

Technical Memorandum (Canon City Milling Facility)

**To: Jim Cain, Environmental Coordinator/Radiation Safety Officer,
Cotter Corporation**

From: Errol P. Lawrence, HydroSolutions

Date: May 28, 2010

**Subject: Review of the 1st quarter, 2010 water quality analytical results for the
Cotter Corporation Canon City Milling Facility**

A review of the water quality analytical results from the first quarter sampling round of 2010 was performed. The data included radionuclides, trace metals, major ions, TDS, pH, alkalinity and conductivity results.

The analytical results for the first quarter sampling round were compared with historical results/trends to identify potential values that might be of concern with respect to changes in water quality and laboratory accuracy/validity.

Field pH measured in several wells were uncharacteristically low. Instrument calibration is suspect and is being evaluated further.

It was determined during data quality review that the Depth to Water (DTW) and Depth to Water Recovery Level (DTW_RL) have been transposed in the water quality reports. Cotter is addressing this issue, although it has not been corrected in this current water report. Cotter is developing and will implement a correction to this error. It should be noted that potentiometric surface maps provided in the annual reports were developed using the correct Depth to Water data.

Locations 035, 274, 381, 526, 710C, and 711A were not sampled during the fourth quarter because of insufficient flow. Locations 15B, 347 and 701, were dry and not sampled. Wells 114, 129, and 231 were not sampled because they were winterized during the sampling period. Four new wells, 044, 045, 046, and 047, were sampled twice in the first quarter. Samples from those four wells and wells 039, 042 and 043 were also analyzed for uranium isotopes 234, 235 and 238 as part of the investigation of groundwater quality north and west of the milling facility.

Changes between the fourth and first quarter sampling events that are notable are indicated in the table below.

Review of 1st Quarter, 2010 Water Quality Analytical Results, Canon City Mill Site

Location ID	Parameter	Description
009	Uranium, sodium, calcium magnesium and sulfate	Decreasing trends for these constituents continuing at this location
045	U, TSS	Uranium and TSS decreased significantly from the first to second sampling event in first quarter 2010
371	Mo	Value increased to highest level since 2001
329, 330, 331	Mo and DTW	Mo decreased to approximately half of previous quarters measurement while water levels rose by approximately 2 feet
331	Na and SO4	Values dropped to lowest levels since 2001