

State of Colorado Oil and Gas Conservation Commission

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403263566

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01/09/2023

Report taken by:

Laurel Anderson

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 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: TAPROOT ROCKIES MIDSTREAM LLC	Operator No: 10718	Phone Numbers Phone: (701) 509-2063 Mobile: ()
Address: 555 17TH STREET SUITE 800		
City: DENVER	State: CO Zip: 80202	
Contact Person: Dave Brazeal	Email: dbrazeal@taprootep.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 21046 Initial Form 27 Document #: 402863200

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: SPILL OR RELEASE	Facility ID: 480563	API #: _____	County Name: WELD
Facility Name: Hale East PW Leak		Latitude: 40.651669	Longitude: -104.085683
** correct Lat/Long if needed: Latitude: 40.650720		Longitude: -104.085289	
QtrQtr: NWNW	Sec: 22	Twp: 8N	Range: 60W Meridian: 6 Sensitive Area? No

SITE CONDITIONS

General soil type - USCS Classifications SC Most Sensitive Adjacent Land Use 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

None

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	<500 sq. ft.	soil analytical results

INITIAL ACTION SUMMARY

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

The leak was discovered NE of the Bison Hale well pad on 8/18/21. It was determined to be from the Taproot Produced Water Transfer system, just east of a previous leak. The system was shut down, isolated, and cleanup began. The spill occurred on land owned by Taproot. The 4" Thermoflex 750 psi pipeline had buckled and the thin spot created by the buckling failed at about 416 psig (well below the 750 psig rating). The piping was in service since January 2021. The Thermoflex piping has now been replaced with Flexsteel along the whole extent of this segment.

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):

Additional soil samples were collected as part of the reclamation planning and Site Reclamation Plan being developed. Soil sampling is determined to be complete in accordance with the developed reclamation plan

Proposed Groundwater Sampling

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

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):

A reclamation plan was developed with the help of SWCA Consultants, and in accordance with COGCC guidance Rule 915b and the draft reclamation plan provided by the COGCC, to receive NFA determination.

SITE INVESTIGATION REPORT**SAMPLE SUMMARY**

Soil

Number of soil samples collected 21

Number of soil samples exceeding 915-1 9

Was the areal and vertical extent of soil contamination delineated? Yes

Approximate areal extent (square feet) 1000

Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet) 110

Number of groundwater monitoring wells installed 0

Number of groundwater samples exceeding 915-1 0

Surface Water

0 Number of surface water samples collected

0 Number of surface water samples exceeding 915-1

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

NA / ND

-- Highest concentration of TPH (mg/kg) 85

-- Highest concentration of SAR 10.5

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 5

NA Highest concentration of Benzene (µg/l)

NA Highest concentration of Toluene (µg/l)

NA Highest concentration of Ethylbenzene (µg/l)

NA Highest concentration of Xylene (µg/l)

NA Highest concentration of Methane (mg/l)

OTHER INVESTIGATION INFORMATION☐ Were impacts to adjacent property or offsite impacts identified?☒ Were background samples collected as part of this site investigation?

One background sample was collected from the initial Hale release along the same segment of pipe. The soil sampling results are included in Table 1. Table 2 are the results from the the second Hale release. The background sample was collected from nearby unaffected soil, and indicated elevated arsenic, barium, and selenium. An additional background sample was collected to assist with reclamation planning.

☐ 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?**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.

Limited remaining exceedances of Table 915 are to be left in place in accordance with rule 915b, development and implementation of a Comprehensive Reclamation Plan.

REMEDIAL ACTION 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.

A final reclamation plan was developed that satisfies COGCC 900 series rules, allowing for limited exceedances of Table 915 to be left in place below the primary root zone. Closure and NFA determination are requested following collection of clean confirmation samples on 5/18/2022. Delineation of reclamation parameters exceeding Table 915 within the root zone has been completed.

Soil Remediation Summary☒ In Situ☐ Ex Situ

No Bioremediation (or enhanced bioremediation)

Excavate and offsite disposal

No Chemical oxidation

If Yes: Estimated Volume (Cubic Yards)

Name of Licensed Disposal Facility or COGCC Facility ID #

Excavate and onsite remediation

Land Treatment

Chemical oxidation

Other

No Bioremediation (or enhanced bioremediation)

No Air sparge / Soil vapor extraction

No Other

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.

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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 Reclamation Plan

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: \$ _____

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: _____

REMEDIATION COMPLETION REPORT

REMEDIATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? Yes _____

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? Yes _____

Does the previous reply indicate consideration of background concentrations? Yes _____

Does Groundwater meet Table 915-1 standards? Yes _____

Is additional groundwater monitoring to be conducted? _____

Operator shall comply with the COGCC 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.

A reclamation plan has been developed to meet the requirements of COGCC guidance Rule 915b. Closure and NFA determination will be reached with the approval of the attached reclamation plan.

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? Yes

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

Did the local soil conservation district provide the seed mix? _____

SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. 04/01/2023

Proposed date of completion of Reclamation. 05/31/2023

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. 08/19/2021

Actual Spill or Release date, or date of discovery. 08/18/2021

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 08/19/2021

Proposed site investigation commencement. 04/04/2022

Proposed completion of site investigation. 06/01/2022

REMEDIAL ACTION DATES

Proposed start date of Remediation. 04/04/2022

Proposed date of completion of Remediation. 06/01/2022

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

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

Signed: Dale Hunt

Title: VP of Engineering

Submit Date: 01/09/2023

Email: DHunt@taprootep.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: 05/18/2023

Remediation Project Number: 21046

COA Type**Description**

	Indicate why sampling locations: SW-10, SW-11, SW-12, SW-13, SW-14, and SW-15 were not sampled for arsenic on the supplemental Form 27 submittal.
	Operator shall provide the analytical results of the background sample that show arsenic concentrations on the supplemental Form 27 submittal.
	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.
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**

403263566	FORM 27-SUPPLEMENTAL-SUBMITTED
403263765	ANALYTICAL RESULTS
403263779	RECLAMATION PLAN
403263781	SOIL SAMPLE LOCATION MAP

Total Attach: 4 Files

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

Environmental	The soil suitability plan cannot be reviewed until all non-soil suitability standards have been remediated and the soil suitability impacts are horizontally and vertically delineated.	05/18/2023
Environmental	Arsenic levels from the 8-20-21 and 9-24-21 sampling events exceed Residential SSLs.	05/16/2023
Environmental	Residential Soil Screening Levels were approved in the Form 27 Initial (Doc #402863200)	04/17/2023

Total: 3 comment(s)