

SITE NAME / REM: LUCCI B 01-23 WH / REM #36410								DATE: 3/21/2025	WEATHER: Partly cloudy, 37 degrees F	
TYPE OF WORK: Wellhead Decommissioning								CLIENT: Chevron		
LAT/LONG: 40.424889 / -104.493611								PERSONNEL: EN		
ESTIMATED DEPTH TO GROUNDWATER: 6 feet bgs								OTHER OBSERVATIONS: None		
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)	-	
3/21/2025	WH01@6'	SW	0.1	N	N	-	Y	Buried or Partially Buried Vessel	-	
3/21/2025	WH01-N@5'	SC	0.3	N	N	-	Y	Separator	-	
3/21/2025	WH01-E@5'	SC	0.1	N	N	-	Y	Emission Control Device (ECD)	-	
3/21/2025	WH01-W@5'	SC	0.0	N	N	-	Y	Dump Line	-	
3/21/2025	WH01-S@5'	SC	0.0	N	N	-	Y	Wellhead	1	
3/21/2025	BKG01@5.5'	-	0.0	N	N	-	Y	Flowline	-	
3/21/2025	BKG02@5.5'	-	0.0	N	N	-	Y	Third Party Equipment:	-	
3/21/2025	BKG03@5.5'	-	0.0	N	N	-	Y	Other:	-	
								Soil Loads Removed		
								IMPACTED SOIL IDENTIFIED?		
								ESTIMATED VOLUME OF IMPACTS:		
								Date	Number	CY
								3/21/2025	4	40
								Total Removed	4	40
								Disposal Facility: North Weld		
								Groundwater Recovery		
								DATE GW ENCOUNTERED:	DEPTH: 6'	
								3/21/2025		
								GROUNDWATER IN CONTACT WITH IMPACTED SOIL?		
								No		
								LNAPL OR SHEEN OBSERVED ON GW? No		
GROUNDWATER SAMPLING								Date	BBLS	
Date/Time	Groundwater Sample ID	Depth Collected	Turbid?	Sheen?	Odor?	Photo?	Sent to lab on Ice? (Y/N)			
3/21/2025	GW01	6'	N	N	N	Y	Y			
								Total Removed		
								Disposal Facility:		





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Wellhead Closure Investigation and Environmental Summary

LUCCI B 01-23 Wellhead
ECMC Remediation Project #36410
Weld County, Colorado

Attachments:

