

State of Colorado
Energy & Carbon Management Commission1120 Lincoln Street, Suite 801, Denver, Colorado 80203
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Report taken by:

Chris Sanchez

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 ECMC 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: MURFIN DRILLING COMPANY INC	Operator No: 61650	Phone Numbers
Address: 250 N WATER ST STE 300		Phone: (316) 858-8664
City: WICHITA	State: KS	Zip: 67202
Contact Person: Cristina Goodrich	Email: cgoodrich@murfininc.com	Mobile: ()

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 29666 Initial Form 27 Document #: 403409061

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: LOCATION	Facility ID: 450166	API #: _____	County Name: LINCOLN
Facility Name: Skyfall 2-5	Latitude: 39.298800	Longitude: -103.573500	
** correct Lat/Long if needed: Latitude: 39.301802		Longitude: -103.574051	
QtrQtr: NWNE	Sec: 5	Twp: 9S	Range: 55W Meridian: 6 Sensitive Area? Yes

Facility Type: WELL	Facility ID: _____	API #: 073-06719	County Name: LINCOLN
Facility Name: Skyfall 2-5	Latitude: 39.298800	Longitude: -103.573500	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWNE	Sec: 5	Twp: 9S	Range: 55W Meridian: 6 Sensitive Area? Yes

Facility Type:	OFF-LOCATION FLOWLINE	Facility ID:	477002	API #:		County Name:	LINCOLN
Facility Name:	Skyfall 2-5	Latitude:	39.301820	Longitude:	-103.573750		
		** correct Lat/Long if needed: Latitude:		Longitude:			
QtrQtr:	NWNE	Sec:	5	Twp:	9S	Range:	55W
		Meridian:	6	Sensitive Area?		Yes	

Facility Type:	SPILL OR RELEASE	Facility ID:	485136	API #:		County Name:	LINCOLN
Facility Name:	Skyfall 2-5	Latitude:	39.298797	Longitude:	-103.573526		
		** correct Lat/Long if needed: Latitude:		Longitude:			
QtrQtr:	NWNE	Sec:	5	Twp:	9S	Range:	55W
		Meridian:	6	Sensitive Area?		Yes	

SITE CONDITIONS

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

Is domestic water well within 1/4 mile? No 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

N/A

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
No	GROUNDWATER	0	not encountered
Yes	SOILS	15' (N-S) x 13' (E-W) x 13' bgs	lab 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.

Wellhead cut and cap operations and facility decommissioning were completed at the Skyfall 2-5 location on 9/7/23 - 10/25/23. Groundwater was not encountered in the wellhead cut and cap excavation area or during facility decommissioning activities. Visual inspection and field screening of soils around the well and associated equipment was conducted following wellhead cut and cap and facility decommission operations, and a soil sample (WH-B01@8') was submitted for laboratory analysis to determine if a release occurred. The flowline associated with this wellhead will be abandoned in place per the landowner's request. Soil samples were collected from the locations where the flowline risers were disconnected at the wellhead (FL-B01@6') and separator (FL-B02@4'), and from beneath the former ASTs and separator (AST-B01@3", AST-B03@3", AST-B05@3", AST-B07@3", and SEP-B01@4', and submitted for laboratory analysis to determine if a release occurred. Laboratory analytical results for soil sample WH-B01@8 indicated that TPH and 1,2-methylnaphthalene impacts exceeding ECMC Table 915-1 were present at the former wellhead location. As such, a Form 19-Initial/Supplemental Spill/Release Report (ECMC Document No. 403532228) was submitted on September 18, 2023, and the ECMC issued Spill/Release Point ID 485136. The remaining analytical results for the soil samples collected during wellhead cut and cap and facility decommissioning operations were in compliance with ECMC standards. See attached site investigation report for figures, tables, photos, closure checklists, and laboratory analytical reports for all work completed at the site.

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):

Proposed Groundwater Sampling

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

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):

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 24

Number of soil samples exceeding 915-1 12

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

Approximate areal extent (square feet) 195

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

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.

