

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:
401909366

Receive Date:
01/18/2019

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 INFORMATON

Name of Operator: <u>URSA OPERATING COMPANY LLC</u>	Operator No: <u>10447</u>	Phone Numbers
Address: <u>1600 BROADWAY ST STE 2600</u>		Phone: <u>(970) 329-4367</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 #: <u>12168</u>	Initial Form 27 Document #: <u>401855724</u>
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>TANK BATTERY</u>	Facility ID: <u>335054</u> API #: _____ County Name: <u>GARFIELD</u>
Facility Name: <u>CSF-67S91W 8SESW</u>	Latitude: <u>39.454919</u> Longitude: <u>-107.578976</u>
** correct Lat/Long if needed: Latitude: <u>39.454503</u>	Longitude: <u>-107.578658</u>
QtrQtr: <u>SESW</u> Sec: <u>8</u> Twp: <u>7S</u> Range: <u>91W</u> Meridian: <u>6</u> Sensitive Area? <u>No</u>	
SITE CONDITIONS	
General soil type - USCS Classifications <u>CL</u>	Most Sensitive Adjacent Land Use <u>Rangeland</u>
Is domestic water well within 1/4 mile? <u>No</u>	Is surface water within 1/4 mile? <u>No</u>
Is groundwater less than 20 feet below ground surface? <u>No</u>	
Other Potential Receptors within 1/4 mile	

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	TBD	site investigation sampling

INITIAL ACTION SUMMARY

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

Upon discovery of the release, flow to the W1 tank was stopped and vac trucks dispatched to the location to begin recovering loss fluids within the containment, as well as remove fluids within the tank to prevent additional fluids from leaking out. The tank was taken off line and out of service. Once the tank was removed, initial sampling of the soils directly below the tank indicated impacts were present up to 1ft based off of field screening and visual observations.

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):

Initial sampling from below the tank has been submitted to the lab for analysis. Additional samples were collected from different depths and locations around the containment to determine vertical and horizontal extent of impacts. Refer to attached sample location map (also submitted with the Form 19s). Results from SP 1 indicate that the soils exceed COGCC Table 910-1 standards for TPH and BTEX. The additional samples (SP 2-8) and confirmation samples will be analyzed for TPH (DRO & GRO) and BTEX as those are the only constituents exceeding COGCC Table 910-1.

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 site investigation activities may be required depending on the results from SP 1-8. Field screening instruments indicate that impacts may be present within 1ft below the ground surface. Confirmation samples have be collected at 1ft. If the analysis at 1ft exceed COGCC Table 910-1, then additional site investigation activities may be necessary to determine actual depth of impacts.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 8
Number of soil samples exceeding 910-1 1
Was the areal and vertical extent of soil contamination delineated? Yes
Approximate areal extent (square feet) 1350

NA / ND

-- Highest concentration of TPH (mg/kg) 3242
-- Highest concentration of SAR 0.646
 BTEX > 910-1 Yes
 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) 400'
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

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?

three (3) background samples collected from an undisturbed location adjacent to the pad

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?

TBD - pending analytical data results.

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.

Analytical results indicate that the soils on the surface exceed COGCC Table thresholds for TPH and BTEX. Follow-up samples will be analyzed for the same constituents to determine vertical and horizontal extent of impacts. Upon confirmation of the vertical and horizontal extent, soils will be excavated via backhoe/trackerhoe.

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.

Soils impacted by the released produced water will be excavated and hauled off site for disposal to Greenleaf Environmental. Upon removing the impacted soils, the excavation will be backfilled with clean native material (or imported fill material if needed) and capped with fill material necessary to support upright tank placement.

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)

Yes _____ Excavate and offsite disposal

_____ Chemical oxidation

If Yes: Estimated Volume (Cubic Yards) _____ 100

_____ Air sparge / Soil vapor extraction

Name of Licensed Disposal Facility or COGCC Facility ID # _____ 0

_____ 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)

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.

Groundwater is estimated to be between 400-500 feet based on nearest groundwater well located ~ 1 mile to the west/southwest and elevation.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Frequency: Quarterly Semi-Annually Annually Other January 2019 Update

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:

No beneficial reuse of waste. Excavated material was hauled off location for off site disposal

Volume of E&P Waste (solid) in cubic yards 75

E&P waste (solid) description Hydrocarbon Impacted Soils

COGCC Disposal Facility ID #, if applicable: 0

Non-COGCC Disposal Facility: _____

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? 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.

The area excavated will be backfilled with clean native material (or imported fill if needed) and capped with material sufficient to support production tank operations. Impacts are no anticipated to extent off well pad.