Figure 1 – Site Location Map

Figure 2 – Soil Sample and Field Screening Locations Map

Figure 3 – Proposed Soil and Groundwater Background Sample Location

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

Table 6 – Summary of Groundwater Elevation Data and Organic Chemistry Data

Table 7 – Summary of Inorganic Groundwater Chemistry Data

Attachment A: Photographic Log

Attachment B: Wellhead Closure Checklist



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FIGURES

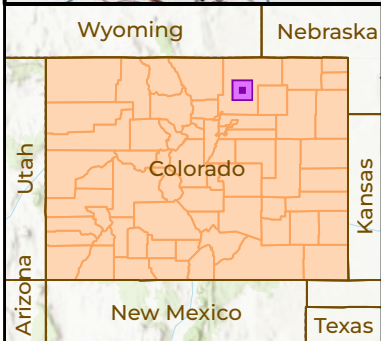
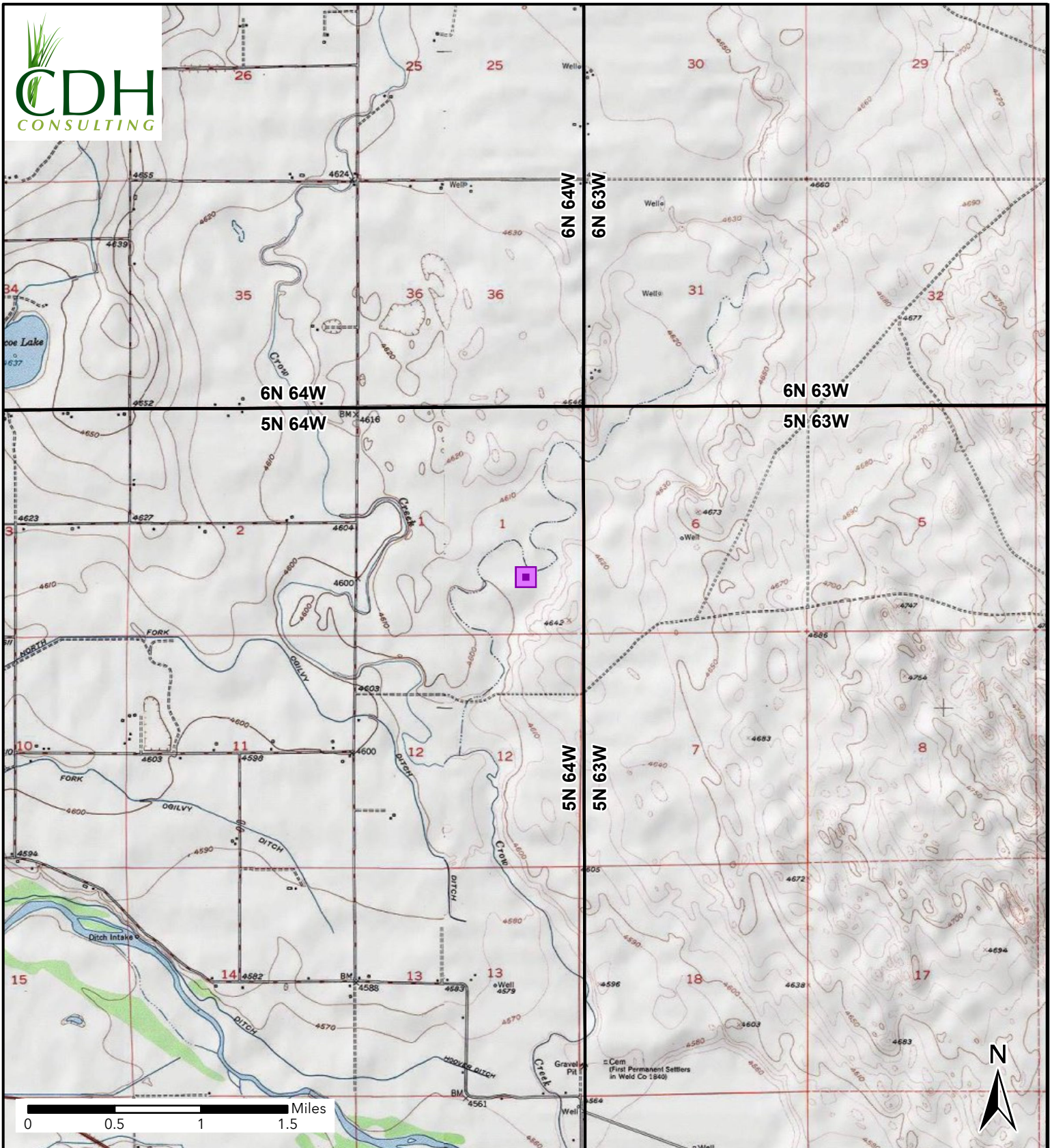



Figure 1
Site Location
LUCCI B 01-23 WH
NWSE-SEC 1-T5N-R64W
Weld County, Colorado
Chevron

 Site Location

BKG01

BKG02

WH01-W@5'
Date: 3/21/2025
Lead: **18.0** mg/kg



GW01@6'
Date: 3/21/2025
Chloride Ion: **386** mg/L
Sulfate Ion: **2920** mg/L

BKG03

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



Figure 2
Soil Sample Locations
LUCCI B 01-23 WH
NWSE-SEC 1-T5N-R64W
Weld County, Colorado
Noble Energy Inc.

- Soil Sample
- Background Sample
- Grab Groundwater Sample
- Existing Excavation

