

State of Colorado
Energy & Carbon Management Commission

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Report taken by:
Taylor Robinson

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: <u>KERR MCGEE OIL & GAS ONSHORE LP</u>	Operator No: <u>47120</u>	Phone Numbers
Address: <u>P O BOX 173779</u>		
City: <u>DENVER</u>	State: <u>CO</u>	Zip: <u>80217-3779</u>
Contact Person: <u>Gregory Hamilton</u>	Email: <u>gregory_hamilton@oxy.com</u>	
		Phone: <u>(970) 336-3500</u>
		Mobile: <u>(970) 515-1698</u>

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 24902 Initial Form 27 Document #: 403147903

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: <u>LOCATION</u>	Facility ID: <u>330065</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>PSC-63N67W 10SWNE</u>	Latitude: <u>40.240610</u>	Longitude: <u>-104.876210</u>	
	** correct Lat/Long if needed: Latitude: <u>40.240372</u>	Longitude: <u>-104.876307</u>	
QtrQtr: <u>SWNE</u>	Sec: <u>10</u>	Twp: <u>3N</u>	Range: <u>67W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>
Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>483063</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>PSC 32-10 O SA tank battery</u>	Latitude: <u>40.240372</u>	Longitude: <u>-104.876307</u>	
	** correct Lat/Long if needed: Latitude: _____	Longitude: _____	
QtrQtr: <u>SWNE</u>	Sec: <u>10</u>	Twp: <u>3N</u>	Range: <u>67W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

SITE CONDITIONS

General soil type - USCS Classifications SC

Most Sensitive Adjacent Land Use crop land

Is domestic water well within 1/4 mile? No

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

Domestic water well: none
Surface water: approximately 580' NE
Wetlands: approximately 570' NE
Springs: none
Livestock: none
Occupied Building: approximately 1000' N
High Priority Habitats: within Mule Deer Severe Winter Range

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- | | | |
|--|--|--|
| <input checked="" type="checkbox"/> E&P Waste | <input type="checkbox"/> Other E&P Waste | <input type="checkbox"/> Non-E&P Waste |
| <input checked="" type="checkbox"/> Produced Water | <input type="checkbox"/> Workover Fluids | |
| <input checked="" type="checkbox"/> Oil | <input type="checkbox"/> Tank Bottoms | |
| <input checked="" type="checkbox"/> Condensate | <input type="checkbox"/> Pigging Waste | |
| <input type="checkbox"/> Drilling Fluids | <input type="checkbox"/> Rig Wash | |
| <input type="checkbox"/> Drill Cuttings | <input type="checkbox"/> Spent Filters | |
| | <input type="checkbox"/> Pit Bottoms | |
| | <input type="checkbox"/> Other (as described by EPA) | |

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	SOILS	28' (N-S) x 15' (E-W) x 8' bgs	inspection/soil samples/laboratory 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.

Decommissioning activities were completed at the PSC 32-10 O SA production facility on September 28, 2022. Groundwater was not encountered during excavation activities. Visual inspection and field screening of soils at one separator, one produced water vessel (PWV), one above-ground storage tank (AST), one meter house, and three dump line potholes were conducted following removal activities, and soil samples (SEP-B01@3", SEP-B02@3", PW-N01@3', PW-B01@5', and AST-B02@3") were submitted for laboratory analysis to determine if a release occurred. Laboratory analytical results indicated that benzene, toluene, naphthalene, 1,2,4-trimethylbenzene (TMB), 1,3,5-TMB, total petroleum hydrocarbons (TPH), 1-methylnaphthalene, 2-methylnaphthalene, pH, SAR, and arsenic impacts exceeding COGCC Table 915-1 were present at the former produced water vessel (PW-B01@5', PW-N01@3'). As such, a Form 19-Initial/Supplemental Spill/Release Report (COGCC Document No. 403183969) was submitted on October 3, 2022 and the COGCC issued Spill/Release Point ID 483063. A topographic Site Location Map showing the geographic setting of the site location is provided as Figure 1. Soil sample location and field screening data is presented in Table 1. The facility soil sample and field screening locations are illustrated on Figure 2.

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):

From September 28 through October 28, 2022, excavation activities were conducted to address remaining soil impacts in the former PWV excavation area, and 8 confirmation soil samples were collected from the final excavation extents and submitted for laboratory analysis of benzene, toluene, naphthalene, 1,2,4-TMB, 1,3,5-TMB, TPH, 1-methylnaphthalene, 2-methylnaphthalene, pH, SAR, and arsenic using standard methods appropriate for detecting the target analytes. Analytical results indicate that constituent concentrations in the 8 confirmation soil samples were in compliance with COGCC Table 915-1 standards or within the range of site-specific background results, with the exception to the pH values in PW-B02@8' and PW-W03@5'. However, the pH values were within the acceptable range of analytical variability. As such, it was determined to be acceptable to leave in place. Soil analytical results are summarized in Tables 1 through 5. The lab analytical results are provided as Attachment A.

Proposed Groundwater Sampling

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

Groundwater was not encountered during decommissioning activities.

