

State of Colorado
Energy & Carbon Management Commission

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Report taken by:

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

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 25666 Initial Form 27 Document #: 403201573

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

No Multiple Facilities

Facility Type: WELL	Facility ID: _____	API #: 123-21554	County Name: WELD
Facility Name: VOGL 4-5A	Latitude: 40.173690	Longitude: -104.921540	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWNW	Sec: 5	Twp: 2N	Range: 67W
Meridian: 6	Sensitive Area? Yes		

SITE CONDITIONS

General soil type - USCS Classifications SW
Most Sensitive Adjacent Land Use Agriculture

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

Occupied buildings approximately 650 feet (ft) southwest, 750 ft northwest, and 900 ft northeast; Wetlands approximately 800 ft north; Water well approximately 800 ft northwest; Agriculture surrounding.

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) Thermogenic gas

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	SOILS	TBD	Soil Vapor 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 operations were completed at the Vogl 4-5A wellhead on October 23, 2023. Groundwater was not encountered in the wellhead cut and cap excavation. Visual inspection and field screening of soils around the wellhead and associated pumping equipment were conducted following cut and cap operations, and a soil sample (B01@8') was submitted for analysis of reduced list Table 915-1 constituents including benzene, toluene, ethylbenzene, xylenes (BTEX), 1,2,4- and 1,3,5-trimethylbenzenes (TMBs), naphthalene, total petroleum hydrocarbons (TPH)-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-oil range organics (ORO), pH, electrical conductivity (EC), sodium adsorption ratio (SAR), and boron to determine if a release occurred. The flowline associated with the wellhead was removed on October 23 and October 25, 2023, and soil samples were collected from the locations where the flowline risers were disconnected from the wellhead (WH01-RISER@6') and from the separator [SEP01-RISER@3' (4-5A)]. The samples were submitted for laboratory analysis of reduced list Table 915-1 constituents to determine if a release occurred. The wellhead excavation and flowline potholes are depicted on Figures 1 and 2, respectively. The PID readings and soil sample results are summarized in Tables 1 and 2, respectively. The Form 44 is attached.

During routine testing activities at the Vogl 4-5A wellhead, five shallow soil vapor points (SVPs) were installed in the vicinity of the wellhead. Samples were collected on July 13, 2022 and submitted to Isotech Laboratories for gas composition (GC) analysis. Sample results and analysis were received on August 3, 2022 and indicated the presence of a trace concentration of thermogenic gas. The presence of stray gas was reported in a Form 19 Initial dated August 3, 2022 (Document No. 403125749). Please refer to the Form 27 Supplemental dated January 30, 2023 (Document No. 403303056) for more details.

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 October 23 and October 25, 2023 soil samples were collected from the base of the cut and cap excavation (B01@8'), and from the locations where the flowline risers were disconnected from the wellhead (WH01-RISER@6') and from the separator [SEP01-RISER@3' (4-5A)]. The samples were submitted for laboratory analysis of reduced list Table 915-1 constituents using ECMC-approved methods, as approved in the Form 27 Supplemental dated April 6, 2023 (Document No. 403367086). Results indicated that all soil samples collected during wellhead cut and cap and flowline removal activities were in compliance with ECMC Table 915-1 standards and/or within the analytical variability of background levels. The wellhead excavation and flowline potholes are depicted on Figures 1 and 2, respectively. The PID readings and soil sample results are summarized in Tables 1 and 2, respectively. The laboratory reports are attached.

Proposed Groundwater Sampling

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

Groundwater was not encountered during wellhead cut and cap or flowline removal 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 October 23 and 25, 2023, visual inspection and field screening of soils were conducted at 4 sidewall locations within the cut and cap excavation area, 4 locations at the ground surface adjacent to the excavation, and 3 pothole locations during flowline removal. Based on the inspection and screening results, impacted soil was not observed at the screening locations, and no soil samples were submitted for laboratory analysis from these areas, in accordance with the ECMC Operator Guidance. A photographic log is attached.

