ECHO BAY MINES LTD., LUPIN MINE, NUNAVUT
Water Licence NWB1LUP0008
Public Hearing, November 13, 2001

TCA PRESENTATION SCRIPT

Good morning Mr. Chairman, members of the Board, Water Board Staff, Ladies and Gentlemen. I am here today to present information on the Lupin Operation, specifically with regard to the Tailings Management and reclamation work that is to be carried out at the Tailings Containment Area or TCA. I would like to invite any questions during the presentation so that we may provide a response with the relative materials in front of us.

Slide 1 Cover slide – Lupin TCA

Slide 2 Lupin Tailings Containment Area – Operational Flow

For the benefit of those in attendance who are unfamiliar with the Lupin Tailings area, I have included an aerial view slide, to illustrate the management of tailings and the concept behind the solids and water storage and the separation into the the two main components of the TCA; Solids retention cells and water holding ponds.

Once the gold has been removed from the ore the waste product, or tailings, is transferred to the TCA for long term storage. Alternately, the mill tailings is utilized in the Backfill plant, where the solids portion is mixed with cement and transferred back underground to provide ground support for the mining process. Placing the tailings solids underground reduces the impact on surface and allows the current tailings area to provide storage over a longer period of time. The mill tailings is currently placed in either Cell No.3 or No.5 dependent on the time of year and length of time in use.

Within these cells, the solids settle and the water portion is collected. This water will remain in these cells until seasonal transfer of water from the TCA ponds has been completed.

Slide 3 Pond Transfers

Generally, the water within the TCA is transferred in a batch process whereby one area is emptied prior to transfer of water from the preceding

area. This starts seasonally in July with the transfer of Pond No.2 contents via syphons to the environment.

Once as much water as possible is transferred from Pond No.2, the transfer of water from Pond No.1 can take place. This is again accomplished with the use of syphons. The water is then held until the next season for discharge to the environment. There have been occasions in the past where the water quality of Pond No.1 has been exceptional and was transferred concurrent with the discharge of Pond No.2.

Slide 4

Water held within Cell No.4 is then transferred to Pond No.1 and stored for approximately one year. During this time natural treatment of the water takes place and an assessment of the water quality can be made prior to the next seasons transfer (and treatment if necessary).

The water that has accumulated within Cells 3 and 5 is then transferred to Cell 4 for storage until the following year. Due to the distance between the cells, a pumping system is used to transfer the water. Generally at this point, the TCA is now ready for a winter season of tailings placement with regard to storage.

Slide 5 Lupin Progressive Reclamation

At this point I would like to switch focus from the general operations of the TCA to the issue which is the basis of our meeting today, reclamation.

Reclamation of the Lupin Mine site has been estimated to cost x millions of dollars upon closure of the mining operations. This amount can be greatly reduced by carrying out progressive reclamation that is concurrent with the operations up to the end of the forecast mine life. A present, approximately one half of the closure costs are associated with the closure of the Tailings Containment Area. With a foreseeable end to the mining operations at Lupin, it is possible to forecast and plan on-going reclamation at the TCA to substantially reduce the closure costs prior to actual cease of operations.

Progressive reclamation planning is endorsed by the management of Echo Bay Mines Ltd and its Environmental Policy as well as forming part of the Water Licence issued by the Nunavut Water Board and the current “draft”

Northwest Territories Mine Reclamation Policy put forward by the Department of Indian Affairs and Northern Development.

Within this portion of the presentation I would like to illustrate to the Board and for those in attendance, the forecasted Progressive Reclamation work that can be accomplished at Lupin within the next 5 years.

Slide 6 Highlights

The Lupin Operation was granted a Water Licence from the Board effective July 1, 2000 through to June 30, 2008.

Slide 7

During this licence period, the mine and mill production is planned at approximately 4.3 million short dry tons.

Slide 8

The current TCA storage available (2000) is approximately 2.1 million cubic metres. This has been increase by approx. 600,000 cubic metres through the raising of the internal dike referred to as mdam.

Slide 9

With mine closure in the foreseeable future, the focus of the tailings management is to maximize the available storage through construction of smaller containment cells within Cells 3 and 5. This will allow staged filling of sections within the TCA and provide manageable areas for esker cover placement during the mine life.

