

State of Colorado
Energy & Carbon Management Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203
Phone: (303) 894-2100 Fax: (303) 894-2109



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Report taken by:
Candice (Nikki) Graber

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>		Phone: <u>(970) 336-3500</u>
City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80217-3779</u>		Mobile: <u>(970) 515-1698</u>
Contact Person: <u>Gregory Hamilton</u>	Email: <u>Gregory_Hamilton@oxy.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 29026 Initial Form 27 Document #: 403374429

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>WELL</u>	Facility ID: _____	API #: <u>123-19870</u>	County Name: <u>WELD</u>
Facility Name: <u>VOGL 5-8A</u>	Latitude: <u>40.154307</u>	Longitude: <u>-104.921059</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SWNW</u>	Sec: <u>8</u>	Twp: <u>2N</u>	Range: <u>67W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>484650</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>VOGL 5-8A WH/FL Historical Release</u>	Latitude: <u>40.154317</u>	Longitude: <u>-104.921070</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SWNW</u>	Sec: <u>8</u>	Twp: <u>2N</u>	Range: <u>67W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

Facility Type: SPILL OR RELEASE Facility ID: 484670 API #: _____ County Name: WELD

Facility Name: VOGL 5-8A SEP RISER Hist. Release Latitude: 40.157812 Longitude: -104.914891

** correct Lat/Long if needed: Latitude: _____ Longitude: _____

QtrQtr: SWNW Sec: 8 Twp: 2N Range: 67W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SC Most Sensitive Adjacent Land Use Crop land

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? Yes

Other Potential Receptors within 1/4 mile

Multiple buildings and livestock holding pens are located within 1/4 mile of the wellhead.
 The nearest building is located approximately 240 feet west of the wellhead.
 The nearest domestic water well is located approximately 400 feet south of the wellhead.

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
Yes	SOILS	15' (N-S) x 15' (E-W) x 6' 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.

Wellhead cut and cap and preliminary flowline removal operations were completed at the Vogl 5-8A wellhead on June 21, 2023. Groundwater was not encountered in the cut and cap excavation. Visual inspection and field screening of soils around the well and associated pumping equipment was conducted following cut and cap operations, and soil samples were collected from the base of the cut and cap excavation area (WH-B01@6'), and from the locations where the flowline risers were disconnected at the wellhead (FL-B01@4') and separator (FL-B02@4'), and submitted for laboratory analysis to determine if a release occurred. The soil samples were submitted for laboratory analysis of BTEX, 1,2,4- and 1,3,5-TMB, naphthalene, TPH-GRO (C6-C10), DRO (C10-C28), and ORO (C28-C40), pH, EC, SAR, and boron using standard ECMC-approved methods. Additionally, based on preliminary analytical results, samples FL-B01@4' and FL-B02@4' were selected for waste characterization purposes and submitted for laboratory analysis of the full Table 915-1 analytical suite. Laboratory analytical results indicated that soil impacts were present at samples WH-B01@6', FL-B01@4', and FL-B02@4' due to the 1,2,4- and 1,3,5-TMB, TPH, PAHs, Ba, Pb, and/or pH results above ECMC standards and/or site-specific background levels. As such, two Form 19-Initial/Supplemental Spill/Release Reports (Document Nos. 403442749 and 403442990) were submitted on June 23 and 27, 2023, respectively, and the ECMC issued Spill/Release Point IDs 484650 and 484670, respectively. Analytical results indicated that the remaining constituent concentrations in the soil samples collected during wellhead cut and cap and flowline riser removal activities were in compliance with ECMC standards and/or within the range of site-specific background levels. Soil sample location and field screening data are presented in Table 1. The soil sample and field screening locations are illustrated on Figures 1 and 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):

On June 21, 2023, soil samples were collected from the base of the cut and cap excavation area (WH-B01@6'), and from the 2 former flowline riser locations (FL-B01@4' and FL-B02@4'). The soil samples were submitted for laboratory analysis of BTEX, TPH, TMB, naphthalene, pH, EC, SAR, boron, and/or PAHs and Table 915-1 metals, using standard methods. Analytical results indicated that soil impacts were present at all 3 sample locations due to 1,2,4- and 1,3,5-TMB, TPH, PAHs, Ba, Pb, and/or pH. The remaining concentrations in the soil samples collected during cut and cap and flowline riser removal activities were in compliance with ECMC standards and/or within the range of site-specific background levels. Excavation activities have not yet been initiated, and future confirmation soil samples will be submitted for laboratory analysis of BTEX, TPH, TMB, PAHs, As, Ba, Cd, Cu, Pb, Se and pH, based on the waste characterization results. Soil analytical results are summarized in Tables 2 - 5.

Proposed Groundwater Sampling

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

Groundwater has not been encountered during wellhead cut and cap or flowline riser removal activities completed to-date. If groundwater is encountered during forthcoming excavation activities at the former wellhead or flowline riser locations, a minimum of one grab sample will be collected as soon as practical. Groundwater samples will be submitted to an accredited laboratory for analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, 1,2,4- and 1,3,5-trimethylbenzene (TMB), using standard methods appropriate for detecting the target analytes in Table 915-1.

