

Internal Monitoring Report

Policy #: O-2B Water Quality

Date: July 24, 2012

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:

There were no coliform-positive samples collected during the period from April through June. Wisconsin Administrative Code NR 809 requires that the utility collect 150 monthly distribution samples and not more than 5% of the samples test positive for coliform bacteria.

Twenty of the twenty-two municipal wells were sampled in late June for a broad suite of over 30 inorganic parameters including arsenic, nitrate, lead, iron, and manganese. Test results are not yet available.

Well 19 is currently monitored twice per quarter due to an elevated level of radium observed in July 2011. Since January, the radium level has ranged from 2.0 to 3.9 pCi/L; all three samples were below the MCL of 5 pCi/L. A sample was collected in June and another is expected to be collected the week of July 23.

Five wells (9, 11, 14, 15, and 18) are currently tested quarterly for volatile organic compounds (VOC) based on previous detections. Each well was sampled in April with results shown below. PCE and TCE are found in all five wells except for Well 9 where TCE has not been detected. The PCE concentration ranged from 0.48 parts per billion [ppb] in Well 11 to 3.1 ppb in Well 15. All VOC that were detected are below the maximum contaminant level (MCL) – the regulatory limit. The amount of PCE found at Well 9 is at the lowest level since at least 1993 when annual testing for VOC was begun. The table does not include results for trihalomethanes (THM), compounds that form as a result of drinking water chlorination.

An additional five wells were tested for VOC in April or May. PCE was detected at Well 6 and measured 0.4 ug/L. Other detections were some THM at some wells.

VOLATILE ORGANIC COMPOUNDS	UNITS	MCL	9	11	14	15	18
			4/17	4/17	4/16	4/17	4/16
Dichlorodifluoromethane	ppb	--	<0.11	<0.11	[0.13]	<0.11	<0.11
1,2-Dichloroethylene (cis)	ppb	70	<0.13	[0.34]	<0.13	<0.13	<0.13
Tetrachloroethylene [PCE]	ppb	5	1.3	0.48	0.50	3.1	0.79
Trichloroethylene [TCE]	ppb	5	<0.12	[0.27]	[0.23]	[0.37]	[0.13]
Trichlorofluoromethane	ppb	--	<0.12	0.76	<0.12	<0.12	<0.12

Policy Goals for Iron and Manganese:

Routine distribution testing in April and May showed none of 55 samples testing above the iron and manganese policy goals. Results for samples collected in June are not yet available. See the table for summary statistics.

Manganese, ug/L			Iron, mg/L		
	Jan - Mar	Apr - May		Jan - Mar	Apr - May
Policy Goal	50	50	Policy Goal	0.30	0.30
Minimum	0.2	0.2	Minimum	0.00	0.00
Median	4.5	2.3	Median	0.03	0.01
Average	6.3	4.5	Average	0.04	0.03
90th	14	9.5	90th	0.09	0.10
95th	18	19	95th	0.13	0.14
Maximum	66	42	Maximum	0.31	0.23
Count	84	55	Count	84	55
>50	1	0	>0.3	1	0
>50, %	1.2%	0.0%	>0.3, %	1.2%	0.0%

Unregulated and Emerging Contaminants:

Chromium-6

Twelve wells were monitored for chromium-6 between April and June. Only limited data are available, however, the available test results were similar to those of previous tests. The remaining wells are expected to be sampled during the week of July 23.

An abstract on Madison’s chromium work was submitted and has been accepted for AWWA’s 2012 Water Quality and Technology Conference. In addition, the water quality manager accepted an invitation to participate in a panel discussion at the WWA Annual Conference and Exposition.

Public Outreach on Water Quality:

The annual Consumer Confidence Report (CCR) was mailed to all water customers in May. Customer feedback has been positive.

Water quality updates were posted to our website and the Water Quality listserv in April and June. There are over 700 subscribers to this listserv. Updates to the website are routinely made when new water quality data become available.

Water Utility staff continues to engage the public on planned capital improvement projects that will improve water quality – Well 15 VOC mitigation and Well 7 iron and manganese filtration. In addition, staff held two information meetings (July 16 and July 23) to discuss current ordinances related to the use of private wells in the city.

I report compliance.

Attachments:

Water Quality Watch List