

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



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

#7917

FOR OGCC USE ONLY

RECEIVED  
6/19/2013

**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.

OGCC Employee: \_\_\_\_\_

Spill	Complaint
Inspection	NOAV

Tracking No: \_\_\_\_\_

**CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED**

Spill or Release    Plug & Abandon    Central Facility Closure    Site/Facility Closure    Other (describe): \_\_\_\_\_

OGCC Operator Number: _____	Contact Name and Telephone: _____
Name of Operator: _____	_____
Address: _____	No: _____
City: _____ State: _____ Zip: _____	Fax: _____

API Number: _____	County: _____
Facility Name: _____	Facility Number: _____
Well Name: _____	Well Number: _____
Location: (QtrQtr, Sec, Twp, Rng, Meridian): _____	Latitude: _____ Longitude: _____

**TECHNICAL CONDITIONS**

Type of Waste Causing Impact (crude oil, condensate, produced water, etc.): \_\_\_\_\_

**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.): \_\_\_\_\_

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: \_\_\_\_\_

Potential receptors (water wells within 1/4 mi, surface waters, etc.): \_\_\_\_\_

\_\_\_\_\_

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

Impacted Media (check):	Extent of Impact:	How Determined:
Soils	_____	_____
Vegetation	_____	_____
Groundwater	_____	_____
Surface Water	_____	_____

**REMEDIALTION WORKPLAN**

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

\_\_\_\_\_

**Describe how source is to be removed:**

\_\_\_\_\_

**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.:**

\_\_\_\_\_

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



Tracking Number: \_\_\_\_\_  
Name of Operator: ENCA N.A  
OGCC Operator No: \_\_\_\_\_  
Received Date: \_\_\_\_\_  
Well Name & No: Location ID # 316370  
Facility Name & No: CANARY 6601 / Ft # 276675

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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

TBD - to be determined

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: 6/18/2013 Date Site Investigation Completed: TBD Date Remediation Plan Submitted: 06-19-13  
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: Christopher Hines

Signed: \_\_\_\_\_

Title: Environmental Field Coordinator

Date: 06-19-13

OGCC Approved: \_\_\_\_\_

Title: EPS NW Region

Date: 08/02/2013

# NARRATIVE ATTACHMENT

## FORM 27 (SITE INVESTIGATION AND REMEDIATION WORKPLAN)

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### Canary 6601 Pit Closure (Location #316370, Pit #276675)

Document Date – 06/17/2013

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This Form 27 (Site Investigation and Remediation Workplan) was prepared for the purpose of generating a remediation project number in support of the closure of the Canary 6601 production pit (Facility #: 276675) in Encana Oil & Gas (USA) Inc. (Encana) Buckhorn Draw area of operations. In a review of records for this location it was determined that the identified pit had been closed without proper clearance sampling or permit approvals, between 2006 and 2009. This document presents Encana's proposed approach to conducting an in-situ investigation for potential impacts within the pit boundary visible in 2006 aerial imagery.

A topographic Site Location Map illustrating the location of the Canary 6601 is provided as attachment to this form. Project-specific information related to pit dimensions, associated potential impacts, and any planned remediation activities will be provided in the required Form 19 (Spill / Release Report), Notification of Completion, and Form 4 (Sundry Notice).

## REMEDIATION WORKPLAN

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

Using the Colorado Oil & Gas Conservation Commission (COGCC) database and historical aerial photographs, Encana has identified a production pit on the Canary 6601 (Site) well pad that was closed without proper clearance sampling or permit approvals between 2006 and 2009. The approximate pit location is illustrated on a Site Map provided as Figure 2.

At the request of Encana, LT Environmental Inc. (LTE) plans to assess the potential for impacted soil at the Site by advancing soil borings using hollow stem auger. The soil borings will be logged by a LTE geologist and will be field-screened for potential petroleum hydrocarbon impacts. The soil from each boring will be characterized by visually inspecting soil samples collected in steel split spoons and screened using a photo-ionization detector (PID) to monitor the soil headspace for the presence of volatile organic vapors. Soil samples will be collected in 5 foot intervals as the boring is advanced, with field-screening results used as an in. Soil samples will be submitted for laboratory analysis conducted in accordance with COGCC Rule 910.

