

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 ECOM 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>LARAMIE ENERGY LLC</u>	Operator No: <u>10433</u>	<b>Phone Numbers</b>
Address: <u>1700 LINCOLN ST STE 3950</u>		Phone: <u>(970) 9019007</u>
City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80203</u>		Mobile: <u>( )</u>
Contact Person: <u>Matt Kasten</u>	Email: <u>mkasten@laramie-energy.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 7258 Initial Form 27 Document #: 2230283

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: Update

SITE INFORMATION

No  Multiple Facilities

Facility Type: <u>LOCATION</u>	Facility ID: <u>423444</u>	API #: _____	County Name: <u>GARFIELD</u>
Facility Name: <u>Mesa Cuttings Disposal Facility</u>	Latitude: <u>39.534710</u>	Longitude: <u>-108.224240</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>NWSE</u>	Sec: <u>9</u>	Twps: <u>6S</u>	Range: <u>97W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

SITE CONDITIONS

General soil type - USCS Classifications OH Most Sensitive Adjacent Land Use RANGELAND

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? No

**Other Potential Receptors within 1/4 mile**

WATER WELL ~1.58 MILES NW, UNNAMED INTERMITTENT DRAINAGE ~500' SE, NATURAL DRAINAGE ~500' SE.

# SITE INVESTIGATION PLAN

## **TYPE OF WASTE:**

- |  |  |   |
|--|--|---|
| <input checked="" type="checkbox"/> <b>E&amp;P Waste</b> | <input type="checkbox"/> <b>Other E&amp;P Waste</b>  | <input type="checkbox"/> <b>Non-E&amp;P Waste</b> |
| <input type="checkbox"/> Produced Water                  | <input type="checkbox"/> Workover Fluids             | _____   |
| <input type="checkbox"/> Oil                             | <input type="checkbox"/> Tank Bottoms                |   |
| <input type="checkbox"/> Condensate                      | <input type="checkbox"/> Pigging Waste               |   |
| <input type="checkbox"/> Drilling Fluids                 | <input type="checkbox"/> Rig Wash                    |   |
| <input checked="" 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
No	GROUNDWATER	NOT APPLICABLE	LABORATORY ANALYTICAL DATA
No	SOILS	NOT APPLICABLE	LABORATORY ANALYTICAL DATA
No	SURFACE WATER	NOT APPLICABLE	LABORATORY ANALYTICAL DATA
No	VEGETATION	NOT APPLICABLE	VISUAL

## **INITIAL ACTION SUMMARY**

Description of initial action or emergency response measures take to abate, investigate, and/or remediate impacts associated with E&P Waste.

OXY SUBMITTED A FORM 2A ON FEBRUARY 23, 2011 REQUESTING APPROVAL OF THE INCLUDED MESA CUTTINGS DISPOSAL AREA (MCDA)CUTTINGS MANAGEMENT PLAN. THE COGCC APPROVED THE CUTTINGS MANAGEMENT PLAN FOR THE MCDA ON JUNE 3, 2011. AS REQUESTED IN THE APPROVED DOCUMENT, OXY IS PROVIDING THIS FORM 27 TO INITIATE CLOSURE OF THE MCDA DRILL CUTTINGS DISPOSAL AREA FOR COGCC REVIEW AND APPROVAL.

## **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 ):

Soil samples were not collected; however, cuttings samples were obtained. cuttings were stabilized with sawdust on each well pad to absorb de minimus amounts of fluids present in the cuttings. Cuttings samples were collected following the transport of the cuttings to the MCDA. The cuttings were then mixed with native materials and resampled.

### **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 ):

Down gradient surface water will be monitored before, during and after cuttings disposal operations.

### **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 24  
Was the areal and vertical extent of soil contamination delineated? No  
Approximate areal extent (square feet) 20037  
6

### NA / ND

-- Highest concentration of TPH (mg/kg) 1902  
-- Highest concentration of SAR 61  
BTEX > 915-1 Yes  
Vertical Extent > 915-1 (in feet) 0

### Groundwater

Number of groundwater samples collected 0  
Was extent of groundwater contaminated delineated? No  
Depth to groundwater (below ground surface, in feet) 100  
Number of groundwater monitoring wells installed 0  
Number of groundwater samples exceeding 915-1 0

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

6 Number of surface water samples collected  
0 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?

OXY WILL FOLLOW UP WITH A FINAL FORM 27 FOR CLOSURE, REVEGETATION EFFORTS, MONITORING FOR STORMWATER, AND SEMI-ANNUAL INSPECTIONS ON THE SITE.

