

**State of Colorado**  
**Oil and Gas Conservation Commission**

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Document Number:

401733635

Receive Date:

08/21/2018

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 INFORMATION

Name of Operator: <u>EXTRACTION OIL &amp; GAS INC</u>	Operator No: <u>10459</u>	<b>Phone Numbers</b> Phone: <u>(720) 481-2362</u> Mobile: <u>( )</u>
Address: <u>370 17TH STREET SUITE 5300</u>		
City: <u>DENVER</u>	State: <u>CO</u> Zip: <u>80202</u>	
Contact Person: <u>Blake Ford</u>	Email: <u>bford@ExtractionOG.com</u>	

### PROJECT, PURPOSE & SITE INFORMATION

#### PROJECT INFORMATION

Remediation Project #: 11643Initial Form 27 Document #: 401719421

#### 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 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>Facility decommissioning in support of final reclamation.</u> |

#### SITE INFORMATION

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

Facility Type: <u>LOCATION</u>	Facility ID: <u>320359</u>	API #: _____	County Name: <u>ADAMS</u>
Facility Name: <u>BOX ELDER-61S65W 22NESW</u>		Latitude: <u>39.947610</u>	Longitude: <u>-104.653570</u>
		** correct Lat/Long if needed: Latitude: <u>39.947592</u>	Longitude: <u>-104.654455</u>
QtrQtr: <u>NESW</u>	Sec: <u>22</u>	Twp: <u>1S</u>	Range: <u>65W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

#### SITE CONDITIONS

General soil type - USCS Classifications SWMost Sensitive Adjacent Land Use CroplandIs domestic water well within 1/4 mile? YesIs surface water within 1/4 mile? NoIs groundwater less than 20 feet below ground surface? No

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
No	SOILS	No known impacts	Laboratory results

### INITIAL ACTION SUMMARY

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

This form has been prepared to support decommissioning and removal of the well site and production equipment associated with final reclamation of this location. In accordance with COGCC Rule 905.b, soil samples, and groundwater samples if present, will be collected during closure of the buried or partially buried produced water vessel to assure compliance with COGCC Table 910-1 allowable limits. The initial investigation will be conducted using excavation equipment. Field screening of disturbed soils will be conducted during equipment removal and plugging and abandonment (P&A) activities, and samples will be collected for laboratory analysis if any indications of impacts are identified. Identified impacts will be reported as required for each discovery, and a Form 19 will be submitted.

### 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 ):

If no suspected release is identified, one discrete grab soil sample will be collected from directly beneath the water vessel upon removal and submitted for laboratory analysis of organic constituents (TPH and BTEX) and inorganics (SAR, EC and pH). If a release is discovered and confirmed through soil screening and/or laboratory analysis, and/or groundwater is encountered during removal activities, additional excavations may be conducted to further delineate horizontally and vertically. If the extent of impacts is reached and/or remaining impact analytical results are needed for future remediation activities, discrete soil samples will be collected from the sidewalls and base (if groundwater is not present) and analyzed for organic (TPH and BTEX) and inorganic (SAR, EC and pH) constituents.

#### Proposed Groundwater Sampling

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

If groundwater is encountered during excavation activities, one sample will be collected and analyzed for BTEX.

#### 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 2

Number of soil samples exceeding 910-1 0

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

Approximate areal extent (square feet) 240

### NA / ND

ND Highest concentration of TPH (mg/kg)           

ND Highest concentration of SAR           

BTEX > 910-1 No

Vertical Extent > 910-1 (in feet) 4

### Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? Yes

Depth to groundwater (below ground surface, in feet)           

Number of groundwater monitoring wells installed           

Number of groundwater samples exceeding 910-1           

           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

           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)           

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.

If a suspected release is identified, and confirmed through soil screening and/or laboratory analysis, during decommissioning of this facility, soils may be removed and transported to a licensed disposal facility. Transport and disposal records will be kept on file under usual and customary practice, and are available upon request. If all source material cannot be removed during excavation activities, additional methodologies will be proposed in subsequent proposals.

### **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.

As needed, site specific soil and/or groundwater remediation plans will be developed and submitted to COGCC via supplemental Form 27s.

### **Soil Remediation Summary**

#### ☐ In Situ

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

#### ☐ Ex Situ

\_\_\_\_\_ Excavate and offsite disposal  
\_\_\_\_\_ If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_  
\_\_\_\_\_ Name of Licensed Disposal Facility or COGCC Facility ID # \_\_\_\_\_  
\_\_\_\_\_ 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  
☐ \_\_\_\_\_ 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.

## REMEDIATION PROGRESS UPDATE

### PERIODIC REPORTING

**Frequency:** ☐ Quarterly ☐ Semi-Annually ☐ Annually ☐ Other \_\_\_\_\_

**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? \_\_\_\_\_

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? Yes \_\_\_\_\_

Do all soils meet Table 910-1 standards? Yes \_\_\_\_\_

Does the previous reply indicate consideration of background concentrations? No \_\_\_\_\_

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.

Reclamation activities will be completed in accordance with 1000 Series Rules, in collaboration with the landowner, and reported in a Form 4 (Sundry Notice) with proper documentation to demonstrate compliance with requirements for final reclamation.

Is the described reclamation complete? \_\_\_\_\_

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? \_\_\_\_\_

If NO, does the seed mix comply with local soil conservation district recommendations? \_\_\_\_\_

## 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). 07/30/2018

Date of commencement of Site Investigation. 08/13/2018

Date of completion of Site Investigation. 08/16/2018

### REMEDIAL ACTION DATES

Date of commencement of Remediation. 08/13/2018

Date of completion of Remediation. 08/16/2018

### SITE RECLAMATION DATES

Date of commencement of Reclamation. \_\_\_\_\_

Date of completion of Reclamation. \_\_\_\_\_

### OPERATOR COMMENT

This form has been prepared to document successful closure of a partially buried produced water vessel at this location. Please find attached a site diagram, topographic map, and laboratory results for a description of site investigation activities and findings.

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

Signed: Maggie Graham

Title: Senior Project Manager

Submit Date: 08/21/2018

Email: maggie.graham@apexc.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: 08/22/2018

Remediation Project Number: 11643

### COA Type

### Description

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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

401733635	FORM 27-SUPPLEMENTAL-SUBMITTED
401738997	OTHER

Total Attach: 2 Files

## General Comments

### User Group

### Comment

### Comment Date

Environmental	The Colorado Oil & Gas Conservation Commission (COGCC) has reviewed and hereby approves your 08/21/2018 request for a determination of No Further Action at the above-referenced location. However, should future conditions indicate that contaminant concentrations in soils exceed COGCC standards, or if ground water is found to be impacted, further investigation and/or remediation activities could be required. Remediation Project 11643 will be closed in the COGIS database. Note that surface reclamation must meet the COGCC 1004 series rules.	08/22/2018
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Total: 1 comment(s)