

State of Colorado
Oil and Gas Conservation Commission

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FOR OGCC USE ONLY
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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 Employee:
☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV
Tracking No:

OGCC Operator Number: <u>100185</u>	Contact Name and Telephone: <u>Matt Kasten</u>
Name of Operator: <u>Encana Oil & Gas (USA) Inc.</u>	No: <u>970.285.2925</u>
Address: <u>143 Diamond Avenue</u>	Fax: <u>970.285.2705</u>
City: <u>Parachute</u> State: <u>CO</u> Zip: <u>81635</u>	
API Number: <u>100237 [Facility ID]</u> County: <u>Mesa</u>	
Facility Name: <u>Zahm 29-3</u> Facility Number: <u>-</u>	
Well Name: <u>Zahm-610S96W / 29SENE [Location Name/No]</u> Well Number: <u>391243 [Location ID]</u>	
Location: (QtrQtr, Sec, Twp, Rng, Meridian): <u>SENE, Sec. 29, T10S, R96W, 6th PM</u> Latitude: <u>39.162272</u> Longitude: <u>-108.123623</u>	

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): produced water and/or condensate

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: Peninsula loam, 3 to 9 percent slopes

Potential receptors (water wells within 1/4 mi, surface waters, etc.): The COGCC GIS OnLine mapping service indicates one (1) surface water receptor and twelve (12) water wells within 1/4 mile of the pad [1 is unknown and 8 are abandoned and/or denied according to the DWR].

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

Impacted Media (check):	Extent of Impact:	How Determined:
<input type="checkbox"/> Soils	<u>Any identified impacts will be detailed in the</u>	<u>NA</u>
<input type="checkbox"/> Vegetation	<u>required Form 19.</u>	
<input type="checkbox"/> Groundwater		
<input type="checkbox"/> Surface Water		

REMEDIALTION 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



REMEDIATION WORKPLAN (Cont.)

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

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.

*TBD - To Be Determined

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: *TBD Date Site Investigation Completed: *TBD Date Remediation Plan Submitted: 12/24/14
Remediation Start Date: *TBD Anticipated Completion Date: *TBD Actual Completion Date: *TBD

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

Print Name: Matt Kasten

Signed: matt.kasten@encana.com

Digitally signed by matt.kasten@encana.com
DN: cn=matt.kasten@encana.com
Date: 2014.12.24 11:02:57 -0700

Title: Environmental Field Contractor

Date: 12/24/14

OGCC Approved: _____ Title: _____ Date: _____

Zahm 29-3 Pit Closure (Form 27)

(Facility ID – 100237)

(Location ID – 391243)

This Form 27 (Site Investigation and Remediation Workplan) was prepared for the purpose of generating a remediation project number in support of pit (Facility ID – 100237) closure efforts on the Zahm 29-3 Pad (Location ID - 391243) in Encana Oil & Gas (USA) Inc. (Encana's) Plateau area of operation in Mesa County.

This pit was identified during P&A due diligence and is believed to be approximately 15' by 15' and approximately 5-10' in depth. This pit was an old production pit and the contents are produced water and/or condensate. A pit liner is unknown at this time. Pit findings will be provided in the Form 4 (Report of Work Completed and Notification of Completion).

This location is within a sensitive area; due to distance (~140') to Coon Creek.

This document includes a topographic map identifying the location of the pit closure. Project-specific information related to pit dimensions, associated impacts, and remediation activities will be provided in the required Form 19 (Spill / Release Report) and/or Form 4 (Report of Work Completed and Notification of Completion).

REMEDIATION WORKPLAN

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

In the event that the pit is open, the following activities have been, or will be carried out in support of pit closure activities conducted in support of this project:

- 905.b(2) & 905.b(4) – Above-liner fluids and solids will be removed from the pit and will be reused or disposed-of at an approved disposal facility with appropriate receipts and manifests.
- 905.b(3) – Liner will be removed and reused/recycled or disposed of at an approved disposal facility with appropriate receipts and manifests.
- 905.b(4) – Representative grab samples will be collected from the pit bottom following removal of the pit liner and will be analyzed for compliance with COGCC Table 910-1.
- 905.c – In the event the constituents of concern found below the liner are in excess of Table 910-1 allowable concentrations and above background concentrations, a Form 19 (Spill/Release Report) will be submitted to document the failure of the pit liner.

In the event that the pit was physically closed without appropriate permitting, the following activities have been, or will be carried out in support of pit closure activities conducted in support of this project:

- In-situ characterization of potential impacts using heavy equipment or a drilling/direct push rig.
- 905.b(4) – Representative grab samples will be collected from the pit area and will be analyzed for compliance with COGCC Table 910-1.
- 905.c – In the event the constituents of concern are in excess of Table 910-1 allowable concentrations and above background concentrations, a Form 19 (Spill/Release Report) will be submitted to document the failure of the pit liner.

Describe how source is to be removed:

Impacted material would be evaluated, and based on extent would be remediated in-situ, or removed using heavy equipment for onsite remediation or offsite disposal at an approved disposal facility documented with appropriate receipts and manifesting. Remediation success will be demonstrated through sample collection and laboratory analysis. The selected remediation approach, clearance sample results, and final disposition of material will be provided in a Form 4 (Report of Work Completed and Notification of Completion).



Zahm 29-3 Pit Closure (Form 27)**(Facility ID – 100237)****(Location ID – 391243)**

Any impacts identified below the liner would be documented and reported on a Form 19 (Spill/Release Report).

Describe how remediation of existing impact 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.:

In the event that below-liner impacts are identified, a Form 19 (Spill / Release Report) would be prepared and submitted to the COGCC.

The selected remediation approach will vary based on economic and technical feasibility. In-situ remediation is the preferred approach for most pit closure projects. However, in some situations petroleum impacted material would be removed and remediated onsite, or transported offsite to an approved disposal facility. The selected remediation approach and final disposition of material will be provided in a Form 4 (Report of Work Completed and Notification of Completion).

All remediation activities are verified with sample collection and laboratory analysis, conducted in accordance with COGCC Rule 910, and when necessary under an approved monitoring plan and analytical suite. These activities would be described in the Report of Work Completed and Notification of Completion for this remediation project.

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

In the event that impacts to groundwater are identified, a vertical and lateral extent would be determined by a third party contractor and an appropriate in-situ remediation and monitoring plan would be prepared and submitted to the COGCC.

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, or has been backfilled to grade. Pad reclamation will be carried out when appropriate, based on well productivity and plans for future development.

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? If yes, describe:

The site investigation for this project will be carried out as described above. All analytical data collected in support of this remediation project will be provided to the COGCC in a Form 19 (Spill / Release Report) and/or in the Form 4 (Report of Work Completed and Notification of Completion). A site diagram showing the location of collected samples will also be provided.

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

Final disposition of E&P waste would be detailed in the Form 4 (Report of Work Completed and Notification of Completion) submitted following successful completion of pit closure activities.



Plateau

