Kingston, NY, Water Quality Report from 2006

Table of Detected Contaminants							
Contaminant	Violation Yes/No	Date of Sample	Average	Unit	MCLG	Regulatory Limit (MCL, TT or AL)	Likely Source of Contamination
Chloride	No	02/14/06	6	mg/L		MCL =250	
Sodium	No	02/14/06	2.8	mg/L		N/A	
Lead [1]	No	9/2005	0.006	mg/L	0	AL = 0.015	Corrosion of household plumbing
Copper	No	9/2005	0.05	mg/L		AL= 1.3	Corrosion of household plumbing
Sulfate	No	2/14/06	6	mg/L		MCL = 250	Naturally occurring
Total Dissolved Solids	No	2/14/06	41	mg/L		N/A	
THM's [2] Trihalomethanes	No	2006	39 24 - 50	ug/L		MCL =80	By-product of drinking water chlorination
HAA5's Haloacetic Acids	No	2006	19 11 - 28	ug/L		MCL = 60	By-product of drinking water chlorination
Turbidity[3]	No	08/08/06	0.49	NTU	N/A	TT = <1 NTU	Soil Runoff
Turbidity[3]	No	9/06 & 12/06	0.16	NTU	N/A	TT = <1 NTU	
Turbidity[3]	No	2006	99.9%	NTU	N/A	TT= 95% of samples <0.3 NTU	

Notes:

1 – The level presented represents the 90th percentile of the 30 samples collected.

2 – This level represents the annual quarterly average calculated from data collected.

3 – We test turbidity levels because it is a good indicator of the effectiveness of our filtration system. Our highest single turbidity measurement for 2006 occurred on August 8th (0.49). State regulations require that 95% of the turbidity samples collected have measurements below 0.3 NTU and that all turbidities are below 1 NTU. During 2006, no individual turbidity measurement exceeded the 1 NTU level and only 3 samples out of 2,190 exceeded 0.3 NTU. The highest monthly average was 0.16 NTU and occurred in September and December.

Definitions:

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Nephelometric Turbidity Unit (NTU): A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

Milligrams per liter (mg/l): Corresponds to one part of liquid in one million parts of liquid (parts per million - ppm).

Micrograms per liter (ug/l): Corresponds to one part of liquid in one billion parts of liquid (parts per billion - ppb).

Picocuries per liter (pCi/l): A measure of radioactivity in water.

Poughkeepsie, NY, Water Quality Report 2006

Contaminant	NYS DOH MCL	US EPA MCLG	Violation Yes/No	Number of Samples	Range	Avg.	Sources in Drinking Water
Microbiological Contaminants							
Total Coliform Bacteria	5%[1]	0%	No	1226	ND	ND	Naturally present in the environment.
Turbidity, NTU[2]							Soil runoff, Flushing Hydrants
Point of Entry	95%<0.3		No	4,380	0.01-0.18	0.030	
City Distribution	5		No	1297	0.02-14.2	0.20	
Inorganic Contaminants mg/l (unless otherwise noted)							
Barium, mg/L	2	2	No	1	0.017	0.017	Erosion of natural deposits
Copper, mg/L	AL=1.3[4]	1.3	No	63	0.006-0.687	0.121[4]	Erosion of natural deposits
Chlorine, mg/L	4	N/A	No	1230	0.00-2.33	0.76	Disinfectant additive
Chromium, mg/L	0.10	0.10	No	1	0.0026	0.0026	Naturally occurring, and leaching from industrial wastes.Naturally occurring, and leaching from industrial wastes.
Lead, µg/L	AL=15[5]	0	No	68	ND-156	14[5]	Corrosion of household plumbing systems; Erosion of natural deposits;
Nitrate, mg/L	10	10	No	1	0.40	0.40	Runoff from fertilizer; Leaching from septic tanks; Sewage; Erosion of Natural deposits
Sodium, mg/L	N/A[6]	N/A	No	1	17.8	17.8	Naturally occurring
Volatile Organic Contaminants							
Haloacetic Acids (mono-,di-,& trichloroacetic acid, and mono-and di-bromoacetic acid), µg/L	60	N/A	NO	16	22.7-53.1	40.7[7]	By-Product of Drinking Water Disinfection needed to kill harmful microorganisms
Total Trihalomethanes (TTHMs – chloroform bromodichloromethane dibromochloromethane and bromoform), µg/L	80	N/A	NO	16	28.3-120.0	66.6[8]	By-Product of Drinking Water Disinfection needed to kill harmful microorganisms

