
MADE at the City of Calgary, in the
Province of Alberta, on

December 9, 2019

ALBERTA ENERGY REGULATOR

Effective immediately, pursuant to the *Oil and Gas Conservation Act* and section 11.104 of the *Oil and Gas Conservation Rules*, the Alberta Energy Regulator (AER) orders as follows:

- 1) Zones from surface to the top of the Duvernay Formation (collectively referred to as zone 1) within the area outlined in appendix A are subject to this order.
- 2) Zones from and including the Duvernay Formation to the basement (collectively referred to as zone 2) within the areas outlined in appendix A and appendix B are subject to this order.
- 3) No hydraulic fracturing operations can occur in zone 2 within the area outlined in appendix A.
- 4) For any hydraulic fracturing operations conducted in zone 1 within the area outlined in appendix A and for any hydraulic fracturing operations conducted in zone 2 within the area outlined in appendix B (the Red Deer Region) but excluding the appendix A area, licensees must meet the following requirements:
 - a) Before beginning any hydraulic fracturing operations at a well (subject well), the licensee must assess the potential for induced seismicity that may occur as a result of or in connection with hydraulic fracturing.
 - b) The licensee must establish and be prepared to immediately implement a plan to monitor for, mitigate, and respond to induced seismicity that may occur from hydraulic fracturing operations.
 - c) The licensee must retain a copy of its induced seismicity response plan on site during hydraulic fracturing operations and submit the plan to the AER upon request.
 - d) Seismic monitoring conducted by or on behalf of the licensee pursuant to this order must be sufficient to detect a 1.0 M_L seismic event within 5 km of the subject well.
 - e) If a seismic event is recorded by or on behalf of the licensee, or by any other source, during hydraulic fracturing operations on the subject well that is of 1.0 M_L or greater within 5 km of the subject well, the licensee must implement its response plan in a manner that eliminates or reduces the magnitude of seismic events. The licensee must also immediately make a report to the Energy and Environmental Emergency 24-Hour Response Line (1-800-222-6514).
 - f) Where a licensee detects a seismic event of 3.0 M_L or greater, the licensee must immediately suspend hydraulic fracturing operations at the subject well, return the well to a safe state, and contact the AER.
 - g) Hydraulic fracturing operations suspended under clause 4(f) of this order may only be recommenced with written consent of the AER.
 - h) The AER may permit resumption of hydraulic fracturing operations at the subject well if
 - i) the licensee presents a plan to the AER for modified operations aimed at eliminating future induced seismic events greater than or equal to 3.0 M_L ,

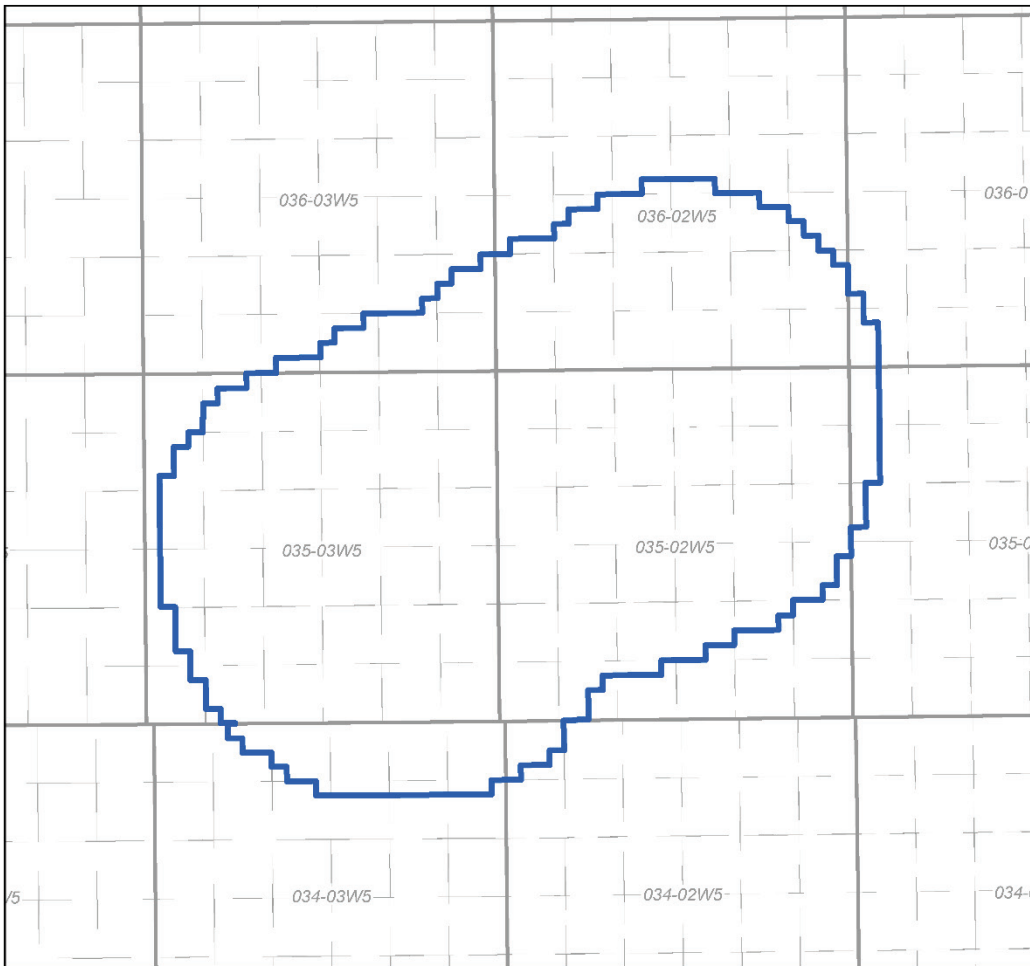
- ii) the plan is acceptable to the AER, and
- iii) the licensee implements the plan as proposed.
- i) Passive seismic monitoring information and data generated, collected, or received by the licensee pursuant to this order must be submitted to the AER in real time. All passive seismic data must be shared publicly through Incorporated Research Institutions for Seismology no later than one year after the data is collected.


