

In the August 17, 2007 issue of the Water Quality update:

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Elevated Fluoride at Well 28

On Tuesday, August 14, as part of routine water quality testing, the Water Utility discovered that water from Well 28 had an elevated amount of fluoride, a water additive that promotes dental health. A water sample collected as water enters the distribution system measured 3.3 parts per million (ppm) of fluoride compared to the target level of 1.1 ppm. Previous fluoride readings, taken once daily during the period of August 7 through 13, ranged from 0.65-1.15 ppm. The EPA maximum contaminant level (MCL) for fluoride is 4 ppm. There is also a secondary MCL of 2 ppm that is based on cosmetic effects. Tooth discoloration may result from long-term exposure to water with greater than 2 ppm of fluoride. Short-term exposure to water containing 3-4 ppm of fluoride is not considered harmful to human health; however, acute toxicity can occur at a level of 30 ppm or more of fluoride. The cause of the elevated fluoride is being investigated by the utility.

Upon discovering the high fluoride level, the well was shut down and staff was dispatched to determine the extent of high fluoride water. Water test results (3.14-3.96 ppm) from locations around the periphery of the Well 28 service area (west of Gammon Road and north of the Beltline and Mineral Point Road) suggested the entire service area was impacted. Additional Water Utility staff was dispatched to flush hydrants and clear the high fluoride water from the water mains. Initially, twelve hydrants were opened at the edge of the service area to pull elevated fluoride water away from the well and out of the mains. Later, hydrants on dead-end courts in the affected area were also flushed to clear these mains.

The combined action of shutting down Well 28 and opening multiple hydrants caused many customers on the far west side to experience reduced water pressure and/or discolored water. Some customers also reported temporarily being out of water. By early evening, service was restored to all water customers and Well 28 was delivering water with normal fluoride levels. Multiple fluoride measurements taken over the last 48 hours have shown fluoride levels at the well in the range of 1.28-1.36 ppm.

Well Status Report

Most Madison wells are currently operating daily to keep up with peak summer water demand. All seasonal wells (6, 8, 10, 17, 27, 28, and 29) have been brought back into service. Well 10 is currently on reserve supply status – the reservoir is drained to a storm

sewer and re-filled weekly to maintain its readiness in case of fire or other water emergency. Well 29 is currently operating on standby – water is pumped twice a week (Monday from 8 am to Noon and 10 pm Thursday to 2 am Friday) also to maintain its readiness for emergencies. It is expected that Wells 10 and 29 will remain in their current status until the end of September. Well 13, which was removed from service for repairs in April, was placed back into service on June 19.

East Isthmus Drinking Water Series Update

The East Isthmus Drinking Water Series concluded with a public meeting on water conservation and rainwater infiltration. The meeting took place on July 19. About 50 people participated in the public meeting hosted by eastside neighborhoods and the utility. Water Board Commissioner George Meyer, the Public Service Commission's (PSC) Water Conservation Coordinator Jeff Ripp, and Mary Ann Lowndes from the Department of Natural Resources (DNR) made brief presentations on statewide water conservation issues, the PSC's entry into conservation rate structuring, and storm water regulations for new development, respectively. Many participants advocated for conservation rates for Madison, and more frequent billing to create timelier price signals that could promote lower water use. Among participants, there was also strong support for increased use of rain gardens to promote infiltration and groundwater recharge and limit storm water runoff.

Previous meetings in the East Isthmus Drinking Water Series highlighted water quality testing, Water Utility communication, water supply issues, potential groundwater contaminant sources on the isthmus, and planned infill and re-development projects that could impact water supply for the isthmus area. At the April meeting, the Water Utility announced its plans to permanently abandon Well 3 following detection of increasing levels of carbon tetrachloride.

Water Quality Test Results – June & July 2007

MICROBIOLOGY – In June and July, Madison Water Utility collected 738 water samples from Water Utility facilities and representative sample locations in the water distribution system. The samples were tested for coliform bacteria – indicators of potential water contamination. A single distribution sample, taken at Orchard Ridge School, initially tested coliform-positive; however, a re-sample and other samples taken from a nearby business and church tested coliform-negative. In addition, three samples collected at unit wells (one each at Well 7, 15, and 17) initially tested coliform-positive. Follow-up samples from these three wells later tested coliform-negative. The remaining 734 samples collected in June and July were all found to be coliform-negative.

INORGANICS – In June, the utility collected water samples from 20 operating wells and tested those samples for a range of inorganic constituents including iron, manganese, and nitrate. The following attachment shows the chemicals that were tested and the range of

concentrations found at those wells. Three additional wells (10, 27, and 29) were recently sampled and also tested for inorganic constituents; results will be reported when they become available.



VOLATILE ORGANIC COMPOUNDS – The utility also collected samples from 23 wells and had the water tested for the presence of volatile organic compounds – man-made contaminants that may be present in ground water. Madison Water Utility annually tests all of its wells for 42 volatile organic compounds including tetrachloroethylene and carbon tetrachloride. The table below shows the contaminants detected, EPA’s maximum contaminant level (MCL), the maximum concentration found, and number of well(s) in which the contaminants were detected. The table does not include data from Wells 10 and 27 since the analysis was complete at the time of this update.