

Barry Reimer

From: Brady MacCarl <brady.maccarl@nwb-oen.ca>
Sent: November-17-14 3:46 PM
To: Hawkins, John
Cc: barry; JStevens@gov.nu.ca
Subject: Re: Iqaluit Airport Chromium in Soils

Hi John,

At the request of Barry Reimer I am resubmitting the answer I provided to you on November 13, 2014, in relation to chromium concentrations at the AIP construction site, with Barry and Jim Stevens cc'd in the email.

"Going back to our phone conversation at the beginning of October, I believe NWB committed to providing you feedback on the chromium issue after reviewing WSP's final report on the issue. Although, as a regulator, this issue technically falls outside of our jurisdiction until a licence has been authored, I hope the following feedback provides some useful direction to the AIP on moving forward.

After a review of the report "Environmental Management of Chromium in Soil", submitted to the Nunavut Water Board (NWB) November 7, 2014, the NWB is in agreement that the chromium concentrations, resulting from soil samples taken between July-September 2014 at the Iqaluit International Airport Improvement Project (IIAIP) construction site, should not be classified as 'waste', per se, according to section 4 of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*. As noted in the submission, the Canadian Council of Ministers of the Environment (CCME) Guidelines are broad-reaching parameters for general environmental conditions in Canada, but can be superceded by site-specific adapted environmental quality remediation objectives based on the native environmental conditions of certain areas. The need for site-specific guidelines appears to be warranted at the IIAIP construction site due to the naturally high occurring concentrations of chromium in the area, as detailed in the report *Quaternary geology of western Meta Incognita Peninsula and Iqaluit area, Baffin Island, Nunavut*; by D A. Hodgson and the Geological Survey of Canada (2005). The NWB agrees that Site Condition Standards (SCSs) provided under the Soil, Groundwater and Sediments Standards for Use Under Part XV.1 of the *Environmental Protection Act*, written by the Ontario Ministry of the Environment (April 2011) are appropriate standards to be adopted by the IIAIP in this regard due to the shared geomorphology of the Canadian Shield and South Baffin Island. It is understood that under these standards the limit for total chromium concentration is 160 µg/g. Ultimately, as long as chromium concentration adhere to these standards it is of the NWB's opinion that the material in question should be treated as uncontaminated.

Within total chromium concentrations the cause for concern stems from hexavalent chromium (CrVI)—rather than trivalent chromium (CrIII)—and the proponent is reminded that although soil samples have revealed hexavalent chromium levels below detectable limits so far, the IIAIP construction site exists on land previously employed for industrial activity where conditions for hexavalent chromium oxidization may have existed previously. Regular monitoring of soil quality at the construction site is expected, and should further sampling results display elevated concentrations of hexavalent chromium, or total chromium levels exceeding the site condition standards provided by the Ontario MOE, than the issue of classifying soil at the IIAIP site as native or contaminated will need to be revisited.

Please contact me with any concerns or questions you may have."

Regards,