This order comes into force on December 9, 2019.

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Appendix A – Zones 1 and 2



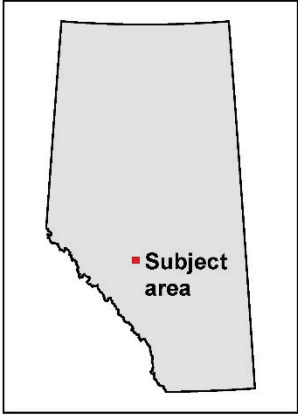
 **Alberta Energy Regulator**

Subsurface Order No. 7

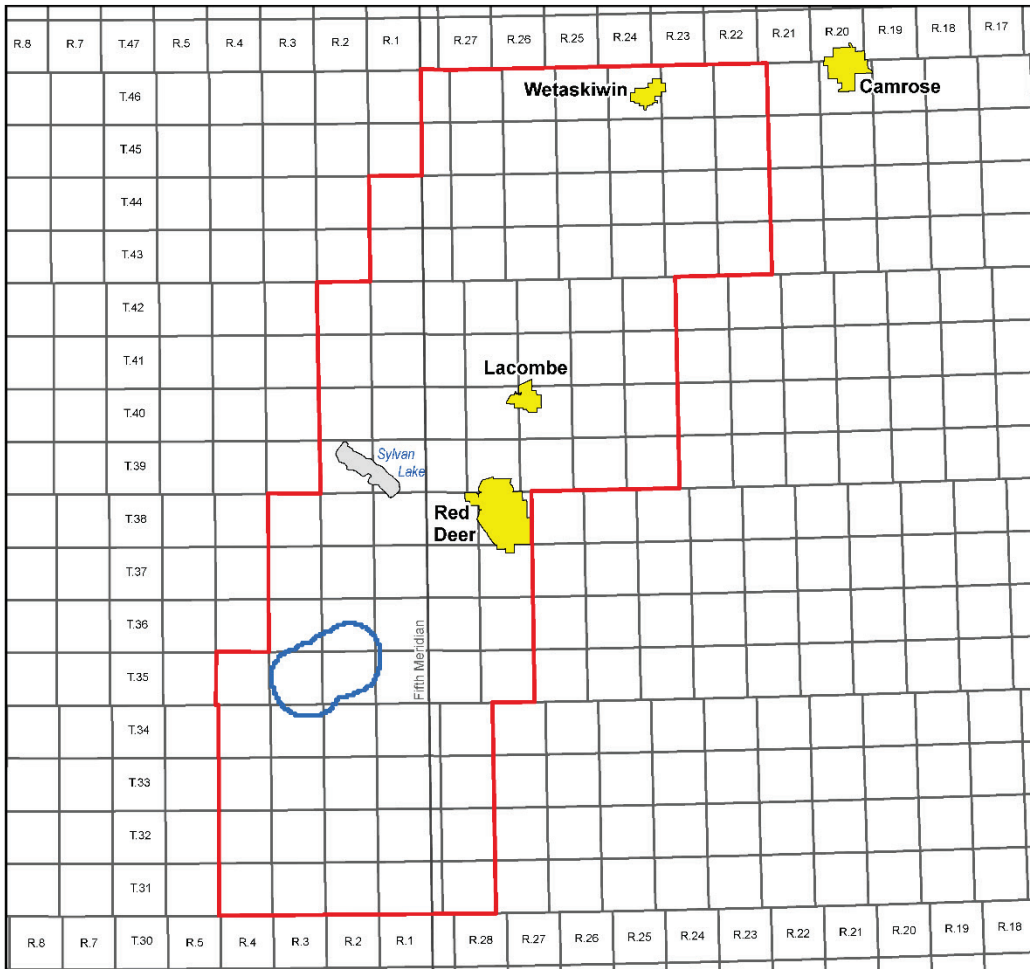
 Surface extent of Zone 1, from land surface to top of the Duvernay Formation and Zone 2, from and including the Duvernay Formation to the basement


0 2.5 5 10 km 
1:150,000

Projection and Datum: 10TM AEP Forest, NAD83
Data Date: December 05, 2019
Base data contains information licensed under the Open Government Licence - Alberta





Appendix B – Red Deer Region




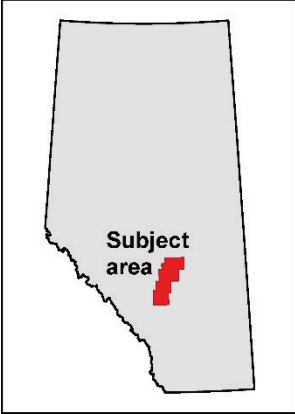


Subsurface Order No.7

-  Exclusion area
-  Red Deer region - Zone 2, from and including the Duvernay Formation to the basement

0 12.5 25 50 km
1:1,000,000

Projection and Datum: 10TM AEP Forest, NAD83
Data Date: December 04, 2019
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Subject area