Slide 10

Timing for the first covering component is to be scheduled in 2003 to correspond with mobilizing equipment to Lupin and having an area of suitable size available for cost effective construction.

Slide 11 Final Closure

With the staged utilization of the TCA Cells and the progressive reclamation schedule through to end of mine life, the slide shown illustrates the appearance of the TCA upon completion of activites.

I would like to now take everyone through the conceptual progressive reclamation plan which corresponds with the mine's operating plan over the next 6 years. Within this operating plan, starting in 2003, there has been approximately 1 million dollars per year budgeted for ongoing reclamation work.

Slide 12 Current TCA Status 2001

This slide shows the current status of the Lupin TCA as of August 2001. Please note the location of Cells No.1 and 2 and the esker cover that has been place on top of the tailings. This work was carried out in 1995 once the Cells were filled to capacity and no further tailings deposition would be possible. The upper corner of Cell 2 remains to be covered and was used for some tailings deposition in 2000.

The covered area makes up approximately 1/3 of the total cell area requiring cover. Approximately 2/3 of the total area is forecast to be covered between 2003 and 2008.

Slide 13 Cell3a

In 2001, the Cell3a dike was completed and the cell was used for tailings deposition throughout the summer as is visible on the aerial photo. These "mini cells" are sectioned off by a simple "walk out and end dump" construction method utilizing waste rock or esker material. The cells then provide an ideal settling environment for the tailings solids and allow filtering of the water to leave the area relatively flat for final covering.

In the next series of photos, the forecasted cell construction and use is illustrated by layering the specific components upon the original photograph to explain the sequence of events on an annual basis and the conceptual final TCA closure.

Slide 14 2002

In 2002, the second and third "mini-cells" are to be completed within Cell No.3. In fact, Cell3b was begun in 2001 and should be completed prior to the year end.

Slide 15

As well, the divider dike in Cell 5 will be raised to provide additional separation of water from the solid tailings and develop the first of four "mini cells". This dike was also raised prior to the end of summer 2001.

Slide 16 2003

In 2003, planned progressive reclamation work will begin with the final covering of a portion of Cell No.2. with approximately one metre of esker material.

The newly constructed Cells 3a and 3b will have been filled during the summer of 2002 and will be covered with one metre of esker material.

Slide 17

Construction of the divide dikes for Cells 3c, 3d and 3f will take place, each one being built as the previous cell is being filled. During the colder months the tailings deposition is rotated to minimize tailings depth and retained water. The xdam divider dike in Cell 5 will be brought up to its maximum elevation of 490 metres. Unfortunately, the aerial photo used in this presentation does not include the extreme western portion of Cell3 for viewing and the two small cells (3d and 3f) that are parallel with Dam6 are not shown. A tailings area drawing is available for later review.

Slide 18

In 2003, the first work on re-sloping of the perimeter dams will take place. This work will require initial geotechnical evaluation to determine suitability of materials as well as the final slope required. Generally, a slope of 1:2 to 1:3 would be adequate for long term stability and erosion protection. Two smaller dams 1b and 1c along with Dam2 will be brought up to final recommended specifications.

Slide 19 2004

Covering of the mini cells of Cell 3 continues with Cells 3c, 3d, 3e and 3f being covered.

Slide 20

Cells 3g and 3h divider dikes are to be constructed. These cells along with Cell5a will be filled with tailings during the year to their constructed elevations of 489 to 490 metres.

Slide 21

Work will continue on the closure preparations of Dam1a and Dam4 to provide a suitable slope as recommended by geotechnical experts.

Slide 22 2005

Covering of the small cells continues in 2005 with Cell3g

Slide 23

Cell 3i and Cell 5b divider dikes are to be built in 2005; these cells and Cell 3h will be filled with tailings to their final elevation of approximately 490m

Slide 24

Work will be completed on the closure preparations of Dams with the additional slope material for Dam5 and Dam6. These two dams are very small, less than 2 metres in height, and are expected to have tailings solids against the upstream slope at closure.

