

State of Colorado  
Oil and Gas Conservation Commission

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401236991  
Receive Date:  
03/20/2017

Report taken by:  
BOB CHESSON

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: NOBLE ENERGY INC	Operator No: 100322	<b>Phone Numbers</b>
Address: 1625 BROADWAY STE 2200		Phone: (970) 3045329
City: DENVER State: CO Zip: 80202		Mobile: ( )
Contact Person: Jacob Evans	Email: jacob.evans@nblenergy.com	

PROJECT, PURPOSE & SITE INFORMATION

**PROJECT INFORMATION**  
Remediation Project #: 7259 Initial Form 27 Document #: 2230285

**PURPOSE INFORMATION**

<input checked="" type="checkbox"/> 901.e. Sensitive Area Determination	<input checked="" 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 checked="" 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: LOCATION	Facility ID: 317493	API #: _____	County Name: WELD
Facility Name: EHRlich-64N64W 4SEnw	Latitude: 40.343180	Longitude: -104.557600	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SENW	Sec: 4	Twp: 4N	Range: 64W Meridian: 6 Sensitive Area? Yes

**SITE CONDITIONS**

General soil type - USCS Classifications SW Most Sensitive Adjacent Land Use CROP LAND

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**

WATER WELLS 1,400' SE AND 1,470' NW, UNNAMED POND 850' S, UNNAMED DITCH 930' NW.

# 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 type="checkbox"/> Produced Water       | <input type="checkbox"/> Workover Fluids             | _____                                  |
| <input checked="" 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
	GROUNDWATER	TO BE DETERMINED	SITE ASSESSMENT
	SOILS	70' X 70' X 16'	EXCAVATION

## INITIAL ACTION SUMMARY

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

TANK VALVES WERE VANDALIZED, RELEASING CONDENSATE INTO THE SECONDARY CONTAINMENT. UPON DISCOVERY, THE STANDING LIQUIDS WERE RECOVERED BY A VACUUM TRUCK AND TRANSFERRED FROM THE LOCATION. SEE FORM 19 (DOCUMENT #2229395).

## 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 ):

Twenty one soil samples were collected during excavation and site assessment activities and analyzed for BTEX, TPH-DRO, and TPH-GRO.

### Proposed Groundwater Sampling

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

Fourteen monitoring wells were installed and sampled 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 21  
Number of soil samples exceeding 910-1 2  
Was the areal and vertical extent of soil contamination delineated? Yes  
Approximate areal extent (square feet) 6400

### NA / ND

-- Highest concentration of TPH (mg/kg) 4090  
NA Highest concentration of SAR           
BTEX > 910-1 Yes  
Vertical Extent > 910-1 (in feet) 16

### Groundwater

Number of groundwater samples collected 14  
Was extent of groundwater contaminated delineated? Yes  
Depth to groundwater (below ground surface, in feet) 11'  
Number of groundwater monitoring wells installed 14  
Number of groundwater samples exceeding 910-1 3

-- Highest concentration of Benzene (µg/l) 4380  
-- Highest concentration of Toluene (µg/l) 90.1  
-- Highest concentration of Ethylbenzene (µg/l) 82.7  
-- Highest concentration of Xylene (µg/l) 549  
NA 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?

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.

IMPACTED SOIL WAS REMOVED VIA EXCAVATION UNTIL CLEAN SIDEWALLS TO THE NORTH, SOUTH, AND WEST WERE OBTAINED AND CONFIRMATION SOIL SAMPLES WERE COLLECTED. EXCAVATION COULD NOT BE CONTINUED TO THE EAST DUE TO CROPS AND IRRIGATION SYSTEMS. A SITE ASSESSMENT OF THE REMAINING SOIL AND GROUNDWATER IMPACTS WILL BE CONDUCTED EAST OF THE EXCAVATION UPON LANDOWNER APPROVAL. ALL SOIL SAMPLES WERE ANALYZED FOR BTEX AND TPH AND WERE IN COMPLIANCE WITH COGCC STANDARDS EXCEPT FOR THE TWO SAMPLES TAKEN ON THE EAST WALL.

## 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.

Remediation of impacted soil and groundwater was remediated through chemical oxidation and air sparge/soil vapor extraction. Four consecutive quarters of compliant groundwater has been achieved.

## Soil Remediation Summary

In Situ

No \_\_\_\_\_ Bioremediation ( or enhanced bioremediation )

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

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

No \_\_\_\_\_ Natural Attenuation

No \_\_\_\_\_ Other \_\_\_\_\_

Ex Situ

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

If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_ 3000

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

No \_\_\_\_\_ Bioremediation ( or enhanced bioremediation )

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

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

Yes \_\_\_\_\_ 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 MONITORING WELLS WILL BE INSTALLED; TWO MONITORING WELLS WILL BE INSTALLED DOWNGRAIDENT AND ONE UPGRADIENT OF THE EXCAVATION EXTENT. QUARTERLY GROUNDWATER SAMPLING WILL BE CONDUCTED, AND GROUNDWATER SAMPLES WILL BE ANALYZED FOR BTEX UNTIL FOUR CONSECUTIVE QUARTERS OF GROUNDWATER SAMPLES ARE IN COMPLIANCE WITH COGCC STANDARDS.

## REMEDIATION PROGRESS UPDATE

### PERIODIC REPORTING

Frequency:  Quarterly  Semi-Annually  Annually  Other \_\_\_\_\_  
Report Type:  Groundwater Monitoring  Land Treatment Progress Report  O&M Report  
 Other No Further Action Request \_\_\_\_\_

### 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 use

Volume of E&P Waste (solid) in cubic yards \_\_\_\_\_ 3000

E&P waste (solid) description Impacted soil above COGCC Table  
910-1 standards \_\_\_\_\_

COGCC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-COGCC Disposal Facility: Buffalo Ridge Landfill \_\_\_\_\_

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? 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.

CLEAN FILL DIRT WAS IMPORTED AND USED TO BACKFILL THE EXCAVATION AND THE GRADE WAS RESTORED. THE OIL AND GAS PRODUCTION FACILITY REMAINS ON SITE.

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

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. 06/19/2012

## SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). \_\_\_\_\_

Date of commencement of Site Investigation. 06/19/2012

Date of completion of Site Investigation. \_\_\_\_\_

## REMEDIAL ACTION DATES

Date of commencement of Remediation. 07/02/2012

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

## SITE RECLAMATION DATES

Date of commencement of Reclamation. 07/02/2012

Date of completion of Reclamation. 07/02/2012

## OPERATOR COMMENT

No Further Action Request

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

Signed: Jacob Evans

Title: Environmental Coordinator

Submit Date: 03/20/2017

Email: jacob.evans@nblenergy.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: BOB CHESSON

Date: 03/20/2017

Remediation Project Number: 7259

## 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

<u>Att Doc Num</u>	<u>Name</u>
401236991	FORM 27-SUPPLEMENTAL-SUBMITTED
401237076	MONITORING REPORT

Total Attach: 2 Files

## **General Comments**

### User Group

### Comment

### Comment Date

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Environmental	The COGCC has reviewed the NFA request for Project/Remediation #7295. Based on the information presented no further action is necessary at this time. However, should future conditions at the site indicate contaminant concentrations in soils exceeding COGCC standards then further investigation and/or remediation activities may be required at the site. For locations with active ongoing oil and gas operations, comply with Rule 1003 interim reclamation requirements and for locations that will no longer have active oil and gas operations, comply with Rule 1004 Final Reclamation requirements.	03/20/2017

Total: 1 comment(s)