

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



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

#7528

FOR OGCC USE ONLY

RECEIVED  
1/29/2013

**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.

**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: _____	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	_____	_____

**REMEDATION 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: ENCAVA  
OGCC Operator No: \_\_\_\_\_  
Received Date: D 27  
Well Name & No: \_\_\_\_\_  
Facility Name & No: PIT # 284001

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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.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: 02/08/2012 Date Site Investigation Completed: 02/17/2012 Date Remediation Plan Submitted: 01/29/2013  
Remediation Start Date: NA Anticipated Completion Date: NA Actual Completion Date: NA

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: [Signature]  
Title: Environmental Field Coordinator Date: 01/29/2013

OGCC Approved: [Signature] Title: FOR Chris Canfield Date: 01/30/2013  
EPS NW Region

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

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## D27 Pit Closure (284001)

Document Date – 01/29/2013

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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 D27 produced water storage pit in Encana Oil & Gas (USA) Inc. (Encana's) North Parachute area of operations. The document provides an overview of Encana's general approach to remediation of potential below-liner impacts identified during pit closure activities. A topographic location map illustrating the location of the D27 storage pit is provided. Site-specific information related to pit dimensions, associated impacts, and 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):**

All activities conducted in support of this pit closure project were carried out in accordance with COGCC Rules 905, 907, and 909 for conducting a site investigation in support of pit closures.

The following activities have, or will be carried out in support of pit closure activities conducted in support of this project:

- 905.b(2) & 905.b(4) – All above-liner fluids and solids will be removed from the pit and will be reused or disposed of at a permitted disposal facility under manifest.
- 905.b(3) – Liners will be removed, and reused/recycled or disposed of at a permitted disposal facility under manifest.
- 905.b(4) – Representative 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.
  - Sample results will be provided to the COGCC in supplementary submission(s) for this remediation project.
- 905.c – In the event that levels of 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 and subsequent release of fluids.
  - If below-liner concentrations are above Table 910-1 allowable concentrations, but below background no Form 19 will be submitted. However, a Form 4 (Sundry Notice) will be submitted to document the onsite disposal of material in excess of the allowable concentrations identified in Table 910-1.

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

Any impacted material identified below the liner would be evaluated upon discovery and depending upon severity 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, and to reflect the procedures described above. These activities would be described in the Sundry Notice / Notification of Completion for this remediation project.

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



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

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## D27 Pit Closure (284001)

Document Date – 01/29/2013

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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 below-liner impacts 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 impacted material would be removed and remediated onsite, or transported offsite to an approved disposal facility.

Whenever possible, the below-grade capacity of a pit scheduled for closure would be utilized to dispose of drill cuttings or other impacted material. Any material disposed of in this fashion would be handled in accordance with Rule 907 and compliance would be demonstrated through sample collection and laboratory analysis carried out in accordance with Rule 910. Utilization of this disposal option would be documented in a Form 4 (Sundry Notice or Notification of Completion). In the event that landowner approval is required for this type of disposal, a written request would be provided to the COGCC prior to backfilling the pit.

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 impacts to groundwater are identified, a vertical and lateral extent would be determined by a third party contractor and an appropriate insitu 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 footprint for the backfilled pit occurs within the boundary for this location. During reclamation the backfilled pit may be part of the pad's working surface and/or covered by recontoured and reseeded slopes installed to meet reclamation objectives. The Form 4 (Notification of Completion) submitted for this project will identify the reclamation status of the location at the time of pit closure. Interim and final reclamation activities will be carried out in accordance with COGCC 1000 Series (Reclamation Regulations).



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## D27 Pit Closure (284001)

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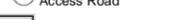
**Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing. Is further site investigation required? If yes, describe:**

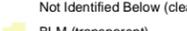
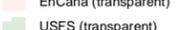
The site investigation for this project will be carried out as described above. All analytical data collected in support of this remediation project will be provided to the COGCC in a Form 19, if applicable, and/or in a Form 4 (Sundry Notice or Notification of Completion). A site diagram showing the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

