

# State of Colorado Oil and Gas Conservation Commission

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402879787

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Report taken by:

BOB CHESSON

## Site Investigation and Remediation Workplan (Initial 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: RED MOUNTAIN RESOURCES LLC	Operator No: 10374	<b>Phone Numbers</b>
Address: 6538 JUNGFRAU WAY		Phone: (303) 894-2100 x5181
City: EVERGREEN	State: CO	Zip: 80439
Contact Person: James Hix - OWP EPS	Email: james.hix@state.co.us	Mobile: (303) 905-5341

### PROJECT, PURPOSE & SITE INFORMATION

#### PROJECT INFORMATION

Remediation Project #: 26689 Initial Form 27 Document #: 402879787

#### 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

Yes Multiple Facilities

Facility Type: PIT	Facility ID: 110645	API #: _____	County Name: LOGAN
Facility Name: KILMER 1	Latitude: 40.466615	Longitude: -103.443489	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SWSW	Sec: 20	Twp: 6N	Range: 54W Meridian: 6 Sensitive Area? Yes
Facility Type: LOCATION	Facility ID: 312130	API #: _____	County Name: LOGAN
Facility Name: KILMER-66N54W 20SWSW	Latitude: 40.465210	Longitude: -103.442440	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SWSW	Sec: 20	Twp: 6N	Range: 54W Meridian: 6 Sensitive Area? Yes

## SITE CONDITIONS

General soil type - USCS Classifications SC

Most Sensitive Adjacent Land Use freshwater pond  
adjacent, rural  
residential,  
cropland

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? No

### **Other Potential Receptors within 1/4 mile**

HPH: no, riverine runs through the location, freshwater pond adjacent, occupied building unit ~0.21 mile SW

## 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
UNDETERMINED	GROUNDWATER	Unknown	visually, laboratory analysis
Yes	SOILS	Unknown	visually, laboratory analysis

### INITIAL ACTION SUMMARY

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

Noble Energy/Chevron performed a site investigation of the Kilmer 1 Tank Battery as part of a public project in 2021. Tanks and production facility equipment were removed under REM 18544. Produced Water Pit Facility ID #110645 remains. Red Mountain/Bhate performed a site investigation including a limited subsurface investigation in 2014 under REM 8141 that included installation of three temporary monitoring wells and collection of a produced water sample. Analysis of soil, groundwater, and produced water was performed along with a sensitive area evaluation. Remediation #8141 was closed in 2015. The COGCC Orphaned Well Program (OWP) will decommission and remediate the produced water pit(s), the former tank battery, and flowline(s) associated with the Kilmer 1 and collect confirmation samples.

### 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 ):

Stained soil and weathered crude oil were noted in the vicinity of the former Kilmer 1 tank battery and produced water pit during previous inspections. Grab soil samples will be collected from the bottom of the pit(s) associated with the former Red Mountain Resources - Kilmer 1 Production Facility/Tank Battery. Soil samples will be collected in the vicinity of the former skim pit/tank and separator, and production tanks. Samples will be analyzed for Table 915-1 soil parameters.

#### Proposed Groundwater Sampling

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

Three temporary monitoring wells installed during the 2014 subsurface investigation were supposed to be abandoned in 2015 when REM 8141 was closed. However, temporary monitoring wells SB-02 was observed during a 2017 inspection. If one or more of these monitoring wells are still present on the location, groundwater samples will be collected and analyzed for Table 915-1 water parameters. If soil analytical results, or groundwater results are above Table 915-1 concentrations/levels, a subsurface investigation will be performed to delineate the nature and extent of these impacts.

#### Proposed Surface Water Sampling

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

If produced water or impounded stormwater is encountered in the pit(s), a grab sample will be collected for analysis of Table 915-1 parameters.

### Additional Investigative Actions

- ☐ Additional alternative investigative actions described in attached Site Investigation Plan ( summary ):

As stated above, if soil or groundwater results exceed Table 915-1 concentrations/levels, a subsurface investigation will be proposed to delineate the nature and extent of these impacts. The previous limited subsurface investigation conducted in 2014 pursuant to REM 8141 indicated that groundwater was encountered at depths ranging from 26 feet and 30 feet. The NRCS soil types present at the location consist of silty sands, sandy clays, clay, and clayey gravels. The need for additional investigation or site remediation will be determined based on the results of the subsurface investigation.