The soil gas investigation is ongoing. On October 23, 2023, five shallow SVPs were installed in and around the cut and cap excavation. On October 26, 2023, Ensolum, LLC. (Ensolum) returned to the site to screen and sample the SVPs using IsoTubes™ and an IsoTube sampling manifold in conjunction with the pump on a Landtec GEM™5000 (GEM). The samples were submitted to Isotech Laboratories (Isotech) for gas composition analysis. Methane was not detected by the GEM.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 3

Number of soil samples exceeding 915-1 1

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

Approximate areal extent (square feet) 0

NA / ND

ND Highest concentration of TPH (mg/kg) _____

-- Highest concentration of SAR 2.65

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 0

Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? Yes

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?

Six background soil samples (Native-BG01@3' through Native-BG03@3' and Native-BG01@6' through Native-BG03@6') were collected from native material adjacent to the wellhead cut and cap excavation. Four background soil samples were also collected from the native material outside of the Vogl3&4&5-5 McHale M O SA Facility excavations (Remediation No. 28970). The background soil samples were submitted for laboratory analysis of pH, EC, SAR, boron, and Table 915-1 metals using ECMC-approved methods. Laboratory analytical results indicated that levels of arsenic are naturally high in the soil. Analytical results from the background soil samples are presented in Table 2. The background soil sample locations are depicted on Figures 1 and 2.

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?

The soil gas investigation is ongoing. Laboratory analytical results from the October sampling event were received on November 14, 2023. Neither methane or thermogenic gas (C2-C5) were detected in any of the five samples.

The tabulated field data and laboratory analytical results are included as Tables 3 and 4, respectively. The October 2023 laboratory analytical report is attached. Additional SVPs will be installed after the cut and cap excavation has been backfilled. An additional soil gas sampling event will be conducted following installation.

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.

Laboratory analytical results indicate that reduced list Table 915-1 constituent concentrations in soil samples collected from the base of the cut and cap excavation (B01@8') and during flowline removal activities [WH01-RISER@6' and SEP01-RISER@3' (4-5A)] were in compliance with the ECMC Table 915-1 standards and/or within the analytical variability of background levels; therefore, no soils were removed from the site during wellhead cut and cap or flowline removal operations. The excavation areas were backfilled and contoured to match pre-existing site conditions.

The soil gas investigation is ongoing. On October 23, 2023, five shallow SVPs were installed in and around the cut and cap excavation. On October 26, 2023, Ensolum returned to the site to screen and sample the SVPs using IsoTubes™ and an IsoTube sampling manifold in conjunction with the pump on a GEM. The samples were submitted to Isotech for gas composition analysis. Methane was not detected by the GEM in any of the locations.

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.

Laboratory analytical results indicate that reduced list Table 915-1 constituent concentrations in soil samples collected from the base of the cut and cap excavation (B01@8') and during flowline removal activities [WH01-RISER@6' and SEP01-RISER@3' (4-5A)] were in compliance with the ECMC Table 915-1 standards and/or within the analytical variability of background levels. Groundwater was not encountered in the cut and cap excavation or the flowline potholes. Based on the analytical and soil screening data presented herein, assessment is complete at this site and no further activities are required. As such, the soil assessment is complete for this location.

The soil gas investigation is ongoing. Laboratory analytical results from the October sampling event were received on November 14, 2023. Neither methane or thermogenic gas (C2-C5) were detected in any of the five samples.

The tabulated field data and laboratory analytical results are included as Tables 3 and 4, respectively. The October 2023 laboratory analytical report is attached. Additional SVPs will be installed after the cut and cap excavation has been backfilled. An additional soil gas sampling event will be conducted following installation.

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

_____ 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 _____

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 Energy and Carbon 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 of guarantees as to the accuracy of the preliminary estimate.

Operator anticipates the remaining cost for this project to be: \$ 30000 _____

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? 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 the ECOM 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. 02/07/2024

Proposed date of completion of Reclamation. 03/07/2024

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. 08/03/2022

Actual Spill or Release date, or date of discovery. 08/03/2022

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 08/03/2022

Proposed site investigation commencement. 08/03/2022

Proposed completion of site investigation. 07/31/2023

REMEDIAL ACTION DATES

Proposed start date of Remediation. 08/01/2023

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

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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: _____

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: _____

Date: _____

Remediation Project Number: 25666

COA Type**Description**

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**

403617138	SOIL SAMPLE LOCATION MAP
403617143	ANALYTICAL RESULTS
403618988	ANALYTICAL RESULTS
403619001	PHOTO DOCUMENTATION
403619012	ANALYTICAL RESULTS

Total Attach: 5 Files

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

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)