

State of Colorado
Oil and Gas Conservation Commission

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Report taken by:
CHRIS CANFIELD

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: TOP OPERATING COMPANY	Operator No: 39560	Phone Numbers
Address: 3609 S WADSWORTH BLVD STE 340		Phone: (720) 6631698
City: LAKEWOOD State: CO Zip: 80235		Mobile: ()
Contact Person: Paul Herring	Email: paul.herring@topoperating.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION
Remediation Project #: 11300 Initial Form 27 Document #: 401621714

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 checked="" 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: LEASE	Facility ID: 10507	API #: _____	County Name: BOULDER
Facility Name: RIDER FAMILY TRUST #1	Latitude: _____	Longitude: _____	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NESE	Sec: 36	Twp: 3N	Range: 69W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications CL Most Sensitive Adjacent Land Use Middle school and housing development

Is domestic water well within 1/4 mile? Yes Is surface water within 1/4 mile? Yes

Is groundwater less than 20 feet below ground surface? Yes

Other Potential Receptors within 1/4 mile

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- | | | |
|--|--|---|
| <input type="checkbox"/> E&P Waste | <input type="checkbox"/> Other E&P Waste | <input checked="" type="checkbox"/> Non-E&P Waste |
| <input type="checkbox"/> Produced Water | <input type="checkbox"/> Workover Fluids | Unknown _____ |
| <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
No	GROUNDWATER	N/A	N/A
Yes	SOILS	10'x10'x11' (3 locations)	soil boring assessment
No	SURFACE WATER	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.

A soil boring assessment was conducted, per approved 27 (document # 401621714): 13 soil borings were advanced to a total depth of 15 feet adjacent to previously identified contamination based on Table 910 limits (document #2496197). Three soil borings had elevated TPH concentrations @7.5-10'. A grab groundwater sample was collected from previously installed MW-01R. The sample did not contain concentrations of BTEX above applicable Table 910 limits.

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):

13 soil borings were advanced to a total depth of 15 feet adjacent to previously identified contamination based on Table 910 limits (document #2496197). 25 soil samples were collected during assessment activities and submitted for laboratory analysis. All soil samples were analyzed for GRO, DRO, RRO, naphthalene, and BTEX following modified EPA methods 8260c and 8015, and pH, EC, SAR, following EPA Method 9045D, USDA Method 3, and USDA Method 20B. Additional grab soil samples will be collected during source removal activities. All source excavation soil samples will be analyzed for GRO, DRO, RRO, naphthalene, and BTEX following modified EPA methods 8260c and 8015.

Proposed Groundwater Sampling

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

A grab groundwater sample was collected from previously installed monitoring well MW-01R. The grab groundwater sample was submitted for BTEX analysis following EPA Method 8260c.

Grab groundwater samples will be collected from the base of the source excavation in lieu of saturated soil samples. The groundwater samples will be analyzed for BTEX following EPA Method 8260c.

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 25
Number of soil samples exceeding 910-1 3
Was the areal and vertical extent of soil contamination delineated? No
Approximate areal extent (square feet) 300

NA / ND

-- Highest concentration of TPH (mg/kg) 1033
-- Highest concentration of SAR 4.07
BTEX > 910-1 No
Vertical Extent > 910-1 (in feet) 10

Groundwater

Number of groundwater samples collected 1
Was extent of groundwater contaminated delineated? Yes
Depth to groundwater (below ground surface, in feet) 9'
Number of groundwater monitoring wells installed 0
Number of groundwater samples exceeding 910-1 0

ND Highest concentration of Benzene (µg/l) _____
ND Highest concentration of Toluene (µg/l) _____
-- Highest concentration of Ethylbenzene (µg/l) 27.4
-- Highest concentration of Xylene (µg/l) 180
NA Highest concentration of Methane (mg/l) _____

Surface Water

0 Number of surface water samples collected
 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?

Elevated TPH concentrations above 910-1 regulatory limits were observed in a soil boring advanced adjacent to the previous Rider #1 facilities.

Were background samples collected as part of this site investigation?

3 soil borings were advanced adjacent to the previous Rider #1 facilities as background comparison of soil concentrations.

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.

Source removal will be completed through excavation of impacted soil above 910-1 standards.

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.

Source excavation activities will be completed adjacent to petroleum hydrocarbon impacts identified during assessment activities on May 17, 2018. Limited excavations are proposed (~10' by ~10' by 11' bgs) around soil borings SB-03, SB-07 and SB-11. Soil samples will be collected from each side wall per COGCC procedures (1 per 30 linear feet). As the excavation is proposed to extend into groundwater at the site, grab groundwater samples will be collected from the base of the excavation in lieu of saturated soil samples. The grab groundwater samples will be submitted for BTEX analysis following EPA Method 8260C.

Soil samples will be submitted for laboratory analysis of BTEX, naphthalene, GRO, and DRO following modified EPA Methods 8260c and 8015. The grab groundwater samples will be submitted for BTEX analysis following EPA Method 8260c. Additional grab groundwater samples will be collected from MW-01R to continue monitoring natural attenuation at the site. All samples were/will be submitted for BTEX analysis following EPA Method 8260c.

Based on laboratory analytical results, NFA can be requested if all samples are observed below applicable COGCC Table 910-1 regulatory limits.

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) _____ 0

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

_____ Bioremediation (or enhanced bioremediation)

_____ Chemical oxidation

_____ Air sparge / Soil vapor extraction

Yes _____ 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.

One grab groundwater sample was collected from monitoring well MW-01R. The groundwater sample did not contain a concentration of BTEX exceeding applicable COGCC Table 910-1 regulatory limits. Additional grab groundwater samples will be collected from MW-01R for a minimum of 3 additional sampling events. All samples were/will be submitted for BTEX analysis following EPA Method 8260c.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Frequency: Quarterly Semi-Annually Annually Other _____

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

Other Soil Remediation (Excavation) Report _____

WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? _____

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? No _____

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? No _____

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.

Reclamation will be in accordance with COGCC 1000 series rules.

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? No _____

If NO, does the seed mix comply with local soil conservation district recommendations? No _____

IMPLEMENTATION SCHEDULE

PRIOR DATES

Date of Surface Owner notification/consultation, if required. 05/17/2018

Actual Spill or Release date, if known. 05/17/2018

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 05/01/2018

Date of commencement of Site Investigation. 05/01/2018

Date of completion of Site Investigation. 05/15/2018

REMEDIAL ACTION DATES

Date of commencement of Remediation. 07/17/2018

Date of completion of Remediation. _____

SITE RECLAMATION DATES

Date of commencement of Reclamation. _____

Date of completion of Reclamation. _____

OPERATOR COMMENT

TOP Operating request approval to begin back filling on the Rider location.

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

Signed: Paul Herring

Title: Landman

Submit Date: 08/29/2018

Email: paul.herring@topoperating.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: CHRIS CANFIELD

Date: 08/29/2018

Remediation Project Number: 11300

COA Type

Description

<u>COA Type</u>	<u>Description</u>

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

401748617	FORM 27-SUPPLEMENTAL-SUBMITTED
401748661	CORRESPONDENCE
401748662	ANALYTICAL RESULTS

Total Attach: 3 Files

General Comments

User Group

Comment

Comment Date

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
		Stamp Upon Approval

Total: 0 comment(s)