FORM
27
Rev 6/99

State of Colorado
Oil and Gas Conservation Commission

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

FOR OGCC USE ONLY
REM 9341
Document 2144632
Date 11/4/2015

OGCC Employee:
☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV
Tracking No:

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): historic pit closure

OGCC Operator Number: 100185
Name of Operator: Encana Oil & Gas (USA) Inc.
Address: 143 Diamond Avenue
City: Parachute State: CO Zip: 81635

Contact Name and Telephone:
Brett Middleton
No: 970-285-2739
Fax: brett.middleton@encana.com

API Number: 414392 [Pit Facility ID] 438526 [Spill Facility ID]
Facility Name: ATCHEE UNIT B-12-6S-104W [Pit Facility Name]
Well Name: W R YOUNG CATTLE CO-66S104W [Location Name]
Location: (QtrQtr, Sec, Twp, Rng, Meridian): NWNE 12 6S 104W

County: Garfield
Facility Number: 322420 [Location ID]
Well Number: 12NWNE [Location No]
Latitude: 39.560122 Longitude: -108.933972

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Filtered produced water was stored in the pit.

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: Battlement loam, saline, 1 to 8 percent slopes

Potential receptors (water wells within 1/4 mi, surface waters, etc.): According to COGCC GISOnline mapping service, there is 1 stream and no water wells within 1/4 mile of the location.

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

Impacted Media (check):	Extent of Impact:	How Determined:
☑ Soils	Vertical and lateral extent of impacts will be	Insitu characterization of soil impacts was
☐ Vegetation	detailed in a Form 4 (Status Update)	completed with a soil auger rig, and will be
☐ Groundwater		detailed in a Form 4 (Status Update)
☐ Surface Water		

REMEDIATION WORKPLAN

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

Describe how source is to be removed:
See attached.

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.:
See attached.

Submit Page 2 with Page 1

FORM
27
Rev 6/99

Page 2

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Tracking Number: _____
Name of Operator: _____
OGCC Operator No: _____
Received Date: _____
Well Name & No: _____
Facility Name & No: _____

REMEDIATION WORKPLAN (Cont.)

OGCC Employee:

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

See attached.

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.

See attached.

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:

See attached.

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

See attached.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: 07/14/2015 Date Site Investigation Completed: 07/18/2015 Date Remediation Plan Submitted: _____

Remediation Start Date: 07/14/2015 Anticipated Completion Date: Fall, 2018 Actual Completion Date: _____

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

Print Name: Brett Middleton Signed: brett.middleton@encana.com Digitally signed by brett.middleton@encana.com DN: cn=brett.middleton@encana.com Date: 2015.10.19 10:20:56 -06'00'

Title: Environmental Specialist Date: 10/19/15

OGCC Approved: Carlos A Lujan, Ph.D. Title: Digitally signed by Carlos A Lujan, Ph.D. DN: cn=Carlos A Lujan, Ph.D., o=Colorado Oil and Gas Conservation Commission (COGCC), ou=Environmental NW Region, email=carlos.lujan@state.co.us, c=US Date: 2015.11.04 16:43:14 -07'00' Date: _____

COGCC FORM 27
(SITE INVESTIGATION AND REMEDIATION WORKPLAN)
NARRATIVE ATTACHMENT

Encana Oil & Gas (USA) Inc. (Operator: 100185)
B12 6104 Well Pad (Location: 322420)
Historic Storage Pit (Facility: 111214)
Spill Incident (Doc #: 400659256)

This Form 27 (Site Investigation and Remediation Workplan) has been prepared by Apex Companies, LLC (Apex) on behalf of Encana Oil & Gas (USA), Inc. (Encana) in support of insitu characterization and remediation of soil impacts resulting from a tank failure and/or the historic operation of an unlined earthen pit on an acquired Encana location in South Canyon, north of the town of Fruita in Garfield County, Colorado. This form is also being submitted in accordance with Rules 905 and 909 to generate a remediation project number in support of pit closure efforts.

Is location within a sensitive area?

Yes, based on the measured distance, approximately 150 feet, to a COGCC GIS Online identified surface water resource. However, this is a dry intermittent channel and no ground water has been noted within 100 feet of surface.

REMEDIATION WORKPLAN

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

In August, 2014 a tank failure resulting in the loss of more than 50 barrels of produced water and condensate was reported to the COGCC in a Form 19 (Doc#: 400659256). Much of the spilled fluids infiltrated into the working surface, and a determination was made that characterization of impacts would need to be completed insitu using a soil-auger or direct-push rig. Due to scheduling challenges and seasonal travel difficulties to the location, a rig did not complete the characterization until July, 2015. The results of the characterization effort will be provided in a Form 4 (Status Update).

While assessing the location during the initial incident response and rig scheduling, a historic pit (Facility: 111214) was identified on the location, and was added to the insitu characterization project.

Describe how source is to be removed:

The failed tank, along with an adjacent tank and the secondary containment were moved across the location and repiped to allow insitu characterization efforts to proceed while limiting the potential for conflicts with production equipment and flowlines still in operation.

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.:

Identified soil impacts will be remediated insitu using augmented bioremediation. As part of insitu characterization efforts, wells were installed with subsurface perforations through targeted remediation zones. These wells have been capped with wind-powered ventilator turbines, which will be visited on a regular O&M schedule. These efforts will be detailed at greater length in subsequent submittals.

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

No groundwater was encountered during insitu characterization efforts, and there is no known groundwater within 100 feet of the surface.

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 footprint is entirely within the working surface of the location. A fence around the historic pit had allowed revegetation at the surface to progress with native species recruitment, including sage brush. The fenced pit area will be left undisturbed until final reclamation efforts are undertaken in the future.

The footprint of the former tank battery, where the spill occurred, was eliminated during interim reclamation efforts at this location. Reclamation efforts are carried out in accordance with COGCC 1000 Series Reclamation Rules.

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?

Samples collected during insitu characterization efforts were submitted to a laboratory for analysis of COGCC Table 910-1 constituents of concern. Laboratory results and sample collection points will be submitted in a Form 4 (Status Update), along with the contractor Report of Work completed and field findings.

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

Soil impacted as a result of the tank failure or operation of the historic pit on this location will be remediated insitu using augmented bioremediation. Characterization of vertical and lateral extent of impacts will be provided in a Form 4 (Status Update), and successful conclusion of remediation efforts will be demonstrated with laboratory analyzed samples, and submitted to the COGCC in a Form 4 (Notification of Completion) for the resulting remediation project.

Encana Oil & Gas (USA) Inc. - B12 6104 Well Pad