

August 22, 2014

9021-5000-59240-06

Mitch Ferguson
Crew Energy Inc.
800, 250– 5th Avenue S.W.
Calgary AB T2P 0R4

Dear Mr. Ferguson:

**RE: GOOD ENGINEERING PRACTICE (GEP) SPECIAL PROJECT
OTHER THAN NORMAL SPACING ORDER
HERITAGE FIELD - MONTNEY "A" POOL**

The Commission has reviewed your application dated June 9, 2014 requesting approval of Good Engineering Practice (GEP) for three areas within the Heritage field – Montney formation.

The Commission maps the areas of Crew's application within the regional Heritage field – Montney "A" unconventional pool, predominantly gas charged with an up-dip oil resource.

The Commission is currently of the opinion that the application area of sections 28 and 29 - 81-18 W6M would yield wells with a primary product of gas. Montney gas wells in these sections are subject to the provisions of Schedule 2 of the Drilling and Production Regulation, removing well spacing and subject to a lease line setback distance of 150 m for the completed portions of wells. Therefore, an oil GEP will not be granted for this area at this time.

The application area of sections 11 and 14 - 82-18 W6M is not subject to near term development plans. As GEP approval conditions would benefit from the results of prior offsetting development, approval will not be granted at this time.

The application area of sections 25 to 30 - 81-17 W6M is the location of multiple well permits for oil development, GEP approval is appropriate. Oil well production is normally subject to a daily oil allowable restriction as a conservation and equity measure. However, the extremely low porosity of the Montney, requiring hydraulic fracture stimulation for economic production, limited well drainage areas and lack of apparent secondary recovery potential are not conducive to normal gas-oil ratio adjusted production allowable restrictions.

The following Orders are attached;

- 1) Order 14-06-001 designating Good Engineering Practice within the oil portion of the Heritage field Montney "A" gas pool as a Special Project under section 75 of the *Oil and Gas Activities Act*, and
- 2) Order 14-06-001-OTN approving Other Than Normal Spacing under section 65.1 of the *Petroleum and Natural Gas Act* for the subject pool and area.

As a Good Engineering Practice Special Project, the applicant intends to locate, complete and operate wells in a manner to optimize resource recovery while minimizing surface impacts. Conditions of this Order, specifically a well rate limitation trial, will serve to increase understanding of primary depletion mechanisms to provide opportunity to best manage



production for ultimate oil recovery. No objections were received following notice of application on the OGC website. This approval may be modified at a later date if deemed appropriate.

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

Sincerely,

A handwritten signature in black ink, appearing to read "R. Slocomb", written over a horizontal line.

Richard Slocomb, P.Eng
Deputy Commissioner, Engineering
Oil and Gas Commission

Attachments

IN THE MATTER of an application from Crew Energy Inc. to the Oil and Gas Commission dated June 9th, 2014 for a Good Engineering Practice project.

ORDER 14-06-001

- 1 Under Section 75(1)(a) of the *Oil and Gas Activities Act*, the Heritage Montney field – Montney “A” pool is designated as a special project for the enhanced recovery of oil utilizing Good Engineering Practice within the following area;

DLS Twp 81 Rge 17 W6M - Sections 25 – 30.
- 2 Oil wells are exempt from the provisions of section 54 of the Drilling and Production Regulation, daily oil allowable, pursuant to section 4(1)(p).
- 3 One well (“trial well”) located within approval area (1) must be produced under a controlled rate limitations trial;
 - a) The trial well must be a horizontal well completed in the Montney formation with multi-stage hydraulic fracture stimulations.
 - b) The trial well must be located from a multi-well surface drilling pad containing one or more additional horizontal wells (“equivalent wells”), located within the same geologic zone, of approximately equivalent length and completion method.
 - c) Prior to production start, the Commission must be informed the well permit numbers of the trial well and equivalent wells.
 - d) The trial well and equivalent well must commence production within six months of initial oil production from wells within approval area (1).
 - e) Upon initial production of the trial well the daily oil production rate must be limited to the following schedule;
 - i) Day 1 to day 90, not to exceed 15 m³.
 - ii) Day 91 to day 180, not to exceed 30 m³.
 - iii) Day 181 onward, unrestricted.
 - f) The following information must be recorded on the trial well and equivalent wells;
 - i) Daily oil, gas and water production and hours on production.
 - ii) Daily tubing and casing pressure.
 - g) Six months from the date of initial well production, a bottom-hole pressure test must be conducted on the trial well and one equivalent well to calculate the stabilized average reservoir pressure.
 - h) One year from the date of initial well production, a bottom-hole pressure test must be conducted on the trial well and one equivalent well to calculate the stabilized average reservoir pressure.

ORDER 14-06-001

- i) A report of information (e) be submitted to the Commission within 30 days of the conclusion of the period specified in (d)(ii), and within 30 days of the conclusion of the initial one year production period, in both tabular and graphical format, also to include gas-oil ratio, water-cut percentage and cumulative volumes of each fluid.



Richard Slocomb, P.Eng
Deputy Commissioner, Engineering
Oil and Gas Commission

DATED AT the City of Victoria, in the Province of British Columbia, this ²² day of August 2014.

IN THE MATTER of an application from Crew Energy Inc. to the Oil and Gas Commission dated June 9, 2014 for Other Than Normal Spacing.

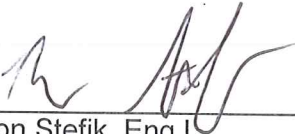
ORDER 14-06-001-OTN

1 Under Section 65.1(2) of the *Petroleum and Natural Gas Act*, Other Than Normal Spacing is approved within the Heritage field - Montney formation within the following area;

DLS Twp 81 Rge 17 W6M - Sections 25 - 30

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.



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

DATED AT the City of Victoria, in the Province of British Columbia, this 21st day of August 2014.