### **Describe how source is to be removed:**

Any impacted material identified would be evaluated upon discovery and depending upon assessed extent would be removed using heavy equipment and remediated onsite, remediated in-situ, or disposed of offsite at a permitted disposal facility. Successful completion of remediation efforts will be demonstrated through sample collection and laboratory analysis conducted in accordance with COGCC Rule 910. These activities would be described in the Sundry Notice / Notification of Completion for this remediation project.

Any petroleum impacts from drilling and production operations identified during assessment activities would be documented and reported on a Form 19 (Spill/Release Report).



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

## Canary 6601 Pit Closure (Location #316370, Pit #276675)

Document Date – 06/17/2013

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**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.:**

In the event that petroleum impacts from drilling and production operations are identified, a Form 19 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.

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. Specifics on the selected remediation approach and clearance results would be provided in a Form 4 (Sundry Notice or Notification of Completion) for this project.

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

In the event that petroleum impacts from drilling and production activities are identified in groundwater, a vertical and lateral extent would be determined, and an appropriate insitu 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 surface of the pit area appears to have been reclaimed sometime after 2006. Soil borings will be backfilled to match existing grade.

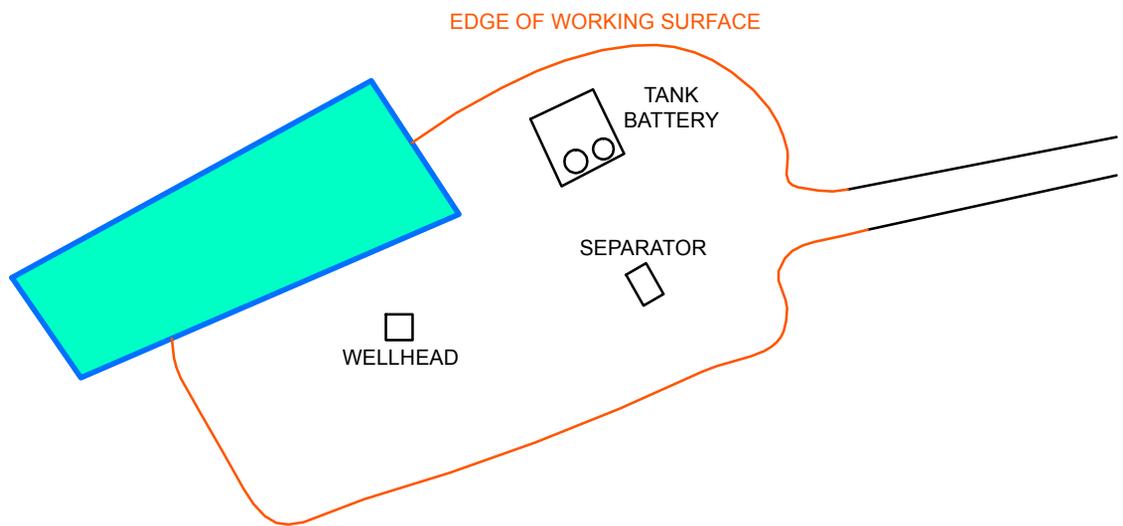
**Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing. Is further site investigation required? If yes, describe:**

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, if applicable, and/or in a Form 4 (Sundry Notice or Notification of Completion). A site diagram showing the location of collected samples will also be provided.

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

Final onsite disposition of E&P waste will be detailed in a Form 4 (Sundry Notice or Notification of Completion). Documentation of offsite disposal of E&P waste from this project would be kept on record at Encana's Parachute Field Office and would be available upon request.





