



In the March 16, 2011 issue of the Water Quality update:

- Well Status Report
- Water Quality Test Results – January/February
- Annual Report on Water Quality Monitoring – 2010
- Update on Chromium-6 Monitoring
- Invitation to Serve on the Well 15 CAP
- Contact the Water Utility

### Well Status Report

- Well 28 was brought into service in early January to supply water to the west side while repairs are being made at Well 26.
- Except for Well 28, all seasonal wells remain out of service for the winter. They include Wells 6, 8, 10, 17, 23, and 27.
- Seasonal wells are typically brought back into service beginning in March or April of each year. More information will be posted to this listserv later in the spring.

### Water Quality Test Results – January/February 2011

**MICROBIOLOGY** – In January and February, Water Utility staff collected a total of 718 samples from Water Utility facilities and representative locations in the distribution system. Each sample was tested for coliform bacteria – indicators of potential water contamination. None of these samples tested positive for coliform bacteria.

**IRON & MANGANESE** – One or more samples were collected from eight wells in January and/or February and tested for iron and manganese. At elevated levels, the minerals can stain laundry and plumbing fixtures. Accumulation and later re-suspension of iron and manganese in water mains may lead to discolored water at the tap. Test results are shown in the table below.

| January 2011     | Mn (ppb)  | Iron (ppm)   |
|------------------|-----------|--------------|
| Well 7           | 30        | 0.420        |
| Well 11          | n/s       | n/s          |
| Well 15          | 159       | 0.881        |
| Well 19          | 49        | 0.198        |
| Well 24          | 31        | 0.186        |
| Well 28          | 24        | 0.196        |
| Well 29          | n/s       | n/s          |
| Well 30          | 22        | 0.353        |
| <b>Standard*</b> | <b>50</b> | <b>0.300</b> |

| February 2011    | Mn (ppb)  | Iron (ppm)   |
|------------------|-----------|--------------|
| Well 7           | 26        | 0.341        |
| Well 11          | 4.9       | 0.044        |
| Well 15          | 7.0       | 0.018        |
| Well 19          | 49        | 0.193        |
| Well 24          | 31        | 0.172        |
| Well 28          | 23        | 0.185        |
| Well 29          | 0.5       | 0.003        |
| Well 30          | 14        | 0.196        |
| <b>Standard*</b> | <b>50</b> | <b>0.300</b> |

\* Secondary Maximum Contaminant Level (SMCL) - non-enforceable guideline for aesthetic effects (color, taste, or odor)

ppb = parts per billion; ppm = parts per million; 1 ppm = 1000 ppb

**VOLATILE ORGANICS MONITORING** – Water samples were collected from 10 wells, two reservoirs, and two water towers in February. Each sample was tested for 50+ potential volatile organic compounds (VOC), man-made contaminants including cleaning solvents and degreasing agents, that may be present in drinking water. Test results are available on our [website](#). Four additional wells were sampled in early March. The website will be updated when the test results become available.

**SYNTHETIC ORGANICS MONITORING** – In addition to VOC monitoring, the water utility periodically tests each well for 36 synthetic organic compounds (SOC). The list of contaminants includes a variety of pesticides and their metabolites. To date, a total of fourteen samples have been collected. None of the 36 SOC tested were detected in the six samples for which we have results. Additional results will be posted to our website and this listserv when they are available.

### **Annual Report on Water Quality Monitoring – 2010**

Each year the water quality section prepares an annual report that summarizes the required water quality monitoring that is conducted by the utility in the preceding year. The report summarizes the test results and provides the original data in a comprehensive appendix. The 2010 [Report on Water Quality Monitoring](#) is now available at [www.madisonwater.org](http://www.madisonwater.org). Data contained in this report serves as the basis for the individual water quality reports developed for each water supply well. Updates to the well-specific reports will be available later this spring.

### **Update on Chromium-6 Monitoring**

Previously, the water utility committed to voluntarily test all wells for chromium-6. The initial monitoring was completed in early January and showed chromium-6 levels ranging from 0.4 to 1.8 ug/L or parts per billion (ppb). Samples were collected from four wells with previous total chromium detections exceeding 1 ppb. Both raw groundwater and treated water (after chlorine and fluoride addition) were tested with additional samples collected in the distribution system.

