

State of Colorado Oil and Gas Conservation Commission

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Receive Date:

Report taken by:

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
Address: 555 17TH STREET SUITE 800		Phone: (701) 509-2063
City: DENVER	State: CO	Zip: 80202
Contact Person: Dave Brazeal	Email: dbrazeal@taprootep.com	Mobile: ()

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 21050 Initial Form 27 Document #: 402869921

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: all soils in excess of Table 915 as a result of the release have been removed.

SITE INFORMATION

No Multiple Facilities

Facility Type: SPILL OR RELEASE	Facility ID: 480564	API #:	County Name: WELD
Facility Name: Boomslang 14B PW Leak	Latitude: 40.659458	Longitude: -104.049692	
** correct Lat/Long if needed: Latitude: 40.659160		Longitude: -104.049033	
QtrQtr: NESE	Sec: 14	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

Domestic water well located to the north (permit# 43844) is not operation and has not been used for years per well owner.

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	<1000 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 on the Bison Boomslang 14B well pad on 08/18/2021. It was determined to be from the Taproot Produced Water Transfer system. The system was shut down, isolated, and cleanup began. Most of the spill was contained on pad and within the retention pond built with the pad. A section of 6" Thermoflex 750 psi pipeline had buckled, and the thin spot created by the buckling failed at about 482 psig (well below the 750 psig rating). The piping had been in service since January of 2020. Taproot replaced all Thermoflex piping on this line with Flexsteel, and will no longer be using Thermoflex piping on any future lines.

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 samples were collected surrounding soil sample SS1 due to an exceedance of SAR. Samples from the retention pond exceeded Table 915, but not due to the release. Elevated pH is attributed to the evaporitic nature of the retention pond. The retention pond is part of the facility infrastructure and will not require additional remediation at this time.

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):

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 26

Number of soil samples exceeding 915-1 15

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

Approximate areal extent (square feet) 6900

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

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) 260

-- Highest concentration of SAR 17.9

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 9

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 (BS1) from an area unaffected by the produced water release. The background sample indicated elevated Arsenic, barium, selenium, and pH in the soil.

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

Volume of solid waste (cubic yards) 10

Volume of liquid waste (barrels) 0

☐ Is further site investigation required?

vertical and spatial delineation has been completed, all impacted soils have been removed, and interim reclamation completed.

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.

Additional soil excavation surrounding soil sample SS1 was excavated and confirmation soil samples SS8, SS9, and SS10 were collected following excavation. Limited exceedances of Table 915-1 of pH in the retention pond are determined not to be a result of the produced water release, but rather the evaporitic nature of the retention pond. The retention pond remains an important part of the facility's infrastructure.

REMEDICATION 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.

All soil has been vertically and spatially delineated at the Site, and further investigation or soil removal and replacement is not anticipated at this time. Closure and NFA determination will be reached with approval of this Form 27.

Soil Remediation Summary

☐ In Situ

☒ Ex Situ

Bioremediation (or enhanced bioremediation)

Yes Excavate and offsite disposal

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

If Yes: Estimated Volume (Cubic Yards)

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

☐ No ☐ Bioremediation (or enhanced bioremediation)

☐ No ☐ Chemical oxidation

☐ No ☐ Air sparge / Soil vapor extraction

☐ No ☐ Natural Attenuation

☐ No ☐ 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.

REMEDATION PROGRESS UPDATE

PERIODIC REPORTING

Approved Reporting Schedule:

☐ Quarterly☐ Semi-Annually☐ Annually☒ Other

With approval of this Form 27, Taproot believes remediation at this Site has been complete.

☐ Request Alternative Reporting Schedule:

☐ Semi-Annually☐ Annually☒ Other

With approval of this Form 27, Taproot believes remediation at this Site has been complete.

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

With approval of this Form 27, Taproot believes remediation at this Site has been complete.

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.

Taproot has Commercial General Liability of \$1,000,000 each occurrence with \$2,000,000 General Aggregate, and \$5,000,000 excess liability coverage. Our Financial Assurance Rule 712 Facility Surety ID is: 20180173.

Operator anticipates the remaining cost for this project to be: \$ 0

WASTE DISPOSAL INFORMATION

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

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

E&P Waste was taken to Pawnee Landfill

Volume of E&P Waste (solid) in cubic yards 10

E&P waste (solid) description Produced water affected soil

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility: Pawnee Landfill

Volume of E&P Waste (liquid) in barrels 0

E&P waste (liquid) description none

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility:

REMEDATION COMPLETION REPORT

REMEDATION 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.

Following the shallow excavation surrounding SS1 and confirmation sampling, A reclamation plan will be developed to meet the requirements of COGCC Guidance rule 915b. Closure and NFA determination will be reached with the approval of the reclamation plan.

Is the described reclamation complete? Yes

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? No

SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. 06/15/2022

Proposed date of completion of Reclamation. 07/15/2022

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. 08/18/2021

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). 08/18/2021

Proposed site investigation commencement. 04/27/2022

Proposed completion of site investigation. 06/30/2022

REMEDIAL ACTION DATES

Proposed start date of Remediation. 04/15/2022

Proposed date of completion of Remediation. 05/20/2022

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

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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: Dale Hunt

Title: VP of Engineering

Submit Date: _____

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: _____

Date: _____

Remediation Project Number: 21050

COA Type**Description**

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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**

403102994	OTHER
403103002	ANALYTICAL RESULTS
403103011	DISPOSAL MANIFESTS
403103017	SOIL SAMPLE LOCATION MAP
403103024	ANALYTICAL RESULTS
403103027	PHOTO DOCUMENTATION
403103041	SITE INVESTIGATION REPORT

Total Attach: 7 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)