

Addendum to Concentrate Recovery and Recycling Plan

This document is an addendum to the Concentrate Recovery and Recycling Plan (Exponent 2002a). While intended to be generally applicable to concentrate recovery and recycling in any of the operational areas, that plan was mostly focused on recovery efforts on the DMTS road, as that was the immediate application at that time. This addendum is intended to supplement the Concentrate Recovery and Recycling Plan by describing the use of the plan at other recovery sites, such as tundra recovery sites.

Identification of Areas for Recovery

Areas will be identified for recovery by comparing laboratory analytical data or field XRF data against appropriate criteria. A discussion of concentration criteria is provided in Exponent (2002a). For example, Method Two “arctic zone” criteria provided in the Alaska Administrative Code, Section 18 AAC 75, for lead, zinc, and cadmium are 1,000, 41,000, and 140 mg/kg, respectively (ADEC 1999). For tundra sites, areas for recovery will be identified and delineated according to the Spill Site Characterization Plan (Exponent 2002b).

Concentrate Recovery Procedure

For recovery sites (e.g., tundra recovery sites), after the area to be recovered has been defined as described above, the recovery will proceed as described below.

For tundra recovery sites to be addressed in the summer months, the procedure will be as follows:

- The recovery will be conducted within the area defined as exceeding the target criteria (e.g., the arctic zone standards).

- If not already moist, the tundra surface will be wetted down with water, to minimize dust generation during removal. Water will be applied at rates that avoid runoff from the area.
- The tundra surface material will be scraped off using a front-end loader or similar equipment, and loaded into trucks. Loads will be securely covered with tarps, and then transported to the mine for recycling as described in Exponent (2002a).

For tundra recovery sites to be addressed in the winter months, the procedure will be as follows:

- The recovery will be conducted within the area defined as exceeding the target criteria (e.g., the arctic zone standards).
- The surface layer of snow and possibly limited tundra that contains the concentrate will be scraped off using a front-end loader or similar equipment, and loaded into trucks. Loads will be securely covered with tarps, and then transported to the mine for recycling as described in Exponent (2002a).

The specifics of removal will vary according to site conditions at each location. The removal will typically include the tundra mat, which may be to depths of 6 to 20 in.

Verification Sampling

Following recovery of the material to be recycled, the newly exposed surface will be sampled with field XRF measurements and/or laboratory analyses. If necessary, additional material will be removed until the verification samples demonstrate that recovery is completed relative to the target concentration.

Tundra Restoration

For recovery sites where tundra has been disturbed, the tundra surface will be restored as follows:

- Clean fill soil from one of the material sites will be placed to fill in the area where tundra surface material was removed.
- The soil will be graded to match the surrounding landscape.
- A seed mixture will be spread over the clean fill to regenerate vegetative cover.
- Where needed (e.g., where exposed areas are steep, or are located near stream crossings), measures will be taken to prevent erosion of the exposed area. Details will be provided in site-specific plans as needed.

Other Procedures

Procedures for sample collection, sample labeling, XRF measurement, equipment cleaning, field data reporting, analytical methods, disposal of waste, etc. are described in Exponent (2002a), and can be readily adapted for use at any area where recovery and recycling is planned.

Locations and Schedule

As recovery efforts are planned, detailed information on recovery locations and the schedule for conducting the work will be provided to DEC prior to implementation.

References

ADEC. 1999. 18 AAC 75 Oil and hazardous substances pollution control regulations as amended through January 22, 1999. Alaska Department of Environmental Conservation.

Exponent. 2002a. Concentrate recovery and recycling plan, DeLong Mountain Regional Transportation System, Alaska. Prepared for Teck Cominco Alaska Incorporated, Anchorage, AK. Exponent, Bellevue, WA.

Exponent. 2002b. Spill site characterization plan, DeLong Mountain Regional Transportation System, Alaska. Prepared for Teck Cominco Alaska Incorporated, Anchorage, AK. Exponent, Bellevue, WA.