In February, samples were collected from an additional 12 wells. Chromium-6 results ranged from non-detect to 1.4 ppb; the detection limit was 0.02 ppb. Similar to the results reported in January, the majority of total chromium found in the samples was in the chromium-6 state. The test results can be found in the table on the next page.

Based on the monitoring conducted to date,

- Total chromium, which includes chromium-6, is well below the current regulatory limit of 100 ppb at all Madison wells.
- The occurrence of chromium-6 is spread over a wide area including in wells located in commercial as well as residential areas. This suggests that the source may be the rock formation itself.
- Chromium-6 is found at similar levels in wells with no prior history of man-made contaminants and those with man-made contaminants.
- Chromium in Madison-area groundwater and drinking water primarily exists as chromium-6.

- Treatment chemicals (chlorine and fluoride) and water age do not appear to affect the fraction of chromium that exists as chromium-6.
- Wells which are cased to the lower aquifer, which limits the impact of surface activities on water quality, and draw water from a different sandstone formation have the lowest levels of chromium-6.

| Source  | Chromium-6 (ug/L) | Total Chromium (ug/L) |
|---------|-------------------|-----------------------|
| Well 7  | 0.02              | 0.02                  |
| Well 9  | 0.71              | 0.88                  |
| Well 11 | 0.95*             | 1.02*                 |
| Well 12 | 1.40              | 1.43                  |
| Well 13 | 0.79              | 0.86                  |
| Well 14 | 1.79              | 2.03                  |
| Well 15 | 0.53              | 0.53                  |
| Well 16 | 1.23*             | 1.24*                 |
| Well 18 | 0.41              | 0.41                  |
| Well 19 | <0.02             | 0.01                  |
| Well 20 | 0.52              | 0.54                  |
| Well 24 | <0.02             | 0.01                  |
| Well 25 | 0.41              | 0.50                  |
| Well 28 | <0.02             | 0.01                  |
| Well 29 | 0.03              | 0.04                  |
| Well 30 | 0.04              | 0.01                  |

\* Average of two samples

Chromium is a metal that occurs in the environment and drinking water sources in two principal forms: chromium-3 and chromium-6 (also called hexavalent chromium or hex chrome). The sum of all chromium is called total chromium. Chromium-3 occurs naturally in food and is an essential dietary nutrient while chromium-6 is a more toxic form. Chromium can change from chromium-3 to chromium-6, and vice versa, depending on the physical environment. Additional information, and a frequently asked question (FAQ) factsheet, is available on our [website](#).

### Invitation to Serve on the Well 15 CAP

The Water Utility is currently recruiting members of the public to serve on a Citizens Advisory Panel (CAP) for Well 15, which has rising levels of a volatile organic compound (VOC). The well is located near the intersection of E Washington and Lien Road, and serves neighborhoods along and north of E Washington Avenue from the Yahara River to east of Interstate 90/94. The

intent of the current project is to address the issue of VOC contamination before it becomes a problem. The purpose of the CAP is to assist the Water Utility by incorporating community preferences into the planning process. More information can be found on our [website](#) or by calling the Water Utility. If you would like to participate, please contact Principal Engineer Al Larson at 266-4653 or [allarson@cityofmadison.com](mailto:allarson@cityofmadison.com).

### **Contact the Water Utility**

Do you have questions about your water? Do you have a water quality concern at your home or place of work? Is there other information you would like to see in future drinking water quality updates or on our website? For answers to these and other questions or to provide us feedback, please contact the Water Utility at 266-4654, [water@cityofmadison.com](mailto:water@cityofmadison.com), or through our website at <https://www.cityofmadison.com/water/askUs.cfm>.

### **Subscribe to the Drinking Water Quality Listserv**

People who want to receive regular updates on Madison's drinking water quality can subscribe to this e-mail listserv at <https://my.cityofmadison.com/>.

Registration is simple and provides access to dozens of City of Madison e-mail lists including Drinking Water Quality (this one) and Water Main Flushing, as well as departmental messages from Metro Transit, City Parks, Public Health, and Police.

Once registered for a “My Account”, click on the check box for “Drinking Water Quality” under the Water Utility heading.

Please contact me if you need assistance.

Sincerely,  
Joseph Grande  
Water Quality Manager  
Madison Water Utility

Phone: (608) 266-4654  
E-mail: [jgrande@cityofmadison.com](mailto:jgrande@cityofmadison.com)

Return to the [Water Utility](#) website