NA / ND

-- Highest concentration of TPH (mg/kg) 782

-- Highest concentration of SAR 4.27

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 13

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)

OTHER INVESTIGATION INFORMATION

☐ Were impacts to adjacent property or offsite impacts identified?

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

Background grab soil samples WH-BG01@3", WH-BG01@4', WH-BG02@3", WH-BG02@4', WH-BG03@10, and WH-BG04@10' were collected from native material adjacent to the wellhead cut and cap excavation. The background soil samples were submitted for Table 915-1 Soil Suitability for Reclamation and Metals analysis. On 7/18/24, additional background grab soil samples were collected from 8', 11', and 14' bgs from 3 new locations in the field around the former wellhead location and submitted to Origins for Arsenic and Barium analysis.

☐ 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.

Impacted soil was removed and transported to a licensed disposal facility.

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 for offsite disposal

Soil Remediation Summary

☐ In Situ

☒ Ex Situ

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

☐ Yes Excavate and offsite disposal
☐ If Yes: Estimated Volume (Cubic Yards) _____ 50
☐ Name of Licensed Disposal Facility or ECMC 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.

Murfin is adequately bonded as shown by submitted Form 3A Doc: 403418364 and has General Liability insurance.

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:

none

Volume of E&P Waste (solid) in cubic yards 50

E&P waste (solid) description impacted soil

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility: Clean Harbors

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

E&P waste (liquid) description

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility:

REMEDIATION COMPLETION REPORT

REMEDIATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? Yes

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 ECMC 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 has already ben reclaimed to crop land and farmer grew crops this season.

Is the described reclamation complete? Yes _____

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. 09/15/2023

Actual Spill or Release date, or date of discovery. 09/15/2023

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 09/07/2023

Proposed site investigation commencement. 09/07/2023

Proposed completion of site investigation. 07/18/2024

REMEDIAL ACTION DATES

Proposed start date of Remediation. 10/25/2023

Proposed date of completion of Remediation. 07/18/2024

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

Approved Form 6 document number 403515384 is related to this form.

Approved Form 44 document number 403590851 is related to this form.

Murfin would like to request ECMC approval for the application of Table 915-1 Residential Soil Screening Level limits at this site. Grab soil sample WH-B04@13' is fully compliant with Table 915-1 Protection of Groundwater Soil Screening Level limits in a clay lithology (sandy CLAY, ~70% clay), confirming impacts did not reach groundwater. Water well documents available on Colorado Division of Water Resources online database for water well receipt number 9090460 approximately 3,450' S from the wellhead state a static groundwater level of 50' bgs. This water well is at a lower elevation than the former Skyfall 2-5 wellsite, per USGS topographic map.

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

Signed: David Castro

Title: Senior Project Scientist

Submit Date: 08/26/2024

Email: dcastro@eagle-enviro.com

Based on the information provided herein, this Application for Site Investigation and Remediation Workplan complies with ECMC Rules and applicable orders and is hereby approved.

ECMC Approved: Chris Sanchez

Date: 11/13/2024

Remediation Project Number: 29666

COA Type**Description**

0 COA	

ATTACHMENT 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**

403900539	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
403900603	SITE INVESTIGATION REPORT
403993127	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 3 Files

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

Environmental	The surface area disturbed by the remediation activity shall be reclaimed in accordance with the 1000 Series Reclamation Rules. For locations with active ongoing oil and gas operations, comply with Rule 1003 interim reclamation requirements and for locations that will no longer have active oil and gas operations, comply with Rule 1004 Final Reclamation requirements.	11/13/2024
Environmental	Based on the information presented, it appears that no further remedial action is necessary at this time and the ECMC approves the closure request. However, should future conditions at the site indicate contaminant concentrations in soils exceeding ECMC standards or if groundwater is found to be impacted, then further investigation and/or remediation activities may be required.	11/13/2024

Total: 2 comment(s)