

WHAT'S NEW AT SCWA

UCMR TESTING For 2015

UNREGULATED CONTAMINANT MONITORING RULE CYCLE 3 (UCMR3)

Every five years the EPA issues a regulation called the Unregulated Contaminant Monitoring Rule (UCMR), which lists 20 to 30 unregulated contaminants that must be monitored for by large public water systems. Used as a tool to find unregulated contaminants of concern in drinking water, the EPA can then determine whether to set drinking water standards or to require water providers to use certain treatment systems to reduce or eliminate these contaminants.

The UCMR3 monitoring, which started in January 2013 and continued through 2015, contains sampling and testing requirements for 28 chemicals:

- Seven Volatile Organic Compounds (VOCs): 1,2,3-trichloropropane (TCP); 1,3-butadiene; chloromethane; 1,1-dichloroethane; bromomethane; chlorodifluoromethane; bromochloromethane
- One Synthetic Organic Compound (SOC): 1,4-dioxane
- Six Metals: vanadium, molybdenum, cobalt, strontium, total chromium and hexavalent chromium* (*Information on chromium can be found on page 12.)
- One Disinfection Byproduct: chlorate
- Six Perfluorinated Compounds: PFOS¹, PFOA², PFNA³, PFHxS⁴, PFHpA⁵, PFBS⁶ (1^{perfluorooctanesulfonic acid}, 2^{perfluorooctanoic acid}, 3^{perfluorononanoic acid}, 4^{perfluorohexanesulfonic acid}, 5^{perfluoroheptanoic acid}, 6^{perfluorobutanesulfonic acid})
- Seven Synthetic Hormones: 17- β -estradiol, 17- α -ethynylestradiol, estriol, equilin, estrone, testosterone, 4-androstene-3,17-dione

With the exception of the synthetic hormones and the perfluorinated compounds, the SCWA was testing for the remaining chemicals listed above prior to the start of the UCMR3 monitoring. The analytical testing methods used by the SCWA are EPA methods approved by the NYSDOH for drinking water analysis. For the metals and VOCs listed above, the analytical testing methods the SCWA uses are different than those methods required specifically for the UCMR3. The SCWA version of the UCMR3 method for the VOCs also included eight additional chemicals: vinyl chloride, methylene chloride, carbon tetrachloride, benzene, 1,2-dichloroethane, trichloroethene, 1,2-dichloropropane, and tetrachloroethene. In some cases the reporting level, or the lowest level of a chemical each method is capable of detecting, is different. Due to differences in the reporting levels, the range of readings for each of method must be shown separately.

The UCMR3 test results for each chemical detected, or found above the reporting level, are listed in the charts found on page 11 for each distribution area tested in 2015. For these same chemicals, SCWA's test results for each distribution area can be found on pages 38 through 46.

EPA's 2016 PFOA & PFOS Drinking Water Health Advisories

PFOA and PFOS are fluorinated organic chemicals that are part of a larger group of chemicals referred to as perfluoroalkyl substances (PFASs). PFOA and PFOS have been the most extensively produced and studied of these chemicals. They have been used to make carpets, clothing, fabrics for furniture, paper packaging for food and other materials that are resistant to water, grease or stains such as non-stick cookware. They are also used for firefighting at airfields and in a number of industrial processes. To provide Americans, including the most sensitive populations, with a margin of protection from a life-time of exposure to PFOA and PFOS from drinking water, EPA established the health advisory levels at 70 parts per trillion on May 19, 2016. When both PFOA and PFOS are found in drinking water, the combined concentrations of PFOA and PFOS should be compared with the 70 parts per trillion health advisory level. EPA's health advisories are based on the best available peer-reviewed studies of the effects of PFOA and PFOS on laboratory animals (rats and mice) and were also informed by epidemiological studies of human populations that have been exposed to PFASs. These studies indicate that exposure to PFOA and PFOS over certain levels may result in adverse health effects, including developmental effects to fetuses during pregnancy or to breastfed infants (e.g., low birth weight, accelerated puberty, skeletal variations), cancer (e.g., testicular, kidney), liver effects (e.g., tissue damage), immune effects (e.g., antibody production and immunity), thyroid effects and other effects (e.g., cholesterol changes). The health advisory levels are calculated based on the drinking water intake of lactating women, who drink more water than other people and can pass these chemicals along to nursing infants through breast milk. Since January 2013, the SCWA Laboratory has been testing for these compounds. Where positive detects were found, the Authority has been very proactive with treatment. In some cases wells were blended together to lower concentration levels, and where levels were not acceptable for SCWA standards, the wells were taken out of service. We are currently installing granular activated carbon (GAC) filtration units at certain sites to treat for these compounds. For more information on PFOA & PFOS, please visit the following website: <https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos>

UCMR3 Test Results For 2015 (continued)

