

Internal Monitoring Report

Policy #: O-2B Water Quality

Date: October 25, 2011

I certify that the following information is true.

Signed  _____, General Manager

Policy Language:

Madison Water Utility consumers will receive high quality water that meets or is better than all primary and secondary drinking water standards, including their public notification requirements, and complies with board-adopted water quality goals, incorporated by attachment.

CEO's interpretation and its justification:

Few things are more vital to a community than the availability of high quality drinking water. It promotes public health, public safety, and the economic interests of our community. To that end, the water utility will consistently deliver water that meets the primary, health-based drinking water standards, the secondary (aesthetic) standards, and the additional policy goals established by the Board. The Water Utility Procedural Guideline GUIDE 3, which establishes policies regarding iron and manganese, contains the following:

The Madison Water Utility, under normal operating conditions, shall provide water that contains less than the National Secondary Drinking Water Standard for Fe (currently 0.3 mg/L) and Mn (currently 0.05 mg/L) at the customer's tap.

I interpret this to mean that 95th percentile results from our routine distribution water quality monitoring program shall be less than these values for iron and manganese.

Utility staff will remain vigilant in following developments related to currently unregulated and emerging contaminants like pharmaceuticals, endocrine disruptors, and chromium-6 that may pose problems in the future. Furthermore, the utility will employ multiple methods to adequately inform its consumers of the safety and quality of their drinking water including the federally-required Consumer Confidence Report (CCR), the water utility website, e-mail distribution lists, neighborhood listservs, citizen meetings, and through staff contact in the field and office.

Data directly addressing the CEO'S interpretation:

Primary Drinking Water Contaminants:

Combined radium (total of Ra-226 and Ra-228) exceeded the Maximum Contaminant Level (MCL) at Well 19 for a sample collected on July 11. Federal and state regulations require quarterly sample to track levels of these contaminants for a minimum of four quarters. Compliance with the MCL for combined radium is based on a running annual average of four quarterly samples. Additional samples were collected in September and October; eight samples are planned for Well 19 in 2012. Test results from five other wells showed combined radium below the MCL.

The second round of lead and copper monitoring is on-going with over 90 of the required 100 samples collected. Preliminary results suggest that the 90th percentile lead level will be below 5 ug/L, and would place Madison on reduced monitoring, i.e. 50 locations tested every three years.

Policy Goals for Iron and Manganese:

Planning efforts are ongoing for iron and manganese treatment at Wells 7 & 8, two wells that exceed the secondary standard for one or both metals. A pilot study examining iron and manganese removal efficiencies will be conducted at each well this fall.

Routine distribution monitoring in the months of July through September showed one out of 84 samples [1.2%] tested above the 50 ug/L manganese threshold and three samples [3.6%] exceeded the 0.3 mg/L iron standard. See attached table for summary statistics. Samples collected at the Maple Bluff village hall consistently exceed the iron standard when Well 7 runs.

Residential tap samples collected in support of the Lead and Copper rule showed levels well below the policy goals for iron and manganese and, except for one sample, concentrations were below the secondary standard. The 95th percentile level of the 89 samples was 15 ug/L manganese and 0.06 mg/L iron.

Manganese, ug/L

	July - Sept	Apr - Jun	Lead & Copper, Sept/Oct
Policy Goal	50	50	50
Minimum	0.2	0.1	0.2
Median	3.0	3.2	1.9
Average	6.4	5.8	--
90th	18	15	12
95th	21	19	15
Maximum	51	34	21
Count	84	86	89
>50	1	0	0
>50, %	1.2%	0.0%	0.0%

Iron, mg/L

	July - Sept	Apr - Jun	Lead & Copper, Sept/Oct
Policy Goal	0.3	0.3	0.3
Minimum	0.001	0.001	0.001
Median	0.016	0.015	0.008
Average	0.046	0.043	--
90th	0.098	0.077	0.045
95th	0.178	0.161	0.058
Maximum	0.692	0.440	0.364
Count	84	86	89
>0.3	3	3	1
>0.3, %	3.6%	3.5%	1.1%

Unregulated and Emerging Contaminants:

Water from each well was tested for chromium 6 during July or August; two wells were tested both months. The results were similar to levels observed in January and February: wells cased to the lower Mt. Simon aquifer show no detectable level of chromium 6 while most wells cased to the Wonnewoc or Tunnel City formations have 0.5–1.5 ug/L. Two wells (Well 6 & Well 14) have nearly 2 ug/L of chromium 6. Each well has now been tested at least twice for chromium 6.

In collaboration with the Wisconsin Geological Survey, additional work is planned to investigate chromium 6 occurrence in drinking water including an

evaluation of rock cuttings from four municipal wells and water quality parameters (pH, dissolved oxygen, oxidation-reduction potential, etc.) at select monitoring well sites.

On October 13, a group of ten water utility employees viewed the Water Research Foundation webcast entitled, *State of the Science of Hexavalent Chromium*.

No new information, as identified in Guide 2 for the testing of pharmaceuticals or endocrine disrupting chemicals, has been identified.

Public Outreach on Water Quality:

The water quality pages (Notices, Testing, Chromium) on our website (madisonwater.org) have been updated to include 2011 data for VOCs, inorganics, chromium 6, and Well 8 testing. The Notices page presents information about the elevated radium test result at Well 19 and the significance of the result.

A water quality update was posted to the drinking water quality listserv in mid-August and another is planned for later this month.

Five to ten citizens have attended the publicly-noticed Water Quality Technical Advisory Committee meetings in September and October.

I report compliance.