

# State of Colorado Oil and Gas Conservation Commission

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Document Number:

402514031

Receive Date:

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.

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>	<b>Phone Numbers</b>
Address: <u>1401 17TH STREET SUITE #1400</u>		Phone: <u>(970) 263-3641</u>
City: <u>DENVER</u>	State: <u>CO</u>	Zip: <u>80202</u>
Contact Person: <u>Joan Proulx</u>	Email: <u>jproulx@laramie-energy.com</u>	Mobile: <u>( )</u>

### PROJECT, PURPOSE & SITE INFORMATION

#### PROJECT INFORMATION

Remediation Project #: 4812 Initial Form 27 Document #: 1630699

#### 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>334490</u>	API #: _____	County Name: <u>MESA</u>
Facility Name: <u>Vega 11 Pad</u>		Latitude: <u>39.206450</u>	Longitude: <u>-107.767460</u>
		** correct Lat/Long if needed: Latitude: _____	Longitude: _____
QtrQtr: <u>SENE</u>	Sec: <u>9</u>	Twp: <u>10S</u>	Range: <u>93W</u>
		Meridian: <u>6</u>	Sensitive Area? <u>Yes</u>

#### SITE CONDITIONS

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

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

Plateau Creek is 1,092' to the East of the location.

# 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
Yes	SOILS	SEE FORM 19	VISUAL/ODOR
Yes	VEGETATION	MINIMAL ALONG EXTENT OF SPILL	VISUAL/ODOR

## INITIAL ACTION SUMMARY

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

RELEASE CONTAINED WITH EARTHEN DIKES AND ABSORBANT BOOMS. RECOVERED 5 BBLS FROM GROUND SURFACE, 4 BBLS REMAINED IN-LINE (TOTAL RECOVERED=9BBLS). EXCAVATION HAS ALREADY BEGUN IN MEADOW ON EAST SIDE OF ACCESS ROAD AND WILL CONTINUE UP TO CULVERT (A TOTAL LENGTH OF APPROX. 105 FT AND AT A DEPTH OF APPROX. 1 FT). BARDITCH EXCAVATION ON THE WEST SIDE OF THE ACCESS ROAD WILL BEGIN WHEN FRAC OPERATIONS ARE COMPLETE ON PAD #1 AND FLOWLINES ARE REMOVED.

## 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 ):

Four grab samples were obtained as outlined on the hand-drawn sketch (doc #1981426).

### 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 ):

Additional grab soil samples were collected in Dec. 2020 from point of release to end of release, along with 3 background samples.

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

### Soil

Number of soil samples collected 11

Number of soil samples exceeding 910-1 4

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

Approximate areal extent (square feet) 1162

### NA / ND

-- Highest concentration of TPH (mg/kg) 73

-- Highest concentration of SAR 14

BTEX > 910-1 No

Vertical Extent > 910-1 (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 910-1

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 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?

The transfer line spill impacted the east side of the access road, entered a culvert, and ended in a barditch on the west side of the access road.

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

A grab background sample was collected on 7/23/07. Three additional background samples were collected in Dec. 2020. The Dec. 2020 samples indicate elevated levels of Arsenic for two of the sampling locations; however, these Arsenic levels are less than the background Arsenic levels collected in Dec. 2020.

☐ 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 WILL BE OVEREXCAVATED UNTIL COGCC CLEANUP LEVELS ARE ACHIEVED.

## **REMEDICATION 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.

Final disposition of the impacted soil will likely be disposal or treatment for reuse. No evidence could be located that indicated either option was utilized.

## **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.

NA

## REMEDATION 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? Yes \_\_\_\_\_

Describe beneficial use, if any, of E&P Waste derived from this remediation project:

There was no beneficial use of the E&P waste derived from this project.

Volume of E&P Waste (solid) in cubic yards \_\_\_\_\_ 0

E&P waste (solid) description \_\_\_\_\_

COGCC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-COGCC Disposal Facility: \_\_\_\_\_

Volume of E&P Waste (liquid) in barrels \_\_\_\_\_ 9

E&P waste (liquid) description Flowback water; 9 bbls recovered. \_\_\_\_\_

COGCC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-COGCC Disposal Facility: Unknown \_\_\_\_\_

## REMEDATION COMPLETION REPORT

### REMEDATION COMPLETION SUMMARY

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

Do all soils meet Table 910-1 standards? Yes \_\_\_\_\_

Does the previous reply indicate consideration of background concentrations? Yes \_\_\_\_\_

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

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.

