

September 15, 2021

8120-2010-32640-02

Nadia Monaghan
Senior Water Development Engineer
Ovintiv Canada ULC
500 Centre Street SE, PO Box 2850
Calgary, Alberta T2P 2S5

Dear Ms. Monaghan,

**RE: PRODUCED WATER DISPOSAL SPECIAL PROJECT APPROVAL
OVV CRP HZ SUNRISE 14-35-78-17; WA# 10677
SUNRISE FIELD – PADDY-CADOTTE FORMATION**

The subject well was originally drilled and completed into the Bluesky formation in 1998 and later completed into the Cadomin in 1999, and the Montney in 2000, but none of these formations were used. In 2011, the Paddy-Cadotte formation was completed and approval was granted to use the formation for disposal of produced water. The well began disposal operations in June of 2015 and has continued to date. The approval was amended in February of 2020 in order to raise the maximum reservoir storage pressure. However, the amendment conditions contained errors in conditions 2a) and 2i) which used the subject well's completed Bluesky interval, rather than the Paddy-Cadotte interval.

Attached please find **Order 14-02-005 Amendment #2**, 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 operation and use of a storage reservoir for the disposal of produced water. Order conditions 2a) and 2i) have been corrected to denote the correct Paddy-Cadotte interval top, base, and datum depths.

Disposal of fluid with high total dissolved solids content requires adjustment of the wellhead injection pressure to remain below formation fracture pressure

Apologies from the Commission for any inconveniences this error may have caused. Should you have any questions, please contact Logan Gray at (250) 419-4465 or Ron Stefik at (250) 419-4430.

Sincerely,



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

Attachment



ORDER 14-02-005 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, including flowback from fracturing operations, into the Sunrise field – Paddy-Cadotte formation as a special project in the following area:

DLS Twp 78 Rge 17 W6M Section 35 – 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 water into the well OVV CRP HZ Sunrise 14-35-78-17; WA# 10677 – Paddy-Cadotte formation from 974.5 – 1,002.0 mKB.
- b) Not exceed an injection pressure, measured at the wellhead on the subject well, of 14,400 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) Include the disposal operating hours and the maximum injection pressure value on the monthly Petrinex disposal statement.
- f) Cease injection and notify the Commission at Reservoir@bcogc.ca immediately if there are any indications that hydraulic isolation is lost in the wellbore or formation.
- g) Conduct and submit an annual surface casing vent flow test report to the Commission within 30 days of the completion of the test.
- h) i) Conduct a reservoir pressure test on the formation in the subject well at least once every two calendar years, 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.
ii) Once a month, report to the Commission the reservoir pressure obtained from the bottom hole recorders in each of the following water source wells:

OVV CRP HZ Sunrise A13-33-78-17 WA 26471
OVV CRP HZ Sunrise 9-34-78-17 WA 28495
OVV CRP HZ Sunrise A9-34-78-17 WA 28496
OVV CRP HZ Sunrise A5-29-78-16 WA 29717
OVV CRP HZ Sunrise A4-28-78-17 WA 29726
OVV CRP HZ Sunrise B1-27-78-17 WA 29740
OVV CRP HZ Sunrise 8-31-78-16 WA 30817

- i) Cease injection upon reaching a maximum formation pressure of 8,475 kPaa, measured at 988.3 mKB.
- 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.



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

DATED AT the City of Victoria, in the Province of British Columbia, this 15th day of September 2021.

Advisory Guidance for Order 14-02-005 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 20th 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.