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 June 21, 2023, soil screening was conducted at 4 sidewall locations within the cut and cap excavation area and 4 locations at the ground surface adjacent to the excavation. Based on the inspection and screening results, hydrocarbon-impacted soil was not observed at the soil screening locations, and no soil samples were submitted for laboratory analysis from these areas in accordance with ECMC Operator Guidance. On July 5, 2023, a soil gas survey was conducted at 5 soil vapor points (SVP01 - SVP05) installed adjacent to the former wellhead location following cut and cap operations. GEM 5000 field readings were non-detect for methane at all 3 soil vapor points able to be screened (SVP03 - SVP05). The SVP locations are illustrated on Figure 2 and the SVP screening results are summarized in Table 6. The laboratory analytical report is provided as Attachment A. The field notes and a photographic log are provided as Attachment B.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil	NA / ND
Number of soil samples collected <u>3</u>	-- Highest concentration of TPH (mg/kg) <u>2230.77</u>
Number of soil samples exceeding 915-1 <u>3</u>	-- Highest concentration of SAR <u>0.75</u>
Was the areal and vertical extent of soil contamination delineated? <u>No</u>	BTEX > 915-1 <u>No</u>
Approximate areal extent (square feet) <u>225</u>	Vertical Extent > 915-1 (in feet) <u>6</u>
Groundwater	
Number of groundwater samples collected <u>0</u>	Highest concentration of Benzene (µg/l) _____
Was extent of groundwater contaminated delineated? <u>Yes</u>	Highest concentration of Toluene (µg/l) _____
Depth to groundwater (below ground surface, in feet) _____	Highest concentration of Ethylbenzene (µg/l) _____
Number of groundwater monitoring wells installed _____	Highest concentration of Xylene (µg/l) _____
Number of groundwater samples exceeding 915-1 _____	Highest concentration of Methane (mg/l) _____
Surface Water	
<u>0</u> 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 BG01@3', BG02@3', BG01@6', and BG02@6' were collected from native material adjacent to the former wellhead location, at comparable depths and material to the confirmation soil samples. The background soil samples were submitted for laboratory analysis of Table 915-1 metals and the Soil Suitability for Reclamation Parameters using standard methods appropriate for detecting the target analytes in Table 915-1. Analytical results for the background soil samples are presented in Tables 4 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?

Excavation activities to address remaining soil impacts at the former wellhead and flowline riser locations have not yet been initiated, and will be summarized in a forthcoming Form 27-Supplemental update.

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.

Excavation activities to address remaining soil impacts at the former wellhead and flowline riser locations have not yet been initiated, and no soils have been removed from the site to-date.

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.

Excavation activities to address remaining soil impacts at the former wellhead and flowline riser locations have not yet been initiated, will be summarized in a forthcoming Form 27-Supplemental update. Estimated time to attain NFA is TBD based on the extent of impacted soil.

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)

_____ Excavate and offsite disposal

_____ Chemical oxidation

_____ If Yes: Estimated Volume (Cubic Yards) _____

_____ Air sparge / Soil vapor extraction

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

_____ Natural Attenuation

_____ 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

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 Remediation progress update

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 Energy and Carbon Management 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: \$ 15000

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? 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 ECMC 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 reclamation 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. 11/30/2024

Proposed date of completion of Reclamation. 12/31/2024

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. 06/22/2023

Actual Spill or Release date, or date of discovery. 06/22/2023

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 06/21/2023

Proposed site investigation commencement. 06/21/2023

Proposed completion of site investigation. 12/31/2023

REMEDIAL ACTION DATES

Proposed start date of Remediation. 06/21/2023

Proposed date of completion of Remediation. 12/31/2023

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

Excavation activities to address remaining soil impacts at the former wellhead and flowline riser locations have not yet been initiated, and will be summarized in a forthcoming Form 27-Supplemental update. Form 27-Supplemental updates will continue to be submitted to the ECMC on a quarterly basis.

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: 09/18/2023

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: Candice (Nikki) Graber

Date: 12/13/2023

Remediation Project Number: 29026

COA Type**Description**

	The sampling plan approved in the previous Form 27 was not followed. Operator did not conduct an investigation along the path of the flowline. Operator shall complete the approved sampling plan prior to requesting closure.
	In accordance with 913.d.(1), Operator will investigate impacts to soil, Groundwater, and surface water as soon as the impacts are discovered.
2 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**

403533077	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
403533219	ANALYTICAL RESULTS
403533224	PHOTO DOCUMENTATION
403533225	OTHER
403533226	SOIL SAMPLE LOCATION MAP
403533227	SOIL SAMPLE LOCATION MAP
403533228	OTHER
403533300	ANALYTICAL RESULTS
403624772	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 9 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)