Contaminant	NYS DOH MCL	US EPA MCLG	Violation Yes/No	Number of Samples	Range	Average	Sources in Drinking Water
Radioactive Contaminants							
Beta/Photon Emitters, pCi/L	4 mem/yr[9] (50 pCi/L)	0	No	1	0.574	0.95	Decay of natural deposits and man-made emissions
Combined radium-226 and 228, pCi/l	5	0	No	1	0.954	0.81	Erosion of natural deposits

1. A violation occurs when more than 5% of the total monthly Coliform samples are positive
2. Turbidity is a measure of the cloudiness of the water. We test it because it is a good indicator of the effectiveness of our filtration system. State regulations require that turbidity must always be below 1 NTU. The regulations require that 95% of the turbidity samples collected have measurements below 0.3 NTU. Our filtered water turbidity did not exceed 0.30 NTU in 2006
3. N/A means not applicable.
4. The level presented represents the 90th percentile of the 60 sites tested in 2004. A percentile is a value on a scale of 100 that indicates the percent of a distribution that is equal to or below it. The 90th percentile is equal to or greater than 90% of the copper values detected at your water system. In this case, 60 samples were collected at customer's homes and the 90th percentile value was the 0.121 mg/L while the maximum detected was 0.637. The action level for copper was not exceeded at any of the sites tested.
5. The level presented represents the 90th percentile of the 68 samples collected in 2004. The action level for lead was exceeded at six of the 68 sites tested. Of those six sites retests at the five highest sites including the top 4 had results of 4 µg/L or less.
6. Water containing more than 20 mg/L of sodium should not be used by people on severely restricted sodium diets. Water containing more than 270 mg/L of sodium should not be used for drinking by people on moderately restricted sodium diets.
7. This level represents the highest quarterly annual average calculated from data collected.
8. This level represents the highest quarterly annual average calculated from data collected.
9. The state considers 50pCi/L to be the level of concern for beta particles.

Table Definitions:

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible.
Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
Action Level (AL): The concentration of a contaminant, which if exceeded, triggers treatment or other requirements which a water system must follow.
Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.
Non-Detects (ND): Laboratory analysis indicates that the constituent is not present.
Nephelometric Turbidity Unit (NTU): A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.
Milligrams per liter (mg/L): Corresponds to one part of liquid in one million parts of liquid (parts per million - ppm)
Micrograms per liter (µg/L): Corresponds to one part of liquid in one billion parts of liquid (parts per billion - ppb).
Picocuries per liter (pCi/L): A measure of the radioactivity in water.
Millirems per year (mrem/yr): A measure of radiation absorbed by the body.

