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September 21, 2004

**Mr. Gary Perkins, Board Counsel**

14<sup>th</sup> Floor, Law Branch  
Alberta Energy and Utilities Board  
640-5 Avenue SW  
Calgary, AB T2P 3G4

Dear Sir:

Re: Pre-Hearing Meeting  
Further Written Submission  
Proceeding No. 1347905: Phase 3 Proceedings  
Under Bitumen Conservation Requirements  
Athabasca Wabiskaw-McMurray Area

At the pre-hearing meeting held September 15, 2004, relating to the above proceeding, the Board stated that it intended to give all participants an opportunity to make a further written submission to this pre-hearing meeting.

Having heard the oral submissions presented at the pre-hearing meeting, and upon further consideration of those submissions, Paramount Energy Operating Corp ("PEOC") wishes to make this further written submission.

At this time, PEOC wishes to qualify that what we envisioned as a SAGD Technical Inquiry as set forth in our pre-hearing meeting submission dated September 7, 2004 is very much what is proposed by Canadian Natural Resources Limited ("CNRL") in its pre-hearing meeting submission dated September 7, 2004 albeit with an expanded scope. In terms of format, PEOC concurs that a two stage final hearing process better reflects the process described in GB 2003-28 and therefore PEOC supports the two stage final hearing process

PEOC proposes that the first stage of the final hearing ("Stage 1") address conceptual issues that are not pool specific so that at the conclusion of Stage 1 there will be issued by the EUB clear criteria as to what constitutes unacceptable risk to bitumen recovery through SAGD processes. PEOC believes in order to properly establish these criteria, these issues would include, without limitation:

- Developments/advancements of SAGD technology since inception,
  - Model studies, laboratory studies and field experience
- Effects of associated gas production on SAGD process
  - Low pressure SAGD
  - Gas cap repressurization

- Flue gas substitution
- Model studies to quantify the incremental loss of bitumen recovery anticipated as a result of the continued depletion of gas for given gas pools to different defined minimum pressures
- Effects of top water and bottom water on SAGD process
  - Steam chamber effects and resulting bitumen production impact
  - Model studies to quantify the incremental loss of bitumen recovery anticipated as a result of the depleted gas in the presence of top or bottom water
- Anticipated effect of depleted gas on incremental bitumen recovery
  - Gas pool distribution from reservoir modeling and pressure data collection at Surmont
  - History-matched modeling of the Surmont Pilot Project
  - Forecast impact of incremental bitumen recovery at Surmont Pilot Project
  - Relationship between gas reservoir pressure and bitumen recovery
- Potentially recoverable Bitumen criteria
  - Porosity, Water Saturation, Net bitumen pay (continuous) and shale content
  - The validity of assessing bitumen accommodation space
- Nature of barriers to pressure communication (ie thickness of regional mudstones; field evidence for barriers to steam at varying reservoir conditions)
- Current operational strategies that bitumen producers are actively practicing or contemplating, based on revised data and experience
  - Control of steam chamber growth through pressure management techniques
- Update alternative technologies to SAGD

There is presently in the public domain evidence that is contrary to the previously formed decisions of the EUB, some examples of which are set forth in the attached table.

Once the Board's decision on Stage 1 is released, all affected parties should be allowed to review the report and the SSG, as applicant, should be required to address its earlier shut-in recommendations, with the benefit of the Board's ruling on the Stage 1 proceedings. The second stage, Stage 2, of the hearing, would be confined to those wells or pools which the SSG, or an oilsands leaseholder, recommended be shut in, immediately prior to the interim hearing convened earlier this year. It is important to adhere to the process set out in GB 2003-28 as the scope of this hearing was defined by GB 2003-28.

For the gas pools which are recommended for continued shut-in, Stage 2 should include a review of all criteria assessed in a revised ID 99-1 including the economic value of the shut-in gas as compared to the value of the potential lost incremental bitumen if gas production were to re-commence to varying levels of pressure depletion.

