



November 21, 2019

9045-7400-32640-02

Leah Davies  
Subsurface Abandonment Lead  
Operations Technical, Imperial Upstream  
505 Quarry Park Boulevard SE  
Calgary AB T2C 5N1

Dear Ms. Davies,

**RE: PRODUCED WATER DISPOSAL SPECIAL PROJECT AMENDMENT #4  
IMP MCADAM c-24-I/94-O-02; WA# 27668  
DEBOLT FORMATION**

Commission staff have reviewed the disposal approval Order for the well Imp McAdam c-24-I/94-O-2 (WA# 27668) due to the reactivation of the well in October 2019. Order 12-02-014, approving produced water disposal in the subject well, was issued May 24, 2015. Amendments #1, #2 and #3 were issued between April 28, 2015 and September 25, 2015, for additional injectivity testing and modification of the maximum wellhead injection pressure. The well was active for six months between April and October 2015 and a cumulative volume of 18,667 m<sup>3</sup> was disposed.

Imperial Oil Resources Limited (Imperial) has informed the Commission that 160.5 m<sup>3</sup> was disposed into the subject well in October 2019. Imperial is conducting abandonment work in the area of the subject well, and anticipates disposing a further 200 to 300 m<sup>3</sup> between January and March 2020. At the end of the area abandonment project Imperial will abandon the subject well.

Attached please find **Order 12-02-14 Amendment #4**, designating an area in the McAdam field, Debolt 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. This Order includes a number of detailed operational conditions including a volume limit for the temporary injection period, a reduction in maximum wellhead pressure and a requirement to conduct a reservoir pressure test prior to January 31, 2020 or before disposal operations recommence; whichever is earlier. The amendment also contains updates to existing conditions to refer to Petrinex where applicable.

Should you have any questions, please contact Kathryn Archibald at (250) 419-4406 or Ron Stefik at (250) 419-4430.

Sincerely,

A handwritten signature in blue ink, appearing to read 'R Stefik', written over a horizontal line.

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

Attachments




#### ORDER 12-02-014 AMENDMENT #4

- 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 McAdam field as a special project in the following area:

NTS                      Map 94-O-2                      Block I                      Unit 24

- 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 IMP McAdam c-24-I/94-O-2; WA# 27668 – Debolt formation (disposal perforations 461.0 – 572.0 mKB MD).
  - b) The disposal volume total for the period of October 1, 2019 to March 31, 2020 is limited to 500 m<sup>3</sup>.
  - c) Not exceed an injection pressure, measured at the wellhead on the subject well, of 4,000 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 there are any indications that 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 Petrinex disposal report.
  - i) Conduct a 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 prior to January 31, 2020 or prior to further disposal operations, whichever is earlier; and submit the test to the Commission 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 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.
  - k) 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 21<sup>st</sup> day of November 2019.

Advisory Guidance for Order 12-02-014 Amendment #4

- 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 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.