

State of Colorado  
Energy & Carbon Management Commission1120 Lincoln Street, Suite 801, Denver, Colorado 80203  
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Document Number:

403862803

Receive Date:

07/24/2024

Report taken by:

Krystal Heibel

## Site Investigation and Remediation Workplan (Supplemental Form)

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. However, this shall not preclude the Operator from taking immediate action to protect public health or safety, the environment, wildlife, or livestock.

This Form 27 describes site conditions as currently understood by the Operator; approval of this Form 27 by ECOM is based on the site conditions accurately described herein; any changes in site conditions identified during or subsequent to the performance of the approved workplan may necessitate additional investigation or remediation which shall be described on a supplemental Form 27. This Form 27 is intended to provide basic information regarding the proposed site investigation and remediation actions, but the workplan may be more fully described in attached documentation.

Closure request is not available for an Initial Site Investigation and Remediation Workplan.

## OPERATOR INFORMATION

Name of Operator: CHACO ENERGY COMPANY	Operator No: 10017	Phone Numbers
Address: P O BOX 1587		Phone: (303) 981-3840
City: DENVER	State: CO	Zip: 80201
Contact Person: Matt Nelson	Email: matt@chacoenergy.com	Mobile: ( )

## PROJECT, PURPOSE &amp; SITE INFORMATION

## PROJECT INFORMATION

Remediation Project #: 24530 Initial Form 27 Document #: 403134907

## PURPOSE INFORMATION

- ☒ Rule 913.c.(1): Pit or Cuttings Trench closure.
- ☐ Rule 913.c.(2): Buried or partially buried vessel closure, which will be by removal.
- ☐ Rule 913.c.(3): Remediation of Spill and Releases pursuant to Rule 912.
- ☐ Rule 913.c.(4): Land treatment of Oily Waste pursuant to Rule 905.e.
- ☐ Rule 913.c.(5): Closure of Centralized E&P Waste Management Facilities pursuant to Rule 907.h.
- ☐ Rule 913.c.(6): Remediation of impacted Groundwater pursuant to Rule 915.e.(3).D, and the contaminant concentrations in Table 915-1.
- ☐ Rule 913.c.(7): Investigation and remediation of natural gas in soil or Groundwater.
- ☐ Rule 913.c.(8): When requested by the Director due to any potential risk to soil, Groundwater, or surface water.
- ☒ Rule 913.c.(9): Decommissioning of Oil and Gas Facilities.
- ☐ Rule 913.g: Changes of Operator.
- ☐ Rule 915.b: Request to leave elevated inorganics in situ.
- ☐ Other: \_\_\_\_\_

## SITE INFORMATION

Yes Multiple Facilities

Facility Type: PIT	Facility ID: 117932	API #: _____	County Name: WELD
Facility Name: KINDT 1	Latitude: 40.593338	Longitude: -103.726530	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NENW	Sec: 11	Twp: 7N	Range: 57W Meridian: 6 Sensitive Area? Yes

  

Facility Type: WELL	Facility ID: _____	API #: 123-15182	County Name: WELD
Facility Name: WELD COUNTY-KINDT 1	Latitude: 40.593780	Longitude: -103.726960	
** correct Lat/Long if needed: Latitude: 40.593780		Longitude: -103.726960	
QtrQtr: NENW	Sec: 11	Twp: 7N	Range: 57W Meridian: 6 Sensitive Area? Yes

## SITE CONDITIONS

General soil type - USCS Classifications OH

Most Sensitive Adjacent Land Use Non-irrigated  
Cropland;  
agricultural

Is domestic water well within 1/4 mile? No

Is surface water within 1/4 mile? No

Is groundwater less than 20 feet below ground surface? No

### **Other Potential Receptors within 1/4 mile**

Mule Deer Severe Winter Range  
Mule Deer Winter Concentration Area  
Pronghorn Winter Concentration Area  
Groundwater is anticipated to be greater than 75 feet bgs

