

Nechalacho Rare Earth Element Project – EA1011-001

Technical Issues Scoping Session – Tree of Peace, Yellowknife NT

September 9th – 10th, 2010

The following issues were identified from discussions during the scoping session as well as from comment cards at the session. The Review Board will consider these points when developing the Terms of Reference and in deciding what issues to consider in this environmental assessment.

While this meeting report is as comprehensive as Review Board staff could make it, this is not a verbatim document. It is based on notes by Review Board staff. Unlike the official statements made at Review Board hearings toward the end of the environmental assessment process, scoping sessions are less formal dialogues.

Review Board staff has organized the points and grouped them under general headings as follows:

Socio-Economic

- What are the personnel requirements for both project sites?
- How is Avalon helping the community workforce prepare for upcoming employment opportunities?
- What percent of aboriginal people will be hired for the project?
- How will Avalon transfer information on this project to the communities?
- How will Avalon assess social and cultural issues? Social and cultural impacts are not limited to mine footprint
- What are the benefits of the mine coming back to Northerners?
- What are the impacts of the project on tourism? What mitigations does Avalon suggest for any impacts ?
- There should be employment opportunities for NWT residents during all project phases
- Does Avalon have a Human Resources Strategy available? Will they develop one?
- Avalon should give advance notice to communities regarding procurement opportunities for communities; let communities know what Avalon needs for project. Agreements needed with Northern contractors and suppliers
- Avalon needs closure planning to deal with the dependence that some northern contractors may have on project
- Monitoring plans needed to know whether objectives are being met
- Will Avalon be signing Impact Benefit Agreements with communities?

Cultural

- An archaeological assessment should be done for this project
- Sometimes company values clash with cultural beliefs and practices – how does Avalon plan to handle this? Policies are needed that respect aboriginal values, beliefs and culture
- Avalon needs a community liaisons to assist company with cultural issues
- Avalon should assess impacts of project on traditional economy and suggest mitigation measures
- How will Avalon incorporate traditional knowledge in this assessment and for their project? Language is an important part of traditional knowledge
- Will Avalon translate into aboriginal languages?

Community Wellness

- What is Avalon prepared to do to improve and community wellness during operation?
- Will Avalon put on workshops for community wellness?
- Avalon should consider the social impacts of large projects in the past and incorporate lessons learned for their operation

Air Quality

- Avalon needs to operate incinerators properly
- There are concerns with the potential for emissions of furans, dioxins and other toxins from incineration
- Avalon should report on emissions data from the proposed use of coal and present this as a percentage of total NWT air emissions

Wildlife

- What are the long term effects of the project on plants and animals?
- There are concerns about wildlife interaction with the tailings pond. What are the potential impacts?
- What impacts to waterfowl can be expected when birds land on tailings ponds?
- What are the projects potential impacts on migratory birds?
- The mine may attract predators to migratory birds. What mitigation measures does Avalon have for this?
- Avalon should consider their SARA-listed species obligations and should also consider those species on the COSEWIC list in their assessment of impacts
- Wolves should be included as a valued ecosystem component
- Barren ground caribou have been hunted historically at Thor Lake. Avalon should include barren ground caribou as a valued ecosystem component
- Avalon should consider invasive species such as cougars, raccoons, insects, and moulds in their assessment of impacts - vehicles may carry some of these species outside of their normal ranges

Access – barging concentrate across Great Slave Lake

- What is the barging window for crossing Great Slave Lake with concentrate?
- Historically there have been barging accidents. What are Avalon’s contingency plans for a barge sinking?
- Are the containers with concentrate waterproof?
- What are the risks with transporting concentrate across lake?
- Avalon needs to produce and consider bathymetric information for Great Slave Lake, including the location of shallow areas. What sort of baseline information on this can Avalon offer?
- Avalon needs to remember that old charts of lake may not be accurate
- Avalon should include wildlife in effects assessment for activities at barge sites

Water

- How much water will be used at the Thor Lake site?
- What percentage of Thor Lake water will Avalon be using? It would help to see volumes and percentages of water withdrawal from Thor Lake
- What is the relationship between the Metal Mining Effluent Regulations and guidelines set out by the Canadian Council of Ministers for the Environment?
- For the proposed water transfer between lakes, will a pipeline be used during winter?
- Would like additional information on timing and seasonality of water withdrawals
- Need additional information on the proposed diffuser
- Need adequate baseline information to know level of acceptable change to water quality
- Need to know potential contaminant loadings in lakes, especially small lakes with respect to the Thor Lake site
- What are the potential impacts related to contaminant releases into groundwater?
- What are the potential impacts from blasting residue to water quality?
- What kind of explosives will be used?
- Do not want water monitoring of just for the sake of monitoring. Better information from the environmental assessment helps to outline path forward for good water quality
- INAC willing to meet with Avalon on baseline data collection techniques
- AEMP and EEM coordination
- Need complete list of reagents for hydrometallurgical plant
- Modeling of effluent and impacts of receiving environment, zones of influence
- Diffuser location – what is the proposed mixing zone and how will it affect aquatic organisms?
- What are the contaminant loading effects on water?
- Need to know anticipated changes in water quality from existing levels
- Need a good understanding of the monitoring plan during the environmental assessment phase
- Lakes that freeze to bottom now may not with warmer effluent discharge
- Discharge under ice could stir up sediments
- Will tailings and chemicals leak into other lakes?
- What are the impacts on water downstream from Thor Lake

- Avalon should compare the expected tailings water discharge from the flotation plant and hydrometallurgical site to local background water quality.
- Identify how the discharge from the tailings facilities will change or affect receiving bodies and the environment downstream on: 1) The initial mixing/dilution zone; 2) Other proposed assessment boundaries, and; 3) The entire watershed (surface and groundwater)
- Identify exposure pathways from the effluent discharge and proposed effects sizes that could exist (part of AEMP process and will require some analysis of baseline data)
- Describe the spatial and temporal implications of effluent discharge over the life of mine and assign magnitudes of effects.

