

State of Colorado
Oil and Gas Conservation Commission

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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>URSA OPERATING COMPANY LLC</u>	Operator No: <u>10447</u>	Phone Numbers
Address: <u>792 BUCKHORN DR</u>		Phone: <u>(970) 329-4367</u>
City: <u>RIFLE</u> State: <u>CO</u> Zip: <u>81650</u>		Mobile: <u>()</u>
Contact Person: <u>Dwayne Knudson</u>	Email: <u>dknudson@ursaresources.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION
Remediation Project #: 12168 Initial Form 27 Document #: 401855724

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>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 CL Most Sensitive Adjacent Land Use Rangeland

Is domestic water well within 1/4 mile? No 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

Dry ephemeral drainages are noted on the COGCC topo map at ~450ft to the east and ~475ft to the northwest. Dry ephemeral drainage to the east connects to Gibson Gulch, which is located ~3,300ft from the spill

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	~35'x~30'x~3'	Confirmation sampling, field screening, visual observations

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 18
Number of soil samples exceeding 910-1 5
Was the areal and vertical extent of soil contamination delineated? Yes
Approximate areal extent (square feet) 3150

NA / ND

-- Highest concentration of TPH (mg/kg) 3242
-- Highest concentration of SAR 12.6
 BTEX > 910-1 Yes
 Vertical Extent > 910-1 (in feet) 5

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 and analyzed for arsenic and inorganics (SAR/EC/pH)

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?

Impacted soils excavated on 12/19/18 removed all soils exceeding COGCC Table 910-1 thresholds with the exception of SP 11 (east wall). Due to winter weather, further excavation of the eastern wall would need to occur in the Spring of 2019.

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.

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.

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 Final

Report Type: Groundwater Monitoring Land Treatment Progress Report O&M Report
 Other Notice of Completion

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:

Soil was not beneficially reused on-site. All waste was hauled off-site to Greenleaf Environmental

Volume of E&P Waste (solid) in cubic yards 70

E&P waste (solid) description Hydrocarbon Impacted Soil

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: Greenleaf Environmental

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.

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. 11/16/2018

Actual Spill or Release date, if known. 11/16/2018

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 11/20/2018

Date of commencement of Site Investigation. 12/06/2018

Date of completion of Site Investigation. 12/21/2018

REMEDIAL ACTION DATES

Date of commencement of Remediation. 12/19/2018

Date of completion of Remediation. 04/24/2019

SITE RECLAMATION DATES

Date of commencement of Reclamation. _____

Date of completion of Reclamation. _____

OPERATOR COMMENT

Please forward onto Steven Arauza

Castle Springs B - Tank Battery - Containment Remediation

As outlined in the previously submitted Form 19's and Form 27's, upon discovery of the release on 11/16/18, vac trucks were used to recover all free-standing liquids within containment as well as fluids within the production tanks.

Initial site investigation activities were conducted in December 2018. It was decided to excavate the soil and haul off-site for disposal while determining the vertical and horizontal extent of impacts. Confirmation samples collected on December 19, 2018 indicated that all of the impacted soils have been excavated with the exception of an area on the eastern side wall (SP 11), which exceeded for TPH (refer to the attached Tables 1 and 2). Updates provided to the COGCC via Form 27 (see Related Forms for associated document #'s).

As outlined the Form 27 (Doc# 401909366) on January 18, 2019, due to winter weather, additional excavation on the eastern side wall would need to occur during the spring of 2019 to address the TPH exceedance observed in the SP 11 sample.

Excavation contractors completed excavation of the eastern side wall on April 24, 2019 by removing an addition 2ft laterally along the eastern side of the excavation and extending vertically to an average depth of 4-5ft. Personnel on-site collected a confirmation sample from the base of the eastern side wall at a depth of ~5' (SP 11 - 4.24.19) and analyzed for TPH (DRO/GRO) as that was the only exceedance observed from the December 19, 2019 sampling event. Results indicate that SP 11 TPH concentrations now satisfy COGCC Table 910-1 (Refer to Table 2).

All impacted soils will be disposed of at Greenleaf Environmental under a previously approved waste profile used for the disposal of the impacted soils in December 2019 (see attached disposal manifests).

Attached are the analytical data reports from all of the samples collected from the remediation of the impacted soils throughout the duration of the project, along with an updated data table and sample location map.

Ursa is requesting consideration to arsenic exceedances as outlined the COGCC FAQ 31 for all of the samples as the background concentrations are within concentrations within the excavation or 10% as discussed with Ursa and COGCC.

Ursa is also requesting consideration to inorganic exceedances as outlined in COGCC FAQ 32 for the pH concentration on the north wall sample (SP 10) and SAR concentration observed in the south wall sample (SP 12). Consideration is being requesting as the area will be backfilled with fill and compacted to allow for a steel lined secondary containment to be constructed, as well as the area will be capped with 3ft of native cover during reclamation.

Ursa is requesting closure of the remediation (REM# 12168) and approval to commence backfilling to allow for the construction of the secondary containment and replacement of production tanks.

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: 05/06/2019

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: 05/23/2019

Remediation Project Number: 12168

COA Type**Description**

	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 surface and/or ground water is found to be impacted, then further investigation and/or remediation activities will be required at the site.
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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**

402029917	FORM 27-SUPPLEMENTAL-SUBMITTED
402030063	ANALYTICAL RESULTS
402030064	ANALYTICAL RESULTS
402030066	ANALYTICAL RESULTS
402030067	ANALYTICAL RESULTS
402030068	ANALYTICAL RESULTS
402030069	ANALYTICAL RESULTS
402030070	SOIL SAMPLE LOCATION MAP
402030075	DISPOSAL MANIFESTS
402030078	DISPOSAL MANIFESTS
402034064	ANALYTICAL RESULTS
402034066	ANALYTICAL RESULTS

Total Attach: 12 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)