

Internal Monitoring Report

Policy #: O-2B Water Quality

Date: April 30, 2014

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.

The Madison Water Utility recognizes that drinking water standards are subject to revision and that new compounds of concern will be determined. This dynamic is a result of health studies being conducted by health organizations and government agencies on the state, national and international level. The technology to quantify compounds at increasingly minute levels is constantly improving.

The Madison Water Utility shall maintain and promulgate a Watch List of compounds of concern by unit well of compounds that are increasing and may approach the primary and secondary drinking water standards. The Watch List shall identify which wells require action.

General Manager'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 General Manager’s interpretation:

Primary Drinking Water Contaminants:

During the period between January and March, 878 samples were collected from routine monitoring points in the distribution system including the entry points at the well houses (185 samples). A single sample collected at Hawks Landing Golf Course showed the presence of coliform bacteria. Follow-up samples did not confirm the presence of bacteria; however, the water main was flushed as a precaution to boost the chlorine residual. The utility is re-evaluating current coliform sample locations to ensure that the existing sites are representative of water quality in the distribution system as a whole.

Quarterly monitoring for volatile organic compounds (VOC) continued at four wells (6, 9, 15, and 18). Test results for the current and last quarter are summarized in the table below. Two of the last three samples from Well 18 have shown the level of tetrachloroethylene [PCE] above 3 parts per billion [ppb]; the MCL is 5 ppb. We will continue to closely monitor this development to determine if the level stabilizes. Previously, PCE at Well 18 measured around 1 ppb. The air stripper continues to reduce the PCE and TCE levels at Well 15. The pilot study to evaluate the amount of acid needed to lower the pH to 7.8 after air stripping is now complete. Plans are being developed for the permanent chemical feed system, bulk storage, and secondary containment. Staff also demonstrated that PCE and TCE removal, to below the detection limit, could be achieved at 1500 gallons per minute (gpm) at air flow rates of 3750 and 4500 cubic feet per minute (cfm). Lower removal efficiencies (90% and 88%) were observed at air flows of 3000 and 2250 cfm, respectively. VOC reductions were also seen at an air flow of 1500 cfm, however, the efficiency was below 80%.

Volatile Organic Compound	MCL, ppb	Well 6		Well 9		Well 15		Well 18	
	Sample Date	1/22	4/7	2/18	4/3	1/21	4/3	1/21	4/7
Tetrachloroethylene [PCE]	5	0.79	0.74	1.7	1.7	0.33	<0.18	1.2	3.5
1,1,1-Trichloroethane	200	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	0.26
Trichloroethylene [TCE]	5	<0.11	<0.11	<0.11	<0.11	0.17	<0.11	0.22	0.40
Disinfection By-Product									
Bromodichloromethane	80	<0.15	<0.15	0.50	0.66	0.65	<0.15	0.26	0.22
Bromoform	80	<0.16	<0.16	0.37	0.49	0.40	0.43	<0.16	0.24
Chloroform	80	<0.19	<0.19	0.22	0.28	0.54	<0.19	<0.19	<0.19
Dibromochloromethane	80	<0.15	0.22	0.75	1.1	0.76	0.38	0.32	0.39

Policy Goals for Iron and Manganese:

Routine distribution testing from January through March showed all 83 samples met the iron and manganese policy goals. See the table below for summary statistics for the first quarter.

Manganese, µg/L			Iron, mg/L		
	Jan - Mar	2014		Jan - Mar	2014
Policy Goal	50	50	Policy Goal	0.3	0.3
Median	2.3	2.3	Median	0.01	0.01
Average	3.7	3.7	Average	0.02	0.02
95th	13	13	95th	0.05	0.05
Maximum	46	46	Maximum	0.20	0.20
Count	83	83	Count	83	83
>50	0	0	>0.3	0	0

Unregulated and Emerging Contaminants:

In January, the water utility continued annual testing at four wells that previously showed the presence of 1,4-dioxane. The highest levels were observed at Well 11 (0.37 ppb) and Well 14 (0.25 ppb). Detections at Well 9 and Well 15 were less than 0.1 ppb. The water utility is will be required to collect two samples from each well in 2015 as part of the Unregulated Contaminants Monitoring Rule 3 (UCMR3).

The first of two water samples to be collected from each well and tested for hexavalent chromium is planned for April and May. Semi-annual testing has been conducted since 2011. Earlier this month, California Department of Public Health submitted final documents for approval of a statewide MCL for hexavalent chromium. If approved as expected, implementation of this new California standard (10 ppb) will begin July 1. For comparison, the highest level of hexavalent chromium detected at any Madison well was just below 2 ppb. Water Quality Manager Joe Grande attended a project advisory committee (PAC) meeting in Norman, OK on March 13 for the Water Research Foundation project, *Sources, Fate, and Treatment of Hexavalent Chromium*. Madison is a participating utility in this water quality study.

Public Outreach on Water Quality:

The Annual Drinking Water Quality Report, commonly known as the Consumer Confidence Report (CCR), was recently completed. Release of the report is planned to coincide with Drinking Water Week, May 4-10. This year, a Spanish translation was also performed. Copies of the English and Spanish versions will be available at our office locations (Olin Avenue and Paterson Street), Centro Hispano, and the public library branches in addition to being posted to

our website. In accordance with federal and states rules, the utility will notify all customers of the availability of the annual report via a saturation mailing of 133,000 postcards.

I report compliance.

Attachments:

Water Quality Watch List

Water Quality Technical Advisory Committee Meeting Minutes