FOR IMMEDIATE RELEASE: September 23, 2017

More birds dead in toxic tailings: before plant even opens!

Keepers of the Athabasca is distressed to hear that yet another large group of birds is dead due to toxic tailings in the bitumen mining region of Northern Alberta. This region, with some of the most environmentally impactful heavy industry on our planet, was first, and still is, home to wildlife that now depend on human ingenuity to be able to safely access their homes. We have failed wildlife once again. Plenty can be done to prevent this!

Fort Hills is not yet an operational bitumen mine, but apparently they already have toxic tailings. There are many ways for industry to avoid these deathly toxic tailings ponds, yet they have consistently chosen not to implement any other option over the past 50 years. Keepers’ Co-chair Paul Belanger, with a long history in 'green chemistry' that can provide many proven treatment methods to achieve non-toxic tailings states, “Solutions over time have been brought forward, but whether they are high cost or low cost, industry wants no cost.” Another proven method for mining bitumen with zero toxic tailings ponds is 'dry processing' of bitumen using solvents. It seems that only further government regulation will provide any environmental responsibility from industry.

Most of the birds that were killed this time were horned larks, a prairie tundra bird, not waterfowl, evidently in the process of their migration south. Did they stop at the edge of the tailings to have a toxic drink? We ask the Alberta Energy Regulator to require industry to replace the so called "bird deterrents" such as cannons and flags, etc, as they are now definitively proven not to work.

Green chemistry and dry processing options must be considered and implemented. Toxic tailings on our landscape are not only contributing to wildlife death, they are also leaking through the ground, into surface water, and have air emissions too. Full containment systems for tailings should be considered (enclosed). If industry won’t get less impactful methods into play, and protect wildlife and human health, regulators must require that they do. Tailings ponds need immediate action!

Toxic tailings are a huge environmental and financial liability. Tailings volume was 234 km$^2$ in area, and 1.1 trillion liters in volume at the end of 2014, and they keep growing. One extreme weather event and the entire region could let go into Wood Buffalo National Park, a UNESCO World Heritage Site. Only five percent of reclamation funds for bitumen mine sites and tailings are currently held by the Alberta government. Keepers recently participated in the Mine Financial Security Program working group, and asked that full financial security for bitumen mine clean-up be required.

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ACTIVE EVAPORATION
- Using Evaporation and VOC’s to further heat and evaporate tailings

Transparent dome (cut-away) for the evaporation of tailings (Greenhouse Effect), could be plexiglass, fiberglass or other material

VOC capture device(s) sends emissions to Incinerator

Water evaporates from tailings, running down dome walls and collecting in reservoir for removal

Tank Containing Tailings For Evaporation

Incinerator: Sends heat under Tank

Reservoir: Extends all around the inside of dome
Evaporation Tanks not tailings ponds - the solution to pollution is containment

Tailings ponds have not successfully evaporated toxic liquid tailings in Alberta during the past 60 years. Open to the air, tailings ponds have provided a source of air, water, and land pollution.

In order to prevent more aerial pollution, wildlife death, land use issues, and leaks into surface water, specialized storage tanks may be used for the evaporation of liquid tailings.

When tailings have settled out and been completely evaporated using evaporation tanks, the tanks may be disassembled, the contaminated waste sand disposed of, and the tank re-assembled and re-used for further liquid tailings.