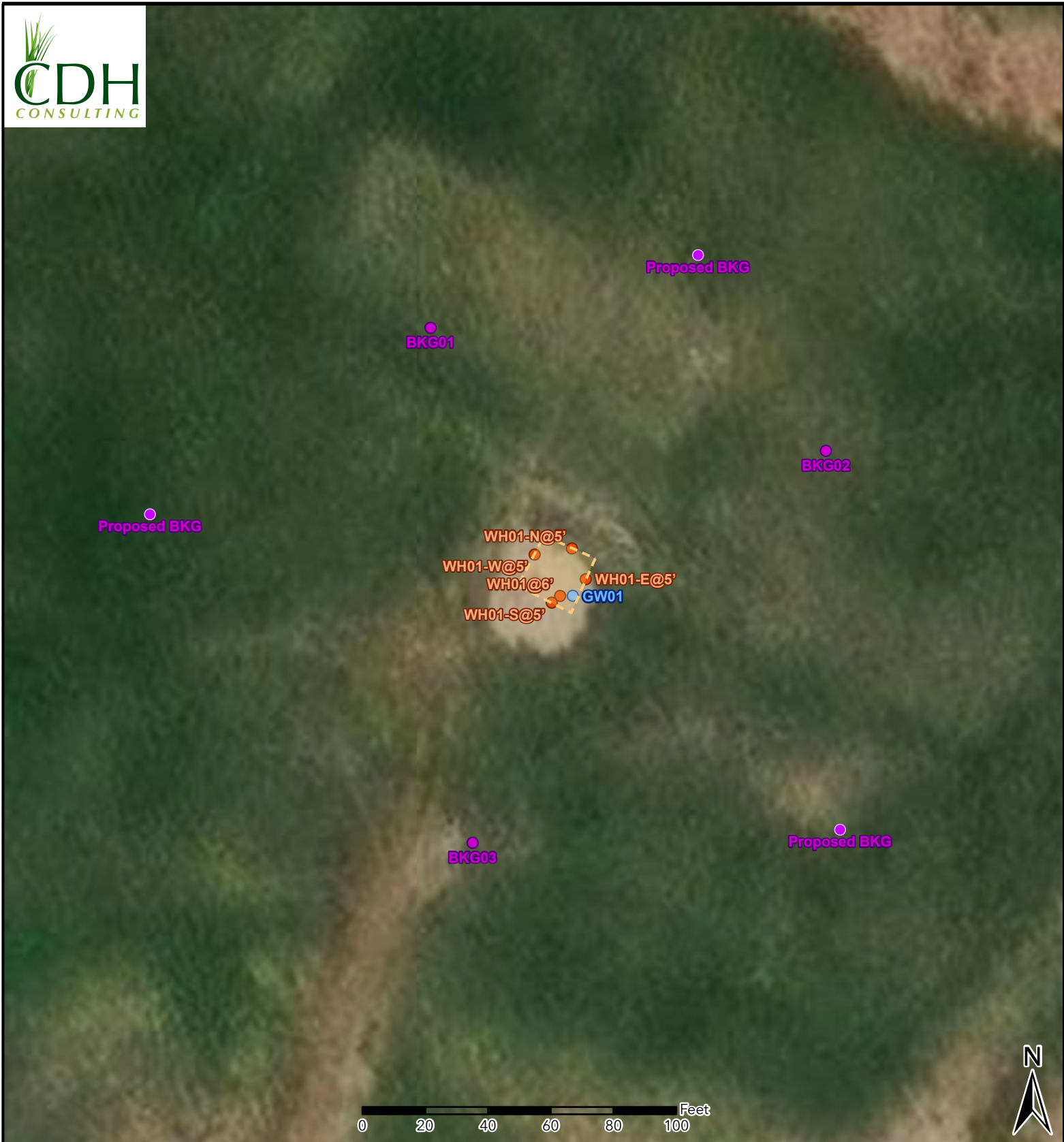


Figure 3
Proposed Soil and Groundwater
Background Sample Locations
 LUCCI B 01-23 WH
 NWSE-SEC 1-T5N-R64W
 Weld County, Colorado
 Noble Energy Inc.

- Soil Sample
- Background Sample
- Grab Groundwater Sample
- Proposed Background Soil Location and Proposed Groundwater Monitoring Well Location
- Existing Excavation



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TABLES

TABLE 1
FIELD DATA SUMMARY TABLE
NOBLE 100322
LUCCI B 01-23 WELLHEAD, WELD COUNTY, COLORADO
REM # 36410

Sample ID	Sample Date	Depth (ft)	GPS Data		PDOP Value	VOC Concentration (ppm)
			Latitude	Longitude		
WH01@6'	3/21/2025	6	40.424893	-104.493587	NM	0.1
WH01-N@5'	3/21/2025	5	40.424925	-104.493577	1.000000	0.3
WH01-E@5'	3/21/2025	5	40.424904	-104.493565	1.000000	0
WH01-W@5'	3/21/2025	5	40.424921	-104.493610	1.100000	0
WH01-S@5'	3/21/2025	5	40.424889	-104.493595	0.900000	0
BKG01@5.5'	3/21/2025	5.5	40.425071	-104.493700	0.900000	0
BKG02@5.5'	3/21/2025	5.5	40.424990	-104.493356	1.000000	0
BKG03@5.5'	3/21/2025	5.5	40.424729	-104.493664	0.900000	0.0
GW01@6'	3/21/2025	6	40.424893	-104.493576	NM	NM

