DRINKING WATER QUALITY SAMPLING OF NEW PUBLIC WATER SUPPLY WELLS

January 2004
Based on R.61-58, September 2003 version

All new wells serving "community" and "non-transient non-community" water systems must be sampled and analyzed for the drinking water quality parameters included in Tables 1, 2 and 3 below. The samples must be analyzed by a certified laboratory. The results of these analyses must be included in the follow-up application for a "test well" permit or with the engineer's certification letter if the well construction project is permitted in one step. Please refer to Section R.61-58.1(B)(8) of the State Primary Drinking Water Regulations concerning the steps involved in the permitting of new groundwater sources.

All new wells serving "transient non-community" and "state" water systems must be sampled and analyzed for total coliform, nitrate, pH, alkalinity, iron and manganese. Those in the coastal districts must also test for sodium chloride and fluoride. Also, all screened wells must test for turbidity and sand content. The Department may require other parameters on a case by case basis. The samples must be analyzed by a certified laboratory. The results of these analyses must be included in the follow-up application for a "test well" permit or with the engineer's certification letter if the well construction project is permitted in one step. Please refer to Section R.61-58.1(B)(8) of the State Primary Drinking Water regulations concerning the steps involved in the permitting of new groundwater sources.

Due to an increase in the number of labs certified to perform the radiological testing, the South Carolina Department of Health and Environmental Control (Department) will no longer be responsible for collecting and analyzing the initial required radiological samples for new public water supply wells on "community" water systems.

The definition for "community", "non-transient non-community", "transient non-community" and "state" water systems may be found in section R.61-58(B) of the State Primary Drinking Water Regulations.

Unless otherwise specified, the unit of measure for each of the maximum contaminant levels (MCL) listed in the following tables is in milligrams per liter (mg/l).

The information in this document is compiled entirely from R61-58.5 titled, Maximum Contaminant Levels in Drinking Water.

Table 1

Primary Drinking Water Parameters

Inorganic Chemicals (IOC)

Contaminant	MCL	Contaminant	MCL
Arsenic	0.010[1]	Fluoride	4.0
Asbestos (10 µm)	7 MFL [2]	Lead	TT[3]
Antimony	0.006	Mercury	0.002
Barium	2.0	Nitrate	10
Beryllium	0.004	Nitrite	1
Cadmium	0.005	Total Nitrate and Nitrite	10
Chromium (total)	0.1	Selenium	0.05
Copper	TT[3]	Thallium	0.002
Cyanide (as free Cyanide)	0.2		

Synthetic Organic Chemicals

Contaminant	MCL	Contaminant	MCL
Alachlor	0.002	Dalapon	0.2
Atrazine	0.003	Di(2-ethylhexyl)adipate	0.4
Carbofuran	0.04	Di(2-ethylhexyl)phthalate	0.006
Chlordane	0.002	Dinoseb	0.007
Dibromochloropropane (DBCP)	0.0002	Diquat	0.02
Ethylene dibromide (EDB)	0.00005	Endothall	0.1
Heptachlor	0.0004	Endrin	0.002
Heptachlor epoxide	0.0002	Glyphosate	0.7
Lindane	0.0002	Hexachlorobenzene	0.001
Methoxychlor	0.04	Hexachlorocyclopentadiene	0.05
PCBs	0.0005	Oxamyl (vydate)	0.2
Pentachlorophenol	0.001	Picloram	0.5
Toxaphene	0.003	Simazine	0.004
Benzo(a)pyrene (PAHs)	0.0002	2,3,7,8-TCDD (Dioxin)	30.0 pg/L[4]
		2,4-D	0.07
		2,4,5-TP (Silvex)	0.05

Primary Drinking Water Parameters (Continued)

Volatile Organic Chemicals (VOC)

Contaminant	MCL	Contaminant	MCL
Benzene	0.005	trans-1.2-Dichloroethylene	0.1
Carbon tetrachloride	0.005	Trichloroethylene	0.005
cis-1,2-Dichloroethylene	0.07	Vinyl chloride	0.002
Dichloromethane	0.005	Xylenes (total)	10
Ethylbenzene	0.7	1,1-Dichloroethylene	0.007
Monochlorobenzene (chlorobenzene)	0.1	1,1,1-Trichloroethane	0.2
o-Dichlorobenzene	0.6	1,1,2-Trichloroethane	0.005
para-Dichlorobenzene	0.075	1,2-Dichloroethane	0.005
Styrene	0.1	1,2-Dichloropropane	0.005
Tetrachloroethylene	0.005	1,2,4-Trichlorobenzene	0.07
Toluene	1		

Naturally Occurring Radionuclides[5]

Contaminant	MCL
Radium 226 and Radium 228	5 pCi/L[6]
Gross Alpha particle activity (including radium-226 but excluding radon and uranium)	15 pCi/L[6]

Man-Made Radionuclides[5]

Contaminant	MCL
Beta particle and photon activity	4 mrem/yr[7]

Microbiological

Contaminant	MCL
Total Coliform	*[8]
Turbidity	TT[9]

Table 2

Secondary Drinking Water Parameters

Contaminant	MCL	Contaminant	MCL
Aluminum	0.05 to 0.2	Iron	0.3
Chloride	250	Manganese	0.05
Color	15 color units	PH	6.5 - 8.5
Copper	1	Silver	0.1
Corrosivity	Non- Corrosive	Sulfate	250
Fluoride	2.0	Total Dissolved Solids (TDS)	500
Foaming Agents	0.5	Zinc	5
		Odor	3 t.o.n.[10]

Table 3

Other Water Quality Parameters

Contaminant	MCL
Alkalinity	None
Calcium Hardness	None
Conductivity	None
Sodium	None [11]
Temperature	None

1. The MCL for arsenic is 0.05 milligrams per liter (mg/L) for all public water systems until January 23, 2006.
2. The unit of measure is million fibers/liter (longer than 10µm).
3. Treatment Technique as outlined in the Lead and Copper Rule.
4. The unit of measure is in picograms per liter. Monitoring for dioxin may be waved by the Department if the design engineer can certify that the well is not within 1000 feet of a pulp and paper manufacturing facility, wood treatment facility, municipal or industrial waste incineration facility, military installation, and chemical plant or site where 2,4,5 trichlorophenol (Silvex) or hexachlorophene was manufactured and/or disposed of (this would include but not be limited to any municipal or county landfill or disposal site).
5. Radiological testing is required for "community" water systems only.
6. The unit of measure is in picocuries per liter
7. The unit of measure is in millirem per year

8. In accordance with the Total Coliform Rule, no more than 5% of the samples per month may be positive. For systems collecting fewer than 40 samples per month, no more than 1 sample per month may be positive.
9. Treatment Technique as outlined in the Surface Water Treatment Rule
10. Threshold odor number
11. There is no MCL for sodium. However, community water systems are required to monitor for sodium (annually for systems which utilize surface water and every three years for system utilizing groundwater) and notify the Department of the sodium levels within three months of receiving the results.