

# 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:

401833896

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 SEVENTEENTH STREET #1400</u>		Phone: <u>(970) 8125311</u>
City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80202</u>		Mobile: <u>(970) 210 6889</u>
Contact Person: <u>Lorne C Prescott</u>	Email: <u>lprescott@laramie-energy.com</u>	

### PROJECT, PURPOSE & SITE INFORMATION

#### PROJECT INFORMATION

Remediation Project #: 11939Initial Form 27 Document #: 401777422

#### 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 checked="" type="checkbox"/> 909.c.(2), Rule 906: Spill/Release Remediation                 | <input 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>CENTRALIZED EP WASTE MGMT FAC</u>	Facility ID: <u>441238</u>	API #: _____	County Name: <u>MESA</u>
Facility Name: <u>HARRISON CR WTR TRMENT FAC IMPOUND 441238</u>	Latitude: <u>39.268140</u>	Longitude: <u>-107.751830</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>NWNE</u>	Sec: <u>22</u>	Twp: <u>9S</u>	Range: <u>93W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

#### SITE CONDITIONS

General soil type - USCS Classifications SCMost Sensitive Adjacent Land Use RanchingIs domestic water well within 1/4 mile? YesIs surface water within 1/4 mile? YesIs groundwater less than 20 feet below ground surface? No

Other Potential Receptors within 1/4 mile

None

# 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	N/A	N/A

## INITIAL ACTION SUMMARY

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

Pond 2, HCWTF was found to be leaking and reported via Form 19, doc num 401765168. No evidence of fluids escaping from the secondary liner system. Monitoring wells near the location indicated no sign of contamination. Fluid flows to the Pond were ceased and the Pond was drawn down to the point where fluids were no longer accumulating in the leak detection sump. Three (3) potential leak locations were identified, those locations were repaired on September 27, 2018.

## 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 ):

If groundwater is available in the Monitoring Wells, it will be sampled and compared to the criteria levels in the Pond water.

### 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 0  
Number of soil samples exceeding 910-1             
Was the areal and vertical extent of soil contamination delineated?             
Approximate areal extent (square feet)           

### NA / ND

           Highest concentration of TPH (mg/kg)             
           Highest concentration of SAR             
           BTEX > 910-1             
           Vertical Extent > 910-1 (in feet)           

### Groundwater

Number of groundwater samples collected 1  
Was extent of groundwater contaminated delineated? Yes  
Depth to groundwater (below ground surface, in feet) 60'  
Number of groundwater monitoring wells installed 2  
Number of groundwater samples exceeding 910-1 0

ND Highest concentration of Benzene (µg/l)             
ND Highest concentration of Toluene (µg/l)             
ND Highest concentration of Ethylbenzene (µg/l)             
ND Highest concentration of Xylene (µg/l)             
ND Highest concentration of Methane (mg/l)           

### Surface Water

0 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?

# 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.

Since no fluids are currently accumulating in the leak detection sump, no additional produced water will be removed from Pond 2.

## 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.

Since the date of the initial Form 19 submittal and the approval of the follow-on form 27 Document 401777422, the Pond 2 liner has been repaired. Subsequent to the repairs, fluids accumulating in the leak detection (LD) sump have consistently decreased. Currently, approximately 1 to 2 gallons of fluid accumulates on a daily basis. There is no evidence of impacts to soil or groundwater. As per conditions detailed in Document 401777422 a geo-hydro assessment of the location is being performed and potential locations for monitoring wells have been identified. Based on an initial review/suggestions by geo-hydrologists, we have scheduled a drilling team to be on location starting November 19, 2018 for installation of the MWs. Core samples will be collected and analyzed during the boring process. Immediately following the installation of the wells, if water is present, we will collect samples for lab analysis to confirm no contaminants have breached the secondary liner.

Preliminary Scope of Efforts for Pond 2, general drilling and sampling plans for the week of the 19th:

- We will drill five 2' wells 40-50' in depth Monday through Thursday and will likely carry into Friday.
- We plan to drill solid stem auger and sample an 18" split spoon every 5' to TD but will be prepared with a hollow stem auger if needed
- Wells will be completed as stickups the week of drilling
- If all soils appear to be clean and screen clean with the PID, we will not submit a sample for analysis. If split spoon samples above the water table appear to be impacted, we will submit those intervals for analysis
- Anticipate drilling the wells and characterizing soils to take the full days and that an Entrada representative will have to come out to the site from Grand Junction the following week to develop and sample the 5 wells for groundwater. If drilling goes faster than anticipated and time allows I will be prepared to develop and sample the wells the week of the 19th

## 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

No \_\_\_\_\_ Bioremediation ( or enhanced bioremediation )  
No \_\_\_\_\_ Chemical oxidation  
No \_\_\_\_\_ Air sparge / Soil vapor extraction  
No \_\_\_\_\_ 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

**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? \_\_\_\_\_

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? \_\_\_\_\_

Does Groundwater meet Table 910-1 standards? \_\_\_\_\_

Is additional groundwater monitoring to be conducted? \_\_\_\_\_

## 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.

Thi slocation will not be reclaimed until it is at the end of the Project Lifecycle.

Is the described reclamation complete? \_\_\_\_\_

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. 08/11/2018

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 08/12/2018

Date of commencement of Site Investigation. 08/12/2018

Date of completion of Site Investigation. 09/27/2018

### REMEDIAL ACTION DATES

Date of commencement of Remediation. 11/19/2018

Date of completion of Remediation. 11/25/2018

### SITE RECLAMATION DATES

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

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

### OPERATOR COMMENT

--

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

Signed: Lorne C Prescott

Title: Reg and Enviro Compliance

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

Email: lprescott@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: 11939

### COA Type

### Description

--	--

### 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

401833948	REMEDIAL ACTION PLAN
-----------	----------------------

Total Attach: 1 Files

### General Comments

### User Group

### Comment

### Comment Date

		Stamp Upon Approval
--	--	---------------------

Total: 0 comment(s)