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

in. = Inches

NM = Not Measured

ft. = Feet

bgs = Below ground surface

TABLE 2
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA
NOBLE 100322
LUCCI B 01-23 WELLHEAD, WELD COUNTY, COLORADO
36410

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@6'	3/21/2025	6	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<100.50	<0.50	<50	<50
WH01-N@5'	3/21/2025	5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<100.50	<0.50	<50	<50
WH01-E@5'	3/21/2025	5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<100.50	<0.50	<50	<50
WH01-W@5'	3/21/2025	5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<100.50	<0.50	<50	<50
WH01-S@5'	3/21/2025	5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<100.50	<0.50	<50	<50

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
- (<) = 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
NA - Not analyzed

TABLE 3
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA
NOBLE 100322
LUCCI B 01-23 WELLHEAD, WELD COUNTY, COLORADO
REM # 36410

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@6'	3/21/2025	6	<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
WH01-N@5'	3/21/2025	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
WH01-E@5'	3/21/2025	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
WH01-W@5'	3/21/2025	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
WH01-S@5'	3/21/2025	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

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
- (<) = 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
NA - Not analyzed

TABLE 4
SUMMARY OF SOIL SUITABILITY FOR RECLAMATION
NOBLE 100322
LUCCI B 01-23 WELLHEAD, WELD COUNTY, COLORADO
REM # 36410

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@6'	3/21/2025	6	8.62	1.70	4.70	<2.00
WH01-N@5'	3/21/2025	5	8.47	1.03	4.57	<2.00
WH01-E@5'	3/21/2025	5	8.33	2.19	8.36	<2.00
WH01-W@5'	3/21/2025	5	8.52	1.50	4.89	<2.00
WH01-S@5'	3/21/2025	5	8.45	0.309	8.61	<2.00
BKG01@5.5'	3/21/2025	5.5	8.25	0.568	12.4	<2.00
BKG02@5.5'	3/21/2025	5.5	8.92	0.186	38.2	<2.00
BKG03@5.5'	3/21/2025	5.5	8.85	0.408	14.1	<2.00
Maximum Background Concentration			8.92	0.568	38.2	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.

NA - Not analyzed

TABLE 5
SUMMARY OF METALS IN SOIL CHEMISTRY DATA
NOBLE 100322
LUCCI B 01-23 WELLHEAD, WELD COUNTY, COLORADO
REM # 36410

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@6'	3/21/2025	6	1.35	6.22	<0.200	<0.30 *	1.08	2.43	1.02	<0.260	<0.0200	5.21
WH01-N@5'	3/21/2025	5	1.79	14.4	<0.200	<0.30 *	1.99	3.49	2.16	<0.260	<0.0200	9.88
WH01-E@5'	3/21/2025	5	1.92	69.2	<0.200	<0.30 *	3.43	5.69	3.30	<0.260	0.0241	13.5
WH01-W@5'	3/21/2025	5	1.68	44.6	0.369	<0.30 *	3.03	18.0	2.62	<0.260	<0.0200	53.2
WH01-S@5'	3/21/2025	5	1.74	44.3	<0.200	<0.30 *	2.76	6.44	2.66	<0.260	<0.0200	12.1
BKG01@5.5'	3/21/2025	5.5	1.44	24.1	<0.200	<0.30 *	2.23	3.48	2.24	<0.260	<0.0200	9.55
BKG02@5.5'	3/21/2025	5.5	1.29	27.2	<0.200	<0.30 *	1.69	2.78	1.88	<0.260	<0.0200	8.41
BKG03@5.5'	3/21/2025	5.5	2.19	64.9	0.241	<0.30 *	4.18	6.54	3.63	0.277	0.0401	17.4
1.25x Maximum Background Concentration			2.74	81.1	0.301	NA	5.23	8.18	4.54	0.346	0.0501	21.75

- Bold** faced values exceed the ECMC Table 915-1 limit(s), but are within 1.25x background concentrations.
- Bold** faced values exceed the ECMC Table 915-1 limit(s) and native background concentrations.
- Red & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL).
- Non-detect background results accounted for in the highest background concentration by using the reporting limit.

