FORM 27 Rev 4/21

State of Colorado
Oil and Gas Conservation Commission

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Report taken by: Jim Hughes

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 INFORMATON

Name of Operator: RED MESA HOLDINGS/O&G LLC Operator No: 10254
Address: 5619 DTC PARKWAY - STE 800
City: GREENWOOD VILLAGE State: CO Zip: 80111
Contact Person: Jacob Harter Email: jharter@cottonwoodconsulting.com

Phone Numbers
Phone: (970) 946-3761
Mobile: ( )

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 17944 Initial Form 27 Document #: 402650460

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.
- [X] 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: WELL Facility ID: API #: 067-06111 County Name: LA PLATA
Facility Name: FERGUSON NO.1 (OWP) F35-1 Latitude: 37.063200 Longitude: -108.125950
** correct Lat/Long if needed: Latitude: Longitude:
QtrQtr: SWNW Sec: 35 Twp: 33N Range: 12W Meridian: N Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications MH
Most Sensitive Adjacent Land Use Grazing
Is domestic water well within 1/4 mile? Yes
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

Cinder Gulch

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- [X] **E&P Waste**
  - [ ] Produced Water
  - [X] 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	TBD	Field screening, 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 COGCC Orphan Well Program plugged the Ferguson No. 1 (OWP) #F35-1 well and decommissioned the associated on-location flowlines and production equipment during the summer of 2021. Soil samples were collected in accordance with the Initial Form 27 for the project and COGCC Rule 915.e(2)B. Four soil samples were collected from the site; one was collected from the wellhead excavation, one was collected from the base of an AST, and two were collected from flowline paths following removal. The AST was located on the wellsite at the time of sampling, but will be removed prior to site decommissioning. All samples were submitted for laboratory analysis of Table 915-1 constituents.

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):

All areas suspected of having potential impacts, including the wellhead, associated flowline(s), and production equipment (if present), were visually inspected and field screen with a PID. Using these observations and field screening results, soil samples were collected from areas most likely to be impacted.
One discrete soil sample was collected from the wellhead excavation, one discrete soil sample was collected from the base of the AST, and two discrete soil sample soil samples were collected from flowline paths following removal. The AST was located on the wellsite at the time of sampling, but will be removed prior to site decommissioning. All samples were submitted for laboratory analysis of Table 915-1 constituents. The attached project map provides the location of all samples.

Proposed Groundwater Sampling

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

No groundwater or pathways to groundwater were discovered during the plugging and decommissioning activities. As such, no groundwater samples were collected for this project.

Proposed Surface Water Sampling

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

No surface water was discovered in the vicinity of the wellsite during the plugging and decommissioning activities. As such, no surface water samples were collected for this project.

Additional Investigative Actions

[ ] Additional alternative investigative actions described in attached Site Investigation Plan (summary):

Off-location flowlines were not addressed during the scope of this workplan. Any off-location flowline decommissioning should be addressed on a separate Form 27.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected: 4
Number of soil samples exceeeding 915-1: 4
Was the areal and vertical extent of soil contamination delineated? No
Approximate areal extent (square feet): 0

NA / ND

-- Highest concentration of TPH (mg/kg): 42140
-- Highest concentration of SAR: 15.8
BTEX > 915-1: Yes
Vertical Extent > 915-1 (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):
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?

[X] Were background samples collected as part of this site investigation?

A representative background soil sample was collected from nearby, non-impacted native soil. Arsenic levels in the background sample were consistent with samples collected within the project area.

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

Volume of solid waste (cubic yards):
Volume of liquid waste (barrels):

[X] Is further site investigation required?

