

State of Colorado  
Oil and Gas Conservation Commission

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401305200  
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Report taken by:  
CARLOS LUJAN

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 INFORMATON

Name of Operator: <u>URSA OPERATING COMPANY LLC</u>	Operator No: <u>10447</u>	<b>Phone Numbers</b>
Address: <u>1600 BROADWAY ST STE 2600</u>		Phone: <u>(970) 625-9922</u>
City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80202</u>		Mobile: <u>( )</u>
Contact Person: <u>Dwayne Knudson</u>	Email: <u>dknudson@ursaresources.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

**PROJECT INFORMATION**  
Remediation Project #: 10074 Initial Form 27 Document #: 401213915

**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 Facilites ( in accordance with Rule 909.c. )

Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>448546</u>	API #: _____	County Name: <u>GARFIELD</u>
Facility Name: <u>SPILL/RELEASE POINT</u>	Latitude: <u>39.459954</u>	Longitude: <u>-108.014076</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SESE</u>	Sec: <u>5</u>	Twp: <u>7S</u>	Range: <u>95W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

**SITE CONDITIONS**

General soil type - USCS Classifications CL Most Sensitive Adjacent Land Use Private landowner ~500 to the west

Is domestic water well within 1/4 mile? Yes Is surface water within 1/4 mile? No

Is groundwater less than 20 feet below ground surface? No

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

Various domesitic water wells present witihin 1/4 miles of the pad.

# SITE INVESTIGATION PLAN

## TYPE OF WASTE:

- |  |  |  |
|--|--|--|
| <input checked="" type="checkbox"/> E&P Waste      | <input type="checkbox"/> Other E&P Waste             | <input type="checkbox"/> Non-E&P Waste |
| <input checked="" 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 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
Yes	SOILS	~6"	Confirmation data and field screening

## INITIAL ACTION SUMMARY

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

Vac trucks were utilized to remove the free standing liquids within the containment. Tank #3 was drained of the liquids to be removed and inspected by contractor personnel.

A sample was collected from within the earthen bermed containment at the furthest point to the north (SP1) where soils were accessible. Sampling results indicated that soils did not exceed COGCC Table 910-1 thresholds with the exception of sodium absorption ratio (SAR). Additionally, field screening of the soils within the containment, as well as outside of containment were conducted at various depths, but not extending into the bentonite liner that lies ~12-18 inches below the surface. Please see Figure 1 for the sample location and field screening map.

## 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 ):

To date, two (2) samples have been collected (SP1 and SP 2) within the earthen bermed containment. Various field screening samples have been collected within and outside of the containment. Additional sampling will consist of confirmation sampling within the earthen bermed area where the tanks are currently located and soils cannot be visually inspected or screened until late March or early April 2017.

### 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 ):

See attached Site Investigation Work Plan. Additional sampling and analysis will take place to determine vertical extent of impact for excavation and remediation. Disposal of impacted soils will occur at a properly permitted and approved disposal facility.

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

### Soil

Number of soil samples collected 2

Number of soil samples exceeding 910-1 1

Was the areal and vertical extent of soil contamination delineated? No

Approximate areal extent (square feet) 0

### NA / ND

--            Highest concentration of TPH (mg/kg) 1522

--            Highest concentration of SAR 25.4

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) 122'

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?

Samples from the pad surface were collected on the eastern side, outside of the sound water to determine if fill material contributed to SAR exceedance in SP1. The same samples will be used for arsenic and inorganic exceedance as the fill material differs from the actual background soils on the adjacent land.

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?

Additional sampling and screening needed to determine extent of impacts under the frac tanks along the western side of the pad.

# 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.

The leaking tank has been taken out of commission and will be repaired. A tank inspection will be completed prior to tank being placed back into service.

## 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.

On 5/16/17 the area where the initial point of origin (SP2) sampling that was conducted on 1/11/16 and results indicated elevated TPH concentrations, was excavated to a depth of ~6" where field screening indicated soils satisfied COGCC Table 910-1. A confirmation sample was collected for TPH and results received on 5/24/17 indicated that soils satisfy Table 910-1 thresholds for TPH. Excavated soils were disposed of at Greenleaf Environmental Services (GES) and clean road base backfill was used to backfill the excavated area.

