

State of Colorado
Energy & Carbon Management Commission

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Report taken by:
Krystal Heibel

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: <u>MARKUS PRODUCTION, INC</u>	Operator No: <u>53790</u>	Phone Numbers Phone: <u>(720) 350-8858</u> Mobile: <u>()</u>
Address: <u>39 FAIRWAY LANE</u>		
City: <u>LITTLETON</u>	State: <u>CO</u>	Zip: <u>80123</u>
Contact Person: <u>Mark Brown</u>	Email: <u>mark@markusproduction.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 13154 Initial Form 27 Document #: 401990432

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>PIT</u>	Facility ID: <u>107649</u>	API #: _____	County Name: <u>WASHINGTON</u>
Facility Name: <u>JOLLY 41X-6</u>	Latitude: <u>39.827663</u>	Longitude: <u>-103.577262</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>NENE</u>	Sec: <u>6</u>	Twp: <u>3S</u>	Range: <u>55W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

Facility Type: <u>PIT</u>	Facility ID: <u>119049</u>	API #: _____	County Name: <u>WASHINGTON</u>
Facility Name: <u>CHARLES JOLLY 41X-6</u>	Latitude: <u>39.827990</u>	Longitude: <u>-103.577517</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>NENE</u>	Sec: <u>6</u>	Twp: <u>3S</u>	Range: <u>55W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

SITE CONDITIONS

General soil type - USCS Classifications SC

Most Sensitive Adjacent Land Use Dry Range Land

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

The surface owner has confirmed that none of the water wells within 1/4 mile of the site are used for domestic purposes, only for watering livestock. Within Mule Deer Winter Concentration Area High Priority Habitat, dry ephemeral drainage 150' southeast.

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	SOILS	TBD	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.

Markus Production has retained Eagle Environmental Consulting to move this remediation project ahead towards closure.

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):

Pit surface grab soil samples will be collected from the 12 previous 2020 pit sample locations as presented in the attached Figure 2 and submitted to Origins Laboratory in Denver, CO for TPH (C6-C36), EC, pH, and SAR analysis only. At soil sample locations SP-FE-1 and SP-WF-1, grab soil samples will be collected from 3' bgs and submitted to Origins for TPH (C6-C36) analysis only.

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):

Grab background soil samples will be collected from surface and 3' bgs at 4 locations around the perimeter of the site away from former oil & gas operations and equipment. The background soil samples will be submitted to Origins for EC, pH, and SAR analysis only for local cleanup level comparison.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 12
Number of soil samples exceeding 915-1 12
Was the areal and vertical extent of soil contamination delineated? No
Approximate areal extent (square feet) 0

NA / ND

-- Highest concentration of TPH (mg/kg) 725
-- Highest concentration of SAR 93.8
BTEX > 915-1 No
Vertical Extent > 915-1 (in feet) 1

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?

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?

See Proposed Sampling Plan

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.

No source has been generated.

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.

TBD

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 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.

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

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 _____

ECMC Disposal Facility ID #, if applicable: _____

Non-ECMC Disposal Facility: _____

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

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? 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? _____

Does the previous reply indicate consideration of background concentrations? _____

Does Groundwater meet Table 915-1 standards? _____

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.

Reclamation will be completed in accordance with ECMC 1000 Series Rules or as agreed upon with the Surface Owner.

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). _____

Proposed site investigation commencement. 04/01/2019

Proposed completion of site investigation. 12/31/2025

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

Markus Production has retained Eagle Environmental Consulting to move this remediation project ahead towards closure.

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

Signed: Mark Brown

Title: President

Submit Date: 09/25/2025

Email: mark@markusproduction.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: Krystal Heibel

Date: 11/04/2025

Remediation Project Number: 13154

COA Type**Description**

	Operator shall email notify NE EPS Krystal Heibel (krystal.heibel@state.co.us) 7 days prior to any soil sampling activity.
	Operator shall collect confirmation soil samples as described in the Rule 915.e.(2) Guidance Document. Operator will analyze soil samples for TPH (C6-C36), Table 915-1 Organic Compounds in Soil, Table 915-1 metals, and Table 915-1 Soil Suitability for Reclamation (Electrical conductivity, Sodium adsorption ratio, and pH by saturated paste method, boron (hot water soluble)). "At soil sample locations SP-FE-1 and SP-WF-1, grab soil samples will be collected from 3' bgs and submitted to Origins for TPH (C6-C36) analysis only."
	Operator shall conduct a closure investigation in accordance with Rule 911.c. Pit Closure Guidance Document.
	Operator shall fully populate the implementation schedule in accordance with Rule 913.d on the subsequent Supplemental Form 27. The "Date of Surface Owner notification/consultation" information is missing.
	Operator shall conduct proposed investigation within 30 days of approval and propose additional remediation with a detailed standalone implementation schedule on the next Supplemental Form 27. Previously approved Form 27 was submitted in June 27, 2022.
	Operator shall investigate soil northeast of the north pit and soil west and southwest of the southern pit. Operator shall remediate any historic release by delineating horizontal and vertical extent of impacted area using the Table 915-1 Protection of Groundwater Soil Screening Level Concentrations and remediate impacts to Table 915-1 standards. Documentation must include a map showing spill area with sample locations plus laboratory results.
	Operator shall move background sample locations to be outside of areas potentially impacted by oil and gas activity. The northern and southern "approximate proposed background soil sample location" placements illustrated on Figure 2, Soil Sample Location Map, shall be moved to areas not reflective of oil and gas activity. Background sampling locations should be sufficiently away from the impacted area to reflect conditions not impacted by oil and gas activity, and should be obtained from similar depths and soil horizons or lithologic materials for comparison to confirmation soil samples.
7 COAs	

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
404361076	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
404361170	MAP
404361272	SOIL SAMPLE LOCATION MAP

Total Attach: 4 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
		Stamp Upon Approval

Total: 0 comment(s)