

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): _____

OGCC Employee:

☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV

Tracking No:

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 [Facility ID]

County: Garfield

Facility Name: A05

Facility Number: -

Well Name: N. PARACHUTE-65S96W /5NENE [Location Name/No]

Well Number: 335909 [Location ID]

Location: (QtrQtr, Sec, Twp, Rng, Meridian): NENE 5 5S 96W

Latitude: 39.64994 Longitude: -108.1854

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: Parachute-Irigul complex, 5 to 30 percent slopes

Potential receptors (water wells within 1/4 mi, surface waters, etc.): According to COGCC GISOnline mapping service, there are 2 streams and no water wells within 1/4 mile of the storage pit.

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

Impacted Media (check):

- ☐ Soils
☐ Vegetation
☐ Groundwater
☐ Surface Water

Extent of Impact:

There are no known impacts resulting from the operation of this storage pit.

How Determined:

If impacts are identified, the extent would be reported in the required Form 19 and subsequent Form 4 status updates.

REMEDIATION WORKPLAN

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

This form is being submitted in accordance with Rules 905 and 909 to generate a remediation project number in support of a pit closure. With approval, a mixing bin will be located at the nearby E34 496 location (335928) to support transport staging. That proposed operation and another associated pit closure are detailed in the attached Waste Management Plan.

Describe how source is to be removed:

Pit fluids will be removed using existing infrastructure associated with Encana's North Parachute water treatment and storage system. The liner will be pressure washed, and above liner solids will be recovered using hydrovac trucks and/or trash pumps. Solids will be offloaded at the proposed transport staging site detailed in the attached Waste Management Plan. The liner will be removed and transported offsite for recycling/disposal. Offsite disposal records are available upon request.

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.:

Any identified impacts would be reported in the required Form 19 and a remediation approach would be selected based on site conditions and detailed in a subsequent Form 4 (Status Update). Onsite remediation efforts are supported by an environmental contractor using field screening techniques confirmed with laboratory results. Typically impacted materials are removed with heavy equipment and disposed of offsite, or characterized and remediated insitu. Offsite disposal records are available upon request.

Submit Page 2 with Page 1



REMEDIAL WORKPLAN (Cont.)

OGCC Employee: _____

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

If groundwater has been impacted, describe 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 and an appropriate remediation and monitoring plan would be prepared and submitted to the COGCC for prior approval.

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 occurs within the boundary of the location's working surface and will be backfilled in compacted lifts. Interim or final reclamation of the site will be 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? ☐ Y ☐ N If yes, describe:

After removal of the pit liner, a number of grab samples will be collected adequate to characterize the size and depth of the pit. Samples will be submitted for laboratory analysis of COGCC Table 910-1 constituents of concern. The location of the samples, and laboratory results will be provided in subsequent form submittals as previously described.

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

Above-liner solids will be transported to the nearby E34 496 location (335928) to support offsite transport staging. That proposed operation and another associated pit closure are detailed in the attached Waste Management Plan.

If below-liner impacts are identified, the final disposition of that E&P waste would be detailed in the Form 4 (Notification of Completion) submitted at the successful conclusion of the associated remediation project.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: _____ Date Site Investigation Completed: _____ Date Remediation Plan Submitted: _____
Remediation Start Date: _____ Anticipated Completion Date: _____ 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: 2015.10.21 16:16:43 -0600