**LEGEND**

 PIT OUTLINE 2006

IMAGE COURTESY OF ESRI/BING MAPS

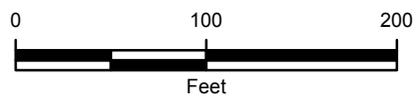


FIGURE 2  
 SITE MAP  
 CANARY 6601  
 RIO BLANCO COUNTY, COLORADO



**ENCANA OIL & GAS (USA) INC.**

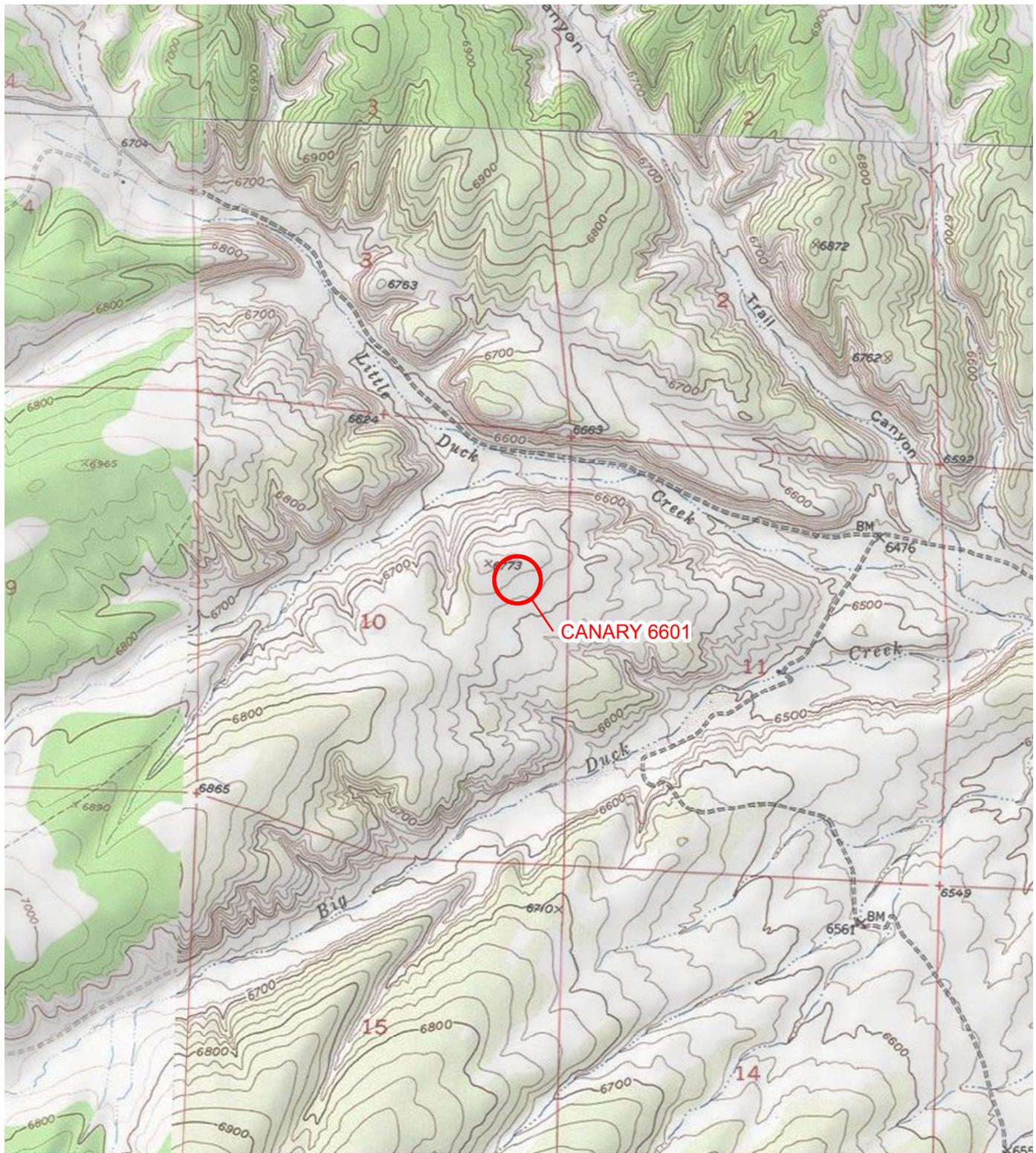
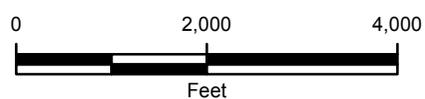


IMAGE COURTESY OF ESRI/BING MAPS

**LEGEND**

 SITE LOCATION



**FIGURE 1**  
**SITE LOCATION MAP**  
**CANARY 6601**  
**RIO BLANCO COUNTY, COLORADO**



**ENCANA OIL & GAS (USA) INC.**