

AER Bulletin 2014-03

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Regulatory Approach for Shallow Thermal In Situ Oil Sands Applications in the Wabiskaw-McMurray Deposit of the Athabasca Oil Sands Area

The Alberta Energy Regulator (AER) is currently completing a thorough technical review of the factors that affect reservoir containment of steam-assisted gravity drainage (SAGD) projects and will be consulting with stakeholders to develop formal regulatory requirements. Until those requirements are issued, the AER will defer decisions on applications for thermal oil sands projects that meet the following criteria:

- 1) Fall within a designated shallow thermal area of the Wabiskaw-McMurray Deposit in the Athabasca Oil Sands Area (see attached map).

The AER believes that the risk of steam and reservoir fluids being released at surface is greater if reservoir containment is compromised in this area due to the shallow nature of the resource.

- 2) Address reservoir containment in a manner that is different from the approach the AER currently uses.

Currently, the AER assesses reservoir containment for SAGD projects by establishing caprock integrity and determining the maximum operating pressure (MOP). A caprock must have sufficient thickness and competency and be continuous across the project area to contain steam and heated reservoir fluids. In the shallow thermal area, the Clearwater shale is the interval currently accepted as a caprock. The integrity of the Clearwater shale is established, in part, by acquiring 3-D seismic over the entire development area.

The MOP is calculated by applying the following formula:

$$\text{MOP} = 0.8 \times \text{caprock fracture closure gradient} \times \text{depth to base of caprock}$$

where 0.8 is a safety factor

The AER is satisfied that deferring decisions on applications under these circumstances supports safe and responsible development at these projects and will ensure the consistency of regulatory decisions until new fully consulted and technically supported requirements are in place.

Operators contemplating applications for SAGD in situ oil sands projects in the designated shallow thermal area are advised to contact Steve Thomas by phone at 403-297-6950 or by e-mail

to Steve.Thomas@aer.ca for more information on the AER's current regulatory approach for such projects.

inquiries 1-855-297-8311
24-hour
emergency 1-800-222-6514

This bulletin is available on the AER website, www.aer.ca. Printed copies are available from AER Information Services, Suite 1000, 250 – 5 Street SW; telephone: 403-297-8311 or 1-855-297-8311 (toll free); fax: 403-297-7040; e-mail: infoservices@aer.ca.

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Kirk Bailey

Executive Vice President, Operations Division

Attachment

Attachment Designated Shallow Thermal Area for Applications in the Wabiskaw-McMurray Deposit of the Athabasca Oil Sands Area

The designated shallow thermal area below represents the part of Alberta's in situ oil sands resources that is in the Athabasca Wabiskaw-McMurray Deposit within and next to the surface mineable area. The designated shallow thermal area is delineated where the Clearwater shale is shallower than 150 metres at its base or is absent, and where the net bitumen pay in the Athabasca Wabiskaw-McMurray Deposit is greater than zero.