New York City Water Quality Report 2006

Detected Parameters

PARAMETERS	NYSDOH MCL	USEPA MCLG	CATSKILL/DELAWARE SYSTEM			GROUNDWATER SYSTEM			SOURCES IN DRINKING WATER
			# SAMPLES	RANGE	AVERAGE	# SAMPLES	RANGE	AVERAGE	
CONVENTIONAL PHYSICAL AND CHEMICAL PARAMETERS									
Alkalinity (mg/L $CaCO_3$)	-		334	8.7 - 17.6	11.8	14	11.6 - 53.4	28.1	Erosion of natural deposits
Aluminum (µg/L)	50 - 200		319	7 - 125	34	7	ND - 52	28	Erosion of natural deposits
Barium (mg/L)	2	2	319	0.01 - 0.02	0.02	7	0.01 - 0.03	0.02	Erosion of natural deposits
Calcium (mg/L)	-		334	4.9 - 8.5	5.4	14	9.2 - 33.4	17.1	Erosion of natural deposits
Chloride (mg/L)	250		321	8 - 20	10	11	23 - 96	47	Naturally occurring; road salt
Chlorine Residual, free (mg/L)	4		10754	0.01 - 1.35	0.66	123	0.02 - 1.30	0.66	Water additive for disinfection
Color - distribution system (color units - apparent)	-		9661	3 - 42	7	82	1 - 12	6	Presence of iron, manganese, and organics in water
Color - entry points (color units - apparent)	15		1095	4 - 13	7	46	1 - 9	4	Iron and manganese; or organic sources, such as algal growth
Copper (mg/L)	1.3	1.3	334	0.003 - 0.141	0.011	14	0.003 - 0.019	0.007	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Corrosivity (Langelier index)	0		318	-3.05 to -1.55	-2.47	6	-2.06 to -1.46	-1.69	
Fluoride (mg/L)	2.2	4.0	1515	ND - 1.2	0.7	123	0.3 - 1.3	1.0	Erosion of natural deposits; water additive which promotes strong teeth; runoff from fertilizer
Hardness (mg/L $CaCO_3$)	-		319	17 - 34	18	9	38 - 156	80	Erosion of natural deposits
Hardness (grains/gallon[US] $CaCO_3$)	-		319	1.0 - 2.0	1.0	9	2.2 - 9.0	4.6	Erosion of natural deposits
Iron (µg/L)	300		336	**20 - 550**	50	7	ND - 90	50	Naturally occurring
Lead (µg/L)	15	0	334	ND - 4	0.6	14	ND - 1	0.6	Corrosion of household plumbing systems; erosion of natural deposits
Magnesium (mg/L)	-		319	1.0 - 3.0	1.2	9	3.6 - 18.0	5.6	Erosion of natural deposits
Manganese (µg/L)	300		336	6 - 261	9	7	11 - 31	21	Naturally occurring
Nitrate (mg/L nitrogen)	10	10	321	0.13 - 0.84	0.22	11	0.98 - 5.80	2.55	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite (mg/L nitrogen)	1	1	318	ND - 0.001	<0.001	9	ND	ND	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
pH (pH units)	6.5 - 8.5		10756	**6.5 - 8.7**	7.3	125	7.4 - 8.2	7.7	
Phosphate, Ortho- (mg/L)	-		10750	0.6 - 2.8	2.0	128	1.5 - 2.7	2.0	Water additive for corrosion control
Potassium (mg/L)	-		319	0.5 - 0.8	0.6	6	0.8 - 1.0	0.9	Erosion of natural deposits
Silica [silicon oxide] (mg/L)	-		318	1.8 - 5.8	2.9	6	5.8 - 6.8	6.2	Erosion of natural deposits
Sodium (mg/L)	NDL		319	6 - 12	8	7	13 - 43	18	Naturally occurring; road salt; water softeners; animal waste
Specific Conductance (µS/cm)	-		10756	70 - 150	82	128	151 - 574	368	
Strontium (µg/L)	-		319	20 - 30	20	6	40 - 50	40	Erosion of natural deposits
Sulfate (mg/L)	250		321	1.8 - 9.9	6.0	10	11.0 - 41.5	19.3	Naturally occurring
Temperature (°F)	-		10752	32 - 83	55	127	43 - 76	57	
Total Dissolved Solids (mg/L)	500		318	39 - 85	50	6	90 - 124	105	Metals and salts naturally occurring in the soil; organic matter
Total Organic Carbon (mg/L carbon)	-		318	1.0 - 3.9	1.3	6	1.0 - 1.4	1.3	Organic matter naturally present in the environment
Turbidity - distribution system (NTU)	5		9661	0.8 - 1.5	1.0	82	0.5 - 1.1	0.7	Soil runoff
UV 254 Absorbency (cm^{-1})	-		318	0.022 - 0.039	0.032	6	0.025 - 0.032	0.029	Organic matter naturally present in the environment
Zinc (mg/L)	5		319	ND - 0.065	0.004	7	ND - 0.006	0.003	Naturally occurring

