FORM 27 Rev 3/16

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 INFORMATON

Name of Operator: TEP ROCKY MOUNTAIN LLC Operator No: 96850
Address: PO BOX 370
City: PARACHUTE State: CO Zip: 81635
Contact Person: Michael Gardner Email: mgardner@terraep.com

Phone Numbers
Phone: (970) 263-2760
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PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 5873 Initial Form 27 Document #: 2214617

PURPOSE INFORMATION

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

SITE INFORMATION

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

Facility Type: PIT Facility ID: 277095 API #: County Name: GARFIELD
Facility Name: CHEVRON TR 44-26-597 Latitude: 39.579076 Longitude: -108.238531
** correct Lat/Long if needed: Latitude: Longitude:
QtrQtr: SESE Sec: 26 Twp: 5S Range: 97W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications OH
Most Sensitive Adjacent Land Use RANGELAND
Is domestic water well within 1/4 mile? Yes
Is surface water within 1/4 mile? Yes
Is groundwater less than 20 feet below ground surface? Yes

Other Potential Receptors within 1/4 mile

CRYSTAL CREEK ~1,840 FEET TO THE NW.

SITE INVESTIGATION PLAN

TYPE OF WASTE:

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

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	SOILS	South and east side walls. Bottom	VISUAL, FIELD SCREENING, ANALYTICAL

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: a PetroFlag unit,

a photoionization gas detector (PID),

or similar, for detection of volatile hydrocarbons, in the immediate area of the pit footprint. 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 (reference to specific analytes is provided below) 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 complied into a summary report, table and/or map to be provided with the Site Closure Plan. 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 excluding boron (see attached analyte list in Table 1 of Annex A; and Williams Highlands Pit Closure Plan, COGCC document #01175818). A visual assessment will be performed throughout the entire investigation process and will be adequately documented (e.g. field notes, observations, photographs, etc.) by

qualified personnel. For additional information and detail of the proposed initial actions to be taken refer to

the Williams Highlands Pit Closure Plan (COGCC document #01175818).

PROPOSED SAMPLING PLAN

Proposed Soil Sampling

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

Grab samples will be collected from the four (4) side walls and from the pit bottom at the lowest point. Any additional areas of concern (AOC) will be sampled separately to ensure pit compliance.

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: 5

Number of soil samples exceeeding 910-1: 3

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): 94

-- Highest concentration of SAR: 19

BTEX > 910-1: No

Vertical Extent > 910-1 (in feet): 2

Groundwater

Number of groundwater samples collected: 0

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet): 35`

Number of groundwater monitoring wells installed: 0

Number of groundwater samples exceeding 910-1: 0

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):

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?

Background samples were collected for inorganic and arsenic comparison and allowance.

☐ 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.

The presence of impact has not been determined at this point. No impacts have been observed to date or any other indication that would suggest there has been an event that would result in

impact to the surrounding environment. However, should contamination be encountered the following actions will be taken: Any spill or release will be reported via a Form 19 and in accordance with Rule 906 and remediation shall be performed in accordance with requirements specified in Rules 909 and 910. Notification and consultation with the affected surface owner(s) shall be made with good faith effort and in accordance with Rule 906.c. Should a release be identified and attributed to the contents of the pit, the impacted area will be: excavated in which field screen instruments will guide the excavation and laboratory confirmation samples collected to demonstrate compliance with Table 910-1 of the COGCC 900-series rule; and placed within a lined and bermed containment cell pending remediation and disposal option described below. All pit contents will be evacuated and managed in accordance with all applicable local, state [i.e. Rule 905.b.(2)] and federal regulations. If disposal is required, the relevant media will be disposed of at an approved facility. The potential source - production pit - will be closed and reclaimed in accordance with the COGCC 900 and 1000 series rules, respectively. The synthetic liner will be removed either recycled/reused or disposed of at an approved facility as a solid waste and in accordance with Rule 905.b.(3). Williams personnel have no reason to suspect nor have they been informed of signs or conditions that would indicate past or present failure of the liner/containment system. For additional information and detail of how the potential sources is to be removed refer to the Williams Highlands Pit Closure Plan (COGCC document #01175818).

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 hydrocarbon impacts were encountered during pit closure operations. No remediation was necessary.

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
  - No Land Treatment
  - No Bioremediation (or enhanced bioremediation)
  - No Chemical oxidation
  - No 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.