## SITE INVESTIGATION PLAN

### TYPE OF WASTE:

- ☒ E&P Waste      ☒ Other E&P Waste      ☐ Non-E&P Waste
- ☒ Produced Water      ☐ Workover Fluids
- ☐ Oil      ☐ Tank Bottoms
- ☐ Condensate      ☐ Pigging Waste
- ☐ Drilling Fluids      ☐ Rig Wash
- ☐ Drill Cuttings      ☐ Spent Filters
- ☒ Pit Bottoms
- ☐ Other (as described by EPA)

### DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	SOILS	Produced Water Pit	Laboratory analysis

### INITIAL ACTION SUMMARY

Description of initial action or emergency response measures take to abate, investigate, and/or remediate impacts associated with E&P Waste.

This Form 27-Supplemental report is being submitted to provide notification of proposed additional investigation excavation and soil sampling activities. Based on the laboratory analytical results from the investigation soil sampling event on May 28, 2024, organic and inorganic soil suitability constituents of concern were above the Table 915-1 residential soil screening concentrations in the former produced water pit. Excavation and additional delineation activities are required at the produced water pit.

### PROPOSED SAMPLING PLAN

#### Proposed Soil Sampling

☒ Will soil samples be collected as part of this investigation? ( Number, type (grab/composite), analyses, and locations of samples ):

Soil samples will be collected from the produced water pit, and earthen berms. Analytical results will be compared to residential soil screening levels based on the depth to groundwater and local lithology. Arsenic and pH concentrations in previously collected confirmation samples will be compared to 1.25x local background samples as an alternate to the ECOM Table 915-1 standard. Based on soil samples collected from the spills to date the Operator is requesting a reduced analytical suite to include EC, SAR, boron, BTEX, 124-TMB, 135-TMB, and TPH.

#### Proposed Groundwater Sampling

☐ Will groundwater samples be collected as part of this investigation? ( Number, analyses, and locations of samples ):

Groundwater was not encountered during site investigation activities and based on the nearest registered water wells, is anticipated to be greater than 75 feet below ground surface in this area.

#### Proposed Surface Water Sampling

☐ Will surface water samples be collected as part of this investigation? ( Number, analyses, and locations of samples ):

Surface water is not present.

### Additional Investigative Actions

☐ Additional alternative investigative actions described in attached Site Investigation Plan ( summary ):

## SITE INVESTIGATION REPORT

### SAMPLE SUMMARY

#### Soil

Number of soil samples collected      23

Number of soil samples exceeding 915-1      15

#### NA / ND

--      Highest concentration of TPH (mg/kg)      665

--      Highest concentration of SAR      268

Was the areal and vertical extent of soil contamination delineated? No

BTEX > 915-1 No

Approximate areal extent (square feet) 15000

Vertical Extent > 915-1 (in feet) 3

#### Groundwater

Number of groundwater samples collected 0

Highest concentration of Benzene (µg/l)

Was extent of groundwater contaminated delineated? No

Highest concentration of Toluene (µg/l)

Depth to groundwater (below ground surface, in feet)

Highest concentration of Ethylbenzene (µg/l)

Number of groundwater monitoring wells installed

Highest concentration of Xylene (µg/l)

Number of groundwater samples exceeding 915-1

Highest concentration of Methane (mg/l)

#### Surface Water

0 Number of surface water samples collected

Number of surface water samples exceeding 915-1

If surface water is impacted, other agency notification may be required.

### OTHER INVESTIGATION INFORMATION

☐ Were impacts to adjacent property or offsite impacts identified?

☒ Were background samples collected as part of this site investigation?

Additional background samples were collected during the investigation sampling event on May 28, 2024. Arsenic and pH concentrations in previously collected confirmation samples will be compared to 1.25x local background samples as an alternate to the ECMC Table 915-1 standard.

☐ Was investigation derived waste (IDW) generated as part of this investigation?

Volume of solid waste (cubic yards)

Volume of liquid waste (barrels)

☒ Is further site investigation required?

Further site investigation is required to delineate the horizontal and vertical extents of elevated electrical conductivity, SAR, boron, and TPH.

