**U.S. Department of the Interior**
**Bureau of Land Management**
**Colorado River Valley Field Office**
**2300 River Frontage Road**
**Silt, Colorado 81652**

# Statutory Categorical Exclusion, DOI-BLM-CO-N040-2010-0015-SCX

**Project:** Proposal to Drill Two Water Disposal Wells into Federal Lease COC64191 from the Existing F21OU Pad Located on BLM Land in the Grand Valley Field (Orchard II Master Development Pad).

**Location:** Township 8 South, Range 96 West, Section 21, SE¼NW¼, 6th PM

**Proposal:** EnCana Oil & Gas (USA) Inc. (EnCana) proposes to drill two additional water disposal wells from the existing F21OU pad located on public land to dispose of produced water collected on-lease within the Orchard Unit and dispose of treated water collected off-lease and transported via buried authorized pipelines from EnCana's High Mesa treatment facility located in Section 36, T7S, R96W. The F21OU pad supports the Orchard Federal Disposal #3 water disposal well (formerly named Orchard Unit 21-6 well which was previously approved for well conversion) and its associated pump house, generator and storage tanks. Figure 1 displays the physical location of the existing pad.

The F21OU pad would be expanded from its original disturbance footprint of 4.5 acres analyzed in Orchard Unit GAP (September 2005) to a revised pad footprint of 4.85 acres (Figure 2). The expanded disturbance would accommodate a PACE rig layout and the existing water disposal support facilities that were installed in fall 2009 under BLM right-of-way COC74107 for the Orchard Unit 21-6 well (Figure 3). The pad is presently in a state of interim reclamation with a disturbed working area of about 1.2 acre (Figure 2). Although the F21OU pad was reclaimed in 2007, it has not achieved an acceptable reclamation objective at this time.

In addition to submittal of the Federal APDs and the associated COGCC approvals for underground water injection, EnCana would also apply for and receive authorization for a BLM right-of-way to take off-lease water and inject it into the underground formation(s). The Sunnyside buried water pipeline system was recently upgraded and deemed operational in fall 2009 to increase the underground water movement capabilities within the Orchard Unit, and specifically to serve the F21OU pad.

**Table 1. Surface and Bottomhole Locations of Proposed Federal Wells**

| *Proposed Wells* | *Federal Lease* | *Surface Locations* | *Bottomhole Locations* |
|---|---|---|---|
| Orchard Unit 21-3 (F21OU) | COC64191 | 1687 feet FNL, 1729 feet FWL SE¼NW¼, Section 21, T8S R96W | 781 feet FNL, 1576 feet FWL NE¼NW¼, Section 21, T8S R96W |
| Orchard Unit 21-7 (F21OU) | COC64191 | 1706 feet FNL, 1730 feet FWL SE¼NW¼, Section 21, T8S R96W | 2612 feet FNL, 1883 feet FWL SE¼NW¼, Section 21, T8S R96W |

An onsite for the pad expansion was conducted on April 29, 2009 during the SCX review and APD processing for the Orchard Unit 21-6H gas well. A follow-up BLM field visit was conducted on November 3, 2009 to review the siting of the water disposal support facilities authorized for the Orchard Unit 21-6 well as well as conduct a final review of the survey plats for these two water disposal wells.

The spud date of the existing gas well on the F21OU pad was 8/18/05. Resource surveys including migratory bird, sensitive plant, and cultural resources were completed relative to the 2005 APD issuance.

A follow-up raptor nest survey of the F21OU pad was also conducted in April 2009. The existing access road and pipelines would continue to serve the F21OU pad in its present condition.

**Lease Stipulations:** The specific stipulations listed on Federal lease COC64191 are not applicable to the F21OU location. In the absence of a winter timing limitation for the F21OU pad, a Condition of Approval restricting any construction, drilling, or completion activities would be invoked from January 1 through March 1 to protect wintering wildlife.

**BLM Conditions of Approval:** Conditions of Approval (COAs) that would be included on the Applications for Permit to Drill (APDs) are attached.

**NEPA Compliance:** The following category of Categorical Exclusions pursuant to Section 390 of the Energy Policy Act (Act of 2005) applies to this proposal:

Category #1: *Individual surface disturbances of less than five (5) acres so long as the total surface disturbance on the lease is not greater than 150 acres and site-specific analysis in a document prepared pursuant to NEPA has been previously completed.* The well pad expansion would amount to 0.35 acre of additional surface disturbance. The total surface disturbance related to oil and gas development on Lease COC58676 is estimated to be 18 acres - 13 acres of pad disturbance (including the planned 4.85 acres for the F21OU pad) and approximately 5 acres of pipeline disturbances in various reclamation conditions.