CLEAN FILL WILL BE USED TO RECONTOUR THE EXCAVATED AREAS TO EXISTING GRADE. ONCE COMPLETED THE AREA WILL BE RESEEDDED USING AN APPROPRIATE NRCS (OR EQUIVALENT) SEED MIX.

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? \_\_\_\_\_

If NO, does the seed mix comply with local soil conservation district recommendations? \_\_\_\_\_

## IMPLEMENTATION SCHEDULE

### **PRIOR DATES**

Date of Surface Owner notification/consultation, if required. \_\_\_\_\_

Actual Spill or Release date, if known. 07/22/2007

### **SITE INVESTIGATION DATES**

Date of Initial Actions described in Site Investigation Plan (start date). 07/22/2007

Date of commencement of Site Investigation. 07/22/2007

Date of completion of Site Investigation. 12/03/2020

### **REMEDIAL ACTION DATES**

Date of commencement of Remediation. 07/22/2007

Date of completion of Remediation. 10/09/2007

### **SITE RECLAMATION DATES**

Date of commencement of Reclamation. \_\_\_\_\_

Date of completion of Reclamation. \_\_\_\_\_

### **OPERATOR COMMENT**

The analytical samples are identified on the "Vega 11 Pad Sampling Table" with a Sample ID which corresponds to the points on the hand-drawn map attached to Form 19 #1630698.

"Remediation Progress Update" tab: It is unknown the amount of impacted soil was excavated; no evidence of the amount of impacted soil or the outcome of the impacted soil (disposed of or treatment for reuse) could be located.

Attached are two sampling reports, a sampling summary table, and a sampling location map for the Dec. 2020 sampling.

Please delete the FAQ 32 request previously submitted; operator is unable to delete it. It is no longer needed as the Dec. 2020 samples indicate no elevated readings for SAR or EC.

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: \_\_\_\_\_

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: \_\_\_\_\_

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

Remediation Project Number: 4812

### **COA Type**

### **Description**

	REMOVE FAQ 32 REQUEST ATTACH COA FOR OPERATOR TO ENSURE THAT FLOW PATH AND AREAS ALONG ACCESS ROAD COMPLY WITH 900-SERIES STANDARDS UPON RECLAMATION.
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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.

### **Att Doc Num**

### **Name**

402514032	ANALYTICAL RESULTS
402514033	OTHER
402514034	ANALYTICAL RESULTS
402572607	SOIL SAMPLE LOCATION MAP
402572608	ANALYTICAL RESULTS
402572830	ANALYTICAL RESULTS
402572832	ANALYTICAL RESULTS

Total Attach: 7 Files

## General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Environmental	<p>COMPOSITE sample from end of release had exceedances for EC (11) and SAR (14) at 2' on 7/23/2007. It appears that two more composite samples were collected on 8/2/2007 and 10/9/2007 from 2.5 and 3' depth, both were compliant with EC and SAR. Sketch attached to Spill Report indicates that the area was excavated. It does not indicate that area from POR to emergency pit was ever excavated. POR sample collected 7/23/2007 was compliant.</p> <p>The compliant POR sample suggests that the flow path may have been compliant, the subsequent COMPOSITE sampling at end of flowpath may document cleanup. Operator's FAQ 32 request is clunky and inappropriate for the location of the spill (offsite). I cannot locate the spill path in aerials based on the sketch alone.</p>	11/13/2020
Environmental	<p>Operator has attached FAQ 32 request for Sample ID P11-CSS1 (2') collected 7/23/2007, FAQ 32 request may not be appropriate since spill occurred off-site. (Do final reclamation standards apply to access road?)</p> <p>Attached analytical suggests that impacted area may have been excavated to 3' (10/9/2007 sample)</p> <p>Spill Report #1630698 indicates that an emergency pit was constructed upgradient. No samples were collected from that location, nor were they collected from between POR and emergency pit as depicted on spill sketch. and no closure on record.</p>	11/13/2020
Environmental	Laboratory reports missing for samples collected on 8/2/2007 and 10/9/2007.	11/13/2020

Total: 3 comment(s)