PARAMETERS	NYSDOH MCL	USEPA MCLG	CATSKILL-DELAWARE SYSTEM			GROUNDWATER SYSTEM			SOURCES IN DRINKING WATER
			# SAMPLES	RANGE	AVERAGE	# SAMPLES	RANGE	AVERAGE	
ORGANIC CONTAMINANTS									
Disinfection By-Products detected:									
Bromochloroacetic acid (µg/L)	50		281	ND - 3	1	2	1 - 2	1	By-product of drinking water chlorination
Chloral Hydrate (µg/L)	50		16	1.6 - 8.2	3	-	-	-	By-product of drinking water chlorination
Chloropicrin (µg/L)	50		16	0.4 - 0.7	0.5	-	-	-	By-product of drinking water chlorination
Haloacetonitriles (HANs) (µg/L)	50		12	1.2 - 3.9	2.7	-	-	-	By-product of drinking water chlorination
Halogenated ketones (HKs) (µg/L)	50		16	1.7 - 3.2	2.3	-	-	-	By-product of drinking water chlorination
Total Organic Halogen (µg/L)	-		318	101 - 262	171	6	106 - 180	148	By-product of drinking water chlorination
Principal Organic Contaminants detected:									
Tetrachloroethylene (µg/L)	5	0	350	ND	ND	17	ND - 1.6 [12]	ND	Discharge from dry cleaners
Specified Organic Contaminants detected:									
Dalapon (µg/L)	50	200	237	ND - 0.8 [12]	ND	2	ND	ND	Runoff from herbicide used on rights of way
Hexachlorocyclopentadiene (µg/L)	5	50	22	ND - 0.10	< 0.05	1	ND	ND	Discharge from chemical factories
Unspecified Organic Chemicals detected:									
Acetone (µg/L)	50		297	ND - 13	< 10	14	ND	ND	Occurs naturally and is used in the production of paints, varnishes, plastics, adhesives, organic chemicals and alcohol. Also used to clean and dry parts of precision equipment
Methyl tert-butyl ether (MTBE) (µg/L)	10		350	ND	ND	17	ND - 1 [12]	ND	Formerly an additive to gasoline

PARAMETERS	NYSDOH MCL	USEPA MCLG	CATSKILL-DELAWARE SERVICE AREA			CROTON SERVICE AREA [10]			GROUNDWATER SERVICE AREA			SOURCES IN DRINKING WATER
			# SAMPLES	RANGE	RAA	# SAMPLES	RANGE	RAA	# SAMPLES	RANGE	RAA	
Disinfection By-Products detected:												
Haloacetic acid 5 (HAA5) (µg/L)	60 [14]		245	19 - 69	43	18	35 - 54	47	20	11 - 50	34	By-product of drinking water chlorination
Total Trihalomethanes (µg/L)	80 [14]		246	10 - 81	38	50	21 - 76	46	17	ND - 50	32	By-product of drinking water chlorination

MICROBIAL PARAMETERS

PARAMETERS	NYSDOH MCL	USEPA MCLG	CITYWIDE DISTRIBUTION					SOURCES IN DRINKING WATER
			# SAMPLES	RANGE	# SAMPLES POSITIVE	AVERAGE	HIGHEST MONTH % POSITIVE	
Total Coliform Bacteria (% of samples positive/month)	5%	0	9754	-	36	-	1.3%	Naturally present in the environment
E. coli (CFU/100 mL)	[5]	0	9754	-	1	-	0.1%	Human and animal fecal waste
Heterotrophic Plate Count (CFU/mL)	TT	-	3262	ND - 570C	307	3	-	Naturally present in the environment

