



May 25, 2020

9045-7400-32640-02

Dave Lipiec, Consultant Engineer  
EOG Canada Oil & Gas Inc.  
1300, 700 – 9<sup>th</sup> Avenue S.W.  
Calgary, AB T2P 3V4

Dear Mr. Lipiec,

**RE: PRODUCED WATER DISPOSAL SPECIAL PROJECT APPROVAL, AMENDMENT #2  
ECOG TATTOO C-35-E/94-O-10; WA# 26180  
DEBOLT FORMATION**

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Approval for disposal of produced water, Order 10-02-005, was issued for the subject well, Debolt formation, on June 11, 2010. Amendment #1 was issued on December 11, 2015. The BC Oil and Gas Commission (Commission) has reviewed EOG Canada Oil & Gas Inc. (EOG)'s request, dated May 12, 2020, to defer the required reservoir pressure test, casing inspection log and hydraulic temperature isolation log to December 31, 2022.

The subject well was rig released in April 2010 and a cumulative volume of 188,087.0 m<sup>3</sup> has been injected. The most recent reservoir pressure test, conducted in September 2019, demonstrates that the reservoir pressure is below the maximum formation pressure, by approximately 1.5 MPa. A hydraulic temperature log conducted in 2015 indicates that all fluid storage is occurring below the packer. A casing inspection log is required at intervals of ten years; commencing from the rig release date. The first casing inspection log for the subject well would be due in 2020.

A cumulative volume of 122.5 m<sup>3</sup> has been injected into the subject well since the last reservoir pressure test. The well reported 8,161.7 m<sup>3</sup> of disposal over five months in 2019. Packer isolation testing has been conducted annually, with the most recent test reporting a pass in September 2019. The low activity levels, good reservoir pressure testing history and passing packer isolation tests provide assurance that the well can continue to operate safely and effectively.

Attached please find **Order 10-02-005 Amendment #2** designating an area near the Tattoo field – Debolt formation as a Special Project under section 75 of the *Oil and Gas Activities Act*, for the use of a storage reservoir for the disposal of produced water. This Order contains revised conditions deferring the next reservoir pressure test, casing inspection log and hydraulic isolation log to the 2022 calendar year. Other operational conditions, such as the requirement to conduct and submit an annual packer isolation test, remain in effect. 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 Ron Stefik at (250) 419-4430 or Kathryn Archibald at (250) 419-4406.

Sincerely,

A handwritten signature in blue ink, appearing to read "R Stefik".

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

Attachment



## ORDER 10-02-005 Amendment #2

- 1 Under Section 75(1)(d) of the *Oil and Gas Activities Act*, the Commission designates the operation and use of a storage reservoir for the disposal of produced water, into the Debolt formation – near the Tattoo field as a special project in the following area:  
NTS 94-O-10 Block E Unit 35
- 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 only into the well ECOG Tattoo c-35-E/94-O-10; WA# 26180 – Debolt formation (disposal perforations 992.0 – 1349.0 mKB MD).
  - b) Not exceed an injection pressure, measured at the wellhead on the subject well, of 8,000 kPag or the pressure required to fracture the formation, whichever is lesser.
  - c) Inject only through tubing with a packer set as near as is practical above the injection interval.
  - d) Continually measure and record the wellhead casing and tubing pressures electronically.
  - e) Cease injection and notify the Commission immediately at [reservoir@bcogc.ca](mailto:reservoir@bcogc.ca) 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 value on the monthly BC-S18 disposal statement.
  - h) A reservoir pressure test on the formation in the subject well must be conducted by either December 31, 2022 or following an additional 24,000 m<sup>3</sup> volume injected from the date of this Order; whichever occurs first. Following this test, a reservoir pressure test on the formation in the subject well must be obtained annually. These tests must be done with a shut-in period of sufficient length to provide data for calculation of the reservoir pressure, and a report of the test must be submitted within 60 days of the end of the test.
  - i) Cease injection upon reaching a maximum formation pressure of 10,245 kPaa, measured at MPP.
  - j) Maintain and manage the well head to prevent surface liquids from entering the well bore through the annulus outside or between casing and conductor strings.
  - 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, by December 31, 2022. Following this log, additional casing inspection logs must be performed at an interval of not more than every 10 years.
    - 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, by December 31, 2022. Following this log, additional hydraulic isolation temperature logs must be performed at an interval of not more than every 5 years.

- I) Not conduct a hydraulic fracture stimulation on any formation in the subject well without prior Commission approval.



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

DATED AT the City of Victoria, in the Province of British Columbia, this 25<sup>th</sup> day of May, 2020.

**Advisory Guidance for Order 10-02-005 Amendment #2**

- I. A production packer must be set above the injection interval and the space between the tubing and casing filled with corrosion and frost inhibiting fluids, as per section 16(2) of the Drilling and Production Regulation.
- II. Annual packer isolation tests are required to be conducted and the associated report must be submitted to the Commission within 30 days of test completion, as per section 16(3) of the Drilling and Production Regulation.
- III. Injected fluids must be metered and the injection pressure measured at the wellhead, as per section 74 of the Drilling and Production Regulation.
- IV. A monthly disposal statement must be submitted to the Commission, via Petrinex, not later than the 20<sup>th</sup> day of the month following the reported month, as per section 75 of the Drilling and Production Regulation.
- V. Seismic events must be reported and disposal operations suspended as per section 21.1 of the Drilling and Production Regulation.