

November 10, 2006

Husky Oil Operations Limited
707 8th Avenue S.W.
Calgary AB T2P 3G7

Attention: Dr. Gokhan Coskuner
Ms. Susan Anderson

**RE: INFORMATION REQUESTS
APPLICATION NO. 1481725
COLD LAKE OIL SANDS AREA CLEARWATER FORMATION**

Please find enclosed Board Staff information requests to Husky Oil Operations Limited with respect to Application No. 1481725.

Yours truly,

“Original Signed by Giuseppa Bentivegna”

Giuseppa Bentivegna
Board Counsel

cc: See attached List of Parties

LIST OF PARTIES

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Attention: Susan C. Stark

Board Staff Information Requests for Husky Oil Operations Limited (November 10, 2006)

1. With respect to Husky's October 3, 2006 response to Board Staff information requests of September 19, 2006:
 - a) In response 1(b) Husky indicated that it was evaluating the Clearwater depositional environments and internal facies. Provide any additional information that Husky has available on these evaluations.
 - b) In response 3(c) Husky stated it was evaluating any problems that could explain the pressure anomalies at wells 16-7 and 4-6 where the pressure trends measured by some of the piezometers are decreasing while the pressure trends measured by other piezometers in the same well are increasing. Provide any further explanation for these pressure anomalies that Husky has determined.
2. With respect to Husky's October 27, 2006 response to Board Staff information requests of October 13, 2006:
 - a) In response 1 Husky provided Figure IR1-1 illustrating a 3 km region of influence.
 - i) Provide a revised figure that more clearly shows the region of influence.
 - ii) Provide a discussion of the basis for the extent of the region of influence; in particular, explain why the region of influence does not contain the entire extent of the gas pools and top water zones.
 - b) With respect to response 2:
 - i) Where Husky has not previously provided the information, provide annotated logs (Gamma Ray, Neutron-Density, SP, and Resistivity) over the Clearwater Formation for all of the wells within the boundaries of Husky's gas pools as defined on Figure IR1-1 and for one well per section within the 3 km boundary surrounding the gas pools. The composite well logs should identify:
 - Formation and facies tops.
 - All gas pay, water zone, and bitumen pay intervals.
 - All perforated and cored intervals.
 - ii) Composite well logs were provided showing, among other things, gas pay, water zones and bitumen pay intervals. In reviewing these composite well logs, it appears that the log characteristics of wet zones in the 6-2, 6-3, and 6-4-70-5W4 wells are very similar to the

log characteristics of the intervals underlying the gas zones in the 13-27 and 02/16-28-68-5W4 wells and for the interval 490-491.5 m KB in the 10-35-68-5W4 well.

- Comment on why these example intervals are not interpreted to be wet in the composite log sections.
- List the log parameters Husky uses to determine if a zone is wet.

iii) Figure IR6b-1 indicates Husky has interpreted gas pay to be present in the 6-3 and 6-4-70-5W4 wells. The composite logs of these wells indicate the gas zones to be above the red dashed line. There is a thin neutron kick over the interpreted gas interval. However the resistivity of the gas zone is about the same as the resistivity of the underlying water zone, and the gas is structurally lower than the gas/water contact in the adjacent 6-2-70-5W4 well. Explain why Husky has interpreted there to be gas pay in the Clearwater in these two wells. If there is gas pay in these two wells, would the differing gas/water contacts indicate separate pools? Explain.

c) In response 3 Husky has provided a Clearwater shale map in which the shale is interpreted to be continuous to the east of Husky's oil sands leases. There is no indication on the Clearwater shale map of shale to the west of range 4, but there appear to be many zones in the composite well logs provided for wells west of range 4 which have comparable log characteristics to the identified shale intervals in the wells east of range 4.

- i) List the log parameters used to determine the presence of a shale interval.
- ii) Comment on the criteria used to determine if a shale is continuous.
- iii) Comment on the depositional environment of a continuous shale and its expected areal extent.
- iv) Comment on why there is no interpreted continuous shale west of range 4.

d) In response 5 Husky provides a table of pressure data in response to the EUB Staff's request for a tabulation of the pressure data for pools that Husky is requesting to be shut-in. Husky appears to have provided pressure data only for the wells that it has requested to be shut-in but not for all of the wells in the pools.

- i) Publicly available information indicates that there are segregated pressure data for wells not included in Husky's table and that there are more segregated pressure data for the wells that are included in

Husky's table than are shown in the table. Explain why all of the data were not included or provide the additional pressure data.

