

State of Colorado Oil and Gas Conservation Commission

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



Document Number:

402443626

Receive Date:

07/15/2020

Report taken by:

ALEX FISCHER

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.

Refer to Rules 340, 905, 906, 907, 908, 909, and 910

OPERATOR INFORMATION

Name of Operator: <u>LARAMIE ENERGY LLC</u>	Operator No: <u>10433</u>	Phone Numbers
Address: <u>1401 SEVENTEENTH STREET #1401</u>		Phone: <u>(970) 263-3641</u>
City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80202</u>		Mobile: <u>()</u>
Contact Person: <u>Joan Proulx</u>	Email: <u>jproulx@laramie-energy.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

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

PURPOSE INFORMATION

- | | |
|--|--|
| <input type="checkbox"/> 901.e. Sensitive Area Determination | <input type="checkbox"/> 909.c.(5), Rule 910.b.(4): Remediation of impacted ground water |
| <input type="checkbox"/> 909.c.(1), Rule 905: Pit or PW vessel closure | <input type="checkbox"/> Rule 909.e.(2)A.: Notice completion of remediation in accordance with Rule 909.b. |
| <input type="checkbox"/> 909.c.(2), Rule 906: Spill/Release Remediation | <input checked="" type="checkbox"/> Rule 909.e.(2)B.: Closure of remediation project |
| <input type="checkbox"/> 909.c.(3), Rule 907.e.: Land treatment of oily waste | <input type="checkbox"/> Rule 906.c.: Director request |
| <input type="checkbox"/> 909.c.(4), Rule 908.g.: Centralized E&P Waste Management Facility closure | <input type="checkbox"/> Other _____ |

SITE INFORMATION

N Multiple Facilities (in accordance with Rule 909.c.)

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>	Twp: <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:

- ☒ **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	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 910-1 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 > 910-1 Yes

Vertical Extent > 910-1 (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 910-1 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 910-1

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)

_____ 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

Yes _____ Other _____ Cuttings were mixed and resampled. _____

_____ 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

Frequency: ☐ Quarterly ☐ Semi-Annually ☐ Annually ☐ Other _____

Report Type: ☐ Groundwater Monitoring ☐ Land Treatment Progress Report ☐ O&M Report
☐ Other _____

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 _____

Do all soils meet Table 910-1 standards? No _____

Does the previous reply indicate consideration of background concentrations? _____

Are the only residual soil impacts pH, SAR, or EC at depths greater than 3 feet below ground surface? Yes _____

Does Groundwater meet Table 910-1 standards? Yes _____

Is additional groundwater monitoring to be conducted? No _____

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 approve the seed mix? Yes _____

If NO, does the seed mix comply with local soil conservation district recommendations? Yes _____

IMPLEMENTATION SCHEDULE

PRIOR DATES

Date of Surface Owner notification/consultation, if required. _____

Actual Spill or Release date, if known. _____

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). _____

Date of commencement of Site Investigation. 05/25/2012

Date of completion of Site Investigation. 08/21/2012

REMEDIAL ACTION DATES

Date of commencement of Remediation. _____

Date of completion of Remediation. 11/01/2012

SITE RECLAMATION DATES

Date of commencement of Reclamation. _____

Date of completion of Reclamation. _____

OPERATOR COMMENT

Please see attached documentation to address elevated Ar, SAR and pH:
MCDA REM 7258 FAQ 31 & 32 Letter 07-14-20, L485339, COCL485339, 616-21-32 PP sampling locations figure, 616-21-32 Sept 2008 data table, MCDA to 616-21-32 Pad

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

Signed: Joan Proulx

Title: Regulatory Analyst

Submit Date: 07/15/2020

Email: jproulx@laramie-energy.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: ALEX FISCHER

Date: 08/20/2020

Remediation Project Number: 7258

COA Type

Description

	Attachments Doc #s 402443655; 402443657; 402443659; 402443660; 402443662; and 402443653 are related to the closure and sampling of Production Pit 616-21-32 (Pit FacilityID 291975) approximately 3,033 feet to the southwest. Operator shall collect background arsenic samples in the near vicinity of the MCDA (Location ID: 423444).
	Attachment Doc #402443654 is analytical for Location ID: 335921 (697-15-01 Cutting Plan Sampling). NOTE: The sample date was 4/8/2011 and F2A approved on 6/3/2011. NOTE: The Mesa Cuttings Disposal Area (MCDA) was not permitted to accept cuttings from this location. Provide verification on whether the MCDA accepted E&P waste from Location ID: 335921 and an explanation to why this information was included in this submittal.
	F27 Doc #2230283 provides statements that operator will follow up with a final F27 for closure, revegetation efforts, monitoring for stormwater, and semi-annual inspections on the site in subsequent F36 (F27??) inspections. Provide the semi-annual inspection documentation on a subsequent F27. THE COGCC REC SPECIALIST SHALL CONDUCT AN INSPECTION PRIOR TO REM 7258 CLOSURE.

