MEETING MINUTES

MMER ENVIRONMENTAL EFFECTS MONITORING
STUDY DESIGN MEETING – TAP only
Lupin Gold Mine

Monday April 18 2005
8:30 a.m. to 12:00 p.m.

Attendees:

Chris Baron	Fisheries and Oceans Canada
Steve Harbicht	Environment Canada
Anne Wilson	Environment Canada
David Hohnstein	Nunavut Water Board
Paula Siwik	Environment Canada

1. **Introductions**
2. **Adult fish survey**
    a. **Sentinel Species**

The sentinel species proposed in the study design were discussed. Concerns expressed in regards to the ninespine stickleback included the possibility that they would be spawning during the fish survey and the possible presence of parasites. Specifically, the large flukes found in the Miramar CON study were identified as problematic. The TAP decided that a 2 day reconnaissance should be recommended to a) confirm the presence of fish in Seep Creek, b) determine which species were still spawning and c) look for incidence of parasitism in the ninespine stickleback.

There was some discussion as to whether the fish move out of Seep Creek once decant started but David indicated that he had observed juvenile grayling in Seep Creek after decant. The merits of a lethal or non-lethal juvenile arctic grayling survey were discussed and it was decided that a lethal survey would be recommended with biophysical data (lengths, weights) collected from any adults captured. Ninespine stickleback were recommended as the second sentinel species contingent on the results of the reconnaissance (e.g. spawning condition, parasites) and slimy sculpin were deemed acceptable provided they were present in adequate numbers.

The TAP also agreed that if insufficient fish were found in Seep Creek, the survey should move downstream to unnamed lake and then to Inner Sun Bay.

    b. **Tracers, mercury and copper**

A question was posed in regards to the use of tracers other than metal fish tissue concentrations (i.e. MFO induction or metallothionein). Chris explained that they tended to be viewed as research which made some facilities avoid them but that if Lupin was interested in using one, they were acceptable in his opinion. However, the TAP decided that tracers were not necessary at this site based on the proposed fish species. The TAP also decided that mercury need not be analyzed in fish tissue provided that effluent mercury concentrations were below 0.1 µg/l.

Copper, however, was of interest to the TAP. In particular the historical trend of higher concentrations in livers of fish from Inner Sun Bay relative to other sites on Contwoyto Lake. The recommendation was that the mine look at copper

concentrations in liver or viscera of a sentinel species, preferable juvenile arctic grayling.

c. Reference area

The Norma Creek system was the reference area proposed in the study design. While the proposed sampling area was upstream from the Long Lake spill, wind blown tailings may have affected that system. As a result, the TAP decided that the Fingers system should be investigated. If Norma was still to be considered as an option, data should be presented in order to evaluate whether conditions at that site had changed over time.

3. Benthic Invertebrate Survey

a. Exposure area and timing

The TAP agreed that Seep Creek should be the site of the benthic invertebrate exposure area sampling stations. There was concern about the amount of flow in the creek once decant had stopped and so the TAP decided to recommend that sampling be done during decant, even if it meant sampling late August instead of September.

b. Habitat and sediment sampling

The TAP also agreed that sediment should be collected and analyzed for metals. As a result, the depositional areas of the Seep creek system will be the focus of the benthic invertebrate survey. It was also recommended that the sediment samples be collected with a corer instead of an Eckman.

c. Additional items

The study design discusses the use of a 243 µm mesh for the benthic invertebrate survey. There was interest amongst the TAP in having that data. Paula mentioned that the 500 µm fraction would likely be the one used in future program decision making. The TAP agreed to suggest the mine include both the 243 and 500 µm mesh data in their report. Due to concerns over the numbers of benthic organisms likely in the sediment at that site, the TAP also agreed that the number of sub samples be increased from 3 to 5.