Date: October 31, 2003

Re: Establishment of Instream Work Windows and Measures for the Thompson Region

The *Forest Practices Code of British Columbia Act* (*FPC*) authorizes a Designated Environmental Official (DEO) to provide timing windows and measures for construction and modification activity on fish stream crossings to adequately manage and conserve aquatic resources. The FPC also authorizes the DEO to provide timing windows and measures for deactivation activity on all streams, whether or not fish bearing.

This document is provided to meet the obligations of the DEO under the following regulations of the FPC, and are legally required to be applied to all operations under these regulations.

1. Timber Harvesting Practices Regulation
   -14(2)(4)-temporary stream crossings [December 17, 2002].
2. Forest Road Regulation [December 17, 2002]
   - Part 3 Section 9(1)(h);
   - Part 5 Sections 14
3. Woodlot License Forest Management Regulation [August 2003]
   - Sections 49(1) and 54 , 68;

These timing windows and measures do not authorize activities contrary to any statute. The timing windows and measures are for the management and protection of aquatic resources under the legal authority of the *FPC*. If followed, the expected result is that the risk to aquatic resources will be decreased or largely eliminated. No authorization to alter, disrupt, destroy, or introduce deleterious substances to fish habitat is expressed or implied through these measures. Such authorization is the exclusive purview of the Department of Fisheries and Oceans (DFO). It is the responsibility of the proponent to contact DFO regarding any activities that fall under the federal *Fisheries Act*. Please note that the *Federal Fisheries Act* supercedes the *FPC*.

If you have any questions concerning this document please contact me at (250)371-6269.

Yours truly,

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Timing Windows and Measures for the Management of Aquatic Resources

Effective November, 2003

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Ministry of Water Land and Air Protection
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1.0 Purpose

The purpose of this document is to provide measures for work related to stream crossings within the Thompson Region, to facilitate compliance with the *Forest Practices Code* (FPC) of BC. In order to meet the FPC requirements, the direction provided in this document is intended to protect fish habitat at crossings and immediately upstream and downstream of crossing structures; and provide safe passage through stream crossing structures for all life stages of fish.

2.0 Referrals and Exemptions

Proponents should plan to conduct all work within the specified in-stream work timing windows established for the district, and to comply with the measures contained within this document. The work windows for all Forest Districts to which these measures apply are found on the Thompson Region Ministry of Water, Land and Air Protection web page.

2.1 Variances to the instream work windows and measures require a referral

- Where a proponent wishes to conduct works outside the designated timing windows or deviate from the measures in this document, written authorization must be obtained from the DEO. The Request for a Site Specific Work Window (variance application) must be made.
- No work may proceed until approval to vary is provided by the DEO. Variation approvals must be kept on the work site.
- All crossings over highly active (highly braided or on alluvial fans) fish streams must be referred to the DEO.
- A DEO referral is required where more than one round-trip crossing by machinery is proposed.
- Works conducted under the authority of the *Forest Practices Code of British Columbia Act* do not require *Water Act* referral.
- All requests for drivable fords must be approved by the DEO.

2.2 Referral not Required

- In-stream activities consistent with the timing windows and the measures in this document will not require referral to the Designated Environmental Official (DEO) unless specifically requested.
- In-stream works with one round-trip crossing of a stream to place or remove a structure do not require a referral if the stream is naturally dry, and if the following conditions are met:

- All machinery that contacts the water or working on the stream banks is cleaned of silt and all petroleum products (grease, oils, fuel) prior to the work commencing.
- A spill kit accompanies all equipment involved in crossings.
- Crossings minimize disturbance (displacement, compaction, erosion) to the substrate, riparian vegetation and stream banks by crossing where the banks are lower and preferably at the footprint of the structure or downstream of the structure. In fish bearing streams the channel substrate at the crossing should be larger (>10 cm diameter) and the machinery should use protective pads or logs to protect the channel bed. Spawning substrates (gravels between 0.5 and 8.0 cm over an area greater than 0.5 m^2) are not disturbed.
- Habitat structures that are naturally present such as larger boulders, imbedded large organic debris, natural gradient, and energy dissipation structures are retained.

2.3 Year Round Timing Window

A year-round open timing window will apply to the construction, modification, and deactivation of stream crossings during forest operations if any of the following conditions are met:

- The stream channel for which the work is proposed has become completely dried through natural processes. This is not the same as de-watering a channel, which, for fish streams, may only occur during the work window under very stringent conditions.

- The structure does not encroach below the high water mark, no work is proposed below the high water mark of a fish stream, and measures will be taken to prevent the delivery of sediments into fish habitat.

- Work is in a non-fish stream and measures will be taken to prevent the delivery of sediments into downstream fish habitat or the stream is not fish-bearing and discontinuous with no connection to downstream fish habitat.

In-stream works meeting the above requirements do not require referral if the applicable measures are followed.

3.0 Measures that apply to all instream work

These measures are to be followed in the construction, modification, maintenance and deactivation of stream crossings to adequately manage and conserve aquatic resources. Guidelines such as the *FPC Stream Crossing Guidebook* 2002 can also be used for additional guidance.

3.1 Objectives:

1. conserve fish habitat and protect channel integrity;
2. provide for fish passage, both adults and juveniles;

3. prevent impacts to fish eggs and alevins that are present in the gravel, or on adult and juvenile fish that are migrating or rearing;
4. reduce the risk of sediment release and other deleterious substances during work at stream crossings.

3.2 Measures

- Proposals for the installation of pipe culverts (round, elliptical, flat bottom or other) or baffled culverts in fish streams require DFO approval. At the time of this draft, DFO considers that all hard bottom structures in fish streams will likely result in harmful alteration or destruction of fish habitat (HADD) and that authorization and compensation could be required under the *Federal Fisheries Act.*

- The channel width of fish streams must be maintained.

