TANBREEZ
mining for greener technologies

Environmental Impact

The Environmental Impact Assessment (EIA) assesses what impacts the planned mine project may have on the environment. The Greenlandic guidelines for EIAs require identification of potential pollution and disturbance impacts. A number of specific studies have been carried out to assist the EIA process. These include studies of the tailings material and waste rock to determine if metals would leach out if the materials are deposited in water. A study has tested if the tailings could leach toxic substances. Staffs from Nuuk Museum have surveyed the project area for cultural heritage sites and biologists have studied the flora and fauna. All these studies are attached as annexes to the EIA report. Other sources of information for the EIA process include previous studies in the area and studies from other mine projects in the Arctic.

Information about the planned mine project and the project area including its biodiversity was compiled and all activities of the mine project that can potentially be a source of disturbance or pollution have been identified. For each potential impact the receptor and potential pathways have been identified.

Any mine tailings and waste rock are potential sources of pollution because metals might leach out if the material is suspended in water. If this is happens, deposition of tailings or waste rock in Fosters Lake could lead to pollution of the lake and the streams and fjord downstream from lake. This could harm fish in the river and seals in the fjord. To test this scenario, the results of the chemical analyses of tailings and waste rock have been combined with a hydrological model of the freshwater system to assess the potential release of metals from tailings deposited in Fosters Lake.

The model shows that concentrations of metals in the lake water will generally be below the Greenland water quality guideline GWQG. Fosters Lake and the streams and rivers downstream from the lake already have natural high lead contents the impact of any lead levels from the tailings will likely reduce the natural lead content. The outflow from Fosters Lake contributes to about 20% of the water in Lakseelv and it is predicted that any lead levels in water from Fosters Lake will not be detectable in Lakseelv due to the large dilution.

Both Tanbreez ore and waste contains extremely low levels of uranium and thorium, neither of which are concentrated above background value during concentration. The lack of such radioactive elements is extremely unusual for rare earth deposits.

Similar assessments have been carried out of the entire suite of potential impacts in connection with the TANBREEZ project. The potential disturbance and loss of habitat when for example vegetation is overlaid by buildings has been assessed for marine, freshwater and land animals and plants. Also pollution from other potential sources than tailings and waste has been assessed. This includes accidental release hazardous material such as oil and other hazardous waste.