## SITE INVESTIGATION REPORT

### SAMPLE SUMMARY

**Soil**

Number of soil samples collected 6

Number of soil samples exceeding 915-1 6

Was the areal and vertical extent of soil contamination delineated? No

Approximate areal extent (square feet) 43560

**Groundwater**

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet) 32

Number of groundwater monitoring wells installed 0

Number of groundwater samples exceeding 915-1

**NA / ND**

-- Highest concentration of TPH (mg/kg) 1513

-- Highest concentration of SAR 11

BTEX &gt; 915-1 No

Vertical Extent &gt; 915-1 (in feet) 3

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?☐ Were background samples collected as part of this site investigation?☐ 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?

Noble Energy/Chevron performed a public project to remove the ASTs and former production equipment in 2021. Additional soil sampling and flowline abandonment is required. If temporary groundwater monitoring wells installed in 2014 are still present at the location, grab groundwater samples will be collected.

**REMEDIAL ACTION PLAN****SOURCE REMOVAL SUMMARY**

Describe how source is to be removed.

Soil samples will be collected from the base of the Kilmer 1# Pit 110645, from the former skim pit, base of the produced water pit, the vertical separator, from the production tank battery location, and produced water tank containment, and analyzed for Table 915-1 parameters. Impacted soils with results above Table 915-1 concentrations/levels will be excavated based on visual and field screening and will be hauled to a commercial disposal facility. Confirmation soil samples will be collected following excavation to demonstrate compliance with Table 915-1 concentrations/levels. The Kilmer 66N54W 20 SWSW Location will be restored to previous grade in preparation for reclamation.

**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.

Remediation of impacts to soil and groundwater will be based on the nature of the impacts encountered. The results of the 2014 limited subsurface investigation (REM 8141) indicated that BTEX, SVOC, TPH-GRO/TPH-DRO were not detected in soil samples. Elevated levels of inorganic parameters, pH and specific conductivity, and arsenic concentrations were observed in upgradient and downgradient soil sample locations above COGCC levels/concentrations. A minimum of one upgradient, background soil sample will be collected and analyzed for these parameters. Concentrations of BTEX and TPH-GRO/TPH-DRO were detected in a produced water sample but were not detected in groundwater samples. Total dissolved solids (TDS) was elevated in groundwater samples which may have resulted from produced water in the pit.

**Soil Remediation Summary**☐ In Situ☐ Ex Situ

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

\_\_\_\_\_ 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.

Three temporary monitoring wells were installed in 2014 pursuant to REM 8141. The COGCC requested that the temporary monitoring wells be abandoned in 2015; however, temporary monitoring well SB-02 was observed during a 2017 inspection. If the monitoring wells are still present and able to be sampled, groundwater samples will be collected and analyzed for Table 915-1 water parameters. If groundwater results exceed Table 915-1 parameter concentrations/levels, additional subsurface investigation and remediation activities will be evaluated.

## 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

### 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?

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:

# 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.

Once the Kilmer 66N54W 20SSW location has been determined to meet Table 915-1 concentrations/levels, the location will be regraded to match existing contours of the surrounding area. Produced water Pit #110645 will be restored to level grade and top soil cover brought in if needed to establish a seed bed. Reclamation will be performed in consideration of consultation with the Surface Owner and intended future land use.

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). 04/10/2022

Proposed site investigation commencement. \_\_\_\_\_

Proposed completion of site investigation. \_\_\_\_\_

### REMEDIAL ACTION DATES

Proposed start date of Remediation. \_\_\_\_\_

Proposed date of completion of Remediation. \_\_\_\_\_

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**

Noble Energy/Chevron completed a public project to remove the production equipment in 2021 including removal of the two 1000 bbl bolted panel production ASTs, 210 bbl produced water AST, and vertical separator. Abandonment of the Kilmer (OWP) #1 and flowline, remediation of any related soil and groundwater impacts, and reclamation of the location will be performed by the COGCC OWP.

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

Signed: James Hix

Title: OWP EPS II

Submit Date: 07/20/2022

Email: james.hix@state.co.us

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: BOB CHESSON

Date: 01/09/2023

Remediation Project Number: 26689

**COA Type****Description**

0 COA	

**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**

402879787	FORM 27-INITIAL-SUBMITTED
403100242	SITE INVESTIGATION REPORT
403111453	MAP
403111455	SITE MAP
403111456	SITE INVESTIGATION PLAN

Total Attach: 5 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)