WATER QUALITY BY DISTRIBUTION AREA

Naturally Occurring Compounds as well as Contaminants					Distribution Area 1				Distribution Area 11				Distribution Area 12				Distribution Area 20			
Detected Compound	Likely Source	MCL	MCLG	Unit of Measure	Range of Readings				Range of Readings				Range of Readings				Range of Readings			
					Low Value	High Value	Avg. Value	No. of Tests	Low Value	High Value	Avg. Value	No. of Tests	Low Value	High Value	Avg. Value	No. of Tests	Low Value	High Value	Avg. Value	No. of Tests
Inorganics																				
Chromium, total	Natural deposits	100	100	ug/L	ND	ND	ND	1	ND	ND	ND	1	ND	0.67	ND	2	ND	ND	ND	4
Cobalt-59	Naturally occurring	n/a	n/a	ug/L	2.2	2.2	2.2	1	ND	ND	ND	1	ND	ND	ND	2	ND	ND	ND	4
Strontium-88	Naturally occurring	n/a	n/a	mg/L	0.012	0.012	0.012	1	0.034	0.034	0.034	1	0.022	0.036	0.029	2	0.005	0.034	0.018	4
Synthetic Organic Compounds including Pesticides, Herbicides, Pharmaceuticals and Personal Care Products																				
PFOS	Pesticide, alkaline cleaners, floor polish	50	n/a	ug/L	ND	ND	ND	1	ND	ND	ND	1	ND	ND	ND	2	ND	ND	ND	2
Volatile Organic Compounds																				
1,1-Dichloroethane	Degreaser, gasoline, manufacturing	5	n/a	ug/L	ND	ND	ND	1	0.51	0.51	0.51	1	ND	ND	ND	2	ND	ND	ND	2
Trichloroethene	Metal degreasing sites, factories	5	0	ug/L	ND	ND	ND	1	0.12	0.12	0.12	1	ND	ND	ND	2	ND	ND	ND	2

WATER QUALITY BY DISTRIBUTION AREA

Naturally Occurring Compounds as well as Contaminants					Distribution Area 30				Distribution Area 57				Distribution Area EFWD			
Detected Compound	Likely Source	MCL	MCLG	Unit of Measure	Range of Readings				Range of Readings				Range of Readings			
					Low Value	High Value	Avg. Value	No. of Tests	Low Value	High Value	Avg. Value	No. of Tests	Low Value	High Value	Avg. Value	No. of Tests
Inorganics																
Chromium, total	Natural deposits	100	100	ug/L	ND	1.14	ND	6	0.83	0.83	0.83	1	NA	NA	NA	0
Cobalt-59	Naturally occurring	n/a	n/a	ug/L	ND	5.2	1.3	6	ND	ND	ND	1	NA	NA	NA	0
Strontium-88	Naturally occurring	n/a	n/a	mg/L	0.064	0.119	0.104	6	0.059	0.059	0.059	1	NA	NA	NA	0
Synthetic Organic Compounds including Pesticides, Herbicides, Pharmaceuticals and Personal Care Products																
PFOS	Pesticide, alkaline cleaners, floor polish	50	n/a	ug/L	ND	0.05	ND	5	NA	NA	NA	0	NA	NA	NA	0
Volatile Organic Compounds																
1,1-Dichloroethane	Degreaser, gasoline, manufacturing	5	n/a	ug/L	ND	ND	ND	4	NA	NA	NA	0	ND	ND	ND	1
Trichloroethene	Metal degreasing sites, factories	5	0	ug/L	ND	ND	ND	4	NA	NA	NA	0	ND	ND	ND	1

EDUCATIONAL INFORMATION

2015 NITROSAMINE TEST RESULTS FOR DISTRIBUTION AREA 12*

Two wells, located in Distribution Area 12, have nitrosamines. Nitrosamines can be formed as a byproduct of the disinfection of drinking water or found as a contaminant in drinking water from manufacturing processes such as for rubber and latex products. Additionally, nitrosamines are found in tobacco smoke, cosmetics and food products such as cured meats and fish, beer and smoked products, and they also form in the body from the nitrosation of dietary amines. EPA has classified several nitrosamines as probable human carcinogens, but has not set an MCL. The nitrosamines were measured at extremely low levels, in parts per trillion or ppt. A summary of the 2015 test results for Distribution Area 12 is shown in the chart below.

Detected Nitrosamine Compounds	Unit of Measure	Low Value	High Value	Avg. Value	No. of Tests
N-Nitrosomorpholine	ppt	ND	4.1	ND	23
N-Nitrosodimethylamine (NDMA)	ppt	ND	4.4	ND	23

* Please see map on pages 36 and 37 for the location of Distribution Area 12

HEXAVALENT CHROMIUM MONITORING

Chromium is a naturally occurring metal found in rock, animals, plants, soils, and volcanic dust and gases. It occurs in two forms: trivalent chromium (Cr-3), an essential human dietary nutrient, and hexavalent chromium (Cr-6). Cr-6 is commonly found in groundwater. It is naturally occurring at low levels, and can also be found in drinking water as a contaminant from industrial processes. There is no specific Maximum Contaminant Level (MCL), which is the highest level allowed in drinking water, for Cr-6. Instead EPA has set an MCL for total chromium, which is the sum of all forms, of 100 ppb (parts per billion). The SCWA regularly tests for total chromium and has listed the results for each year in our Drinking Water Quality Reports. In 2015 the levels ranged from non-detect (no total chromium present) to 11.45 ppb, and the results for each distribution area can be found on pages 38 through 46. In 2015, the levels ranged from non-detect (no Cr-6 present) to 11.05 ppb. The results for each distribution area can be found on pages 38 through 46.