LEAD AND COPPER RULE SAMPLING AT RESIDENTIAL WATER TAPS

PARAMETERS	NYS DOH AL	US EPA MCLG	Surface Water: January to December 2006				Groundwater: July to December 2006				SOURCES IN DRINKING WATER
			# SAMPLES	RANGE	90th PERCENTILE VALUES	# SAMPLES EXCEEDING AL	# SAMPLES	RANGE	90th PERCENTILE VALUES	# SAMPLES EXCEEDING AL	
Copper (mg/L)	1.3	1.3	120	0.022 - 0.661	0.239	0	99	ND - 0.387	0.233	0	Corrosion of household plumbing systems
Lead (µg/L)	15	0	120	ND 123.2	13	10	99	ND 35.3	7	3	Corrosion of household plumbing systems

Undetected Parameters

UNDETECTED CONVENTIONAL PHYSICAL AND CHEMICAL PARAMETERS
Antimony, Arsenic, Asbestos [16], Beryllium, Bromide, Cadmium, Chlorate, Chromium, Cyanide, Foaming Agents, Gross Alpha [17], Gross Beta [17], Lithium, Mercury, Nickel, Selenium, Silver, ⁹⁰Strontium [17], Thallium, Tritium (³H) [17]
UNDETECTED ORGANIC CONTAMINANTS
Principal Organic Contaminants not detected:
Benzene, Bromobenzene, Bromochloromethane, Bromomethane, n-Butylbenzene, sec-Butylbenzene, tert-Butylbenzene, Carbon Tetrachloride, Chlorobenzene, Chloroethane, Chloromethane, 2-Chlorotoluene, 4-Chlorotoluene, Dibromomethane, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Dichlorodifluoromethane, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,1-Dichloroethene, cis-1,2-Dichloroethylene, trans-1,2-Dichloroethylene, 1,2-Dichloropropane, 1,3-Dichloropropane, 2,2-Dichloropropane, 1,1-Dichloropropene, cis-1,3-Dichloropropene, trans-1,3-Dichloropropene, Ethylbenzene, Hexachlorobutadiene, Isopropylbenzene, p-Isopropyltoluene, Methylene chloride, n-Propylbenzene, Styrene, 1,1,1,2-Tetrachloroethane, 1,1,2,2 Tetrachloroethane, Toluene, 1,2,3 Trichlorobenzene, 1,2,4 Trichlorobenzene, 1,1,1 Trichloroethane, 1,1,2 Trichloroethane, Trichloroethene, Trichlorofluoromethane, 1,2,3 Trichloropropane, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, m-Xylene, o-Xylene, p-Xylene
Specified Organic Contaminants not detected:
Alachlor, Aldicarb (Temik), Aldicarb sulfone, Aldicarb sulfoxide, Aldrin, Atrazine, Benzo(a)pyrene, Butachlor, Carbaryl, Carbofuran (Furadan), Chlordane, 2,4-D, 1,2-Dibromo-3-chloropropane, Dicamba, Dieldrin, D(2-ethylhexyl)adipate, Di(2-ethylhexyl)phthalate, Dinoseb, Diquat, Endothall, Endrin, Ethylene dibromide (EDB), Glyphosate, Heptachlor, Heptachlor epoxide, Hexachlorobenzene, 3-Hydroxycarbofuran, Lindane, Methomyl, Methoxychlor, Metolachlor, Metribuzin, Oxamyl (Vydate), Pentachlorophenol, Picloram, Polychlorinated biphenyls [PCBs], Propachlor, Simazine, Toxaphene, 2,4,5-TP (Silvex), 2,3,7,8-TCDD (Dioxin), Vinyl chloride
Unspecified Organic Chemicals not detected:
Acenaphthene, Acenaphthylene, Acetochlor, Acifluorfen, tert-Amyl methyl ether, Anthracene, Bentazon, Benzo[a]anthracene, Benzo[b]fluoranthene, Benzo[k]fluoranthene, Benzo[g,h,i]perylene, a-BHC, b-BHC, d-BHC, Bromacil, Bromomethane, 2-Butanone (MEK), Butylbenzylphthalate, tert-butyl ethyl ether, Caffeine, a-Chlordane, g-Chlordane, Chlorobenzilate, Chloroneb, Chlorothalonil (Draconil, Bravo), Chlorpyrifos (Dursban), Chrysene, 2,4-DB, DCPA (total mono & diacid degradate), p,p'DDD, p,p'DDE, p,p'DDT, Diazinon, Dibenz[a,h]anthracene, Di-n-Butylphthalate, 3,5-Dichlorobenzoic acid, Dichlorprop, Dichlorvos (DDVP), Diethylphthalate, Diisopropyl ether, Dimethoate, Dimethylphthalate, 2,4-Dinitrotoluene, 2,6-Dinitrotoluene, Di-N-octylphthalate, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin aldehyde, EPTC, Fluoranthene, Fluorene, Heptachlor epoxide (isomer B), Indeno[1,2,3-cd] pyrene, Isophorone, Malathion, Methiocarb, 4-Methyl-2-pentanone (MIBK), Molinate, Naphthalene, cis-Nonachlor, trans-Nonachlor, Paraquat, Parathion, Pendimethalin, Permethrin, Phenanthrene, Prometryn, Propoxur (Baygon), Pyrene, 2,4,5-T, Terbacil, Terbuthylazine, Thiobencarb, Trichlorotrifluoroethane (freon), Trifluralin