### REMEDIAL ACTION PLAN

Does this Supplemental Form 27A include changes to a previously approved Remedial Action Plan? No

#### SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

Further site investigation is required to delineate the horizontal and vertical extents of electrical conductivity, SAR, boron, and TPH as described in this report. Any hydrocarbon-impacted material will be transported off-site to a licensed disposal facility in accordance with Rules 905 and 906.

#### REMEDIATION SUMMARY

Describe how remediation of existing impacts to soil and groundwater is to be accomplished (i.e. summarize remedial action plan). Provide a brief narrative description including: technical justification, schedule for implementation, estimated time to attain NFA status, plus plans and specifications for the selected remedial action technology.

If reportable hydrocarbon impacts, as defined in Rule 912.b., are discovered, a site-specific remediation plan will be developed and submitted via a Supplemental Form 27.

#### Soil Remediation Summary

☐ In Situ

☐ Ex Situ

Bioremediation ( or enhanced bioremediation )

Excavate and offsite disposal

Chemical oxidation

If Yes: Estimated Volume (Cubic Yards)

Air sparge / Soil vapor extraction

Name of Licensed Disposal Facility or ECMC Facility ID #

Natural Attenuation

Excavate and onsite remediation

Other

Land Treatment

\_\_\_\_\_ Bioremediation (or enhanced bioremediation)

\_\_\_\_\_ Chemical oxidation

\_\_\_\_\_ Other \_\_\_\_\_

### **Groundwater Remediation Summary**

\_\_\_\_\_ Bioremediation ( or enhanced bioremediation )

\_\_\_\_\_ Chemical oxidation

\_\_\_\_\_ Air sparge / Soil vapor extraction

\_\_\_\_\_ Natural Attenuation

\_\_\_\_\_ Other \_\_\_\_\_

### **GROUNDWATER MONITORING**

If groundwater has been impacted, describe proposed monitoring plan, including # of wells or sample points, monitoring schedule, analytical methods, points of compliance. Attach a groundwater monitoring location diagram.

## REMEDIATION PROGRESS UPDATE

### PERIODIC REPORTING

#### Approved Reporting Schedule:

☒ Quarterly☐ Semi-Annually☐ Annually☐ Other

#### ☐ Request Alternative Reporting Schedule:

☐ Semi-Annually☐ Annually☐ Other

Rule 913.e:

After initial approval of a Form 27, the Operator will provide quarterly update reports in a Supplemental Form 27 to document progress of site investigation and remediation, unless an alternative reporting schedule has been requested by the Operator and approved by the Director. The Director may request a more frequent reporting schedule based on site-specific conditions.

#### Report Type:

☐ Groundwater Monitoring☐ Land Treatment Progress Report☐ O&M Report☒ Other Decommissioning investigation results

### Adequacy of Operator's General Liability Insurance and Financial Assurance

Describe the adequacy of the Operator's general liability insurance and Financial Assurance to fully address the anticipated costs of Remediation, including the estimated remaining cost for this project (below).

If this information has been provided on a Form 27 within the last 12 months, provide the Document Number of that form.

Operator has appropriate insurance coverage per Rule 705. Document # 403115230

Operator anticipates the remaining cost for this project to be: \$ 50000

### WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? \_\_\_\_\_

Describe beneficial use, if any, of E&P Waste derived from this remediation project:

Volume of E&P Waste (solid) in cubic yards \_\_\_\_\_

E&P waste (solid) description \_\_\_\_\_

ECMC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-ECMC Disposal Facility: \_\_\_\_\_

Volume of E&P Waste (liquid) in barrels \_\_\_\_\_

E&P waste (liquid) description \_\_\_\_\_

ECMC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-ECMC Disposal Facility: \_\_\_\_\_

## REMEDIATION COMPLETION REPORT

### REMEDIATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? No \_\_\_\_\_

If YES:

☐ Compliant with Rule 913.h.(1).☐ Compliant with Rule 913.h.(2).☐ Compliant with Rule 913.h.(3).

