

State of Colorado Oil and Gas Conservation Commission

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Report taken by:

John Heil

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.

Refer to Rules 340, 905, 906, 907, 908, 909, and 910

OPERATOR INFORMATION

Name of Operator: <u>TEP ROCKY MOUNTAIN LLC</u>	Operator No: <u>96850</u>	Phone Numbers
Address: <u>PO BOX 370</u>		Phone: <u>(970) 263-2760</u>
City: <u>PARACHUTE</u>	State: <u>CO</u> Zip: <u>81635</u>	Mobile: <u>(970) 623-4875</u>
Contact Person: <u>Michael Gardner</u>	Email: <u>MGardner@terraep.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 11708Initial Form 27 Document #: 401716081

PURPOSE INFORMATION

- | | |
|--|--|
| <input type="checkbox"/> 901.e. Sensitive Area Determination | <input type="checkbox"/> 909.c.(5), Rule 910.b.(4): Remediation of impacted ground water |
| <input checked="" type="checkbox"/> 909.c.(1), Rule 905: Pit or PW vessel closure | <input type="checkbox"/> Rule 909.e.(2)A.: Notice completion of remediation in accordance with Rule 909.b. |
| <input type="checkbox"/> 909.c.(2), Rule 906: Spill/Release Remediation | <input type="checkbox"/> Rule 909.e.(2)B.: Closure of remediation project |
| <input type="checkbox"/> 909.c.(3), Rule 907.e.: Land treatment of oily waste | <input type="checkbox"/> Rule 906.c.: Director request |
| <input type="checkbox"/> 909.c.(4), Rule 908.g.: Centralized E&P Waste Management Facility closure | <input type="checkbox"/> Other _____ |

SITE INFORMATION

N Multiple Facilities (in accordance with Rule 909.c.)

Facility Type: <u>PIT</u>	Facility ID: <u>274716</u>	API #: _____	County Name: <u>GARFIELD</u>
Facility Name: <u>TR 43-34</u>	Latitude: <u>39.568126</u>	Longitude: <u>-108.257282</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>NESE</u>	Sec: <u>34</u>	Twp: <u>5S</u>	Range: <u>97W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

SITE CONDITIONS

General soil type - USCS Classifications OHMost Sensitive Adjacent Land Use RangelandIs domestic water well within 1/4 mile? NoIs surface water within 1/4 mile? YesIs groundwater less than 20 feet below ground surface? No

Other Potential Receptors within 1/4 mile

Crystal Creek lies approximately 500ft to east

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
No	SOILS	None	Confirmaiton 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.

At the location(s) of the pit which are the furthest downgradient, lowest in elevation and/or have the potential for pooling of liquid, field-screening will be performed and will utilize appropriate field equipment which may include, but is not limited to the following.

-PetroFlag unit,

-photoionization gas detector (PID),

Confirmation sample(s), Rule 905.b.(4), will be collected and submitted for lab analysis and verification to confirm compliance with Rule 910 and Table 910-1, relative to the aforementioned field screen activity.

Other areas of the pit walls and floor will be inspected for evidence of impact via field screening and visual observation. Grab samples will be collected, as appropriate, to demonstrate diligence and thoroughness of investigation activities performed as directed in Rule 905.b.(1). In addition, all field screening activities and results will be documented and compiled into a summary report, table and/or map to be provided with the Notice of Completion (NOC) Report.

Grab sample(s) will be submitted for laboratory analysis to confirm field screening activities. Sub-liner sample analytes will include considerations identified by Rule 910 and all contaminants of concern for soils from Table 910-1.

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):

Five (5) grab samples will initially be collected from the pit subsoils along the side wall and bottom. Sample locations will be provided in a sample location map attached to the closure summary.

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 6

Number of soil samples exceeding 910-1 0

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

Approximate areal extent (square feet) 0

NA / ND

-- Highest concentration of TPH (mg/kg) 60

-- Highest concentration of SAR 6.2

BTEX > 910-1 No

Vertical Extent > 910-1 (in feet) 0

Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet) 100'

Number of groundwater monitoring wells installed 0

Number of groundwater samples exceeding 910-1 0

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

0 Number of surface water samples exceeding 910-1

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?

Three (3) background samples were collected from the surrounding area and analyzed for arsenic and inorganic comparison

☐ 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? Yes _____

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

TEP removed the pit liner and supporting felt layers. No visual signs (dark staining or impacted soils) were observed in the underlying soil. All liner material was cut into sections and hauled off-site for disposal to West Garfield County Landfill. Samples were collected from various positions on the side wall and pit bottom and field screened using a PID and PetroFlag. The highest PID reading recorded was 46.7 ppm and the highest PetroFlag reading was 122 mg/kg.