Footnotes

(1) USEPA Secondary MCL. NYSDOH has not set an MCL for this parameter
(2) Value represents MRDL, which is a level of disinfectant added for water treatment that may not be exceeded at the consumer's tap without an unacceptable possibility of adverse health effects. The MRDL is enforceable in the same manner as an MCL.
(3) Determination of MCL violation: If a sample exceeds the MCL, a second sample must be collected from the same location within 2 weeks. If the average of the two results exceeds the MCL, then an MCL violation has occurred.
(4) Action Level (not an MCL) measured at the tap. The data presented in this table were collected from sampling stations at the street curb. For at the tap monitoring, see the following table.
(5) A Langelier Index of less than zero indicates corrosive tendencies.
(6) Hardness of up to 3 grains per gallon is considered soft water; between 3 and 9 is moderately hard water.
(7) If iron and manganese are present, the total concentration of both should not exceed 500 µg/L.
(8) The average for pH is the median value.
(9) Water containing more than 20 mg/L of sodium should not be used for drinking by people on severely restricted sodium diets. Water containing more than 270 mg/L of sodium should not be used for drinking by people on moderately restricted sodium diets.
(10) Turbidity is a measure of cloudiness of the water. Turbidity is monitored because it is a good indicator of water quality and can hinder the effectiveness of disinfection.
(11) This MCL for turbidity is the monthly average rounded off to the nearest whole number. Data presented are the range and average of monthly averages.
(12) The contaminant was detected in only one sample. The level found was below the MCL.
(13) Though Croton water was not put into distribution in 2008, DBP monitoring is conducted at specified locations based on the potential distribution of the different source waters to consumers. As such, each system has a defined set of monitoring sites and the data are reported by service area.
(14) USEPA MCLs for HAA5 and TTHMs are the calculated quarterly running annual average. Data presented are the range of individual sampling results and the highest quarterly running annual average.
(15) If a sample and its repeat sample are both positive for coliform bacteria and one of the two samples is positive for *E. coli*, then an MCL violation has occurred.
(16) NYSDOH has issued a waiver for asbestos monitoring in the Groundwater System since no asbestos cement pipes are used anywhere in the distribution system.
(17) Radionuclide data presented were collected in 2001.

Highlighted and bolded value indicates a violation or exceedence occurred.

Bottled Water Test results, report from the Natural Resources Defense Council: www.nrdc.org

Bottled Water: As Pure as We Are Led to Believe?

- While most bottled water apparently is of good quality, publicly available monitoring data are scarce. The underfunded and haphazard patchwork of regulatory programs has found numerous cases where bottled water has been contaminated at levels above state or federal standards. In some cases bottled water has been recalled.

