

State of Colorado Oil and Gas Conservation Commission

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Receive Date:

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Report taken by:

Steven Arauza

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) 8125311</u>
City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80202</u>		Mobile: <u>(970) 2106889</u>
Contact Person: <u>Lorne C Prescott</u>	Email: <u>lprescott@laramie-energy.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 14690Initial Form 27 Document #: 402246241

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 checked="" type="checkbox"/> Other <u>Deliniate, excavate impacted soils, remove gravel from tank battery, inspect liner for compromise</u> |

SITE INFORMATION

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

Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>469032</u>	API #: _____	County Name: <u>MESA</u>
Facility Name: <u>Alkali Creek Compression Station</u>	Latitude: <u>39.357588</u>	Longitude: <u>-107.644467</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SESE</u>	Sec: <u>15</u>	Twp: <u>8S</u>	Range: <u>92W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

SITE CONDITIONS

General soil type - USCS Classifications GCMost 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? Yes

Other Potential Receptors within 1/4 mile

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	Area beneath secondary containment	Liner will be removed, collect soil samples

INITIAL ACTION SUMMARY

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

After fluid was discovered inside containment 130 bbls of fluid was pumped out and disposed of. Recovered fluid was a mixture of produced water release and frozen precip. A saturated area outside the containment was noted and dug out, approx 1.5ft x 1.5ft. The liner was pulled back from the steel containment ring and frozen fluid was discovered. The frozen materials were removed along with soils (using a Supersucker/pressure washer). Samples were collected from soils to confirm delineation and compliance with Table 910-1. After this effort was completed, Laramie removed the remaining gravel from the remaining lined containment and discovered additional compromises (holes). To fully examine the area for potential impacts from fluids, Laramie will remove all the tanks and the remaining secondary containment. Delineation, excavation and sampling according to Table 910-1 was conducted subsequent to the spill remediation.

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):

Sampling and analysis of the area impacted by the spill/release has been completed. No exceedances for TPH, BTEX, SAR. After the tanks and liner are removed, the soils beneath the liner will be examined for staining/impacts and samples will be collected to confirm no additional impacts.

Proposed Groundwater Sampling

☐ Will groundwater samples be collected as part of this investigation? (Number, analyses, and locations of samples):

No groundwater is present or impacted as a result of the release, gw depth is estimated at 30 feet or more according to the BLM hydrologist. Laramie is coordinating with the landowner (BLM) for the installation of a monitoring well (MW) near this location. Final approval and installation of the MW is anticipated for Spring 2020. Soil boring and ground water data will be provided to the COGCC at that time.

Proposed Surface Water Sampling

☐ Will surface water samples be collected as part of this investigation? (Number, analyses, and locations of samples):

There is no evidence of impacts to surface waters (Alkali Creek), fluids have been contained within the secondary containment and Laramie's current assessment is minimal impacts to soils. Confirmed via the attached lab data for impacted soils.

Additional Investigative Actions

☒ Additional alternative investigative actions described in attached Site Investigation Plan (summary):

Installation of a monitoring well, Spring 2020.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 8

Number of soil samples exceeding 910-1 0

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

Approximate areal extent (square feet) 120

NA / ND

NA Highest concentration of TPH (mg/kg)

NA Highest concentration of SAR

BTEX > 910-1 No

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) 30'

Number of groundwater monitoring wells installed 0

Number of groundwater samples exceeding 910-1 0

NA Highest concentration of Benzene (µg/l)

NA Highest concentration of Toluene (µg/l)

NA Highest concentration of Ethylbenzene (µg/l)

NA Highest concentration of Xylene (µg/l)

NA 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) 2

Volume of liquid waste (barrels) 2

☒ Is further site investigation required?

After the tanks and liner are removed, the soils beneath the liner will be examined for staining/impacts and samples will be collected to determine if any as yet undiscovered impacts exist..

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.

Soils will be examined for staining/odor. Material were excavated using heavy equipment, vac trucks and shovels. Materials determined to have been impacted and potentiallt exceeding Table 910-1 hauled to a disposal facility (Greenleaf).

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.