## 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.

AS DESCRIBED IN THE DRILL CUTTINGS MATERIALS MAANGEMENT PLAN OXY TRANSPORTED DRILL CUTTINGS VIA TRUCK FROM THE 697-04D, 608-41, 608-43-31, 609-33, 697-16-28, AND 697-05C WELL PADS TO THE MCDA CUTTINGS DISPOSAL AREA. THE CUTTINGS WERE TRANSPORTED TO THE RECEIVING/MIXING AREA ON THE LOCATION, MIXED WITH NATIVE MATERIAL, AND THEN STACKED AT THE PERMANENT DISPOSAL LOCATION UNTIL ~14,189 CU YDS OF CUTTINGS WERE DISPOSED. OXY COLLECTED AND ANALYZED MIXED CUTTINGS SAMPLES WITHIN THE MCDA DISPOSAL AREA AND ANALYZED THEM FOR COGCC TABLE 910-1. OXY WILL CAP THE CUTTINGS WITH AT LEAST 3 FEET OF NATIVE MATERIAL FOR A SUFFICIENT AGRONOMIC ZONE, TO ALLOW FOR FINAL RECLAMATION.

### 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.

Cuttings were mixed on site and resampled. The cuttings were then capped with at least 3 feet of native material to ensure a sufficient agronomic zone. The site was prepared for reclamation by recontouring and seed bed preparation.

### Soil Remediation Summary

In Situ

Ex Situ

\_\_\_\_\_ Bioremediation ( or enhanced bioremediation )

\_\_\_\_\_ Chemical oxidation

\_\_\_\_\_ Air sparge / Soil vapor extraction

\_\_\_\_\_ Natural Attenuation

Yes \_\_\_\_\_ Other \_\_\_\_\_ Cuttings were mixed and resampled.

\_\_\_\_\_ 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.

NO GROUNDWATER WAS IMPACTED DURING THE DISPOSAL OF THE DRILL CUTTINGS. THE TRANSPORTED CUTTINGS WERE STABILIZED WITH SAWDUST ON EACH WELL PAD TO ABSORB DE MINIMUS AMOUNTS OF FLUIDS PRESENT IN THE CUTTINGS. AFTER THE CUTTINGS WERE TRANSPORTED TO THE DISPOSAL AREA THE CUTTINGS WERE ADDITIONALLY MIXED WITH NATIVE MATERIAL PRIOR TO DISPOSAL. OXY MONITORED DOWN GRADIENT WATER BEFORE, DURING AND AFTER CUTTINGS DISPOSAL OPERATIONS. CURRENTLY SURFACE WATER SAMPLING DATA SHOWS NO CHANGE TO SURFACE WATER ANALYTICAL CONCENTRATIONS IN THE STOCK POND. AS OUTLINED THE CUTTINGS MANAGEMENT PLAN, OXY HAS FOUR ADDITIONAL QUARTERLY SUFACE WATER SAMPLES TO COLLECT FOLLOWING THE FINAL RECLAMATION OF THE AREA, AND WILL PROVIDE THE DATA TO THE COGCC WHEN COMPLETED.

# 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?    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.

Cuttings were mixed on site and resampled. The cuttings were then capped with at least 3 feet of native material to ensure a sufficient agronomic zone. The site was prepared for reclamation by recontouring and seed bed preparation.

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? 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? \_\_\_\_\_

### **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. 05/25/2012

Proposed completion of site investigation. 08/21/2012

### **REMEDIAL ACTION DATES**

Proposed start date of Remediation. \_\_\_\_\_

Proposed date of completion of Remediation. 11/01/2012

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**

Q1 2025 Update. No work performed on project.

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

Signed: Matt Kasten

Title: Sr. Env Coordinator

Submit Date: \_\_\_\_\_

Email: mkasten@laramie-energy.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: \_\_\_\_\_

Date: \_\_\_\_\_

Remediation Project Number: 7258

**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**

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Total Attach: 0 Files

**General Comments**

**User Group**

**Comment**

**Comment Date**

		Stamp Upon Approval
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Total: 0 comment(s)