- Our "snapshot" testing of more than 1,000 bottles of 103 brands of water by three independent labs found that most bottled water tested was of good quality, but some brands' quality was spotty. About one third of the bottled waters we tested contained significant contamination (i.e., levels of chemical or bacterial contaminants exceeding those allowed under a state or industry standard or guideline) in at least one test. This is the most comprehensive independent testing of bottled water in the United States that is publicly available. Moreover, NRDC contracted with an independent data verification firm to confirm the accuracy of our positive test results. Still, the testing was limited. The labs tested most waters for about half of the drinking water contaminants regulated by FDA (to control costs). They found:

    - Nearly one in four of the waters tested (23 of the 103 waters, or 22 percent) violated strict applicable state (California) limits for bottled water in at least one sample, most commonly for arsenic or certain cancer-causing man-made ("synthetic") organic compounds. Another three waters sold outside of California (3 percent of the national total) violated industry-recommended standards for synthetic organic compounds in at least one sample, but unlike in California, those industry standards were not enforceable in the states (Florida and Texas) in which they were sold.

    - Nearly one in five tested waters (18 of the 103, or 17 percent) contained, in at least one sample, more bacteria than allowed under microbiological-purity "guidelines" (unenforceable sanitation guidelines based on heterotrophic plate count [HPC] bacteria levels in the water) adopted by some states, the industry, and the EU. The U.S. bottled water industry uses HPC guidelines, and there are European HPC standards applicable overseas to certain bottled waters, but there are no U.S. standards in light of strong bottler opposition to making such limits legally binding.

    - In sum, approximately one third of the tested waters (34 of 103 waters, or 33 percent) violated an enforceable state standard or exceeded microbiological-purity guidelines, or both, in at least one sample. We were unable to test for many microbial contaminants, such as *Cryptosporidium*, because the logistics and cost of testing for them post-bottling were beyond our means.

    - Four waters (4 percent) violated the generally weak federal bottled water standards (two for excessive fluoride and two for excessive coliform bacteria; neither of the two latter waters were found to be contaminated with coliform bacteria in our testing of a different lot of the same brand).

    - About one fifth of the waters contained synthetic organic chemicals -- such as industrial chemicals (e.g., toluene or xylene) or chemicals used in manufacturing plastic (e.g., phthalate, adipate, or styrene) -- in at least one sample, but generally at levels below state and federal standards. One sample contained phthalate -- a carcinogen that

leaches from plastic -- at a level twice the tap water standard, but there is no bottled water standard for this chemical; two other samples from different batches of this same water contained no detectable phthalate.

- In addition, many waters contained arsenic, nitrates, or other inorganic contaminants at levels below current standards. While in most cases the levels found were not surprising, in eight cases arsenic was found in at least one test at a level of potential health concern.

- For purposes of comparison, we note that EPA recently reported that in 1996 about 1 in 10 community tap water systems (serving about one seventh of the U.S. population) violated EPA's tap water treatment or contaminant standards, and 28 percent of tap water systems violated significant water-monitoring or reporting requirements. In addition, the tap water of more than 32 million Americans (and perhaps more) exceeds 2 parts per billion (ppb) arsenic (the California Proposition 65 warning level, applicable to bottled water, is 5 ppb); and 80 to 100 million Americans drink tap water that contains very significant trihalomethane levels (over 40 ppb). Thus, while much tap water is supplied by systems that have violated EPA standards or that serve water containing substantial levels of risky contaminants, apparently the majority of the country's tap water passes EPA standards. Therefore, while much tap water is indeed risky, having compared available data we conclude that there is no assurance that bottled water is any safer than tap water.

- Other academic and government bottled water surveys generally are consistent with the testing NRDC commissioned. Though usually limited in scope, these studies also have found that most bottled water meets applicable enforceable standards, but that a minority of waters contain chemical or microbiological contaminants of potential concern.

The entire report can be found at: http://www.nrdc.org/water/drinking/bw/appa.asp and contains most bottled water brands. Below is only a sample.