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). 11/20/2018

Date of commencement of Site Investigation. 12/19/2018

Date of completion of Site Investigation. 12/20/2018

REMEDIAL ACTION DATES

Date of commencement of Remediation. 12/19/2018

Date of completion of Remediation. _____

SITE RECLAMATION DATES

Date of commencement of Reclamation. _____

Date of completion of Reclamation. _____

OPERATOR COMMENT

Attached is the updated analytical results from the additional site investigation work that was conducted on December 19, 2018. Vertical and horizontal delineation was conducted by utilizing an excavator to remove the impacted soils and field screen the material with a PID and PetroFlag. As the soils were being excavated for delineation, they were also hauled off site for disposal to Greenleaf Environmental Services (GES).

It was determined that impacted soils extended vertically to approximately 3ft below ground surface (bgs) at SP 14, and horizontally to the eastern edge of containment near SP 11 and SP 15 as outlined in the attached sample location map. Additional excavation occurred horizontally to the south approximately 5ft from the edge of the containment wall and to a depth of 1ft near sample points SP 6 and SP 12. Excavation to the north occurred horizontally ~2-3 feet from the point of origin (SP 1) and to a depth of ~1.5ft where a confirmation sample was collected as noted by SP 13. Lastly, exaction to the west extended ~5ft from the point of origin (SP 1) SP 10 with an approximate depth of 1.5ft, where a confirmation sample was collected as denoted by SP 13 on the map.

As discussed with the COGCC, an Area of Concern (AOC) was identified (denoted as red in the attached map) in the northeast corner of the excavation and extended to the eastern side of the containment wall. A hydrovac truck was utilized to complete a pothole to 4ft outside of the containment to determine if discolored soils extended outside the containment, which based on visual observations, they did not. Samples were collected from within the excavation at 3.5ft (SP 15), as well as within the pot hole at 4ft (SP 16) outside the containment to determine if the discolored soils contained any impacts exceeding COGCC Table 910-1. Results indicated the soils identified in the AOC (SP 15 & 16) did not exceed COGCC Table 910-1 thresholds.

Initial soil samples SP 1 and SP 5 that exceeded COGCC Table 910-1 have been excavated and a new confirmation sample (SP 14) has been collected from the bottom of the excavation. All confirmation samples indicate compliance with COGCC Table 910-1 with the exception of the eastern side wall at 1.5ft (SP 11) which exceeds for TPH. Additionally, a slight inorganic exceedance is present on the north and south side wall as outlined in the attached analytical data tracking spreadsheet, along with arsenic, which are within background concentrations and consideration is requested as outlined in COGCC Rules FAQ 31 & 32.

The eastern side wall TPH exceedances will be addressed in the Spring of 2019 when winter weather has subsided and additional excavation can occur. Upon additional excavation of the eastern side wall, a follow-up confirmation sample will be collected and analyzed for TPH (DRO & GRO).

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: 01/18/2019 _____

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: Steven Arauza _____

Date: 02/25/2019 _____

Remediation Project Number: 12168 _____

COA Type

Description

	Submit complete laboratory reports and analytical results summary table for soil samples SP 1, BKGD 1, BKGD 2, and BKGD 3 as attachments to the next Supplemental eForm 27.
--	---

Per COA attached to Initial F27 (doc #401855724), operator shall submit an analytical results summary table for all soil samples collected during the course of site investigation and remediation under this remediation workplan as an attachment to the next Supplemental eForm 27.

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>
401909366	FORM 27-SUPPLEMENTAL-SUBMITTED
401909382	ANALYTICAL RESULTS
401909383	ANALYTICAL RESULTS
401910393	SOIL SAMPLE LOCATION MAP
401911047	ANALYTICAL RESULTS

Total Attach: 5 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Environmental	Analytical reports document TPH exceedances at sample locations for SP 5 (559 mg/kg) and SP 11 (1000+ mg/kg). Soil sample SP 12 exceeds Table 910-1 for SAR (12.6). Soil samples SP 10-SP 16 exceed Table 910-1 for arsenic.	02/25/2019
Environmental	Under Operator Comment, the operator requests consideration under COGCC FAQ 31 & 32 for the use of background concentration levels of arsenic, SAR, EC, pH on the basis that concentrations of these constituents in undisturbed, native soil samples exceed Table 910-1 standards. The analytical data tracking spreadsheet and laboratory results for BKGD samples are not attached to this report, therefore the COGCC cannot grant consideration under FAQ 31 & 32 at this time.	02/25/2019

Total: 2 comment(s)