	<p>F27 Doc #2230283 provides statements that 14,189 cubic yards of cuttings were disposed at this location. The Operator identified episodic elevated concentrations of TPH, Benzo(A)pyrene, Dibenzo(A,H)anthracene, and Benzene which were collected prior to mixing. The cuttings were then mixed and Oxy resampled the mixed cuttings once staged for final disposal to ensure elevated concentrations of TPH and PAH's were not present within the mixed cuttings. Oxy will cap the cuttings disposal location with at least 3 feet of native material to ensure a sufficient agronomic zone. Oxy will collect confirmation samples of the cap to ensure adequate native material is placed on the disposal location.</p> <p>The WMP shows a 200'x100' area for a total volume of 11,000 cubic yards. An additional 3,189 cubic yards were added to the MCDA. Additionally, the WMP illustrates that the cuttings would be 24' in depth at the west end and 6' in depth at the east end.</p> <p>Summary table Doc #402443651 does NOT identify samples after remixing. The Operator shall advance a sufficient number of soil borings throughout the MCDA, sampling beneath the 3' cap and through the extent of the cuttings material for TPH (GRO and DRO), BTEX, Benzo(A)pyrene, Dibenzo(A,H)anthracene, and inorganics (pH and SAR), and arsenic to demonstrate that the cutting in the MCDA are compliant to table 910-1.</p>
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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.

<u>Att Doc Num</u>	<u>Name</u>
402443626	FORM 27-SUPPLEMENTAL-SUBMITTED
402443649	ANALYTICAL RESULTS
402443650	ANALYTICAL RESULTS
402443651	ANALYTICAL RESULTS
402443652	ANALYTICAL RESULTS
402443653	ANALYTICAL RESULTS
402443654	ANALYTICAL RESULTS
402443655	SITE MAP
402443657	ANALYTICAL RESULTS
402443659	SITE MAP
402443660	OTHER
402443662	ANALYTICAL RESULTS
402443663	ANALYTICAL RESULTS

Total Attach: 13 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Environmental	Under the Remediation Complete Tab, the Final Closure Request has been changed from YES to NO.	08/20/2020
Environmental	<p>Analytical for sampled L561390, 2/16/2012, MCDA-MCW-21612 was not included on the summary table. All samples with the exception of Arsenic (4.9 mg/kg) were Table 910-1 compliant.</p> <p>Analytical for sampled L586821-08, 7/25/2012, MCDA-WC-072512 was not included on the summary table. All samples with the exception of Arsenic (11 mg/kg), SAR (15), and Benzo (a)pyrene (0.025) were Table 910-1 compliant.</p>	08/19/2020

Environmental	Attachment Doc #402443651 is a summary table of the MCDA. This table was provided F27, Doc #2230283 without the attached analytical. Sample ID L550993, 12/9/2011, MCDA 12911 Table does not match lab report. Arsenic should be 3.3 mg/kg and not 30 mg/kg; Barium should be 420 and 850; Cadmium should be 0.21 and not 7.7 Chromium should be 8.6 and not 170; Copper should be 17 and not 860; Lead should be 9.9 and not 1600; Nickel should be 7.5 and 73; Selenium should be 2.3 and not 2.2; Silver should be 1.2 and BDL; Zinc should be 42 and 4100	08/19/2020
Environmental	AJF 8/19/2020 review time. 1.5 hrs 1.0 hr 2.0 hrs 2.5 hrs AJF 8/20/2020 review time. 1.5 hrs	08/19/2020
Environmental	WMP states that water quality sampling will be conducted from the unnamed intermittent drainage app 1,000 feet south of the disposal location. Sample for BTEX, TDS, dissolved metal, chlorides, and sulfates F27 Doc #2230283 provides statements that the Operator has four additional quarterly surface water samples following the final reclamation of the area and will provide the data to the COGCC when completed. Attachment Doc #40244363 are analytical results from surface water samples collected on 3/27/2012, 5/11/2012, 8/7/2012, 10/10/2012, 3/20/2013, and 8/14/2013. Attachment Doc #40244362 is the summary table. These two (2) attachments appear to fulfill the statement above.	08/19/2020
Environmental	Waste Management Plan (WMP) states Three (3) background samples were collected for table 910-1 excluding Boron. WMP states that "On each of the first 3 well pads, beginning with the first well, multiple composite samples from both the surface and production string and from each major formation will be collected." Then cuttings from every 4th, 8th, 12th, 16th and 20th well based on a 22 well pad composite samples will be collected. Well 1 from each pad to target Unita, Green River, and Wasatch Fms.	08/19/2020
Environmental	Permitted to receive cuttings from: 608-43-31, 17 wells; 608-41, 20 wells; 609-33, 22 wells; 697-04D, 21 wells; 697-05C, 22 wells; and 697-16-28, 9 wells.	08/19/2020

Total: 7 comment(s)