NORTHWEST TERRITORIES WATER BOARD

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Mr. Randall Warren
Manager, Reclamation and Drilling Waste
Shell Canada Limited
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Calgary, AB T2P 2H5

July 3, 2008

Sent by E-mail and Post
randall.warren@shell.com

Re: Interim Abandonment and Restoration Plan
Shell Camp Farewell Water License N7L1 – 1762

Dear Mr. Warren:

This letter is in reply to your request for a review of your interim plan sent to the Water Board. Staff and technical advisors to the Water Board have reviewed the plan and we are pleased to provide some technical comments, without prejudice, that we hope will assist you in your final preparations.

Obviously, while the NWT Water Board itself declines any formal comment at this time, the Board Members will formally review any further submissions requesting a Water License for the project if, and when, such is submitted to the Board.

Please do not hesitate to call me should you require any further clarifications or information in regard to this matter.

Yours truly,

Ron R. Wallace, PhD.
A/Executive Director
NWT Water Board

cc. Mr. C. Robertson – cohl.robertson@worleyparsons.com
Mr. Joel Ingram – joel.ingram@ec.gc.ca
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Technical Comments from Water Board Technical Advisors

The Interim Abandonment and Restoration Plan as prepared by WorleyParsonsKomex for Shell Canada Limited has been reviewed. The Plan is in partial fulfillment of conditions G1 and 2 of Water License N7L1-1762, "Conditions Applying to Abandonment and Restoration".

Also reviewed were the 2006 Environmental Site Assessment prepared by WorleyParsonsKomex, including review comments from the Department of the Environment and also the Department of Indian Affairs and Northern Development (Water Resources Division).

General Comments

The Water License expires on October 31, 2010. Shell Canada was required to submit to the Water Board an Interim Abandonment and Restoration plan within one year of issuance of the License (November 1, 2005) and to update this interim plan every two years. Submission of this plan and the Environmental Site Assessment fulfills these conditions.

It is assumed that Shell Canada Limited will submit an updated, interim plan later this year to comply with conditions of the Water License. It may also be assumed that, upon renewal of the Water License in 2010, the Board will require before approval, a final abandonment and restoration plan.

The conditions of the Water License lack specifics on what the abandonment and restoration should include; however, I find that the consultants for Shell Canada Limited have provided a comprehensive, interim plan that addresses all site components to be abandoned and restored. They have completed many studies at Camp Farewell, which should guide them in their restoration work.

The consultants make reference to the 1990 Guidelines for Abandonment and Restoration and it is encouraging that they also reference the 2002 ministerial policy on mine site reclamation for the Northwest Territories, which describes recent government thinking about liabilities to the Crown from industrial activities in the north. The intent of the policy should be the main guidance document for the proponent as they develop the updated, or final, plan for 2008. The final land use should be clearly identified for each abandonment and restoration activity. If the Lands Directorate of INAC is also requiring an abandonment and restoration plan, the Board may choose to consider a joint review with INAC.

Water-related Activities

Section 6 describes the water-related restoration activities. The main area of concern is the treatment of sediments from the sewage lagoon. The proposed treatment method is

air-drying potentially contaminated sediments and the consultants cite literature to show the effectiveness of this option. However, this literature may be "southern-based' and its effectiveness in Arctic conditions may not been demonstrated. Shell Canada Limited may consider a test of this option to prove its effectiveness, and perhaps more importantly, its cost. It is also noted that the consultants suggest the final restoration plan will be based on feedback from the Land Use Inspector.

Hydrocarbon-affected areas

Section 7.2 "Near-Term Site Remediation and Monitoring" identifies several thousand cubic metres of hydrocarbon-affected soils. Options are presented for remediation. The consultants also note that disturbing this land could cause more environmental damage than leaving it as is. The Water Board may request a quantitative risk assessment of various options to remediate the hydrocarbon-affected areas, especially the urethane foam/gravel pad. It is noted that the consultants cite the NWT Guidelines for parklands and residential lands for hydrocarbon contamination (ie. a concentration of 0.8 mg/kg of toluene in soil).

Reclamation Costs

Section 7.3 introduces the notion of a site audit to verify on-site materials and structures. Such an audit will ensure that decommissioning activities are implemented in a safe manner. More importantly, an initial restoration cost estimate should be provided to the Water Board when this audit is conducted as it could affect the amount of the security deposit, which at present is two million dollars.

Monitoring

Sections 7.2.6 and 7.5.3 describes the intended monitoring programs following final abandonment and restoration. It is noted that the plan considers a one, two and five-year follow-up period for post-abandonment monitoring. Specifics of such a monitoring plan including locations, frequency of monitoring and further remedial actions should be identified in the event monitoring shows unanticipated site conditions. The NWT Water Board has issued monitoring guidelines for exploration activities in the delta and these guidelines could assist in developing a comprehensive monitoring program.

Summary

The interim conceptual plan has been reviewed. Current technical review comments are based on the conceptual nature of the plan. It may be assumed that the NWT Water Board, at the time of a Water License submission by the proponent, may require a more detailed final plan that includes a quantitative risk assessment of restoration options, the costs of these options and the timing of reclamation activities.