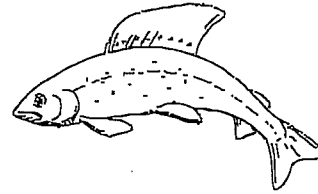




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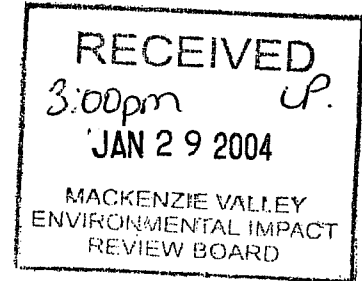
Fish Habitat Management
Suite 101, 5204 - 50th Avenue
Yellowknife, Northwest Territories
X1A 1E2

January 29, 2004

FAX

(867) 766-7074

TO/A:
Martin Haefele
Mackenzie Valley Environmental Impact
Review Board
Box 938
200 Scotia Centre, 5102-50th Ave
Yellowknife, NT X1A 2P6



SC02081

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MESSAGE

**RE: Paramount Resources Ltd. Cameron Hills Extension Environmental Assessment - DFO
Technical Report**

FROM/DE:

Bruce Hanna
Habitat Biologist
Western Arctic Area

telephone (867) 669-4931
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hannab@dfo-mpo.gc.ca

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Your file *Votre référence*

Our file *Notre référence*

SC02081

January 29, 2004

Mackenzie Valley Environmental Impact Review Board
Box 938 200 Scotia Centre
5102-50th Ave
Yellowknife, NT
X1A 2N7

Attention: Martin Haefele

RE: Paramount Resources Ltd. Cameron Hills Extension Environmental Assessment – DFO Technical Report

Dear Mr. Haefele:

The Department of Fisheries and Oceans- Fish Habitat Management (DFO) has reviewed the Developer's Assessment Report (DAR) as well as Paramount's responses to the information requests that were submitted during the process. Based on this information I am providing the following technical report on behalf of DFO. As per DFO's mandate under the *Fisheries Act* and the *Navigable Waters Protection Act*, this assessment takes into consideration primarily fish and fish habitat related concerns.

The following comments relate specifically to two sections of the Terms of Reference that the DAR was based on: G-4 (effects on water) and G-5 (effects on fish and wildlife).

Winter water withdrawal

1. Paramount is following the *DFO Protocol for Water Withdrawal for Oil & Gas Activities in the NWT*.
2. As Paramount stated in their response to IR Number 1.2.107, they cannot commit to using only the four currently approved water source lakes during the entire length of the program due to the "...*uncertainty related to the location of future drilling in relation to lakes*". If any additional water sources are proposed, they will require DFO review and approval. This will be done on a case by case basis.

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3. On page 186, Table 7.4-5 of the DAR it states that "*Lake 3 was deemed to have no overwintering fish habitat as it was expected to freeze to the bottom, therefore the DFO water withdrawal volume restrictions were relaxed*". This is not correct. With an estimated maximum ice thickness of 1 metre and a maximum depth of 1.4 metres, the lake is potential overwintering habitat. The water volume restrictions for Lake 3 have not been relaxed, and a maximum 5% withdrawal of available water volume under ice does apply (for a maximum anticipated ice coverage of 1 metre).

Erosion

There has been erosion problems associated with the Camcron Hills development. This is of particular concern to DFO when erosion results in the release of sediment to water courses. However, Paramount has undertaken remediation measures to correct the problems that occurred and have developed enhanced erosion control measures to help prevent similar problems as the project progresses. Monitoring of erosion prevention measures will be necessary to determine if they are adequate or need to be improved upon. DFO personnel will continue to conduct site visits to determine if any impacts to fish habitat are occurring.

Pipeline Crossings

It is the understanding of DFO that open cut crossings will only be conducted if the stream is frozen to the bottom or the bed is dry. If flowing water is present Paramount's preferred option is an aerial crossing, with an isolated crossing as a contingency. This approach is acceptable to DFO.

Temporary Winter Access Crossings

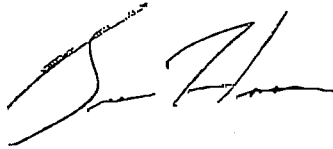
Paramount has committed to following the *DFO Protocol for Temporary Winter Access Water Crossings for Oil & Gas Activities in the Northwest Territories*. If Paramount follows the protocol and adheres to existing conditions in the water licence and land use permit, the potential for negative impacts to fish and fish habitat from access crossings should be low.

Recommendations:

1. Follow up monitoring should be undertaken to ensure any reclamation work done on sumps, disturbed banks, and erosion problem areas is successful.
2. Alternatives to sumps for drill cuttings should continue to be explored. If no feasible alternative exists presently, it does not mean that this will be the case for the projected life of the Cameron Hills development.
3. In the case of an isolated crossing, downstream water flow must be maintained at pre-in-stream work levels and all in-stream work must be

completed as expediently as possible to prevent significant disruption of fish movements.

If you have any questions please contact me at (867) 669-4931 or Pete Cott at (867) 777-7520.



Bruce Hanna
Habitat Biologist
Fish Habitat Management
Department of Fisheries and Oceans- Western Arctic Area

Copy: Pete Cott, Area Habitat Biologist-DFO