

State of Colorado
Energy & Carbon Management Commission

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403501857
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Report taken by:
Krystal Heibel

Site Investigation and Remediation Workplan (Initial 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 COGCC 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: <u>CHACO ENERGY COMPANY</u>	Operator No: <u>10017</u>	Phone Numbers
Address: <u>P O BOX 1587</u>		
City: <u>DENVER</u>	State: <u>CO</u>	Zip: <u>80201</u>
Contact Person: <u>Matt Nelson</u>	Email: <u>matt@chacoenergy.com</u>	Phone: <u>(303) 9813840</u>
		Mobile: <u>(303) 9813840</u>

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 31160 Initial Form 27 Document #: 403501857

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

No Multiple Facilities

Facility Type: <u>OFF-LOCATION FLOWLINE</u>	Facility ID: <u>473994</u>	API #: _____	County Name: _____
Facility Name: _____	Latitude: <u>40.699234</u>	Longitude: <u>-103.394543</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: _____	Sec: _____	Twtp: _____	Range: _____
		Meridian: _____	Sensitive Area? <input type="checkbox"/> Yes

SITE CONDITIONS

General soil type - USCS Classifications CL Most Sensitive Adjacent Land Use Cropland
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

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- | | | |
|--|--|--|
| <input checked="" type="checkbox"/> E&P Waste | <input type="checkbox"/> Other E&P Waste | <input type="checkbox"/> Non-E&P Waste |
| <input checked="" type="checkbox"/> Produced Water | <input type="checkbox"/> Workover Fluids | _____ |
| <input type="checkbox"/> Oil | <input type="checkbox"/> Tank Bottoms | |
| <input type="checkbox"/> Condensate | <input type="checkbox"/> Pigging Waste | |
| <input type="checkbox"/> Drilling Fluids | <input type="checkbox"/> Rig Wash | |
| <input type="checkbox"/> Drill Cuttings | <input type="checkbox"/> Spent Filters | |
| | <input type="checkbox"/> Pit Bottoms | |
| | <input type="checkbox"/> Other (as described by EPA) | _____ |

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	SOILS	Undetermined	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.

On May 22, 2023 produced water was released to the surface from a below grade produced water transfer line and a hole in the line. Upon discovery, the transfer pump was immediately shut down and the water line was isolated. Initial response activities for soil investigation was performed on June 30, 2023, using hand augur drilling and sampling. However, due to inclement weather and inability to access all areas of the site, only three samples were able to be collected. Per Form 44 Document #403493775, on July 12, 2023, the water line was exposed, removed, and replaced. On August 2, 2023, another hand augur soil sampling event was performed and one "source" area sample (SSE02@1') near the release point was collected and two background samples were collected at the locations illustrated on the attached Soil Sample Location Map. Soil samples were submitted for the Table 915-1 list of analytes and the results are presented on the attached summary tables and laboratory analytical reports.

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):

Based on the initial soil sample investigation, impacts to soil above the Table 915-1 protection of groundwater soil screening level concentrations are present. Impacted soil remediation and supplemental investigation is required. Impacted soil excavation and disposal remediation methods will be conducted and soil samples will be collected from the extents of the excavation for Table 915-1 analysis.

Proposed Groundwater Sampling

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

Groundwater is not anticipated to be encountered at the Site. The nearest groundwater wells indicate a groundwater level of <200 feet below ground surface.

Proposed Surface Water Sampling

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

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 6

Number of soil samples exceeding 915-1 4

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

Approximate areal extent (square feet) 300

NA / ND

-- Highest concentration of TPH (mg/kg) 1177.8

-- Highest concentration of SAR 22.285

BTEX > 915-1 Yes

Vertical Extent > 915-1 (in feet) 4

Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet)

Number of groundwater monitoring wells installed

Number of groundwater samples exceeding 915-1

Highest concentration of Benzene (µg/l)

Highest concentration of Toluene (µg/l)

Highest concentration of Ethylbenzene (µg/l)

Highest concentration of Xylene (µg/l)

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?

Two background samples were collected at the locations illustrated on the attached Soil Sample Location Figure and submitted for laboratory analysis of the Table 915-1 list of soil suitability and metals analytes. The results for the background samples were below the Table 915-1 standards.

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?

