

March 3, 2014

8120-2600-32640-02

Mr. Todd Maheux
Tourmaline Oil Corp.
3700, 250 – 6th Ave S.W.
Calgary, AB T2P 3H7

Dear Mr. Maheux:

**RE: PRODUCED WATER DISPOSAL WELL APPROVAL
TOURMALINE SUNRISE D12-14-80-16 W6M; WA# 27864
SUNRISE FIELD - BLUESKY FORMATION**

Oil and Gas Commission (Commission) staff have reviewed the application, dated December 18, 2013, requesting approval for disposal of produced water and flowback fluids into the Bluesky formation of the subject well. Deep disposal wells are a key component of oil and gas development and operations.

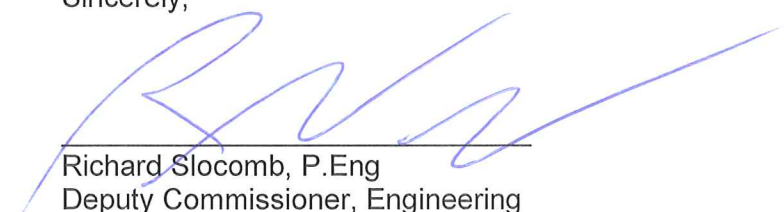
The subject vertical well was originally completed in December of 2011 for the purpose of water sourcing from the Bluesky, Cadomin and Nikanassin formations. The Bluesky was hydraulically fractured during this initial completion. The completions were unsuccessful as a potential water source, each formation abandoned and the well was suspended in March of 2012. In November 2013 Tourmaline Oil Corp. drilled out the cement cap and bridge plug above the Bluesky formation, the shallowest of the three initially investigated. Wellbore logging, pressure tests and injectivity tests have been conducted to ensure this well was suitable for disposal.

Attached find **Order 14-02-002**, designating an area in the Sunrise field – Bluesky formation a Special Project under section 75 of the *Oil and Gas Activities Act* (OGAA), for use as a storage reservoir for the disposal of produced water and well stimulation flowback fluid. This Order includes a number of detailed operational conditions, including: continuous wellhead measurements, a maximum wellhead injection pressure, ultimate reservoir pressure limit, wellbore integrity monitoring and reporting requirements. Additional general information regarding disposal wells is available on the Commission's website at <http://www.bcogc.ca/industry-zone/documentation/Subsurface-Disposal>.

Disposal wells are subject to regular field inspection and audit. Contravention of a condition of this Order may be subject to enforcement under section 62 of OGAA, or suspension or cancellation of the Order under section 75(2)(b).

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

Sincerely,


Richard Slocumb, P.Eng
Deputy Commissioner, Engineering
Oil and Gas Commission

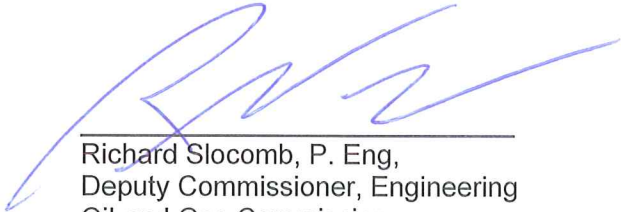
Attachment

ORDER 14-02-002

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 into the Bluesky formation – Sunrise field as a special project in the following area:

DLS Twp 80 Rge16 W6M Section 14 - Lsds 11,12,13 and 14.

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, including well flowback completion fluids, only into the well Tourmaline Sunrise D12-14-080-16 (Well Permit # 27864) Bluesky (1132.0 mKB to 1135.0 mKB) formation.
 - b) Not exceed an injection pressure, measured at the wellhead on the subject well, of 12,800 kPag or the pressure required to fracture the formation, whichever is lesser.
 - c) Inject only through tubing.
 - d) Continually measure and record the wellhead casing and tubing pressures.
 - e) Cease injection and notify the Commission immediately if hydraulic isolation is lost in the wellbore or formation.
 - f) Submit the annual packer isolation test report to the Commission within 30 days of the completion of the test
 - g) Include the disposal operating hours and the maximum injection pressure values on the monthly disposal statement.
 - h) Cease injection upon reaching a maximum formation pressure of 11,200 kPaa.
 - i) Conduct an annual reservoir pressure test on the formations 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.
 - j)
 - 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 at an interval of not more than every 5 years, commencing from the date of initial disposal.
 - k) Not conduct a hydraulic fracture stimulation on any formation in the subject well without prior Commission approval.



Richard Slocomb, P. Eng,
Deputy Commissioner, Engineering
Oil and Gas Commission

DATED AT the City of Victoria, in the Province of British Columbia, this 4th day of March 2014.

Advisory Guidance for Order 14-02-002

- I. A production packer must be set above the injection interval and the space between the tubing and casing (including the space between the 3 packers) 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.