Transportation

- What are the truck volumes on the highway system going into the Pine Point site and going out?
- Will a winter road be used to get to the Thor Lake site?

Tailings ponds at Nechalacho deposit and Pine Point

- Will toxicity testing be done on tailings?
- Which reagents are needed during operations? Are these reagents included in the toxicity tests?
- Is this a metal mine, does Metal Mining Effluent Regulations apply?
- Is there sufficient capacity in the tailings management facility at Nechalacho in the event of increased mine life?
- If amount of tailings increased would there still be room for the polishing pond?
- Is re-mining of the tailings an option?
- For Pine Point tailings deposition into pit, has geotechnical work been done?
- Why is the N-38 pit dry? That indicates that it actively drains
- Historic geotechnical and hydrogeological information at Pine Point would be useful
- If pit used for tailings at Pine Point would it infiltrate to groundwater?
- What happens with tailings once mine is completed?
- What is the risk of tailings pond failure?
- What are the alternative locations for tailings deposition?
- Want to see a multiple accounts analysis for choice of tailings pond in DAR
- What is the failure rate for tailings ponds in Canada and North America?
- How will Avalon discharge tailings in the winter? Will there be capacity problems introduced by freezing?
- N-38 pit proposed for tailings deposition, need more information on this pit in the DAR
- Are holding areas required during water treatment with limestone at Pine Point? Will holding capacity be needed?
- Concern with using open pit as last point-of-control for effluent at hydrometallurgical site as recovery would not be possible. A water License needs a compliance point.

- Gypsum tailings may create a paste and seal pit - over time it may not infiltrate. What sort of problems can this create for water quality?
- How will Avalon deal with effluent that settles on gypsum if pit seals up?
- Need information on possible pit sealing and use of multiple pits as soon as possible
- Need better grasp of water effluent management from hydrometallurgical plant and tailings location
- Need more information on deposit of waste
- What are the radioactivity levels of the tailings? Of the concentrate?
- Need to know contaminant concentrations predicted from tailings water at both sites
- Consider past effects of old tailings pond at Pine Point – cumulative effects assessment
- Have studies been done beneath areas proposed for tailings deposition

Project ore reserves – project lifespan

- Are there additional reserves at 200 m depth? Reserves at other depths?
- Could the mine life extend beyond 18 years?
- What is the lifespan of this project: 18 years, 25, 100?
- What will the Review Board do if license is granted for 18 years but there are 100 years of reserves?
- Will subsequent deposits be open pits?
- Will additional tailings ponds be needed if additional reserves are developed and mine life increases?
- Is there any information on existing rare earth element mines and tailings? Need examples to look at.
- Mine life needs to be static in order to predict adverse impacts of the development, in particular mine life as it relates to tailings deposition
- It may be beneficial to request a list alternatives in the Terms of Reference due to uncertain mine life

Cumulative effects

- Describe cumulative effects in context of historic activities at Pine Point
- Would like to see induced impacts from mine considered
- If Avalon plans on mining additional deposits beyond 25 years it should be included in cumulative effects assessment
- Will a cumulative effects assessment consider reserves that are not presently economic?
- Look at Canadian Environmental Assessment guidelines on cumulative effects

Closure and reclamation

- Want additional clarity on closure in the DAR
- Need goals and objectives for closure

- Avalon should consider progressive reclamation
- Avalon should consider testing of different closure methods
- Mine Reclamation Policy and guidelines exist

Other

- How close is the proposed Avalon hydrometallurgical site to the Tamerlane Project
- What are the timelines for geothermal studies?
- Do workers underground need protective gear for radiation?
- Will there be changes to ice regime for people on the land?
- How will Avalon consider climate change in this environmental assessment?
- Question on the value of old studies and reports

Project Description Modifications

The following describes modifications, as presented by Avalon representatives at the Yellowknife technical scoping session, from the original Project Description Report (April 2010) for the Nechalacho Project.

Modification to Project Description at Nechalacho (Thor Lake Site)

Avalon proposes to reduce the 3 year ramp up in scale of mine production to improve project optimization. Avalon originally proposed an initial 3 years of production at 1,000 tonnes per day (tpd). After 3 years mine production would ramp up to 2,000 tpd for the remainder of the mine life. Avalon now plans to begin production at the full 2,000 tpd from the start-up of mine operations.

Modification to Project Description at Pine Point Site

Avalon originally proposed to place tailings from their proposed hydrometallurgical facility in the old Teck-Cominco tailings pond at Pine Point. However, due to added weight and effects to the structural integrity of the existing tailings dam Avalon has modified their plans. Instead Avalon proposes to use one of three alternative sites for tailings disposal at Pine Point including one or more of the old Pine Point open pits.