**Prepared by:** Jim Byers, Natural Resource Specialist 4/5/10

**Approval:** It is my decision to approve the proposed action with the above referenced terms and conditions:

Allen B. Crockett, Ph.D., J.D.
Supervisory Natural Resource Specialist

4-5-10
Date

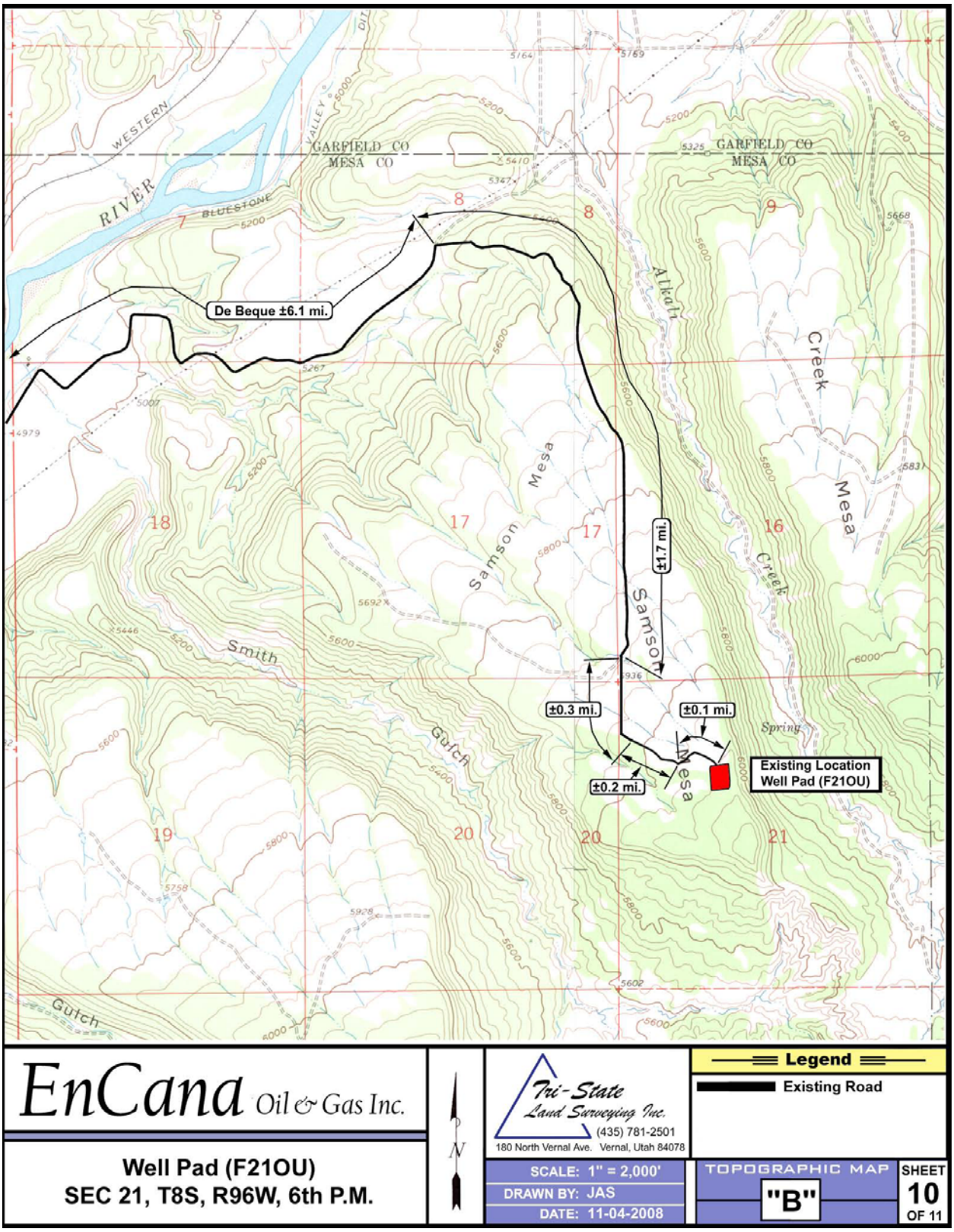


Figure 1. Project Location Map

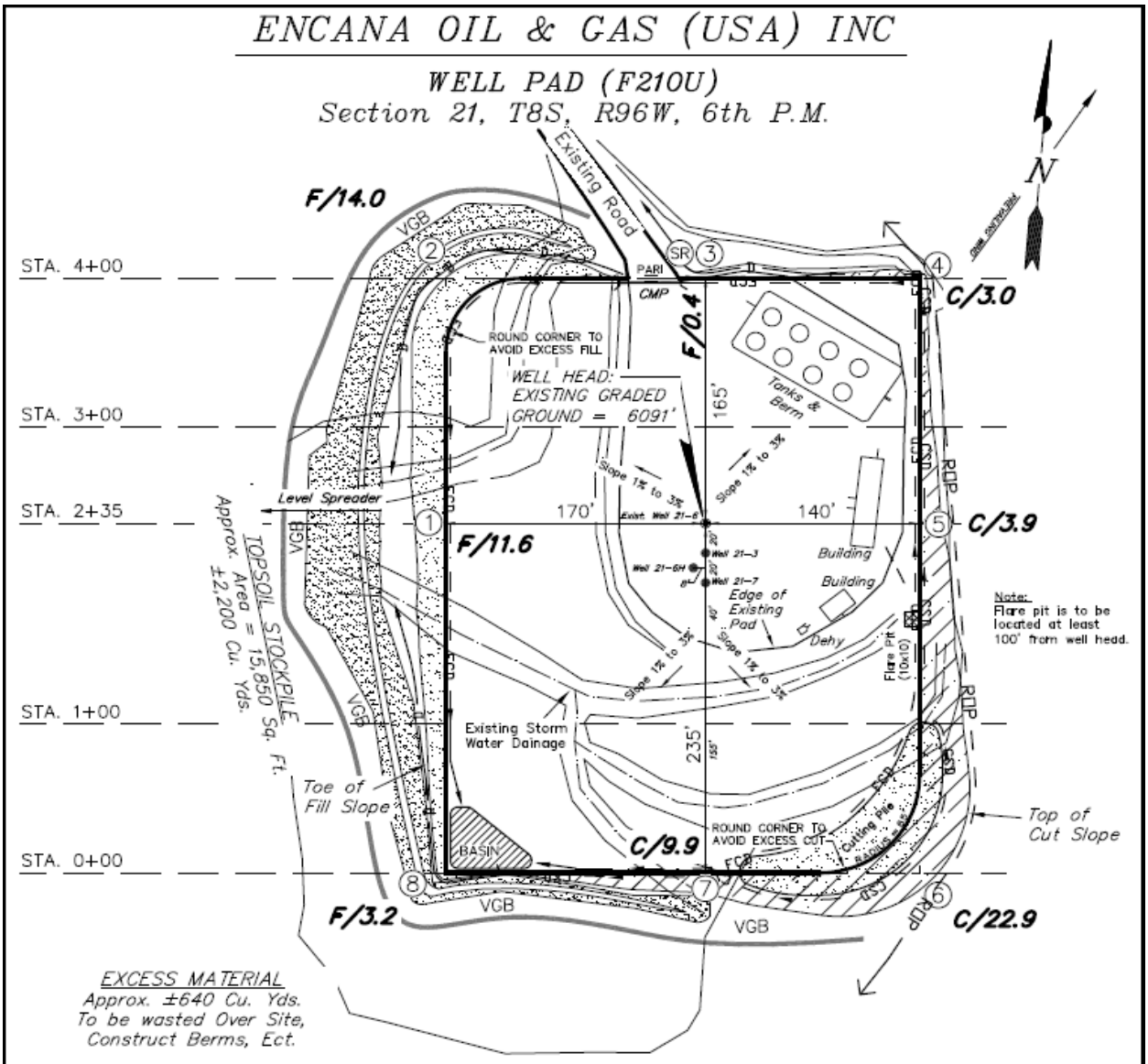


Figure 2. Pad Layout with Current Water Disposal Facilities

**DOWNHOLE CONDITIONS OF APPROVAL**
**Applications for Permit to Drill**

**Company/Operator:** EnCana Oil & Gas (USA) Inc.

**Surface Location:** SENW, Section 21, Township 8 South, Range 96 West, 6th P.M.

| Well Name | Well No./Pad | Bottomhole Location | Lease |
|---|---|---|---|
| Orchard Unit | 21-3 (F21OU) | SENW Sec. 21, T. 8S, R. 96W. | COC-64191 |
| Orchard Unit | 21-7 (F21OU) | SENW Sec. 21, T. 8S, R. 96W. | COC-64191 |

