

State of Colorado
Oil and Gas Conservation Commission



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

#8382

FOR OGCC USE ONLY

Received
3/31/2014

SITE INVESTIGATION AND REMEDIATION WORKPLAN

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. Form 27 is intended to be used whenever possible. Additional documentation will be required when large volumes of soil and groundwater have been impacted or involve large facilities with multiple source areas. See Rule 910. Attach as many pages as needed to fully describe the proposed work.

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

☒ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☐ Site/Facility Closure ☐ Other (describe): _____

OGCC Employee:

☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV

Tracking No:

OGCC Operator Number: 100322

Name of Operator: Noble Energy, Inc.

Address: 1625 Broadway, Suite 2200

City: Denver State: CO Zip: 80202

Contact Name and Telephone:

Jacob Evans

No: 303-228-4000

Fax: 303-228-4286

API Number: 05-123-13991

County: Weld

Facility Name: Lilli Unit P-34

Facility Number: 112233

Well Name: Lilli Unit 16-34

Well Number: 16-34

Location: (QtrQtr, Sec, Twp, Rng, Meridian): SESE 34 9N 58W 6 PM Latitude: 40.702205 Longitude: -103.842565

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Produced water

Site Conditions: Is location within a sensitive area (according to Rule 901e)? ☐ Y ☒ N If yes, attach evaluation.

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): Rangeland

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Cascajo gravelly sandy loam, 5% to 20% slopes

Potential receptors (water wells within 1/4 mi, surface waters, etc.): Unnamed creek approximately 745 feet southwest of the facility

Description of Impact (if previously provided, refer to that form or document):

Impacted Media (check):

- ☒ Soils
☐ Vegetation
☐ Groundwater
☐ Surface Water

Extent of Impact:

Unknown

How Determined:

TBD via excavation

REMEDIALTION WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document):

A site assessment was conducted to evaluate potential soil impact at the pit. A hand auger was advanced to 5 feet below ground surface at the pit. One discrete soil sample was collected from 4 feet below ground surface. The soil sample was submitted for laboratory analysis of BTEX, TPH, EC, SAR, and pH. A site map is attached.

Describe how source is to be removed:

Analytical results indicate there are elevated benzene and TPH concentrations in the pit. The pit will be excavated until confirmation soil samples from the sidewalls and floor of the excavation demonstrate concentrations within COGCC allowable levels.

Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.:

The impacted soil will be treated on site via exsitu chemical oxidation. The excavated soil will be placed in a soil shredder. The soil shredder will loosen the soil and spray it with hydrogen peroxide to reduce hydrocarbon impacts to levels below COGCC Table 9-10 standards. The treated soil will be utilized as backfill for the excavation once confirmation soil samples demonstrate concentrations within COGCC allowable levels for BTEX, TPH, and naphthalene. If the laboratory analytical results indicate the material is not suitable for backfill, additional remediation will be conducted.

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Tracking Number:	
Name of Operator:	<u>Noble Energy, Inc.</u>
OGCC Operator No:	<u>100322</u>
Received Date:	<u>3/31/2014</u>
Well Name & No:	<u>Lilli Unit 16-34 16-34</u>
Facility Name & No:	<u>Lilli Unit P-34 112233</u>

REMEDIALATION WORKPLAN (Cont.)

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If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):

Groundwater was not encountered during the site assessment.

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. Use additional sheet for description if required.

The pit will be filled and graded to match adjacent topography. Reclamation activities at the site will be compliant with COGCC regulations.

Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing.

Is further site investigation required? ☒ Y ☐ N If yes, describe:

The results of the excavation and soil treatment will be provided under a separate cover.

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):

The impacted soil will be treated on site via exsitu chemical oxidation. The treated soil will be used to backfill the excavation.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: <u>5-31-2011</u>	Date Site Investigation Completed: <u>---</u>	Date Remediation Plan Submitted: <u>9-04-2013</u>
Remediation Start Date: <u>5-31-2011</u>	Anticipated Completion Date: <u>---</u>	Actual Completion Date: <u>TBD</u>

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

Print Name: Jacob Evans Signed: *Jacob Evans*
Title: Senior Environmental Specialist Date: 9-04-2013

OGCC Approved: _____ Title: Northeast EPS Date: 4/24/2014