The presence of impact has not been determined at this point. No impacts have been observed to date or any other indication that would suggest there has been an event that would result in impact to the surrounding environment. However, should it be observed or determined that groundwater impacts exist an appropriate site specific monitoring and remediation plan will be developed and submitted for approval. The monitoring and remediation plan will be developed to include, but is not limited to, number of sample wells and/or points; proposed location of sample wells and/or points; sampling schedule;

analytical methods including analyte list(s); monitoring scheme including end point; and potential mitigation or remediation approaches if necessary [Rule 910 (4) E].

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Frequency: ☐ Quarterly ☐ Semi-Annually ☐ Annually ☒ Other Final closure

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

☒ Other Notice of Completion 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:

REMEDIATION COMPLETION REPORT

REMEDIATION COMPLETION SUMMARY

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

Do all soils meet Table 910-1 standards? No

Does the previous reply indicate consideration of background concentrations?

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

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. A noxious weed survey is performed annually of the Trail Ridge field which includes this location. As a preventative measure, Williams seeds all disturbed areas as soon as practicable with temporary or sterile annual seed mixes to: provide soil stability, and serve as a nurse or cover crop for desired species; derived from the natural seed bank and/or the applied seed mix. Bare ground treatment is a common practice by Williams and any identified noxious weed species will be spot treated for immediate eradication and prevention of

encroachment and dispersal. A plat of the location is attached for topographic and geographic reference.

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 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). 08/31/2018

Date of commencement of Site Investigation. 08/31/2018

Date of completion of Site Investigation. 08/31/2018

REMEDIAL ACTION DATES

Date of commencement of Remediation. 08/31/2018

Date of completion of Remediation. 09/11/2018

SITE RECLAMATION DATES

Date of commencement of Reclamation. 09/25/2018

Date of completion of Reclamation. 10/02/2018

OPERATOR COMMENT

Please forward to John Heil.

Below are responses to the COA's listed on the Supplemental Form 27 pit closure report (Doc# 401789016);

• Depth of five (5) samples collected – The overall depth of the pit was ~18 feet below ground surface (bgs). The four (4) side wall samples were collected from a mid-point on the walls, putting them at ~8-9 feet bgs and laterally into the wall ~6-12 inches. The pit bottom sample was collected at a depth of 6-8" inches off the bottom of the pit at the lowest point, putting the depth of the pit bottom samples at ~18.6 feet bgs. No additional areas of concern were visually identified at the time of the subsoil investigation nor did field screening readings on the side wall and pit bottom indicate that the pit liner was compromised in any way.

• Inorganics Exceedances - TEP is requesting relief from inorganic exceedance as outlined in the COGCC FAQ #32 as the areas noted as having elevated EC, pH and SAR will be capped with 3 feet of native cover during the backfilling of the pit. Additionally, 2 to 5 feet of top soil will be placed above backfilled pit during the interim reclamation.

• Background Sampling Distance – Background samples collected in 2017 from the nearby spill remediation (Spill ID 449637) were used as backgrounds are representative of the surrounding soil. The distance of the background samples to the TR 44-26 pit is ~1050-1100 feet the north.

Description of Closure Activities:
• The fluids were removed via hydro-vac truck and any solids adhered to the side or bottom were removed via pressure washing. All fluids were hauled to the TEP centralized E&P water management facility for management. The pit liner was allowed the dry before being removed in sections during the week of 8/20/18 - 8/24/18 and hauled to the West Garfield County Landfill and disposed of as solid waste.

• An evaluation of the subliner soils was performed on 8/31/18, which consisted of field screening three (3) points on each of the side walls and four (4) points on the pit bottom. The highest field screening reading was 125 mg/kg with the Petroflag and 47 ppm with the PID. No visual observations were present to suggest the pit liner leaked nor did field screening instruments indicate soils contained a hydrocarbon impact above COGCC Table 910-1. Confirmation samples were collected as outlined above.

• The initial Form 27 outlining pit closure was submitted by WPX in 2011 at which time usage of the pit had stopped.

The analytical data tracking spreadsheet has been updated with the units to help resolve any confusion. Additional information regarding the analytical results is also avaialble in the attached lab data reports.

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: 10/15/2019

Remediation Project Number: 5873

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
402093879	FORM 27-SUPPLEMENTAL-SUBMITTED
402094103	ANALYTICAL RESULTS
402094106	ANALYTICAL RESULTS
402094111	ANALYTICAL RESULTS
402094112	SOIL SAMPLE LOCATION MAP

Total Attach: 5 Files

General Comments

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)