No impacts to groundwater have been identiifed or are anticipated at this time. Impacted soils were removed and hauled away for disposal. Soils will be replaced with clean fill prior to the regrading the location. Determination of the horizontal and vertical extent of contamination was performed using field screening devices and olafactory assessment.

Soil Remediation Summary

☐ In Situ

_____ Bioremediation (or enhanced bioremediation)
_____ Chemical oxidation
_____ Air sparge / Soil vapor extraction
_____ Natural Attenuation
_____ Other _____

☒ Ex Situ

Yes _____ Excavate and offsite disposal
If Yes: Estimated Volume (Cubic Yards) _____ 10
Name of Licensed Disposal Facility or COGCC Facility ID # _____
No _____ 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
No _____ 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.

MW planned installation, Spring 2020.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Frequency: ☐ Quarterly ☐ Semi-Annually ☐ Annually ☒ Other Final

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

☒ Other Soils assessment

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:

None

Volume of E&P Waste (solid) in cubic yards 10

E&P waste (solid) description Soils combined with water used to melt ice, hauled away via vac truck.

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: Greenleaf

Volume of E&P Waste (liquid) in barrels 3

E&P waste (liquid) description Soils combined with water used to melt ice, hauled away via vac truck.

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: Greenleaf

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? 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? Yes

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.

This location will continue to be used for storage and transport of fluids via tanks within secondary containment.

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 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). 11/01/2019

Date of commencement of Site Investigation. 11/01/2019

Date of completion of Site Investigation. 11/30/2019

REMEDIAL ACTION DATES

Date of commencement of Remediation. _____

Date of completion of Remediation. _____

SITE RECLAMATION DATES

Date of commencement of Reclamation. _____

Date of completion of Reclamation. _____

OPERATOR COMMENT

Lab analysis of soil samples collected at this location indicate compliance with Table 910-1 criteria for TPH, BTEX, SAR and PH (excepting one sample SS5). These samples were collected as part of the remediation/cleanup that took place after the release. Arsenic levels exceed Table 910-1 but Laramie believes these values are reflective of naturally occurring levels in the region. Since this data was gathered, Laramie has decided to remove the tanks and containment from this spot and relocate them on the pad up gradient (with the compressor). After the tanks were removed, Laramie secured additional soil samples from beneath the liner for this location. As of January 14, 2020, lab results are still pending. Laramie is coordinating with the landowner (BLM) for the installation of a monitoring well (MW) near this location. Final approval and installation of the MW is anticipated for Spring 2020. Soil boring and ground water data will be provided to the COGCC at that time.

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 & Enviro Compliance

Submit Date: 01/14/2020

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: Steven Arauza

Date: 01/27/2020

Remediation Project Number: 14690

COA Type**Description**

	Operator shall submit a proposed monitor well installation site diagram via a Supplemental eForm 27 prior to installation of the monitor well.
	Operator shall submit complete documentation (soil sample location map, analytical summary table, and complete laboratory reports) of additional soil samples referenced under Operator Comment section of this report via a Supplemental eForm 27.
	Operator shall submit a revised summary table for 11/12/2019 confirmation soil sample results that includes soil sample depths as an attachment to a Supplemental eForm 27.
	The COGCC does not concur with the operator's belief that arsenic levels exceeding Table 910-1 "are reflective of naturally occurring levels in the region" at this time. Operator shall submit technical justification for regional arsenic background concentration via a Supplemental eForm 27.
	Operator indicates that additional lab results are pending for soil samples collected from former tank battery area. This remediation project shall remain open to document site investigation and remediation of potential impacts beneath the tank battery.

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**

402285774	FORM 27-SUPPLEMENTAL-SUBMITTED
402285841	AERIAL IMAGE
402285844	MAP
402285846	ANALYTICAL RESULTS
402285848	ANALYTICAL RESULTS

Total Attach: 5 Files

General Comments**User Group****Comment****Comment Date**

Environmental	Changed operator's final closure request from 'Yes' to 'No,' due to additional site investigation pending beneath former tank battery area and operator's commitment to install and sample a monitoring well. See COAs above.	01/22/2020
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Total: 1 comment(s)