Soil samples were collected on the four (4) side walls at a point position center of the pit wall, approximately 3ft below ground surface. Additionally a sample was collected from the pit bottom at lowest point. All samples were analyzed for COGCC Table 910-1 thresholds. No impacts were observed exceed COGCC Table 910-1 with the exception to arsenic and inorganic parameter (EC) with concentrations consistent for soils in that area.

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.

No remediation was conducted as the only exceedances within the soil are for arsenic and inorganic constituent (EC). Discussion between TEP personnel and COGCC concluded that concentrations observed within the confirmation samples are consistent for soils in this area and geological formations.

Soil Remediation Summary

☐ In Situ

- _____ Bioremediation (or enhanced bioremediation)
- _____ Chemical oxidation
- _____ Air sparge / Soil vapor extraction
- _____ Natural Attenuation
- _____ Other _____

☐ Ex Situ

- _____ Excavate and offsite disposal
- _____ 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

- ☐ _____ 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.

No groundwater monitoring or sampling necessary

REMEDATION PROGRESS UPDATE

PERIODIC REPORTING

Frequency: ☐ Quarterly ☐ Semi-Annually ☐ Annually ☒ Other Facility Closure Report

Report Type: ☐ Groundwater Monitoring ☐ Land Treatment Progress Report ☐ O&M Report

☒ Other NOC Report

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: _____

REMEDATION COMPLETION REPORT

REMEDATION COMPLETION SUMMARY

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

Do all soils meet Table 910-1 standards? Yes

Does the previous reply indicate consideration of background concentrations? Yes

Are the only residual soil impacts pH, SAR, or EC at depths greater than 3 feet below ground surface? _____

Does Groundwater meet Table 910-1 standards? Yes

Is additional groundwater monitoring to be conducted? No

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.

The pit will be reclaimed to the present grade of the location or to the approximate original contour of the landscape and consistent with the 1000-series Rule. Seeding of the disturbed area will be performed in accordance with its' intended use. The seed mix will be prescribed by the landowner. There are no known noxious weeds in the immediate area of the disturbance.

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 approve the seed mix? Yes

If NO, does the seed mix comply with local soil conservation district recommendations? Yes

IMPLEMENTATION SCHEDULE

PRIOR DATES

Date of Surface Owner notification/consultation, if required. _____

Actual Spill or Release date, if known. _____

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). _____

Date of commencement of Site Investigation. 05/01/2019 _____

Date of completion of Site Investigation. 05/29/2019 _____

REMEDIAL ACTION DATES

Date of commencement of Remediation. _____

Date of completion of Remediation. _____

SITE RECLAMATION DATES

Date of commencement of Reclamation. _____

Date of completion of Reclamation. _____

OPERATOR COMMENT

Please forward onto John Heil

This Notice of Completion (NOC) report is being submitted for the closure request of the TR 43-34-597 production pit.

TEP is also requesting consideration as per FAQ 31 and 32 as arsenic concentrations are consistent with typical background concentrations in that area, as well as inorganic exceedance (EC) will be capped with 3ft of native cover.

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

Signed: Michael Gardner

Title: TEP Environmental

Submit Date: 09/25/2019

Email: MGardner@terraep.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: John Heil

Date: 10/14/2019

Remediation Project Number: 11708

COA Type**Description**

	After review of the data presented, elevated levels of [SAR/EC/pH] exist deeper than three feet below ground surface. Per guidance in FAQ 32, elevated levels of [SAR/EC/pH] at three feet below ground surface or deeper should not adversely affect the successful reclamation of the site. If groundwater is found to be impacted, or if reclamation is not compliant with the 1000-series rules, additional remediation activities may be required at the site. It appears that no further action is necessary at this time and COGCC approves the closure request.
	Based on review of the information provided, it appears that no further action is necessary at this time and COGCC approves the closure request. Should conditions at the site indicate contaminant concentrations in soils exceeding COGCC standards, or, if groundwater is found to be significantly impacted, further investigation and/or remediation activities may be required at the site.

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**

402072864	FORM 27-SUPPLEMENTAL-SUBMITTED
402072909	ANALYTICAL RESULTS
402072912	ANALYTICAL RESULTS
402072913	ANALYTICAL RESULTS
402072915	ANALYTICAL RESULTS
402072933	SOIL SAMPLE LOCATION MAP

Total Attach: 6 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)