Soil samples will be field screened using a photoionization detector (PID) and sampled during excavation remediation activities. Soil samples will be submitted for Table 915-1 analysis.

REMEDIAL ACTION PLAN

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

Impacted soil will be removed using mechanical excavation and transported to an approved landfill for disposal. Soil samples will be collected from the excavation extents, field screened using a photoionization detector (PID) and submitted for Table 915-1 analysis.

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.

Impacted soil will be removed using mechanical excavation and transported to an approved landfill for disposal. Soil samples will be collected from the excavation extents, field screened using a photoionization detector (PID) and submitted for Table 915-1 analysis. Samples will be collected from the base and the sidewalls of the excavation at approximate 20 foot intervals and/or where indicators of petroleum hydrocarbon and/or produced water impacts are apparent. Remediation activities are anticipated to be completed as soon as field crews are available.

Soil Remediation Summary

In Situ

Ex Situ

 Bioremediation (or enhanced bioremediation)

 Excavate and offsite disposal

Yes

_____ Chemical oxidation
 _____ Air sparge / Soil vapor extraction
 _____ Natural Attenuation
 _____ Other _____

_____ If Yes: Estimated Volume (Cubic Yards) _____ 100
 _____ Name of Licensed Disposal Facility or COGCC Facility ID # _____
 _____ Excavate and onsite remediation
 _____ 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 Remedial Action Plan and Spill Number Closure Request

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 anticipates the remaining cost for this project to be: \$ 10000

WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? No

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 _____

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: _____

Volume of E&P Waste (liquid) in barrels _____

E&P waste (liquid) description _____

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: _____

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.

Subsequent to remediation activities, a reclamation plan will be submitted for Commission approval.

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. 05/23/2023

Actual Spill or Release date, or date of discovery. 05/22/2023

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 06/30/2023

Proposed site investigation commencement. 06/30/2023

Proposed completion of site investigation. _____

REMEDIAL ACTION DATES

Proposed start date of Remediation. _____

Proposed date of completion of Remediation. _____

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

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

Signed: Drezden Kinnaird

Title: Consultant

Submit Date: 08/18/2023

Email: dkinnaird@cgrs.com

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

COGCC Approved: Krystal Heibel

Date: 08/25/2023

Remediation Project Number: 31160

COA Type**Description**

	If a spill/release of produced fluids or E&P waste causes an impact to soil, the operator should perform sampling and analysis to fully delineate the lateral and vertical extent of those impacts.
	Operator shall collect confirmation soil samples as described in the Rule 915.e.(2) Guidance Document. Operator will analyze soil samples for TPH (C6-C36), Table 915-1 Organic Compounds in Soil, Table 915-1 metals, and Table 915-1 Soil Suitability for Reclamation (Electrical conductivity, Sodium adsorption ratio, and pH by saturated paste method, boron (hot water soluble)) at an accredited lab.
	Operator shall submit reports of site investigation including all laboratory analytical results for all samples collected, per Rule 913.h.(4).A.. Per the 900 Series rules 915.e "... Analyses of samples will be performed by laboratories that maintain state or national accreditation programs.." The main accreditation programs are National Environmental Laboratory Accreditation Program (NELAP) and National Environmental Laboratories Accreditation Conference (NELAC). Not only is this accreditation required the lab has to be accredited for each specific analyte.
3 COAs	

Attachment Check 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**

403501857	INVESTIGATION/REMEDATION WORKPLAN (INITIAL)
403502171	ANALYTICAL RESULTS
403502174	ANALYTICAL RESULTS
403502175	ANALYTICAL RESULTS
403502176	ANALYTICAL RESULTS
403502177	ANALYTICAL RESULTS
403502193	SITE MAP
403502194	SOIL SAMPLE LOCATION MAP
403509989	FORM 27-INITIAL-SUBMITTED

Total Attach: 9 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Environmental	"Soil samples will be collected from the excavation extents, field screened using a photoionization detector (PID) and submitted for Table 915-1 analysis. Samples will be collected from the base and the sidewalls of the excavation at approximate 20 foot intervals and/or where indicators of petroleum hydrocarbon and/or produced water impacts are apparent. Remediation activities are anticipated to be completed as soon as field crews are available."	08/25/2023

Total: 1 comment(s)