Below is a summary of the attached analytical  
12/1/16 – Inside Containment (SP1)  
1/11/17 – Point of Origin (SP2)  
1/11/17 – Pad Background (inorganics)  
4/11/17 – SP3, SP4, SP5, and Background  
5.16.17 – Remediation Excavation Confirmation

Additionally, seven (7) boreholes to varying depths between 0-12" were completed at outlined in Map #1 to determine if any impacts were present outside of containment. Results indicated not impacts were present as field screening results were less than 100 mg/kg.

Map #1 – Borehole sample points (field screened only) and confirmation sample points (SP 1 & 2)  
Map #2 – Shows all the confirmation samples points that all satisfy COCC Table 910-1 along with borehole sample locations.

## Soil Remediation Summary

In Situ

Ex Situ

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

Yes \_\_\_\_\_ Excavate and offsite disposal

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

If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_ 7

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

Name of Licensed Disposal Facility or COGCC Facility ID # \_\_\_\_\_

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

No \_\_\_\_\_ Excavate and onsite remediation

\_\_\_\_\_ Other \_\_\_\_\_

\_\_\_\_\_ Land Treatment

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

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

\_\_\_\_\_ Other \_\_\_\_\_

## Groundwater Remediation Summary

No \_\_\_\_\_ 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.

Impacts did not extend beyond the pads bentonite containment layer which is present at 12" below the pad surface. Groundwater was not impacted.

## REMEDIATION PROGRESS UPDATE

### PERIODIC REPORTING

**Frequency:**  Quarterly  Semi-Annually  Annually  Other Final Closure

**Report Type:**  Groundwater Monitoring  Land Treatment Progress Report  O&M Report  
 Other Closure Request

### 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:

Impacted soils around the point of origin were excavated and hauled to Greenleaf Environmental Services (GES) for disposal.

Volume of E&P Waste (solid) in cubic yards 7

E&P waste (solid) description Hydrocarbon Impacted Soils

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

Non-COGCC Disposal Facility: Greenleaf Environmental Services (GES)

Volume of E&P Waste (liquid) in barrels 0

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? 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.

Backfill will consist of the same material used to construct the pad, or an alternate fill determined at the time completion to ensure pad integrity.

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. 11/29/2016

Actual Spill or Release date, if known. 11/29/2016

### **SITE INVESTIGATION DATES**

Date of Initial Actions described in Site Investigation Plan (start date). 11/30/2016

Date of commencement of Site Investigation. 11/30/2016

Date of completion of Site Investigation. 04/19/2017

### **REMEDIAL ACTION DATES**

Date of commencement of Remediation. 05/16/2017

Date of completion of Remediation. 05/16/2017

### **SITE RECLAMATION DATES**

Date of commencement of Reclamation. 05/16/2017

Date of completion of Reclamation. 05/16/2017

**OPERATOR COMMENT**

Please forward onto Carlos Lujan

The impacted area around the point of origin has been remediated and backfilled with clean roadbase material. Request for NFA as all analytical collected from within the area where the release occurred satisfy COGCC Table 910-1

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

Signed: ` Kris Rowe

Title: Env. Consultant

Submit Date: ` 06/09/2017

Email: krowe@hrlcomp.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: CARLOS LUJAN

Date: 06/13/2017

Remediation Project Number: 10074

**COA Type****Description**

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**

401305200	FORM 27-SUPPLEMENTAL-SUBMITTED
401305274	ANALYTICAL RESULTS
401305275	ANALYTICAL RESULTS
401305278	ANALYTICAL RESULTS
401305279	ANALYTICAL RESULTS
401305280	ANALYTICAL RESULTS
401305281	MAP
401305284	MAP
401305287	DISPOSAL MANIFESTS

Total Attach: 9 Files

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

Environmental	Based on review of information presented it appears that no further action is necessary at this time, and COGCC approves the closure request. However, should future conditions at the site indicate contaminant concentrations in soils exceeding COGCC standards or if ground water is found to be significantly impacted, then further investigation and/or remediation activities may be required at the site. Reclamation shall be in accordance to the 1000 Series Rules.	06/13/2017
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Total: 1 comment(s)