Further PEOC wishes to re-iterate that it is essential that it be communicated to all interested parties, as soon as reasonably possible the processes that will be followed for the final hearing, so that all interested parties have a clear understanding of what is

required of them. We can only expect that such clear understanding will lead to a better focused and more efficient final hearing.

PEOC believes that this two-stage process constructed on the principles outlined herein affords the best opportunity for an efficient hearing, while still preserving the basic tenets of natural justice and procedural fairness.

If you require additional information please contact Sue Riddell Rose at 269-4442 or the undersigned at 269-4452.

Yours truly,

***Paramount Energy Operating Corp.,  
As Trustee of Paramount Operating Trust***

*"Signed"*

Jane Peck Hay  
General Counsel

cc: Sue Riddell Rose, President, Paramount Energy Operating Corp.

Attachment

EUB PREVIOUS DECISION	NEW EVIDENCE
<p><b>FEASIBILITY OF ARTIFICIAL REPRESSURING</b></p> <ul style="list-style-type: none"> <li>EUB DECISION 2003-023 STATED "Board" notes that repressuring of a depleted gas zone has not yet been proven feasible and practical in the Wabiskaw-McMurray".</li> </ul>	<ul style="list-style-type: none"> <li>July 2004 issue of the Gas Over Bitumen Technical Solution Industry &amp; Government Collaboration Subcommittee's monthly progress report stated " that repressuring a gas pool was technically feasible and therefore has been accomplished"</li> </ul>
<p><b>FEASIBILITY OF ARTIFICIAL LIFT</b></p> <ul style="list-style-type: none"> <li>EUB DECISION 2003-023 STATED "Electric submersible pumps (ESPs) offer the greatest potential to be a workable option for SAGD bitumen production". "The Board believes that field testing is needed to definitively establish the operation limitations of ESPs". "The Board notes that EnCana installed and commenced operation of an ESP in the near horizontal portion of a SAGD well at its Foster Creek project in April 2002, but that very little information was submitted at the hearing regarding its operation".</li> </ul>	<ul style="list-style-type: none"> <li>It has been over two years since EnCana has installed/commenced operation of an ESP at its Foster Creek project, there must be data available for the Board to review. The GIAG subcommittee's may also have additional information on ESP's and low pressure SAGD projects.</li> </ul>
<p><b>ECONOMICS</b></p> <ul style="list-style-type: none"> <li>EUB DECISION 2003-023 STATED "Board finds itself in approximately the same position it was in at the conclusion of gas/bitumen inquiry in June 1997 with respect to assessing the commercial attractiveness of SAGD as a bitumen recovery process". "The Board is encouraged that a number of experimental and commercial projects have been initiated since that time, the data required for such an assessment are either too limited to be of value or are considered proprietary".</li> </ul>	<ul style="list-style-type: none"> <li>It is time the Board reviews all of the available data for the SAGD projects that have been operating since 1997, insure their objectives are being met and understand the advancements in the technology of SAGD.</li> </ul>
<p><b>MODEL STUDIES</b></p> <ul style="list-style-type: none"> <li>EUB DECISION 2003-023 STATED "There is still very limited applicable field experience regarding the effect of associated gas production on SAGD bitumen recovery". "The Board must continue to rely on reservoir modeling to evaluate the issue". "Based on its assessment of the model studies submitted and subject to its views on artificial repressuring, the Board concludes that producing gas that is associated with bitumen, such as at the high-risk wells and presents an unacceptable risk to SAGD bitumen recovery."</li> </ul>	<ul style="list-style-type: none"> <li>There is SAGD data which was publicly available as of July 2003 that needs to be reviewed and understood. This SAGD operation offers a chance to understand the current ability of an operator to plan and control steam chamber growth. There may have been other model studies that could assist the Board in its understanding of SAGD technology.</li> </ul>