ECMC = 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

NA - Not analyzed

TABLE 6
SUMMARY OF GROUNDWATER ELEVATION DATA AND ORGANIC CHEMISTRY DATA
NOBLE 100322
LUCCI B 01-23 WELLHEAD, WELD COUNTY, COLORADO
REM # 36410

Sample ID	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	Naphthalene (µg/L)	1,2,4- Trimethyl- Benzene (µg/L)	1,3,5- Trimethyl- Benzene (µg/L)	TOC Elevation (ft)	Depth to Groundwater Below TOC (ft)	Depth to Groundwater Below Ground Surface (ft)	Groundwater Elevation (ft)	LNAPL Thickness (ft)
ECMC Table 915-1 Limits		5.0	560	700	1400	140	67	67					
GW01@6'	03/21/25	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	NM	NM	6	NM	NM

1. Bold values exceed the ECMC limit(s)

2. Red highlighted groundwater analytical values indicate a regulatory exceedance

NP - No measurable LNAPL, NA - Not Analyzed, NL - No Limit, INA - Inaccessible, IW - Insufficient Water, DES - Destroyed

TABLE 7
SUMMARY OF INORGANIC GROUNDWATER CHEMISTRY DATA
NOBLE 100322
LUCCI B 01-23 WELLHEAD, WELD COUNTY, COLORADO
REM # 36410

Sample ID	Sample Date	Total Dissolved Solids (mg/L)	Chloride Ion (mg/L)	Sulfate Ion (mg/L)
ECMC Table 915-1 Limits*		<1.25 x local background	250 or <1.25 x local background	250 or <1.25 x local background
GW01@6'	45737	5800	386	2920
Background Concentration (Current)		NA	NA	NA

1. Bold values exceed the ECMC limit(s)

2. Blue highlighted groundwater analytical values indicate a regulatory exceedance

NP - No measurable LNAPL, NA - Not Analyzed, INA - Inaccessible, IW - Insufficient Water, DES - Destroyed

*Dissolved metals refer to Colorado Regulation 41 Standards



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ATTACHMENT A
PHOTOGRAPHIC LOG

Attachment A - Photographic Log

LUCCI B 01-23 WH
Chevron REM #36410
March 21, 2025



Photo 1: View of wellhead excavation with groundwater infiltration, facing north

Attachment A - Photographic Log

LUCCI B 01-23 WH
Chevron REM #36410
March 21, 2025



Photo 2: View of wellhead excavation with groundwater, facing east

Attachment A - Photographic Log

LUCCI B 01-23 WH
Chevron REM #36410
March 21, 2025



Photo 3: View of wellhead excavation with groundwater, facing west

Attachment A - Photographic Log

LUCCI B 01-23 WH
Chevron REM #36410
March 21, 2025



Photo 4: View of wellhead excavation with groundwater, facing southwest



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ATTACHMENT B
WELLHEAD CLOSURE CHECKLISTS

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
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Site Name & COGCC Facility Number: LUCCI B 01-23 WH & 05-123-21508	Date: 6/3/2025	Remediation Project #: 36410
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Associated Wells: LUCCI B 01-23	Age of Site: 9/28/2003 - 8/19/2024	Number of Photos Attached: 5
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Location: 40.424889, -104.493611	Estimated Facility Size (acres): 0.1
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General Condition of Site: (General observations regarding housekeeping, corrosion, waste management, etc.) **Cropland**

USCS Soil Type: Medium to coarse sand and clayey sands	Estimated Depth to Groundwater: 6 feet bgs
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Hydrocarbon Impacted Soils / Spills : None observed

Salt Crusted Soils or Impacted Vegetation: None observed

Wellhead(s)

Well API	Age	Condition of surface around wellhead	PID Readings	Condition of subsurface (staining present)	PID Readings	Sample taken? Location/Sample ID#	Photo Number(s)
05-123-215-8	2003-2024	Good	0.0 - 0.3 ppm	No staining observed	0.0 - 0.3 ppm	Yes, see attached	See attached

Other observations regarding wellheads: None

Summary

Was impacted soil identified?
No Yes - less than 10 cubic yards Yes - more than 10 cubic yards

Total number of samples field screened: 5	Total number of samples collected: 5
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Highest PID Reading: 0.3 ppm	Total number of samples submitted to lab for analysis: 5
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If more than 10 cubic yards of impacted soil were observed:

Vertical extent:	Estimated spill volume:
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Lateral extent:	Volume of soil removed:
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Is additional investigation required?

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: 6 ft bgs	Was remedial groundwater removal conducted? Yes	No
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Date Groundwater was encountered: 3/21/2025	Commencement date of removal: N/A
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Sheen on groundwater? Yes No	Volume of groundwater removed prior to sampling: None
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Free product observed? Yes No	Volume of groundwater removed post sampling: None
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Total number of samples collected: 1	Total Volume of groundwater removed: None
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Total number of samples submitted to lab for analysis: 1	
--	--