1. Twenty-four hours *prior* to (a) spudding, (b) conducting BOPE tests, (c) running casing strings, and (d) within twenty-four hours *after* spudding, the CRVFO shall be notified. One of the following CRVFO's inspectors shall be notified by phone: Steve Ficklin at 970-319-2509, Dave Giboo at 970-319-2211, and Todd Sieber at 970-319-7887.
2. A CRVFO petroleum engineer shall be contacted for a verbal approval prior to commencing remedial work, plugging operations on newly drilled boreholes, changes within the drilling plan, changes or variances to the BOPE, deviating from conditions of approval, and conducting other operations not specified within the APD. Please contact Will Howell at 970-876-9049 (office) or 970-319-5837 (cell) for verbal approvals. As a secondary contact, contact Dane Geyer at 970-876-9048 (office) or 970-589-6887 (cell) for verbal approvals.
3. If a well control issue arises (e.g. kick, blowout, or water flow), casing failure occurs, or an increase in bradenhead pressure occurs during fracturing operations, Will Howell shall be notified within 24 hours from the time of the event.
4. The BOPE shall be tested and conform to Onshore Order #2 for a **3M** system.
5. A casinghead rated to 3,000 psi or greater shall be utilized.
6. An electrical/mechanical mud monitoring equipment shall be functional prior to drilling out the next shoe. As a minimum, this shall include a trip tank, pit volume totalizer, stroke counter, and flow sensor.
7. Gas detecting equipment shall be installed in the mud return system, prior to drilling out the next shoe, and hydrocarbon gas shall be monitored for pore pressure changes.
8. A gas buster shall be functional and all flare lines effectively anchored in place, prior to drilling out the next shoe. The discharge of the flare lines shall be a minimum of 100' from the well head and targeted at bends. The panic line shall be a separate line (not open inside the buffer tank) and effectively anchored. All lines shall be downwind of the prevailing wind direction and directed into a flare pit, which cannot be the reserve pit. The flare system shall use an automatic ignition. Where noncombustible gas is likely or expected to be vented, the system shall be provided supplemental fuel for ignition and maintain a continuous flare.
9. 1000 feet of Surface Casing will be required on this well to protect a potential water source/aquifer. Cement will be circulated to surface. If the TOC is lower than required or the cement sheath of poor quality, a CBL will be run and remedial cementing performed to insure zone isolation/wellbore integrity. If possible, attempt to circulate cement to surface on the Production Casing. Contact Will Howell 970-876-9049 or 970-319-5837.
10. Prior to commencing fracturing operations, the production casing shall be tested to the maximum

anticipated surface fracture pressure and held for 15 minutes. If leak-off is found, Will Howell shall be notified within 24 hours of the failed test, but prior to proceeding with fracturing operations. The test shall be charted and set to a time increment as to take up no less than a quarter of the chart per test. The chart shall be submitted with the well completion report.

