

April 3, 2017

5860-4545-59240-09

Enrico DeLauretis, P.Eng.  
Manager, Reservoir Engineering  
Venturion Oil Limited  
1600, 500 – 4<sup>th</sup> Ave S.W.  
CALGARY, AB T2P 3V6

Dear Mr. DeLauretis:

**RE: PRESSURE MAINTENANCE WATERFLOOD SPECIAL PROJECT, AMENDMENT #3  
OTHER THAN NORMAL SPACING ORDER, AMENDMENT #3  
MICA FIELD – MICA “A” POOL**

The Commission has reviewed the application dated February 9<sup>th</sup>, 2017 requesting amendment of the waterflood approval for the Mica field – Mica ‘A’ pool. Though previously approved for waterflood, injection has not yet commenced. Examination of pool mapping, based on drilling, reservoir pressure, production data, and reservoir simulation as outlined in this submission, has shown that the pool has not one but two gas caps; one located in the southern part and one in the northern part of the pool. Water injection along with the reduction in gas cap expansion will result in maintaining or increasing the pressure of the pool ensuring maximum resource recovery.

The following Orders are attached;

- 1) Order 12-09-001 Amendment #3 designating Pressure Maintenance Waterflood within the Mica field – Mica ‘A’ pool, as a Special Project under section 75 of the *Oil and Gas Activities Act*, and
- 2) Order 12-09-001 Amendment #3 - OTN approving Other Than Normal Spacing under section 65.1 of the *Petroleum and Natural Gas Act* for the subject area and formation.

This approval includes recognition of the well Venturion HZ Mica C13-04-082-14 (WA 31837) as water injector in addition to the previously approved well Venturion HZ Mica B14-27-081-14 (WA 30891). Well Venturion HZ Mica B14-27-081-14 (WA 30891) may be used for water injection with the flexibility of temporarily re-injecting gas in addition to Venturion Mica A11-34-081-14 (WA 23409), due to lack of firm gas service, to continue producing oil from the pool. These injection locations will provide sweep efficiency and pressure support to increase recovery and preserve reservoir energy.

Good Engineering Practice approvals 08-06-042 and 01-06-003, for the Mica - Mica ‘A’ pool are terminated effective the date of initial water injection.

Please note that, as per section 75 of the *Drilling and Production Regulation*, a record of the volume of water injected must be included on a Monthly Injection or Disposal Statement (BC-S18), which must be submitted to the Commission no later than the 25<sup>th</sup> day of the month in which activity occurred. Upon injection, a form BC-11 Notice of Commencement or Suspension of Operations must be submitted to amend the status to water injector. Each time well B14-27 switches from water to gas injection or vice versa, a form BC-11 must be submitted to amend the status of the injector.

Gas injection volumes during a month are applied as a gas credit for the calculation of the following month daily oil allowable FGOR factor. However, all gas produced must be reported on a BC S1 form. Disposition of produced gas, to sales or re-injection, will be noted on the form BC S2.

Should you have any questions, please contact Petra Kriescher-Trudgeon at (250) 419-4415 or the undersigned at (250) 419-4430.

Sincerely,

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

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

IN THE MATTER of an application from Venturion Oil Limited to the Commission dated February 9<sup>th</sup>, 2017 for the production of oil using pressure maintenance (water injection).

**ORDER 12-09-001 AMENDMENT #3**

1. Under Section 65.1(2) of the *Petroleum and Natural Gas Act*, Other Than Normal Spacing is approved within the Mica field – Mica “A” pool within the following area;

DLS Twp 81 Rge 14 W6M N/2 Section 27, Section 28, N/2 & SE/4 Section 33,  
Section 34, and SW/4 Section 35.

DLS Twp 82 Rge 14 W6M SW/4 Section 3, Sections 4, 5, 7, 8, W/2 Section 9  
and Sections 17 and 18.

- 1 Under section 75(2) of the *Oil and Gas Activities Act*, I specify the following:

- a) The project unadjusted daily oil allowable (UDOAA) is 511.0 m<sup>3</sup>/d.
- b) All associated produced gas must be conserved.
- c) Water may be injected into the injection wells Venturion HZ Mica B14-27-081-14 W6M (WA 30891) and Venturion Mica C13-04-082-14 W6M (WA 31837).
  - i) Inject only through tubing with a packer set as near as is practical above the injection interval.
  - ii) Not exceed an injection pressure, measured at the wellhead of 18,800 kPa or the pressure required to fracture the formation, whichever is lesser.
- d) Gas may be injected into wells Venturion HZ Mica B14-27-081-14 W6M (WA 30891) and Venturion Mica A11-34-081-14W6M (WA 23409).
  - i) Inject only through tubing with a packer set as near as is practical above the injection interval.
  - ii) Not exceed an injection pressure, measured at the wellhead of 20,700 kPa or the pressure required to fracture the formation, whichever is lesser.
- e) Not exceed an average pool pressure of 14,900 kPa measured at 873 meters subsea.
- f) Cease injection for wells listed in (c) and (d) and notify the Commission immediately if hydraulic isolation is lost in the wellbore or formation
- g) Submit the annual packer isolation test report for wells listed in (c) and (d) to the Commission within 30 days of the completion of the test.
- h) Include the injection hours and the maximum injection pressure value for wells listed in (c) and (d) on the monthly BC-S18 form.
- i) Injection must cease upon termination of production from the pool.
- j) The permit holder must submit a Progress Report to the Commission for each 12 month period the project is in operation. The Progress Report must be filed by March 31<sup>st</sup> the following year and must contain the information specified in Pressure Maintenance Progress Report Requirements.

Advisory Guidance for Order 12-09-001 AMENDMENT #3

- 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 submitted, 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 injection statement must be submitted to the Commission not later than the 25<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.

  
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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 3<sup>rd</sup> day of April 2017.

IN THE MATTER of an application from Venturion Oil Limited to the Oil and Gas Commission dated February 9<sup>th</sup>, 2017 for Other Than Normal Spacing.

**ORDER 12-09-001 AMENDMENT #3**

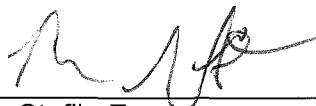
1 Under Section 65.1(2) of the *Petroleum and Natural Gas Act*, Other Than Normal Spacing is approved within the Mica field – Mica “A” pool within the following area;

DLS Twp 81 Rge 14 W6M N/2 Section 27, Section 28, N/2 & SE/4 Section 33, Section 34, and SW/4 Section 35.

DLS Twp 82 Rge 14 W6M SW/4 Section 3, Sections 4, 5, 7, 8, W/2 Section 9 and Sections 17 and 18.

2 Under section 65.1(3) of the *Petroleum and Natural Gas Act*, I specify the following:

- a) the target area for an oil well completed within the project area is not nearer than 100 m to the sides of the Other Than Normal Spacing area,
- b) an oil well completed outside the target area specified in paragraph (a) may be subject to an off-target production penalty,
- c) oil wells drilled within the specified project area are not subject to spacing requirements.



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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 3<sup>rd</sup> day of April 2017.