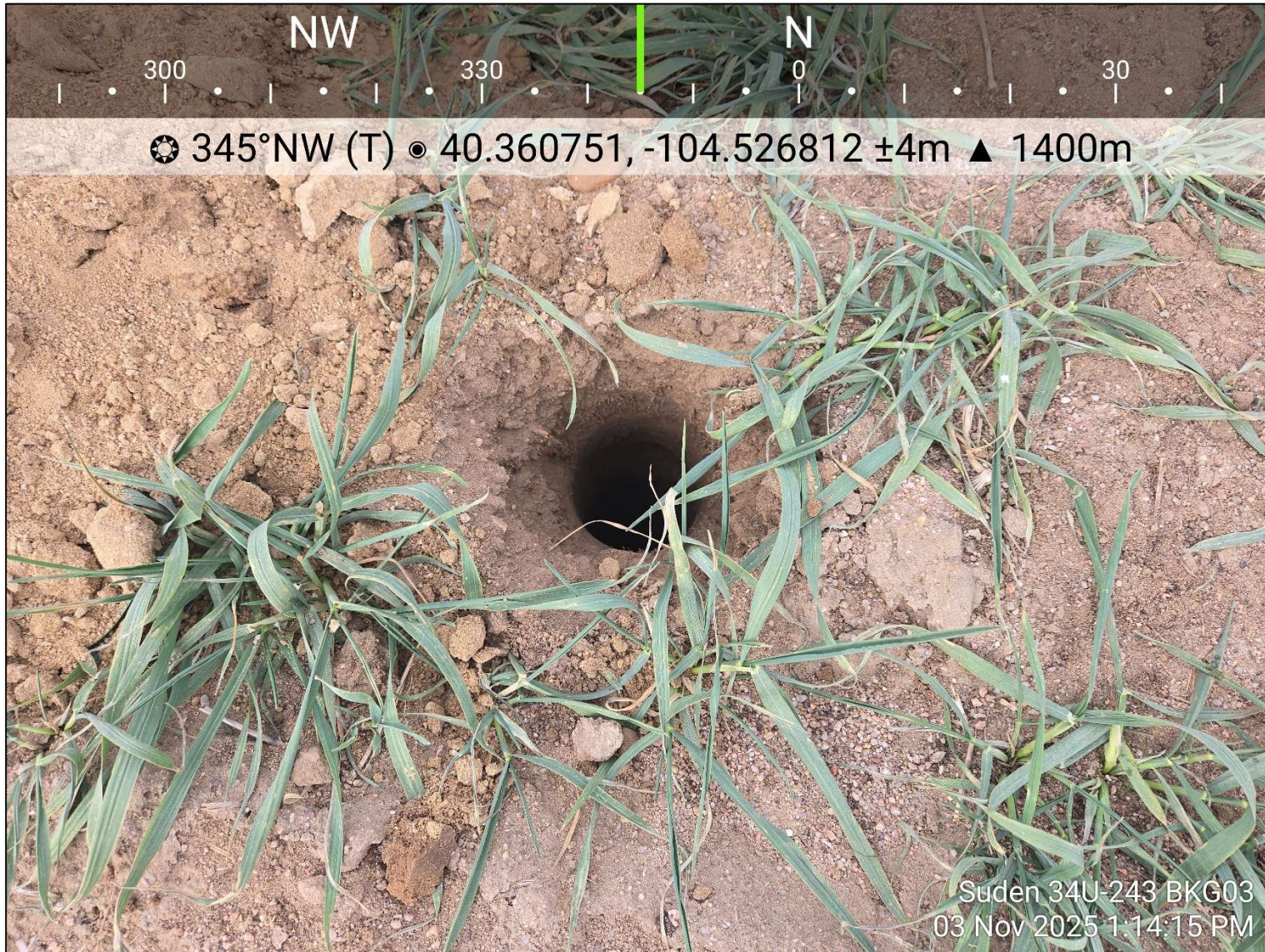


Photo 10: View of background sample location BKG03, facing north



CDH Consulting, LLC
Thornton, Colorado
720.431.7468
www.CDHConsult.com

WELLHEAD CLOSURE CHECKLIST

Wellhead Closure Checklist

COGCC Rule 911.a.(4) Environmental Site Closure Assessment Field Form

Additional attachments (optional):		Pit Closure		Tank Battery Closure		Flowline Closure		Partially Buried Vault Closure	
Site Name & COGCC Facility Number: SUDEN 34U-403 #437890		Date: 10/31 & 11/3/2025						Remediation Project #: 42507	
Associated Wells:		Age of Site: 1/28/2015 (spud date)						Number of Photos Attached: 10	
Location: 40.362509, -104.530211								Estimated Facility Size (acres): ~0.1 acres	
General Condition of Site: <i>Good</i>									
USCS Soil Type: Clayey sands (SC), Poorly graded sands (SP)				Estimated Depth to Groundwater: Groundwater not encountered					
Hydrocarbon Impacted Soils / Spills : <i>Odor encountered at soil samples WH01@5' and WH01-S@4'.</i>									
Salt Crusted Soils or Impacted Vegetation: <i>Not encountered</i>									
Wellhead(s)									
Well API	123-39754								
Age	1/28/2015 (spud date)								
Condition of surface around wellhead	Good								
PID Readings	0.3 - 60.8 ppm								
Condition of subsurface (staining present)	Odor observed at WH01@5' and WH01-S@4'								
PID Readings	0.3 - 60.8 ppm								
Sample taken? Location/Sample ID#	Yes, see attached								
Photo Number(s)	See attached								
Other observations regarding wellheads:									
Summary									
Was impacted soil identified? No Yes - less than 10 cubic yards Yes - more than 10 cubic yards									
Total number of samples field screened: 7				Total number of samples collected: 3					
Highest PID Reading: 60.8 ppm				Total number of samples submitted to lab for analysis: 3					
If more than 10 cubic yards of impacted soil were observed:									
Vertical extent: 5 feet				Estimated spill volume: 8 CY					
Lateral extent: 6 feet x 7 feet				Volume of soil removed: 8 CY					
Is additional investigation required? Supplemental site investigation for barium									
