

March 17, 2016

2000-4535-59240-09

Neal Alexander, P.Eng.  
Reservoir Manager  
Whitecap Resources Inc.  
3800, 525 – 8<sup>th</sup> Ave S.W.  
CALGARY, AB T2P 1G1

Dear Mr. Alexander:

**RE: PRESSURE MAINTENANCE WATERFLOOD SPECIAL PROJECT –  
AMENDMENT#14  
OTHER THAN NORMAL SPACING ORDER – AMENDMENT #14  
BOUNDARY LAKE FIELD – BOUNDARY LAKE “A” POOL**

The Commission has reviewed the application, dated February 2, 2016, requesting inclusion of the following three recently drilled horizontal wells within the Boundary Lake field Boundary Lake “A” pool pressure maintenance waterflood project;

- Whitecap HZ Boundary 03-32-084-13; WA 31476
- Whitecap HZ Boundary B16-18-084-13; WA 31399
- Whitecap HZ Boundary B08-28-084-14; WA 31471

These wells, currently producing under individual well daily oil allowables, are located in spacing areas adjacent to Boundary Lake Unit #1, operated as a waterflood project by Whitecap Resources Inc. within the Boundary Lake formation. The waterflood approval area is coincident with the boundaries of Unit #1. Production from the listed wells will benefit from existing waterflood project injection wells. Amendment of the waterflood area, to include both Unit and non-unitized lands, is supported by supplied letters of consent from Unit interest owners.

The following Orders are attached;

- 1) Order 64-09-003 Amendment #14 designating Pressure Maintenance Waterflood within the Boundary Lake field – Boundary Lake “A” pool, as a Special Project under section 75 of the *Oil and Gas Activities Act*, and
- 2) Order 64-09-003 Amendment #14 - OTN approving Other Than Normal Spacing under section 65.1 of the *Petroleum and Natural Gas Act* for the subject area and formation.

Individual well or a project daily oil allowable do not apply, as Amendment #7, dated December 13, 1987, deemed production to be limited by voidage replacement.

Note that the Commission is currently reviewing active waterflood projects and issuing amended approvals with conditions to ensure safe and prudent operation. A subsequent approval amendment will include a list of the approved injection wells, a maximum wellhead injection pressure limit, a requirement for reporting of injection water source, and other suitable conditions.

Please note that, as per section 75 of the *Drilling and Production Regulation*, a record of the volume of water injected in each well 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.

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', is written over a horizontal line.

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

Attachments

IN THE MATTER of an application from Whitecap Resources Inc. to the Commission dated February 2<sup>nd</sup>, 2016 for the production of oil using pressure maintenance (water injection).

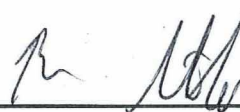
**ORDER 64-09-003 Amendment #14**

1 Under section 75(1)(a) of the *Oil and Gas Activities Act*, the Boundary Lake field – Boundary Lake “A” pool is designated as a Special Project for the recovery of oil utilizing pressure maintenance waterflood within the following area;

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|-------------------|--|
| Twp 84 Rge 13 W6M | Fractional NW/4 Section 16, N/2 Section 17, Sections 18, 19, N/2 & SW/4 Section 20, Fractional NW/4 Section 21, Fractional Section 28, Sections 29, 30, 31, 32, Fractional Section 33  |
| Twp 84 Rge 14 W6M | NW/4 Section 2, Section 3, N/2 Section 4, N/2 Section 7, NW/4 Section 8, E/2 Section 9, Sections 10, 11, NW/4 Section 12, Sections 13, 14, 15, 16, 17, E/2 Section 18, E/2 Section 20, Sections 21, 22, 23, 24, 25, 26, 27, E/2 Section 28, N/2 & SE/4 Section 34, Sections 35, 36 |
| Twp 85 Rge 13 W6M | Fractional Section 4, Sections 5, 6, 7, 8, Fractional Section 9, Fractional Section 16, Section 17, S/2 Section 18, S/2 Section 20, Fractional SW/4 Section 21   |
| Twp 85 Rge 14 W6M | Sections 1, 2, 3, NE/4 Section 4, NE/4 Section 9, Sections 10, 11, NW/4 Section 12, SW/4 Section 13, Section 14, S/2 & NE/4 Section 15.  |

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

- a) The oil production volume for a month shall be based on the previous month's voidage replacement.
- b) All associated produced gas must be conserved.
- c) Injection wells inject only through tubing with a packer set as near as is practical above the injection interval.
- d) Cease injection upon reaching a maximum average pool pressure of 12,630 kPaa measured at MPP.
- e) Cease injection and notify the Commission immediately if hydraulic isolation is lost in an injection wellbore or the formation.
- f) Submit the annual packer isolation test report for each injection well to the Commission within 30 days of the completion of the test.
- g) Include the injection hours and the maximum injection pressure value for each injection well on the monthly BC-S18 form.
- h) Injection must cease upon termination of production from the pool.



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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 17<sup>th</sup> day of March 2016.

Advisory Guidance for Order 64-09-003 Amendment #14

- 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.

IN THE MATTER of an application from Whitecap Resources Inc. to the Oil and Gas Commission dated February 2<sup>nd</sup>, 2016 for Other Than Normal Spacing.

**ORDER 64-09-003 Amendment #14 - OTN**

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

Twp 84 Rge 13 W6M	Fractional NW/4 Section 16, N/2 Section 17, Sections 18, 19, N/2 & SW/4 Section 20, Fractional NW/4 Section 21, Fractional Section 28, Sections 29, 30, 31, 32, Fractional Section 33
Twp 84 Rge 14 W6M	NW/4 Section 2, Section 3, N/2 Section 4, N/2 Section 7, NW/4 Section 8, E/2 Section 9, Sections 10, 11, NW/4 Section 12, Sections 13, 14, 15, 16, 17, E/2 Section 18, E/2 Section 20, Sections 21, 22, 23, 24, 25, 26, 27, E/2 Section 28, N/2 & SE/4 Section 34, Sections 35, 36
Twp 85 Rge 13 W6M	Fractional Section 4, Sections 5, 6, 7, 8, Fractional Section 9, Fractional Section 16, Section 17, S/2 Section 18, S/2 Section 20, Fractional SW/4 Section 21
Twp 85 Rge 14 W6M	Sections 1, 2, 3, NE/4 Section 4, NE/4 Section 9, Sections 10, 11, NW/4 Section 12, SW/4 Section 13, Section 14, S/2 & NE/4 Section 15.
  
- 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 17<sup>th</sup> day of March 2016.