11. On the first well drilled on this pad, a triple combo (open hole logs) shall be run from the base of the surface borehole to surface, and another run from TD to the surface casing shoe. This log shall be in accordance with 43 CFR 3162.4(b), which states that the operator shall submit a complete set of electrical/mechanical logs in .las/.pdf format with standard Form 3160-4, Well Completion or Recompletion Report and LOG. Please contact Karen Conrath at 970-876-9053 or karen_conrath@blm.gov for clarification. Well logs need to be sent to the BLM Silt office as soon as possible after logging to evaluate the injection zone for gas reserves.
12. As a minimum, cement shall be brought to 200' above the Mesaverde. Prior to commencing fracturing operations, a CBL shall be run (from TD to 200' above the TOC) and an electronic and/or hard copy submitted to the CRVFO. If the TOC is lower than required or the cement sheath of poor quality, then, within 48 hours from running the CBL and prior to commencing fracturing operations, a CRVFO petroleum engineer shall be notified for further instruction.
13. A 80-90% stand-off or greater from hole to casing must be maintained throughout this well. Centralizers and turbolizers must be spaced to insure 100% cement bond due to the deviated nature and disposal objective of the well.
14. Submit the (a) mud/drilling log (e.g. Pason disc), (b) driller's event log/operations summary report, (c) production test volumes, (d) directional survey, and (e) Formation Integrity Test results with the well completion report. Please contact Will Howell for clarification.
15. After the surface casing is cemented, a leak-off test will be performed on the first well drilled in accordance with OOGO No. 2; Sec. III, B.1. i. in order to make sure the surface casing is set in a competent formation. Submit the results from the test via email (william_howell@blm.gov) on the first well drilled on the pad.
16. Before completing the subject well, perform a MIT (mechanical integrity test) verifying a competent wellbore. This test should address expected acid, frac, and injection pressures.
17. Report any well tests, i.e. step rate test, pressure fall-off test, injection test, MIT, etc., and send documentation to the BLM CRVFO, attention: Will Howell, to be placed in the well file.
18. Report water quality, water treatment, injection rates, pressures, and volumes monthly to the BLM CRVFO to be placed in the well file. Injection pressures should be below formation frac pressure (2770 psi).
19. Prior to starting work on these wells, submit a copy of the Underground Injection Control (UIC) permit for the subject well(s) to the BLM CRVFO. The operator will comply with the requirements and standards of the UIC permit.

# SURFACE USE CONDITIONS OF APPROVAL
# DOI-BLM-CO-N040-2010-0015-SCX

1. Startup Notification. The operator shall notify the BLM representative at least at 48 hours prior to initiation of construction.

2. Application of GAP COAs. Standard Conditions of Approval outlined in Appendix D (pp. D-13 through D-24) of the Orchard II Master Development Plan will apply and remain in full force and effect.

3. Production Facility Placement and Paint Color. The final location of frac pits, separators, and storage tanks will be determined after the pad has been constructed. The paint color to be used on all surface facilities including the metal containment rings surrounding the tank battery and pipeline risers shall be Shale Green (5Y 4/2).

4. Protection of Big Game Winter Range. Where big game winter range areas have been identified and lease stipulations do not apply, no construction, drilling or completion activities shall occur during a Timing Limitation (TL) period from **January 1 to March 1** annually. To further reduce impacts to wintering big game, remote sensing should be used for production monitoring, and unavoidable monitoring or maintenance activities should be conducted between 9 a.m. and 3 p.m., to the extent practicable. These additional recommendations apply to the period from December 1 to April 30. Contact Sylvia Ringer, Glenwood Springs Energy Office Wildlife Biologist, at 970-876-9000 or sylvia_ringer@blm.gov.

5. Right-of-Way Authorizations. Since a portion of the disposal waters planned for these wells will originate outside the Orchard Unit, operator shall obtain a right-of-way from BLM to authorize the placement of disposal well support facilities on the pad and physically dispose of any approved waters into the target geologic formation(s). The existing Orchard Unit buried water pipeline system has been installed with BLM right-of-way authorizations; should additional buried water supply lines be needed in the future to support the water disposal program for this pad location, those pipelines could be subject to BLM right-of-way authorizations particularly of they would transport off-lease disposal waters.

6. Topsoil Collection and Windrowing. Since this project involves disturbance of an existing reclaimed pad, efforts shall be taken during the pad expansion earthwork to develop as much available topsoil as possible and place it in windrow around pad perimeter as shown on Sheet 4.

7. Raptor Nesting. Raptor nest surveys conducted for this pad on March 25, 2009 did not result in location of raptor nest structures within 0.25 mile of a well pad or 0.125 mile of an access road, pipeline, or other surface facility. Therefore, a Raptor Nesting Timing Limitation COA is not attached to this APD. Although BLM considers surveys conducted for a NEPA Environmental Assessment to be valid for 5 years, new nests may be built and occupied between the initial surveys and project implementation. To ensure compliance with the Migratory Bird Treaty Act, the operator should schedule construction or drilling activities to begin outside the raptor nesting season (February 1 to August 15) if practicable. If initiation of construction, drilling, or completion activities during these dates cannot be avoided, the operator is responsible for complying with the Migratory Bird Treaty Act, which prohibits the “take” of birds or active nests (those containing eggs or young), including nest failure caused by noise and human activity.