Do all soils meet Table 915-1 standards? \_\_\_\_\_

Does the previous reply indicate consideration of background concentrations? \_\_\_\_\_

Does Groundwater meet Table 915-1 standards? \_\_\_\_\_

Is additional groundwater monitoring to be conducted? \_\_\_\_\_

Operator shall comply with the ECMC 1000-Series Reclamation Requirements for all impacted and disturbed areas.

## RECLAMATION PLAN

### RECLAMATION PLANNING

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing.

Reclamation will be completed in accordance with COGCC 1000 Series Rules and a reclamation plan will be proposed in a Form 27-Supplemental report subsequent to additional investigation activities.

Is the described reclamation complete? No

Does the reclamation described herein constitute interim or final reclamation of the Oil and Gas Location?

☐ Interim

☐ Final

Did the Surface Owner provide the seed mix? \_\_\_\_\_

If YES, does the seed mix comply with local soil conservation district recommendations? \_\_\_\_\_

Did the local soil conservation district provide the seed mix? \_\_\_\_\_

### SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. \_\_\_\_\_

Proposed date of completion of Reclamation. \_\_\_\_\_

## IMPLEMENTATION SCHEDULE

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

### PRIOR DATES

Date of Surface Owner notification/consultation, if required. 08/22/2022

Actual Spill or Release date, or date of discovery. 05/28/2024

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 08/31/2023

Proposed site investigation commencement. 08/31/2023

Proposed completion of site investigation. 11/30/2024

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 09/01/2024

Proposed date of completion of Remediation. 04/01/2025

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

☐ Change from approved implementation schedule per Rule 913.d.(2).

Basis for change in implementation schedule:

**OPERATOR COMMENT**

Based on soil samples collected from the spills to date the Operator is requesting a reduced analytical suite to include EC, SAR, boron, BTEX, 124-TMB, 135-TMB, and TPH.

I hereby certify all statements made in this form are to the best of my knowledge true, correct, and complete.

Signed: dkinnaird@cgrs.com

Title: Consultant

Submit Date: 07/24/2024

Email: dkinnaird@cgrs.com

Based on the information provided herein, this Application for Site Investigation and Remediation Workplan complies with ECMC Rules and applicable orders and is hereby approved.

ECMC Approved: Krystal Heibel

Date: 07/30/2024

Remediation Project Number: 24530

**COA Type****Description**

	Operator shall investigate the Table 915-1 EC exceedance at BKG 03 @ 2 to determine that the analytics do not indicate the presence of a salt kill next to the pit area.
1 COA	

**ATTACHMENT LIST**

Upon approval, the approved Form 27 and all listed attachments will be indexed to the Remediation Project file. Only the approved Form 27 will also be indexed to the related Facilities.

**Att Doc Num****Name**

403862803	FORM 27-SUPPLEMENTAL-SUBMITTED
403862908	ANALYTICAL RESULTS
403862918	ANALYTICAL RESULTS
403862924	SOIL SAMPLE LOCATION MAP

Total Attach: 4 Files

**General Comments****User Group****Comment****Comment Date**

Environmental	"Based on soil samples collected from the spills to date the Operator is requesting a reduced analytical suite to include EC, SAR, boron, BTEX, 124-TMB, 135-TMB, and TPH."  ECMC acknowledges the operator's reduced analyte suite request and does not approve it at this time due to pH exceedances.	07/30/2024
Environmental	Per Doc# 403533126, Based on the Operator's assessment of background conditions at the subject location, arsenic results for confirmation soil samples appear to be representative of background as opposed to E&P activities. Therefore, the Operator's demonstration of background will be accepted as an alternative to the default standard in ECMC's Table 915-1.	07/30/2024
Environmental	Per Doc# 403533126, ECMC approves Operator's request for use of Residential SSLs based on the depth to groundwater and the local lithology suggesting a pathway to groundwater at this location is not likely.	07/30/2024

Total: 3 comment(s)