- Stream bed and channel stability of streams must be maintained during bridge installation by avoiding damage to stream banks and by minimizing the width of the right of way clearing within the Ripaarian Management Area of a fish stream. Trees on the work site or clearing width adjacent to streams must be felled away from the stream to the fullest extent possible. The tree(s) and all resultant debris must be removed from the channel concurrently with felling.

- For work within the high-water mark of a fish stream, the work area must be isolated from the stream flow, and works completed "in the dry". Dry channel work conditions include:

    - When the channel of a fish stream is de-watered, fish must be salvaged from the de-watered area and returned to the stream (permits are required).

    - Within the work area, standing water that contains sediment must be pumped to a vegetated area or settling pond that is sufficiently far from the stream to allow for suspended fine particles to settle or be filtered out, prior to reintroducing stream flow to the work area.

    - Stream flow is to be returned gradually to the work site and not in a single sudden rush.

- Any materials, such as riprap or gabion rock, placed within the stream channel must be free of silt, overburden, or other substances deleterious to aquatic life. Rock used as riprap must be angular in shape and suitably sized to resist movement by stream flows.

- Temporary sediment control structures must be used during crossing construction in ditchlines and on fill slopes to reduce the risk of downstream sedimentation, where appropriate. These sediment control structures must be functional, maintained on a regular basis and cleaned prior to removal.

- Where there is a risk of sediment delivery to a stream, permanent sediment control structures must be installed and maintained to minimize the delivery of sediment into streams from road surfaces and ditches at the crossing location.

- To prevent sediment delivery to a stream, the road grade should be elevated, where topography permits, to ensure the grade falls away from the crossing for a minimum of ten metres in either direction.

- Disturbance to the stream channel, banks, and riparian vegetation in the vicinity of the work area must be minimized. Disturbance that occurs to the channel and/or banks must be stabilized and the risk associated with sedimentation minimized prior to water being introduced under or through the structure.

- Soils exposed as a result of work activities, and that have the potential for sediment delivery to a stream, must be promptly treated to avoid erosion.

- Seeding with an ecologically suitable seed mix or deciduous whips concurrent with the work must occur, so as to maximize the speed and density of re-vegetation. Species less palatable to livestock are preferred, to reduce attraction of livestock to the crossing site. Fertilizers must not be applied where they will directly enter a fish stream.

- During periods of heavy or persistent precipitation or other periods of increased stream flow, work must stop if continuing may result in sediment delivery to the stream. Measures must be taken to prevent the risk of sediment delivery to the stream during the shutdown period.

- Road material and gravel on a bridge deck must not enter the stream during construction or deactivation.

- Upon completion of the stream crossing structure or deactivation activity, all temporary bridges, culverts, pipe conduits, non-natural or treated wood construction materials, or other structures that are no longer being utilized, must be removed from the stream floodplain before the spring freshet. Debris must not be burned within the Riparian Management Area except on the road subgrade or surface.

- All machinery used on site must be in good repair and free from excessive grease, oil, and fluid leaks. All refueling and servicing must be completed outside of the Riparian Management Area. All machinery operating near a stream must have a spill kit.

- If wood preservative treatment is necessary, the chemical to be used is chromated copper arsenate (CCA); the use of creosote is <u>not</u> permitted. Application must be upland, well away from any watercourse; application of treatment solutions must never be carried out to installed materials on or over water. Treated wood must be dry at time of application, rinsed off after application and drying, then weathered

for a minimum of 45 days prior to use in or about the stream. Washwaters must be contained and removed off-site for proper disposal. In addition, pressure-treated lumber containing CCA must be allowed to fully react and be weathered for a minimum of 45 days.

- All cast-in-place concrete and grouting must be completely separated from fish-bearing waters for a minimum of 48 hours if ambient air temperature is greater than 0 degrees Celsius or for 72 hours if ambient air temperature is less than 0 degrees Celsius.

- Tracks or wheels of equipment must not be within the wetted perimeter of the stream, except during approved stream crossings or as other wise authorized by the DEO. Work is to be mainly from the bank or running surface of the road.

- If redds (locations where fish eggs have been laid) are present in or downstream of the work area, work activities must not commence or must be suspended and the DEO notified. Similarly operations should be shutdown and the DEO notified if spawning fish are noted in the area of the work site.

- During deactivation, the stream channel, banks, and other affected work areas at the site must be restored to their approximate original configuration and composition. Any fill material that has been added to the stream channel and floodplain must be removed and deposited where it will not re-enter the creek. Sedimentation resulting from channel erosion of the disturbed soil surfaces must be prevented through armouring. Stream substrate must be restored to the approximate original composition.

- During deactivation, the crib of a wooden culvert or bridge must be left if it is stable, and over time has been integrated into the channel and now contributes to fish habitat complexity in the channel. If the upper portion of the crib will decay and fail in time, resulting in sedimentation, then it should be removed and only the lower portion left in place.

- S4 streams may be crossed using winter snowfill temporary crossing structures as described in the *Stream Crossing Guidebook.* The structures must be removed prior to the spring thaw to prevent damage to the stream.

- Short term roads (in use for less than 2 years) that cross streams more than 500m from a fish bearing lake do not need to assure fish passage if the offending culvert is removed and the channel restored.

4.0 Emergency Actions

If emergency actions are required to protect roads, stream environments or crossing structures from catastrophic events, or the crossing has failed as a result of catastrophic

events and damage to fish habitat has or may occur, then the incident must be reported in writing to the DEO (or designate) as soon as possible or within 72 hours.