



July 3, 2015

4000-2800-32640-02

Ian Radzichowsky
Newalta Corporation
211 – 11th Avenue SW
Calgary, AB T2R 0C6

Dear Mr. Radzichowsky:

**RE: PRODUCED WATER AND NON-HAZARDOUS WASTE DISPOSAL
SPECIAL PROJECT APPROVAL; AMENDMENT #2
NEWALTA FT ST JOHN SE 15-5-83-17 W6M; WA# 8130
FT ST JOHN SE FIELD – CADOMIN FORMATION**

The subject well was drilled in July 1993 to provide salt water disposal capacity in addition to Newalta's 12-10-83-17 well. Order 94-02-002, approving the well for salt water disposal in the Cadomin formation, was issued February 24, 1994. On April 30, 1998 the well was approved for non-hazardous waste disposal under Order 94-02-002 Amendment #1. This well has been injecting fluids continuously since March 1994, now totaling of over 990,000m³. Recent tests confirm that the wellbore remains in good condition and verify hydraulic isolation. We note that the well 12-10 has been shut-in since December 2014 due to high reservoir pressure and possible near-wellbore damage. Annual reservoir pressure tests on well 15-5 will provide information on reservoir capacity.

On March 11, 2015, the Commission issued a draft version of Order 94-02-002 Amendment #2, for review and comment, containing a number of detailed operational conditions to ensure that the subject well conforms with current OGC standards for disposal wells. These conditions include a maximum wellhead injection pressure (MWHIP), continuous wellhead measurements, ultimate reservoir pressure limit, and wellbore integrity monitoring and reporting requirements. Newalta responded on May 15, 2015 with an application to increase MWHIP, which was denied by the Commission in a letter dated June 18, 2015. Attached please find **Order 94-02-002 Amendment #2**, as drafted, designating an area in the Ft St John SE field – Cadomin formation as a Special Project under section 75 of the *Oil and Gas Activities Act*, for the operation and use of a storage reservoir for the disposal of produced water and non-hazardous fluid. Additional general information regarding disposal wells is available on the Commission's website at <http://www.bcogc.ca/industry-zone/documentation/Subsurface-Disposal>.

The Ministry of Environment identifies the type of effluent approved for injection in the separate Waste Discharge Permit, granted under the Environmental Management Act.

In certain circumstances, disposal well operation may induce seismicity. The Commission advises that disposal well permit holders monitor seismic events in proximity to the well and be prepared to modify operations to mitigate induced seismicity. Permit holders may monitor seismic events through the Natural Resources Canada seismic monitoring network at <http://www.earthquakescanada.nrcan.gc.ca/recent/index-eng.php>

Should you have any questions, please contact Michelle Harding at (250) 419-4493 or Ron Stefik at (250) 419-4430.

Sincerely,

Ron Stefik, Eng.L.
Supervisor, Reservoir Engineering
Oil and Gas Commission

Attachment

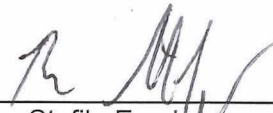


ORDER 94-02-002 Amendment #2

1. Under Section 75(1)(d) of the *Oil and Gas Activities Act*, the Oil and Gas Commission (Commission) designates the operation and use of a storage reservoir for the disposal of produced water, including flowback from fracturing operations, and non-hazardous waste into the Cadomin formation – Ft St John SE field as a special project in the following area:

DLS Twp 83 Rge 17 W6M Section 5 - Lsds 9, 10, 15 and 16.

2. Under section 75(2) of the *Oil and Gas Activities Act*, the special project designation in this Order is subject to the following conditions. The Permit Holder shall:
 - a) Inject produced water and non-hazardous waste only into the well Newalta Ft St John SE 15-5-83-17 W6M; WA# 8130 Cadomin formation (perforations from 983 to 1015 mKB).
 - b) Hold a valid Permit under the Environmental Management Act for the disposal of non-hazardous waste.
 - c) Not exceed an injection pressure, measured at the wellhead on the subject well, of 14,600 kPag or the pressure required to fracture the formation, whichever is lesser.
 - d) Inject only through tubing with a packer set as near as is practical above the injection interval.
 - e) Continually measure and record the wellhead casing and tubing pressures electronically.
 - f) Cease injection and notify the Commission immediately if hydraulic isolation is lost in the wellbore or formation.
 - g) Submit the annual packer isolation test report to the Commission within 30 days of the completion of the test.
 - h) Include the disposal operating hours and the maximum injection pressure value on the monthly disposal statement.
 - i) Cease injection upon reaching a maximum formation pressure of 10,670 kPaa.
 - j) Conduct an annual reservoir pressure test on the formation in the subject well, with a shut-in period of sufficient length to provide data for calculation of the reservoir pressure, and submit a report of the test within 60 days of the end of the test.
 - k)
 - i) Perform a casing inspection log on the subject well and submit results to the Commission within 30 days of the completion of logging, at an interval of not more than every 10 years, commencing from the date of initial disposal.
 - ii) Perform a hydraulic isolation temperature log on the subject well and submit results to the Commission within 30 days of the completion of logging, at an interval of not more than every 5 years, commencing from the date of initial disposal.
 - l) Not conduct a hydraulic fracture stimulation on any formation in the subject well without prior Commission approval



Ron Stefik, Eng.L.
Supervisor, Reservoir Engineering
Oil and Gas Commission

DATED AT the City of Victoria, in the Province of British Columbia, this 3rd day of July 2015.

Advisory Guidance for Order 94-02-002 Amendment #2

- I. A production packer must be set above the injection interval and the space between the tubing and casing filled with corrosion inhibiting fluids, as per section 16(2) of the Drilling and Production Regulation.
- II. Annual packer isolation tests are required, as per section 16(3) of the Drilling and Production Regulation.
- III. Injected fluids must be metered, as per section 74 of the Drilling and Production Regulation.
- IV. A monthly disposal statement must be submitted to the Commission not later than the 25th day of the month following the reported month, as per section 75 of the Drilling and Production Regulation.