

State of Colorado  
Oil and Gas Conservation Commission

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Document Number:  
401943605  
Receive Date:  
02/19/2019

Report taken by:  
ROB YOUNG

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: WESTERN OPERATING COMPANY	Operator No: 95620	<b>Phone Numbers</b>
Address: 1165 DELAWARE STREET #200		Phone: (303) 893-2438
City: DENVER State: CO Zip: 80204		Mobile: ( )
Contact Person: Steven James	Email: steve@westernoperating.com	

PROJECT, PURPOSE & SITE INFORMATION

**PROJECT INFORMATION**  
Remediation Project #: 4855 Initial Form 27 Document #: 1631810

**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 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 Submittal of GW monitoring Report for 4Q 2018

**SITE INFORMATION** N Multiple Facilites ( in accordance with Rule 909.c. )

Facility Type: LOCATION	Facility ID: 313872	API #: _____	County Name: MORGAN
Facility Name: SAUER-63N59W 14E2NE	Latitude: 40.228880	Longitude: -103.945384	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: E2NE	Sec: 14	Twp: 3N	Range: 59W Meridian: 6 Sensitive Area? Yes

**SITE CONDITIONS**

General soil type - USCS Classifications SM Most Sensitive Adjacent Land Use IRRIGATED

Is domestic water well within 1/4 mile? No 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**

WATER WELLS ARE CURRENTLY LOCATED APPROX. 1100' N OF THE SITE (DOWNGRADIANT).

# 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 checked="" 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	GROUNDWATER	300' X 650'	SITE ASSESSMENT
Yes	SOILS	70' X 250'	SITE ASSESSMENT

## INITIAL ACTION SUMMARY

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

WELL WAS SHUT-IN, THE FAILED DUMPLINE AND PRODUCED WATER VAULT WERE REMOVED AND REPLACED.

## 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 ):

Soil samples were collected and were provided in historic documentation

### Proposed Groundwater Sampling

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

Groundwater monitoring will continue in MW05, MW18R, MW19R, MW23, MW35, and MW36 until four consecutive quarters of groundwater monitoring demonstrate compliance with the Table 910-1 standards for BTEX. The next quarterly groundwater monitoring event is scheduled for March 2019.

### 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 32

Number of soil samples exceeding 910-1 20

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

Approximate areal extent (square feet) 15000

### NA / ND

-- Highest concentration of TPH (mg/kg) 1900

NA Highest concentration of SAR           

BTEX > 910-1 Yes

Vertical Extent > 910-1 (in feet) 15

### Groundwater

Number of groundwater samples collected 5

Was extent of groundwater contaminated delineated? Yes

Depth to groundwater (below ground surface, in feet) 14'

Number of groundwater monitoring wells installed 24

Number of groundwater samples exceeding 910-1 0

-- Highest concentration of Benzene (µg/l) 2.2

ND Highest concentration of Toluene (µg/l)           

ND Highest concentration of Ethylbenzene (µg/l)           

ND Highest concentration of Xylene (µg/l)           

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?

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.

THE SOURCES (DUMPLINE AND WATER VAULT) WERE REMOVED AND REPLACED.

## 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/SVE system was installed and use was ceased in 2015. Monitoring of GW has continued.

## Soil Remediation Summary

In Situ

Ex Situ

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

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

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

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

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

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

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

\_\_\_\_\_ Excavate and onsite remediation

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

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

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

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

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

## Groundwater Remediation Summary

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

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

Yes \_\_\_\_\_ 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.

Groundwater monitoring will continue in MW05, MW18R, MW19R, MW23, MW35, and MW36 until four consecutive quarters of groundwater monitoring demonstrate compliance with the Table 910-1 standards for BTEX. The next quarterly groundwater monitoring event is scheduled for March 2019.

## 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? 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.

RECLAMATION IS NOT NECESSARY, AS GROUND DISTURBANCE HAS NOT OCCURRED.

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). \_\_\_\_\_

Date of commencement of Site Investigation. 02/02/2009

Date of completion of Site Investigation. 02/21/2009

## REMEDIAL ACTION DATES

Date of commencement of Remediation. 06/01/2010

Date of completion of Remediation. \_\_\_\_\_

## SITE RECLAMATION DATES

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

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

## OPERATOR COMMENT

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

Signed: Jeremy Pike

Title: Staff Geologist

Submit Date: 02/19/2019

Email: jpike@ltenv.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: ROB YOUNG

Date: 02/20/2019

Remediation Project Number: 4855

## 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

401943605	FORM 27-SUPPLEMENTAL-SUBMITTED
401943637	MONITORING REPORT

Total Attach: 2 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)