



# SUPERIOR WATERSHED PARTNERSHIP

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## **CEMP Monitoring Report – April 5, 2013**

### **RE: CEMP Verification Monitoring Reveals Uranium in TDRSA Sump**

#### **Type of Monitoring (Permit Verification or Additional): Verification – Mine Permit**

#### **Summary:**

Results from CEMP monitoring of the TDRSA indicate uranium is present in the Leak Detection Sump.

#### **Chronology:**

February 11, 2013	Quarterly verification monitoring of TDRSA and WTP conducted
March 12, 2013	Initial results received via email from CEMP Laboratory
March 12, 2013	SWP immediately informed Rio Tinto and scheduled re-sampling for the following day
March 13, 2013	SWP and Rio Tinto conducted re-sampling
March 21, 2013	CEMP expedited lab results from the re-sample received
March 27, 2013	Rio Tinto lab results from re-sample received and shared with SWP
March 28, 2013	Contact made with MDEQ
April 5, 2013	SWP/Rio Tinto reported findings to Mining Journal and the public

#### **Details:**

Results of CEMP quarterly verification monitoring on February 11, 2013 indicated uranium (72.6 ug/L) was present in the TDRSA Leak Detection Sump (secondary liner). While uranium was not included in the requested laboratory parameter list, it was detected as an OCD (Other Compound Detected) during the standard metals analysis. SWP's EPA-approved lab, Underwriters Laboratories Inc., was required by law to report the finding as the uranium result was higher than the EPA Maximum Concentration Level (MCL) established under the Safe Drinking Water Act (MCL 30 ug/L). Note: The TDRSA and other mine facilities are not currently regulated under the Safe Drinking Water Act. Accordingly, the detection of uranium is not a permit violation.

When the initial sample results were received, SWP notified Rio Tinto and scheduled a re-sample to verify results. SWP requested expedited reporting from Underwriters for the re-samples and the lab report confirmed the presence of uranium in the TDRSA Leak Detection Sump (61 ug/L and 58 ug/L) but not in the TDRSA Contact Water Sump (<1 ug/L or not-detected). Rio Tinto's independent laboratory results from the re-sample also confirmed the presence of uranium (56 ug/L) in the TDRSA Leak Detection Sump and at extremely low concentrations in the Contact Water Sump (0.13 ug/L).

#### **SWP Concerns:**

At this time, the SWP/CEMP report card reflects a need for further monitoring/tracking. As such, SWP is conducting additional monitoring to determine the extent of the detected uranium and scale of potential risks. While uranium is a naturally occurring element, present at low levels in nearly all rock, soil and water, there are a number of potential explanations for the result.

All water collected from the TDRSA is stored in the Contact Water Basins then processed through the Water Treatment Plant (WTP). Water from the WTP is either recycled through the mining process or discharged to the Treated Water Infiltration System (TWIS).

Rio Tinto believes the Water Treatment Plant is removing uranium through ion exchange and reverse osmosis systems prior to discharge. Ion exchange and reverse osmosis are EPA's recommended methods for removing uranium from water. Water used to periodically backwash and clean the ion exchange and reverse osmosis filters is returned to the Contact Water Basins for further treatment. Only clean, product water is discharged to the TWIS. Rio Tinto believes that the detected uranium is fully contained, will be completely removed by the WTP and poses no risk to the environment. Rio Tinto testing of solid wastes from the water treatment plant showed very low levels of uranium (2.5mg/kg) in the filter press waste and none in the crystallizer waste, indicating the treatment plant is removing uranium. SWP will conduct independent solid waste tests next week to confirm. Rio Tinto has indicated the uranium level in the solid waste is consistent with background levels found in Upper Peninsula geology and poses no risk to the environment. The solids removed by the process are disposed of at a municipal landfill.

### **SWP Actions:**

#### **1. Source Identification**

In an effort to identify the source, the SWP has requested Rio Tinto provide representative core samples, a development rock sample and a sample of the aggregate imported for use in the TDRSA Leak Detection Liner. The TDRSA is designed to be an environmentally secure storage facility for development rock. Rio Tinto has indicated that the TDRSA Leak Detection Liner filled with approximately 26,000 gallons of water from rain events during the construction process. To date only 2,829 gallons have been purged from the secondary liner to the Contact Water Basins for future treatment. All water collected from the TDRSA is stored in the Contact Water Basins then processed through the Water Treatment Plant (WTP). Water from the WTP is either recycled through the mining process or discharged to the Treated Water Infiltration System (TWIS).

#### **2. Verify Removal**

The SWP is also incorporating parameters to confirm that any uranium is contained and removed by the water treatment plant. Additional parameters include but are not limited to; characterization of water in the TDRSA primary and secondary (Leak Detection) sumps, WTP influent and effluent, WTP solid waste, and related compliance wells.

Further lab results are expected within one week.

All CEMP monitoring results are available to the public at [www.cempmonitoring.org](http://www.cempmonitoring.org).