MEETING MINUTES

MMER ENVIRONMENTAL EFFECTS MONITORING
STUDY DESIGN MEETING
Lupin Gold Mine

Monday April 18 2005
12:30 a.m. to 4:00 p.m.

Attendees:

Mike Tansey	Lupin Gold Mine
Rick Schryer	Golder Associates
Gary Ash	Golder Associates
Mark Dunnigan	Golder Associates
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**

Paula began by outlining the TAP's preferences. They included: 1- a 2 day reconnaissance to asses a) the presence of fish, b) the spawning condition and c) the presence of parasites in the ninespine stickleback population, 2- the use of juvenile arctic grayling and ninespine stickleback as sentinel species in lethal surveys, 3- a progression downstream in the Seep Creek system if species/populations higher in Seep Creek were not adequate, 4- July 15 was an acceptable start date, 5- other reference areas should be investigated due to the possible influence of wind blown tailings on the Norma system (recommended Fingers) and 6 – that copper concentrations be determined in the viscera or liver of the juvenile arctic grayling.

a. Sentinel specie selection and timing

There was some discussion about past sampling techniques and the results of the ninespine stickleback survey at the Miramar CON site. The result was a decision to a) delay the adult fish survey until August (fish and benthic surveys done at the same time) and b) attempt to use sculpin as a sentinel species. Sample sizes were 20 adult males, 20 adult females and 20 immature fish per area for the sculpin and 40 immature fish per area for the arctic grayling. The TAP agreed that a non-lethal ninespine stickleback survey with a sub sample sacrificed for aging and to determine the presence of parasites be the backup plan.

The TAP had expressed the desire to have water quality data collected near the beginning of decant. Originally, this would not have been an issue with the proposed temporal separation of the fish and benthic surveys. Anne inquired as to whether Pond 2 was well mixed and David replied that it was, that the Pond was relatively shallow, and that the siphons draw off the top 3 m. The facility agreed to sample water quality in the proposed biological reference and exposure areas soon after commencing decant to address the TAP's concern.

b. Copper and mercury

Paula explained that the TAP agreed mercury need not be sampled in fish tissue provided the mercury concentration in the effluent sample to be collected from Pond #2 pre decant was ‹ 0.1 µg/l. If the effluent sample has a mercury concentration > 0.1 µg/l, it was suggested that non-lethal tissue sampling be considered (guidance to be available soon).

The group did not reach resolution on the issue of copper analysis. Tissues for copper analysis will be collected and archived during the adult fish survey. Further discussion on this topic will take place.

c. Reference area

The rationale for locating a new reference area was outlined. There is a road to Fingers Lake and the creek can be accessed by boat. Reconnaissance will be done to determine if sufficient numbers of the appropriate species reside in that system.

3. Benthic Invertebrate Survey

Paula outlined the TAP's suggestions. They included: 1- using Seep Creek as the exposure area, 2- to sample during decant even if it means compromising a bit on timing, 3- focus on depositional habitat, 4- collect sediment samples for metals analysis in addition to TOC and PSA, 5- use cores instead of an Eckman to collect sediment samples, 6 – include both the 243 and 500 µm fraction in the Interpretative Report and 5 – increase the number of benthic sub samples from 3 to 5.

a. Sieve size and sub samples

It was agreed that the number of sub samples would be increased from 3 to 5 per station. There was some discussion about the 500 vs. the 243 µm fraction. Paula explained that future program decisions would likely be made at the 500 µm level and analysis should be done on that fraction. It was decided that the data for both the 500 and 243 µm fraction would be included in the Interpretative Report but that analysis would be done on the 500 µm fraction.

b. Sampling areas

As the TAP recommended sampling depositional areas, it was suggested that the small unnamed lakes along Seep Creek might be the most suitable sampling areas. The TAP agreed that they should be looked at. In terms of reference areas, the decision was to explore the area downstream of Concession Lake to see if the habitat and flow were similar. Other options, including some small lakes in the Fingers system, were discussed as back up.

c. Sediment sampling

Sediment will be collected using a core sampler at each benthic invertebrate station and analyzed for PSA, TOC and metals.

4. Effluent and Water Quality

Paula reminded everyone to ensure that labs use the appropriate detection limits when analyzing effluent and water quality samples, and that water sampling must be done in both the fish and benthic exposure and reference areas. The comments

were noted. Mike asked about suitable sampling stations for the routine effluent and water quality sampling. Paula stated that the exposure station should be close to the point of discharge but far enough downstream to allow for some dilution. David suggested the station at the narrows be the exposure station and the one at Concession Creek act as a reference station.

5. Additional Items

a) Paula will be the EEM contact during the field surveys and will supply the consultants and facility with contact information
b) Paula will make arrangements with Mike for a visit to the site during field work.
c) Some of the TAP comments were discussed and an addendum will be submitted. The highlights of that conversation include: 1- lake seiche effects were not included in the model, 2- an estimate of the plume at 250 m will be done in the field, 3- any tissue metal data will continue to be reported in dry weight but the moisture content of the sample will also be presented and 4 – the consultants will verify the volume of sediment required for analysis.
d) Lupin is considering their options and may decide to submit a letter requesting Recognized Close Mine status. ***ACTION ITEM: Paula will review recent decisions regarding the timing of this request and provide that information to Mike.***