- ii) Comment on whether or not the pressure data supports Husky's interpretation that the 5-16, 6-21 and 5-22-70-5W4 wells are part of the pool shown on Figure IR1-1 as the CLWR MU #2 pool. Refer also to question 2e(iv).
 - iii) Figure IR6b-1 shows the 6-28 well as currently producing from the Clearwater formation. Publicly available information indicates that in the 6-28-69-4W4 well the interval that Husky has asked to be shut-in is below a cemented bridge plug and that the interval has never produced. Publicly available information also shows that the pressure data submitted by Husky for the 6-28 well is from the Grand Rapids zone. Clarify why Husky has indicated the 6-28 well is currently producing from the Clearwater formation and why it has included the pressure data from the Grand Rapids zone in the table.
 - iv) Publicly available information also shows that the pressure data submitted by Husky for the 5-13-69-6W4 well is for an interval different than the interval that Husky has requested to be shut-in. Clarify why Husky has included this data in the table.
- e) With respect to response 6:
- i) In response 6(a) Husky states that the trapping mechanism for the gas pools includes structural, stratigraphic and bitumen "elements". However, in response 3 Husky states that gas cap depletion effects will be transmitted throughout the bitumen reservoir. How can bitumen be a trapping mechanism for gas if gas cap depletion effects are transmitted throughout the bitumen reservoir?
 - ii) In response 6(b) Husky notes that its gas pool outlines were modified after new well data were input and additional wells were reviewed. Identify the new data that were input and the additional wells that were reviewed. Also provide isopach maps for the new pool outlines.
 - iii) Also in response 6(b) Husky indicates that the Clearwater MU #2 and Clearwater EE pools have tilted gas/water contacts. Explain the mechanism which would result in a tilted gas/water contact in a gas pool with good permeability.
 - iv) In response 6(c) Husky states that the Clearwater MU #2 pool is commingled with Grand Rapids production, and therefore pressure data is of no use in isolating the Clearwater reservoir. Publicly

available information indicates that within the Clearwater MU #2 pool shown on Figure IR1-1, the Clearwater zone is not commingled with any other zone. Clarify why Husky believes that the Clearwater MU #2 pool is commingled with the Grand Rapids zone. If Husky agrees that the Clearwater zone is not commingled with any other zone, discuss the use of pressure data for pooling of the wells in the Clearwater MU #2 pool shown on Figure IR1-1.

- f) In response 8 Husky states that a conservative estimate for the bitumen recovery in the primary development area is 27 % with a potential to go as high as 50 % if the HSAGD technology works. What is the basis for these recovery estimates? Discuss the effect of pressure depletion of the gas zones on these recoveries.
- g) With respect to response 9:
- i) Husky has indicated that it wants five wells in the Clearwater MU #2 pool shut-in. Publicly available information indicates there are five wells (5-21, 6-32-69-4W4, 8-36-69-5W4, 10-6-70-4W4 and 6-12-70-5W4) producing from the Clearwater MU #2 pool in addition to the 5 wells that Husky has requested to be shut-in. The information also shows that Clearwater gas pay has been assigned by the EUB for a total of 24 wells (see the attached table for well locations and intervals) in the Clearwater MU #2 pool shown on Figure IR1-1. Explain why Husky has not requested that all intervals in the pool with assigned gas pay not be allowed to produce.
 - ii) Husky has indicated that it wants three wells in the Clearwater D pool shut-in. Publicly available information shows that Clearwater gas pay has been assigned by the EUB for a total of six wells in the Clearwater D pool (see the attached table for well locations and intervals). Explain why Husky has not requested that all intervals in the pool with assigned gas pay not be allowed to produce.
 - iii) Husky has indicated that it wants two wells in each of the Clearwater CC and DD pools shut-in. Publicly available information shows that Clearwater gas pay has been assigned by the EUB for a total of four wells in each of the Clearwater CC and DD pools (see the attached table for well locations and intervals). Explain why Husky has not requested that all intervals in the pools with assigned gas pay not be allowed to produce.
 - iv) Husky has requested that two gas bearing intervals in the 02/16-28 and 11-33-68-5 W4 wells be shut in.
 - What is the horizontal trapping mechanism for the lower gas zones in these wells?

- What is the vertical trapping mechanism separating the two gas zones in these wells?
 - What is the lateral extent of this vertical trapping mechanism?
- h) With respect to Figure IR3-1, provide separate net bitumen pay maps for the bitumen above and below the shale shown in Figure IR3-1, at a scale of 1:50 000. The bitumen pay should be based on the bitumen saturation being equal to or greater than 50 % pore volume and the net pay values for each well should be posted on the maps. Also provide the cutoffs (resistivity, porosity) used by Husky to determine the net pays.
- i) With respect to Figure IR7-1:
- i) The plot shows three data points for the Clearwater G Pool (well 6-20-69-5W4) but the pressure table on page 2 shows five pressure measurements at different dates. Why are only three data points plotted on Figure IR7-1?
 - ii) The plot shows a cumulative gas production at the last pressure point of about 45 E6 m³ but the publicly available information indicates a cumulative gas production for the 6-20 well of only 33 E6 m³ in September 2006. Explain why the cumulative gas production at the last pressure point is greater than the current cumulative gas production from the well.