

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

1120 Lincoln Street, Suite 801, Denver, Colorado 80203
Phone: (303) 894-2100 Fax: (303) 894-2109



Document Number:

401219411

Receive Date:

02/27/2017

Report taken by:

RICK ALLISON

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

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 10069 Initial Form 27 Document #: 401219411

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 type="checkbox"/> Other _____ |

SITE INFORMATION

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

| | | | |
|---|---|-------------------------------|--------------------------|
| Facility Type: <u>LOCATION</u> | Facility ID: <u>310441</u> | API #: _____ | County Name: <u>WELD</u> |
| Facility Name: <u>BARTHOL A-66N64W 34SWNW</u> | Latitude: <u>40.444477</u> | Longitude: <u>-104.543413</u> | |
| | ** correct Lat/Long if needed: Latitude: <u>40.442772</u> | Longitude: <u>-104.542712</u> | |
| QtrQtr: <u>SWNW</u> Sec: <u>34</u> Twp: <u>6N</u> Range: <u>64W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u> | | | |
| Facility Type: <u>LOCATION</u> | Facility ID: <u>323313</u> | API #: _____ | County Name: <u>WELD</u> |
| Facility Name: <u>ANDERSON-COOMBS-65N66W 25NWSW</u> | Latitude: <u>40.368610</u> | Longitude: <u>-104.732490</u> | |
| | ** correct Lat/Long if needed: Latitude: <u>40.366673</u> | Longitude: <u>-104.733026</u> | |
| QtrQtr: <u>NWSW</u> Sec: <u>25</u> Twp: <u>5N</u> Range: <u>66W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u> | | | |
| Facility Type: <u>LOCATION</u> | Facility ID: <u>331732</u> | API #: _____ | County Name: <u>WELD</u> |
| Facility Name: <u>GOLDBERG N-65N67W 14NESW</u> | Latitude: <u>40.397508</u> | Longitude: <u>-104.862798</u> | |
| | ** correct Lat/Long if needed: Latitude: <u>40.396049</u> | Longitude: <u>-104.869218</u> | |
| QtrQtr: <u>NESW</u> Sec: <u>14</u> Twp: <u>5N</u> Range: <u>67W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u> | | | |

Facility Type: TANK BATTERY Facility ID: 425984 API #: County Name: WELD
Facility Name: BERNHARDT STATE TANK BATTERY Latitude: 40.355740 Longitude: -104.843335
29-36
** correct Lat/Long if needed: Latitude: 40.355834 Longitude: -104.843312
QtrQtr: NESW Sec: 36 Twp: 5N Range: 67W Meridian: 6 Sensitive Area? Yes

Facility Type: TANK BATTERY Facility ID: 435486 API #: County Name: WELD
Facility Name: State M 36-17 Latitude: 40.446077 Longitude: -104.832857
** correct Lat/Long if needed: Latitude: 40.446059 Longitude: -104.832878
QtrQtr: SESE Sec: 36 Twp: 6N Range: 67W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SW Most Sensitive Adjacent Land Use Residential Area

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

Various

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 | NA | Laboratory Analytical |

INITIAL ACTION SUMMARY

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

Produced water vessel sampling

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 analyzed for TPH-DRO, TPH-GRO, BTEX, Naphthalene, SAR, EC, and pH.

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):

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 9

Number of soil samples exceeding 910-1 0

Was the areal and vertical extent of soil contamination delineated? No

Approximate areal extent (square feet) 0

NA / ND

-- Highest concentration of TPH (mg/kg) 1.6

-- Highest concentration of SAR 0.74

BTEX > 910-1 No

Vertical Extent > 910-1 (in feet) 0

Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet) 0'

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) _____

ND Highest concentration of Ethylbenzene (µg/l) _____

-- Highest concentration of Xylene (µg/l) 0.272

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

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

There was no EP waste generated

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.

Between September 8, 2016 and November 29, 2016 5 locations were sampled to investigate for potential impacts subsequent to a produced water vessel removal. All samples collected were below Table 910-1 standards.

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

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.

NA

REMEDATION PROGRESS UPDATE

PERIODIC REPORTING

Frequency: Quarterly Semi-Annually Annually Other Water vessel closure

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

Other Water vessel closure

WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? No

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: _____

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 locations will reclaimed and recontoured where needed to match pre-existing conditions.

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. 09/08/2016

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 09/08/2016

Date of commencement of Site Investigation. _____

Date of completion of Site Investigation. 11/29/2016

REMEDIAL ACTION DATES

Date of commencement of Remediation. _____

Date of completion of Remediation. _____

SITE RECLAMATION DATES

Date of commencement of Reclamation. 09/08/2016

Date of completion of Reclamation. 11/29/2016

OPERATOR COMMENT

| |
|--|
| |
|--|

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: ` 02/27/2017 _____

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: RICK ALLISON _____

Date: 03/01/2017 _____

Remediation Project Number: 10069 _____

COA Type**Description**

| | |
|--|---|
| | The Operator is directed to submit a Supplemental Form 27 - Remediation Complete to request closure of this Remediation Project. |
| | <p>COGCC has reviewed the data submitted for the following facilities submitted with this Form 27 Site Investigation and Remediation Workplan: State M 36-17, 1; Barthol A34-05X; Anderson Coombs 4; BERNHARDT STATE TANK BATTERY; Goldberg N 14-11,12,13,14,25.</p> <p>Based on the information presented, it appears that no further action is necessary at this time and the COGCC approves the closure request. However, should future conditions at the site indicate contaminant concentrations in soils exceeding COGCC standards or if ground water is found to be impacted, then further investigation and/or remediation activities may be required. In addition, the surface area disturbed by the remediation activity shall be reclaimed in accordance with the 1000 Series Reclamation Rules.</p> |
| | A Form 2A was submitted for the Bernhardt State Tank Battery 29-36 and Location ID 417158 and Tank Battery ID 425984 was created. Both Location ID 417158 and Tank Battery ID 425984 remain registered to Kerr McGee Oil & Gas Onshore. Noble shall submit a Form 10 Change of Operator to assume ownership of both the Tank Battery and Location. |

Attachment Check List**Att Doc Num****Name**

| | |
|-----------|---------------------------|
| 401219411 | FORM 27-INITIAL-SUBMITTED |
| 401219583 | ANALYTICAL RESULTS |
| 401219584 | ANALYTICAL RESULTS |
| 401219586 | ANALYTICAL RESULTS |
| 401219594 | ANALYTICAL RESULTS |
| 401219602 | ANALYTICAL RESULTS |

Total Attach: 6 Files

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

| | | |
|---------------|---|------------|
| Environmental | <p>COGCC made the following changes to facilities:</p> <ol style="list-style-type: none"> 1. Added existing Tank Battery ID 435486 (State M 36-17, State M 36-1) in place of Location ID 305590 2. COGCC created Tank Battery ID 449419 with a Closed status for the Barthol A34-05X tank battery located remote from the wellhead. 3. COGCC created Tank Battery ID 449420 with a Closed status for the Anderson Coombs 4 tank battery located remote from the wellhead. 4. Changed related Location ID 328056 to existing Tank Battery Id 425984. COA applied for Operator to submit Form 10 Change of Operator. 5. 3. COGCC created Tank Battery ID 449421 with a Closed status for the Goldberg N 14-11,12,13,14,25 tank battery located remote from the wellhead. | 03/01/2017 |
|---------------|---|------------|

Total: 1 comment(s)