

October 9, 2018

8120-2010-32640-02

Deb Gogol, P.Tech (Eng.)
Sr. Engineering Technologist
Encana Corporation
500 Centre Street SE, PO Box 2850
Calgary, Alberta T2P 2S5

Dear Ms. Gogol,

**RE: EXTENDED INJECTIVITY TEST
ECA CRP HZ SUNRISE A01-27-78-17 W6M; WA# 29739
SUNRISE FIELD – PADDY-CADOTTE FORMATION**

Commission staff have reviewed the application from Encana Services Company Ltd, on behalf of Encana Corporation, dated September 27th, 2018, requesting an extended injectivity test of 3,500 m³ into the Cadotte formation of the subject well.

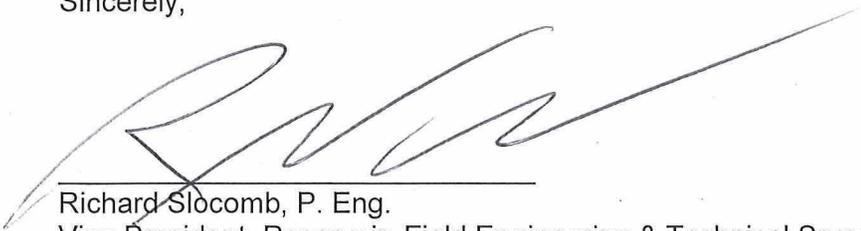
The subject well was horizontally completed in the Cadotte formation in May, 2014 as a water source well. Water, and by-product gas, have been produced since that time. Encana now requires additional disposal capacity necessitating the conversion of this well to disposal. An extended injectivity test is requested in order to assess the disposal capability of the horizontal well, and to allow wellsite commissioning activities to begin.

Attached please find **Order 18-02-009**, designating an area in the Sunrise field, Paddy-Cadotte formation, as a Special Project under section 75 of the Oil and Gas Activities Act, for the temporary operation and use of a storage reservoir for the injection of produced water. Note that although this well was completed in the Cadotte formation, the Commission has defined a combined Paddy-Cadotte zone for the purposes of source and disposal due to the areal connectivity of the zones. This authorization does not warrant that a future disposal approval will be issued. The maximum wellhead injection pressure (MWHIP) designated in condition 2b) was calculated using a fluid hydrostatic gradient of 11.4 kPa/m, the density of the fluid to be disposed as indicated in Encana's application, and using a formation fracture gradient of 27.7 kPa/m.

Additional general information regarding disposal wells is available on the Commission's website at <http://www.bcogc.ca/industry-zone/documentation/Subsurface-Disposal>.

Should you have any questions, please contact Michelle Gaucher at (250) 419-4482 or Ron Stefik at (250) 419-4430.

Sincerely,



Richard Slocomb, P. Eng.
Vice President, Reservoir, Field Engineering & Technical Svcs
Oil and Gas Commission

Attachment



IN THE MATTER of the application from Encana Services Company Ltd. on behalf of Encana Corporation, to the Oil and Gas Commission (Commission), dated September 27, 2018 for an extended injectivity test:

ORDER 18-02-009

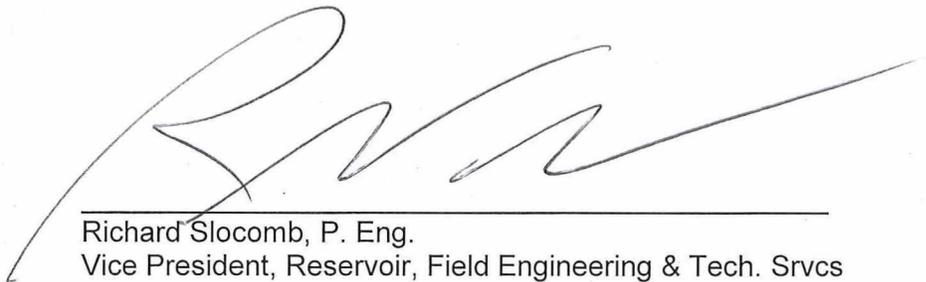
1 Under Section 75(1)(d) of the *Oil and Gas Activities Act*, the Commission designates the temporary operation and use of a storage reservoir for the injection of fresh water or produced water, including flowback from fracturing operations, in the Sunrise field – Paddy-Cadotte formation as a special project in the following area:

DLS Twp 78 Rge 17 W6M Section 27 – Lsds 1, 2, 3, 4, 5, 6, 7, 8, 11, 12, 13 and 14

DLS Twp 78 Rge 17 W6M Section 28 – Lsds 9, 10, 11, 12, 13, 14, 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 water into the well ECA CRP HZ Sunrise A01-27-78-17; WA# 29739 Paddy-Cadotte formation (completed hole from 1404.0 – 3504.0 mKB MD)
- b) Not exceed an injection pressure, measured at the wellhead on the subject well, of 13,750 kPag or the pressure required to fracture the formation, whichever is lesser.
- c) If the fluid injected is not fresh water, inject only through tubing with a packer set as near as is practical above the injection interval.
- d) The total volume of injected water must not exceed 3,500 m³.



Richard Slocomb, P. Eng.
Vice President, Reservoir, Field Engineering & Tech. Svcs
Oil and Gas Commission

DATED AT the City of Victoria, in the Province of British Columbia, this 9th day of October, 2018.