Soil sample SS01, collected at a depth of 6 feet below ground surface (bgs) from the area adjacent to the wellhead, had TPH (total petroleum hydrocarbon) and naphthalene values exceeding the COGCC Table 915 standard.
SS02, collected at a depth of 3 feet bgs from the flowline excavation, had lead and TPH values exceeding the COGCC Table 915 standard.
SS03, collected at a depth of 3 feet bgs from the base of an AST, had TPH, benzene, ethylbenzene, total xylenes, and other organic compound values exceeding the COGCC Table 915 standard.
SS04, collected at a depth of 0-1 feet bgs from the base of an AST, had SAR (sodium adsorption ratio), TPH, and naphthalene values exceeding the COGCC Table 915 standard.
Further excavation/remediation of impacted soils around the wellhead, flowline, and ASTs may be 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 Ferguson No. 1 (OWP) F35-1 well was plugged and the associated on-location flowlines and production equipment were decommissioned during the summer of 2021. Soil samples were collected in accordance with the Initial Form 27 for the project. Based on Initial Form 27 soil sampling results, it appears additional remediation is needed in the vicinity of the former wellhead, flowline, and ASTs. It is estimated that approximately 40 cubic yards of soil should be excavated and disposed of at an approved facility.
All other soil samples collected from potential areas of impacts were below COGCC Table 915 standards. Please refer to attached Results Table, Map, and Photographs.

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.

Following removal of impacted soil, additional confirmation sample(s) should be collected to demonstrate that all remaining soil left in place is below COGCC Table 915 standards. Once complete, the excavation should be backfilled with clean soils. Remediation will likely occur during the summer of 2022.

Soil Remediation Summary

☐ **In Situ**

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

☒ **Ex Situ**

- Yes Excavate and offsite disposal
  - If Yes: Estimated Volume (Cubic Yards) 40
  - Name of Licensed Disposal Facility or COGCC Facility ID # 0
- ____ 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:

[X] Quarterly [ ] Semi-Annually [ ] Annually [ ] Other

[ ] **Request Alternative Reporting Schedule:**

[ ] Semi-Annually [ ] Annually [X] Other As project progresses.

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

[X] Other Facility Closure

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? No

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? No

Does the previous reply indicate consideration of background concentrations?

Does Groundwater meet Table 915-1 standards?

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.

Reclamation will be in accordance with COGCC 1000 Series Rules.

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.

Actual Spill or Release date, or date of discovery.

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 05/03/2021

Proposed site investigation commencement. 06/01/2021

Proposed completion of site investigation. 09/30/2021

REMEDIAL ACTION DATES

Proposed start date of Remediation. 05/01/2022

Proposed date of completion of Remediation. 08/31/2022

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:` Jacob Harter Title: Consultant

Submit Date:` 09/16/2021 Email: jharter@cottonwoodconsulting.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: Jim Hughes Date: 12/14/2021

Remediation Project Number: 17944

Condition of Approval

COA Type	Description
	Per Rule 913.b.(2).A.: Sampling and analyses will be required to profile E&P Waste, delineate extent of contamination, and confirm compliance with applicable standards upon completion of Remediation.
	Per Rule 915.e.(2).B: Samples will be collected from areas most likely to have been impacted, and the horizontal and vertical extent of contamination will be determined. The number and location of samples will be appropriate to determine the horizontal and vertical extent of the impact.
	Per Rule 913b.(5).B: When conducting Remediation activities, Operators will conform to the following standards: i. Operators will fence or cover open excavations to prevent access when sites are not attended. ii. Operators will protect topsoil, consistent with the Commission's 1000 Series Rules. iii. Operators will minimize surface disturbance. iv. Operators will properly store, handle, and manage all E&P Waste to prevent contamination of stormwater, surface water, Groundwater, and soil. v. If Remediation occurs within High Priority Habitat, the Operator will incorporate Best Management Practices protective of the relevant wildlife species or habitat in the Operator's Form 27.
	Per 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. The request for reporting as the project progresses is granted. Supplemental reports will be submitted within 30 days of any project progress.
4 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
402813040	FORM 27-SUPPLEMENTAL-SUBMITTED
402813091	PHOTO DOCUMENTATION
402813107	SOIL SAMPLE LOCATION MAP
402813109	ANALYTICAL RESULTS

Total Attach: 4 Files

General Comments

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)