Slide 25 2006

Covering of Cells3h and Cell3i will take place in 2006 along with the partial covering of Cell5b. Cell 5b will only be partially covered due to funds available for reclamation on an annual basis (operating plan).

Slide 26

Tailings deposition in 2006 will take place into Cells 3j, 5c and 5d. Tailings line endpoint discharge is rotated to minimize tailings thickness, water retention and promote as even or level a tailings beach as possible.

Slide 27 2007

In 2007, the production from the mine and mill is to come to end and the tailings facility will no longer be used.

Slide 28

At this point, Cell 3j will be covered and Cells 5c and 5d will be allowed to dewater with the summer thaw.

Slide 29 2008

In 2008, the tailings ponds will be monitored for water quality and may be discharged if required. As there has been no input of mill tailings during the course of the previous year it is not expected that release of water will be required at this time. Some pumping of water from the mine/mill site will have taken place during the initial decommissioning of the complex.

Slide 30

The final covering of the Tailings Containment Area Cells will take place during 2008. This will include the second half of cell 5b, the last cell in use 5c and the smaller 5d used the previous year. A small corner of Cell5a will also require covering which is located near a tailings line dump valve within the TCA.

After completion, all raised cells within the TCA have been covered with a 1 metre layer of esker material which will provide a physical means of containing the tailings solids, moisture retention and a barrier for oxygen transfer. The upper portion of the tailings cell that is subject to seasonal freeze thaw affects will be limited to between 0.5 and 1.5 metres of actual underlying tailings (below the esker cover). As well, this active zone is seasonally dependent, being active or unfrozen for approximately 2-3 months of the year.

Slide 31 2009

In 2009, continued monitoring of the tailings ponds will take place to determine any water quality trends. Water will continue to accumulate within the facility from general precipitation and run-off.

Slide 32

As water levels increase within the TCA it will be necessary to construct the "overflow" channel conceptually planned for a location north of Dam1a within bedrock.

Slide 33

To provide a natural (or gravity) flow of water within the TCA the Jdam will require opening or a lowering of the crest to allow water flow from Pond No.1 to Pond No.2.

Slide 34

This slide shows the projected configuration of the TCA with respect to water flow and runoff from the covered cell areas for control, monitoring and release through the designed overflow.

The divider dike, located at the southeast corner of Cell 4 will also require removal or the application of coarse rock to stabilize it and allow flow of water overtop into Pond No.1.

That concludes the description of reclamation work planned at Lupin with regard to the TCA during the Licence term.

Slide 35 Examples of naturally occurring vegetation

Slide 36

This slide shows some examples of the vegetation variety that has been occurring upon the areas that have been reclaimed in the recent past. The first two photos show an abundance of vegetation occurring on Cell 1which was covered with esker material in 1995. Dwarf birch appears to invade rather well as do a variety of grasses.

The third photo shows some willow growing on the reclaimed area associated with a tailings spill in 1987. This area was reclaimed in 1995 as well.

Slide 37

This slide shows numerous patches of grass beginning to establish on the cover of Cell No.1. This area was covered in 1995. When allowed to proceed naturally, it is evident that vegetation will naturally establish on reclaimed areas.

Slide 38

This slide shows the downstream slope of Dam1b and the vegetation that has established over the course of mine life. Some of these grasses and shrubs are very mature, thriving in the sheltered downslope of the dam.

Slide 39

This next slide shows an area of Cell 1a where, in 1995 during the covering process of Cells 1 and 2, material from the Fingers Lake esker (borrow source) was removed and placed upon the esker cover of the cell. There was little re-growth from the soils the first couple years but has established very well in recent years.

Slide 40

This slide again show an area of Cell 1a that received a portion of the overburden material stripped from the Fingers Lake Esker in 1995 and placed on the cover.

If future opportunities exist and more of this type of material becomes available through construction requirements, it may be beneficial to more widely spread these materials giving more locations for naturally occurring vegetation to re-establish on the esker covered tailings cells.

Slide 39 Final closing slide – Rainbow

That concludes this portion of the Lupin Presentation. I would like to thank you Mr. Chairman, the Board Members and everyone in attendance for their time and invite any further question with regard to the information that was presented.

Thank you.