



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

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July 7, 2004

*Your file*      *Votre référence*  
NWB4MAG

*Our file*      *Notre référence*  
NU-04-0041

Mr. David Hohnstein  
Technical Advisor Mining  
Nunavut Water Board  
P.O. Box 119  
Gjoa Haven, NU X0B 1J0

Dear Mr. Hohnstein:

**Subject:** Proposed works or undertakings will not likely result in negative effects to fish habitat if additional protection measures are implemented.

As a follow up to our letter dated June 21, 2004 regarding the all season road between Arviat and Maguse Lake, it is my understanding that the proposal will consists of seven water crossings as noted below:

- Crossings #1, 3 and 4 have been described as ephemeral watercourses that drain spring runoff. Culverts will be installed to cross these watercourses.
- Crossings #2 and 5 involve crossing a portion of two separate lakes. The location of the two crossings has been redesigned such that they will now cross the adjacent ephemeral watercourses using culverts.
- Crossings #6 and 7 involve the installation of clear span bridges to cross the watercourses

We have reviewed the proposal under the habitat protection provisions of the *Fisheries Act*. The installation of culverts has the potential to disrupt the stream bed and bank, and increase sediment loads during the construction and bank stabilization stages. The harmful alteration, disruption or destruction of fish habitat is prohibited under Section 35 of the *Fisheries Act* unless authorized by Fisheries & Oceans Canada. The measures described in the plans are not adequate to protect fish and fish habitat. Therefore, please ensure that the following additional measures are incorporated into the plans.

- All in-stream construction should be carried out during the low water period.
- Culverts should be of sufficient length to extend a short distance beyond the toe of the fill material to prevent blockage of the culvert ends by erosion.
- The original velocity and direction of stream flow should be maintained by the culvert.
- To prevent erosion, the culvert should be countersunk 10-20% below the upstream and downstream invert of the watercourse and backfilled with native substrate to the height of the creek bed.
- To minimize impacts it is suggested that in-stream activity be limited, that machinery is not permitted to travel up the streambed, and that fording the streams be kept to a minimum. Equipment should be well cleaned and free of oil and grease.

Note: Fording conditions are usually site specific and aimed at limiting alteration and destruction of habitat and preventing the deposit of deleterious substances.

- Stream crossings should be located to minimize approach grades. Stabilization of the approaches is also necessary during construction and upon completion of the project, to control runoff, erosion and subsequent siltation in the stream. Methods to control erosion may include re-vegetation of the slopes, drainage ditches and sediment traps.
- DFO recommends that mechanized clearing not be permitted within 30 metres of the normal high water mark of a watercourse in order to maintain a vegetative mat for bank stabilization.
- Debris from clearing activities should not be dragged or skidded across watercourses, and all slash and debris is to be disposed of above the high water mark so that it does not enter the water.

Depositing deleterious substances into fish bearing waters is prohibited as stated under Subsection 36(3) of the *Fisheries Act*. The following are additional measures to mitigate habitat disturbance or loss as well as the deposition of deleterious substances.

- Sediment and erosion control measures should be implemented prior to commencement of, and maintained during, the work to prevent sediment entry into the water. Siltation from the construction activities should be controlled with geotextile silt barriers. These barriers should be installed to sufficiently isolate the abutment construction and associated fill activities from the stream flow while allowing free flow of the stream main channel. These barriers must also be removed in manners that do not result in the release of trapped sediments.
- All wastes, sewage containments and fuel caches should be located well away from the normal high water mark of any water body. Impermeable spill mats or plastic sheets as well as efficient containment berms should be incorporated into these caches to ensure that contaminants do not enter water bodies.
- All activities, including maintenance procedures and vehicular refuelling, should be controlled to prevent the entry of petroleum products, sediment, debris, rubble, or other deleterious substances into the water. Impermeable spill mats, drip pans or other measures to prevent ground or ice contamination should also be used when refuelling equipment on site. Ensure that refuelling activities are conducted well away from the normal high water mark of any water body.
- Extra fuel storage containers equal to or bigger than the size of the largest fuel container should be available on site. These containers should be used to replace any existing containers showing signs of leakage. Containers should be checked for leaks on a daily basis and any visible leaks should be repaired immediately. Spill kits should be readily available at all times.
- All spills of oil, fuel, or other deleterious material should be reported immediately to the 24-Hour Spill Line at (867) 920-8130.

By implementing these additional measures, it is our opinion that the proposed works and undertakings will not likely result in the harmful alteration, disruption or destruction (HADD) of fish habitat, which is prohibited unless authorized by DFO. These are recommendations to ensure that the proposed works will likely not result in a HADD of fish habitat. Therefore a subsection 35(2) authorization is not necessary.

You could contravene subsection 35(1) of the *Fisheries Act* if a HADD of fish habitat results from any change in the proposed plan or from failure to properly implement these additional measures. Subsection 35(1) states, "*no person shall carry on any work or undertaking that results in the harmful alteration, disruption or destruction of fish habitat.*"

This letter of advice does not permit the deposit of a deleterious substance into waters frequented by fish nor does it release the proponent from the responsibility to obtain any other federal (for example, the *Navigable Waters Protection Act*), provincial or municipal approvals.

If these plans have changed since the time of submission, the advice in this letter may no longer apply and you should consult with us to determine if further review is required.

We request that the proponent notify us at least 10 working days before starting the work and that a copy of this letter be kept on site while work is in progress. If you have any questions concerning the above, or if my understanding of the proposal is either incorrect, incomplete, or if there are changes to the proposed works or undertakings, please contact me directly by telephone at (867) 979-8011 or by fax at (867) 979-8039.

Yours sincerely,



Derrick Moggy  
Habitat Management Biologist  
Fisheries and Oceans Canada – Eastern Arctic Area

Copy: Nick Arnalukjuak - Hamlet of Arviat