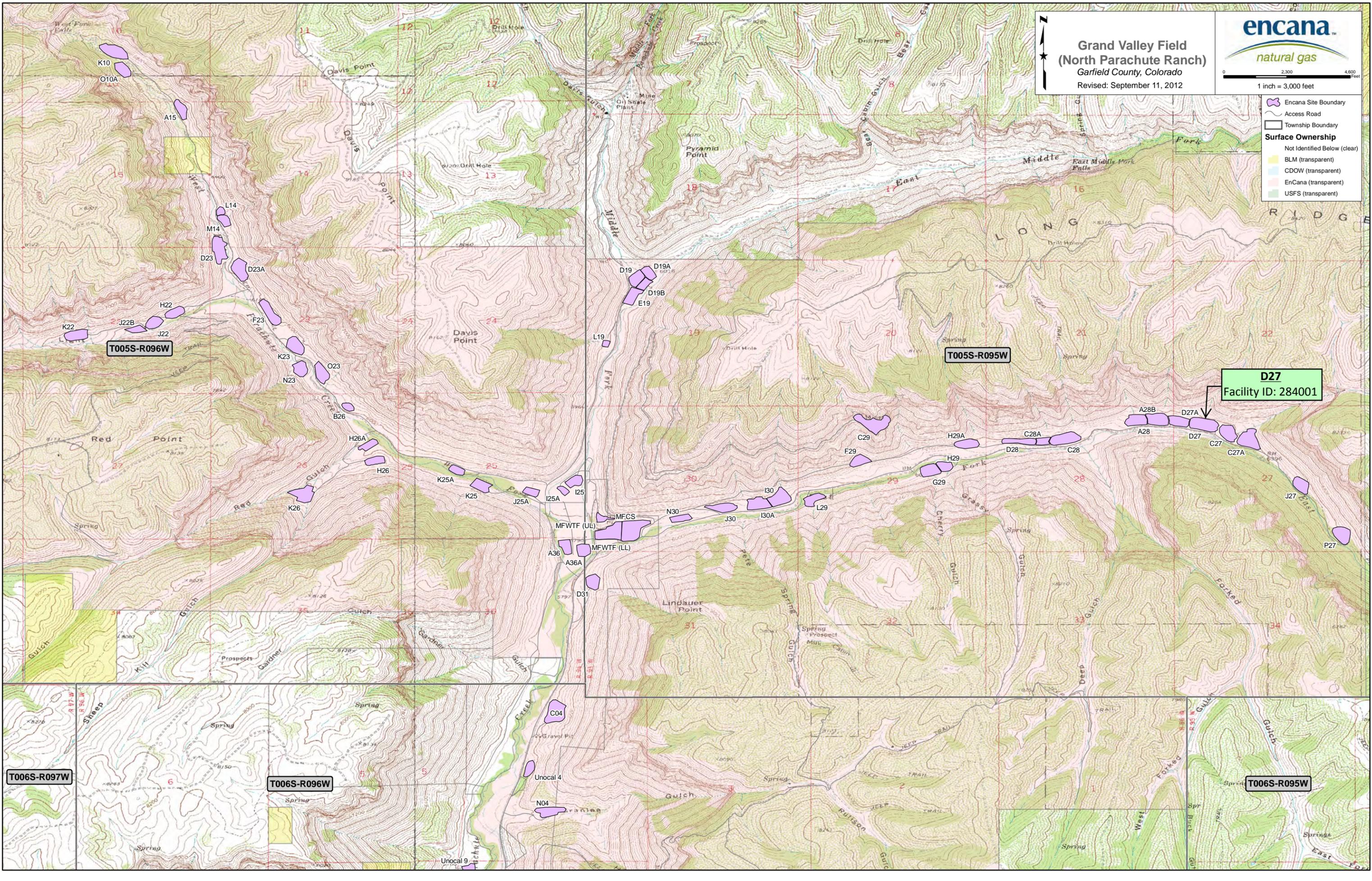
**Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):**

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



**Encana Site Boundary**  
 Encana Site Boundary  
 Access Road  
 Township Boundary

**Surface Ownership**  
 Not Identified Below (clear)  
 BLM (transparent)  
 CDOW (transparent)  
 EnCana (transparent)  
 USFS (transparent)



**T005S-R096W**

**T005S-R095W**

**D27  
Facility ID: 284001**

**T006S-R097W**

**T006S-R096W**

**T006S-R095W**