Was groundwater encountered during the investigation? No Yes - not impacted or in contact with impacted soils Yes - groundwater impacted and/or in contact with impacted soils									
Measured depth to groundwater:				Was remedial groundwater removal conducted? Yes No					
Date Groundwater was encountered:				Commencement date of removal:					
Sheen on groundwater?		Yes	No	Volume of groundwater removed prior to sampling:					
Free product observed?		Yes	No	Volume of groundwater removed post sampling:					
Total number of samples collected:				Total Volume of groundwater removed:					
Total number of samples submitted to lab for analysis:									



CDH Consulting, LLC
Thornton, Colorado
720.431.7468
www.CDHConsult.com

RBU CHECKLIST

Chevron Rockies Business Unit

Field Qualitative Criteria for ECMC Reporting Associated with the Discovery of Potentially Impacted Material

If answered **Yes** to any of the questions listed below, this may suggest the presence of potentially impacted materials as outlined in ECMC Rule 912. Out of an abundance of caution, a “Yes” response will be reported to the ECMC within 24 hours after discovery, regardless of laboratory results. **Immediately notify the RBU Remediation Team.** Include a copy of this Field Qualitative Spill Criteria Checklist in the field Report.

Please answer the following questions when on-site:

1. Is there visible petroleum hydrocarbon staining in the soil?
(Yes / **No**)
2. Does the soil sample from the stained area have a petroleum odor?
(**Yes** / No)
3. Is there a petroleum hydrocarbon sheen on the nearby surface water?
(Yes / **No**)
4. Does there appear to be a sheen on the surface of accumulated groundwater or seeps within the excavation indicative of petroleum?
(Yes / **No**)
5. Is stained soil in contact with groundwater?
(Yes / **No**)

Please Include relevant photos of the site conditions for items 1-5.

Location name: SUDEN 34U-403 WH (REM # 42507)

Please Circle Facility Type: **Well** / Flowline / Production Facility / Other