Title: Environmental Specialist

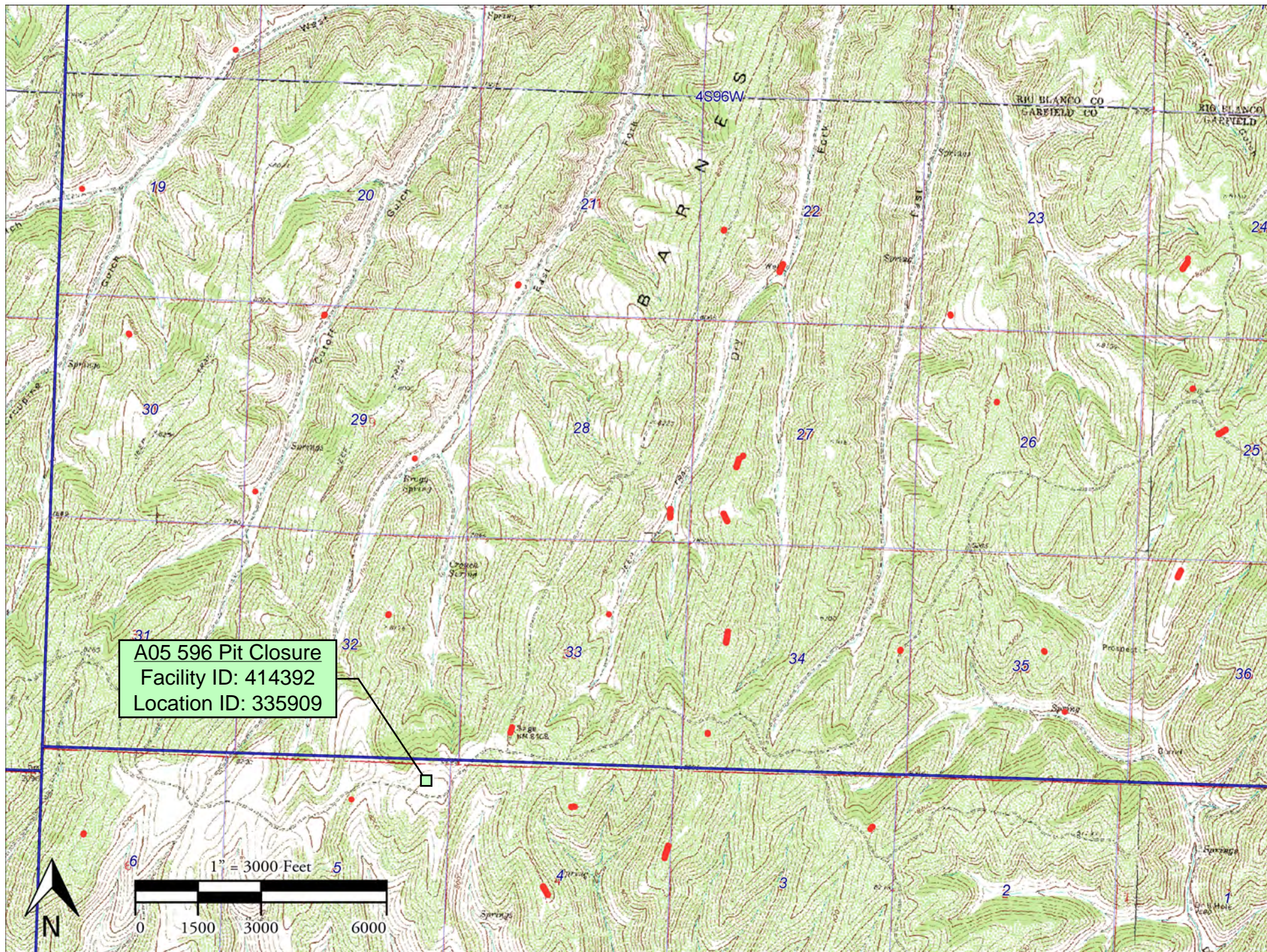
Date: 9/24/15

OGCC Approved: Carlos A Lujan, Ph.D.

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: 2015.10.21 16:16:43 -0600

Title: _____

Date: _____





WASTE MANAGEMENT PLAN ABOVE-LINER SOLIDS PRODUCED WATER STORAGE PITS

This Waste Management Plan (WMP) has been prepared by Apex Companies, LLC (Apex) on behalf of Encana Oil & Gas (USA), Inc. (Encana) in support of the closure of two (2) produced water storage pits on separate well pads in the North Parachute area of operations in Garfield County, Colorado. Both pits will be closed concurrently using techniques for removing above-liner material that eliminate, or minimize below-liner soil impacts during pit closure activities. To reduce material handling and offsite truck traffic from the pit closures, Encana proposes to utilize a third Encana well pad for the purpose of consolidating and staging above-liner solids prior to transport to an offsite disposal facility. Activities described in this plan will be carried out entirely on Encana operated locations and access roads, on Encana owned surface.

To assure adequate documentation of these efforts, the WMP has been included with both Site Investigation and Remediation Workplans (Form 27) prepared to document the associated pit closures, and in a Sundry (Form 4) submitted for the staging and consolidation location. The three (3) locations associated with this effort are identified in the table below and in the attached topographic location map.

Location Name	Activity	Facility ID	Location ID
A05 596	Pit closure	414392	335909
M23 496	Pit closure	414395	335680
E34 496	Transport staging	NA	335928

With Colorado Oil & Gas Conservation Commission (COGCC) approval of this WMP, Encana will use a combination of available equipment and personnel, and best practices to remove and dispose of above-liner solids. (equipment with similar function may be substituted):

- Using existing pipe and pump infrastructure, residual fluids will be removed from the pits;
- To maximize mobilization of above-liner solids, and assure acceptance of liner material for recycling/disposal; crews with pressure-washers will clean the liner using heated water;
- Hydrovac trucks will be used to remove mobilized solids and fluids from the pit bottom, while vacuum trucks will remove free liquids from the hydrovac truck tanks;
- When full, the hydrovac trucks will travel to the staging site and offload solids into a steel mixing bin;
- Any accumulated fluid in the mixing bin will be recovered by vacuum truck; and
- Material offloaded into the mixing bin at the staging site will be mixed with sawdust (or substitute) and loaded into a transport for offsite disposal.

Fluid waste generated during pit closure activities will be transported by pipeline or truck to an appropriate offload site associated with Encana's North Parachute Properties water system, for treatment, reuse, or disposal.

Following completion of pit closure activities on the A05 and M23, the steel mixing bin at the E34 staging site will be removed and the working surface will be assessed for staining and appropriate follow up.

Disposal records are kept on file at Encana's Parachute Field Office, and are available upon request.