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):

On September 28, 2022, visual inspection and field screening of soils was conducted at the sidewalls of the PWV excavation, one former meter house, one former AST, and 3 dump-line potholes. Based on the inspection and screening results, hydrocarbon-impacted soils were not observed at the soil screening locations. As a result, no soil samples were submitted for laboratory analysis from these areas in accordance with the COGCC Operator Guidance for Oil & Gas Facility Closure document. Soil sample location and field screening data is presented in Table 1. Soil analytical results are summarized in Tables 2 through 5. The soil sample and field screening locations are illustrated on Figure 2. The laboratory analytical reports are provided as Attachment A. The field notes and photographic log are provided as Attachment B.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 20

Number of soil samples exceeding 915-1 3

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

Approximate areal extent (square feet) 420

NA / ND

-- Highest concentration of TPH (mg/kg) 688

-- Highest concentration of SAR 11.1

BTEX > 915-1 Yes

Vertical Extent > 915-1 (in feet) 8

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?

Were background samples collected as part of this site investigation?

Background soil samples PW-BG01@2.5'-PW-BG03@2.5' and PW-BG01@5'-PW-BG03@5' were collected from native material adjacent to the produced water vessel excavation. The background soil samples were submitted for laboratory analysis of the Soil Suitability for Reclamation Parameters and Table 915-1 Metals in Soils using standard methods appropriate for detecting the target analytes in Table 915-1. Analytical results for the background soil samples are presented in Tables 3 and 5.

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.

Between September 28 and October 28, 2022, approximately 40 cubic yards of impacted soil was excavated and transported to the Front Range Landfill in Erie, Colorado, for disposal; approximately 60 cubic yards of impacted soil was excavated and transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado for recycling. The excavation area will be backfilled and contoured to match pre-existing conditions.

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.

Laboratory data indicate that impacted soils in the excavation have been remediated to be in compliance with the COGCC Table 915-1 standards, and/or within the range of site-specific background results, with the exception to the pH values for PW-B02@8' and PW-W03@5'. However, the pH result was within the acceptable range of soil variability. Due to the depth of the elevated pH result, it was determined to be acceptable to leave in place. Groundwater was not encountered in the PWV excavation area. Based on the analytical and soil screening data presented herein, assessment is complete at this site and no further activities are required. As such, Kerr McGee is requesting a No Further Action (NFA) determination for this location.

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)

Yes _____ Excavate and offsite disposal

_____ Chemical oxidation

_____ If Yes: Estimated Volume (Cubic Yards) _____ 100

_____ Air sparge / Soil vapor extraction

_____ Name of Licensed Disposal Facility or COGCC Facility ID # _____ 149007

_____ Natural Attenuation

No _____ Excavate and onsite remediation

_____ Other _____

_____ 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:

Quarterly Semi-Annually Annually Other Final Report

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 NFA Request

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.

KMOG has sufficient insurance and bonding to fully address the anticipated costs of remediation, including the remaining estimated costs for this project. KMOG currently has over 40 million in bonds with the Colorado Oil and Gas Conservation Commission. The cost for remediation is a preliminary estimate only, costs may change upwards or downward based on site-specific information. KMOG makes no representation or guarantees as to the accuracy of the preliminary estimate.

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:

Approximately 60 cubic yards of impacted material were excavated and transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado for recycling.

Volume of E&P Waste (solid) in cubic yards 100

E&P waste (solid) description impacted soil

COGCC Disposal Facility ID #, if applicable: 149007

Non-COGCC Disposal Facility: Front Range Landfill in Erie, Colorado

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

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? 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.

The site will be reclaimed in accordance with COGCC 1000 Series Reclamation Rules. Timeliness of reclamation initiation and completion will be subject to NFA, surface owner discretion and land use, and suitable ground conditions which allow for execution of surface activities so as to not cause unwarranted damages.

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? 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. 10/10/2023

Proposed date of completion of Reclamation. 11/10/2023

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. 06/29/2022

Actual Spill or Release date, or date of discovery. 09/30/2022

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 09/28/2022

Proposed site investigation commencement. 09/28/2022

Proposed completion of site investigation. 10/28/2022

REMEDIAL ACTION DATES

Proposed start date of Remediation. 09/28/2022

Proposed date of completion of Remediation. 10/28/2022

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

Based on the analytical and field screening data provided herein, Kerr-McGee is requesting an NFA determination for this location.

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

Signed: Gregory Hamilton

Title: Environmental Lead

Submit Date: 08/10/2023

Email: gregory_hamilton@oxy.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: Taylor Robinson

Date: 09/12/2023

Remediation Project Number: 24902

COA Type**Description**

	Operator will provide a Form 27-Supplemental to ECMC that addresses these COAs within 90 days.
	Operator will provide an updated soil sample location map showing all sample locations that are included in the soil analytical tables. ECMC can not verify confirmation samples without these locations identified on the map.
	Arsenic concentrations in confirmation soil samples exceed the Table 915-1 Residential Soil Screening Level Concentrations and are greater than 1.25 times the arsenic concentration in the background sample. Operator will provide additional data to characterize arsenic concentrations at the site and to determine its source.
	Background samples were collected from areas on-location and are not representative of background conditions. These samples (PW-BG01 and PW-BG03) shall be omitted from future background determination calculations. Operator shall obtain background samples from locations sufficiently away from the impacted area to reflect conditions not impacted by oil and gas activity, from similar depths, and soil horizons or lithologic materials for comparison to confirmation soil samples.
	COGCC has removed the closure request. Operator shall address the attached COAs prior to resubmission of this form.
5 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
403240628	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
403242205	OTHER
403242206	SITE MAP
403242210	ANALYTICAL RESULTS
403279852	SOIL SAMPLE LOCATION MAP
403492692	ANALYTICAL RESULTS
403527166	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 7 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Environmental	ECMC added Spill ID 483063 and selected Rule 913.c.(3): Remediation of Spill and Releases pursuant to Rule 912.	09/12/2023

Total: 1 comment(s)