Brand(a)	Test #	Water Type	Purchase Location	Source of Water (if listed)	Contaminant & Level Found(b)									Number of Bottles Tested	Lab Rep. #	Comments
					HPC Bacteria(c) (Guidelines 500 cfu/ml; no enforceable standard) in cfu/ml	Arsenic(d) (CA Prop. 65 Level 5 ppb) in ppb	TTHMs(e) (CA & Industry bottled water standard 10 ppb) in ppb	Chloroform (CA Prop. 65 Level l0 ppb) in ppb	BDCM(f) (CA Prop. 65 Level 2.5 ppb) in ppb	DBCM (g) (CA Prop. 65 Level 3.5 ppb) in ppb	Phthalate (DEHP) (Tap water standard 6 ppb) no bottled water standard	Nitrate (Fed. & CA standard 10 ppm) in ppm	Other			
Perrier	2	Sparkling Mineral Water (25 fl oz.)	Los Angeles	Vergeze, France	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	2.6	2-Chlorotoluene found at 3.7 ppb	3 (1 for each contaminant type)	EQI-1-LA 36-LA 38	Chlorotoluene of unknown origin.
Perrier*	3	Sparkling Mineral Water (1 liter)	San Francisco	Vergeze, France	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Di(2-ethylhexyl)Phthalate detected at 12 ppb*	4.3	No detection of 2-Chlorotoluene	10 (composited)	SA-712-0032	Exceeds 6 ppb tap water standard for Di(2-ethylhexyl) phthalate (DEHP), but there is no standard for bottled water for this chemical. California does not allow this DEHP level in the source water for bottled water, but sets no DEHP standard for finished bottled water.
Perrier	4	Sparkling	San Francisco	Vergeze, France	No test	No test	No test	No test	No test	No test	No test	4.1	No test	10 (composited)	SA-808-	Nitrate retest.

		Mineral Water													1662	
Poland Spring†	1	Natural Spring Water (1 liter)	Washington, DC		750†	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected		10 (composited)	298808-965 (819-824)	HPC bacteria found at levels exceeding guideline applied by some states to bottled water.
Poland Spring†	2	Natural Spring Water (1 liter)	Washington, DC		5 of 10 bottles tested had HPC bacterial overgrowth †	No test	No test	No test	No test	No test	No test	No test		10 (individually)	298 808-965 (809-818)	Bacterial overgrowth was observed in 5 of the 10 bottles tested. The presence of a large number of non-coliform HPC bacteria may be inhibiting the detection of coliform bacteria during the testing. See text for discussion of HPC bacteria.
Polar	1	Spring Water (1 gallon)	Washington, DC	Crystal Springs, Spring Grove, VT	Not Detected	Not Detected	0.1	0.1	Not Detected	Not Detected	Not Detected	0.8	Toluene detected at 2.5 ppb, (well below the standard of 1000 ppb)	10 (composited)	298 808-965 (851-856)	Toluene is often an indicator of the presence of gasoline or industrial chemicals, here of unknown origin.
Polar	2	Spring Water (1 gallon)	Washington, DC	Crystal Springs, Spring Grove, VT	Not Detected	No test	No test	No test	No test	No test	No test	No test		10 (individually)	298 808-965 (841-850)	

Chemical	Standard	Our Tap Water	Evian	Poland Spring	Shop Rite
Aluminum	.02 mg/L	0.030	0.009	<0.005	<0.005
Barium	2 mg/L	0.024	0.108	0.001	0.004
Chloride	250 mg/L	25	4.5	5	1.5
Nitrate	10 mg/L	0.65	0.74	0.23	0.20
Nitrite	1 mg/L	0.01	0.03	<0.02	<0.02
pH	6.5-8.5	7.62	7.84	6.37	6.26
Total Hardness	- mg/L	92.6	304	48	9
Total Organic Carbon	- mg/L	2.0	<1	<1	<1
Turbidity	0.5 NTU	0.10	0.07	0.05	0.05
Cost Per Gallon		**$0.0016**	**$5.2617**	**$3.3690**	**$0.5900**

This information comes from the Poughkeepsie Water Treatment facility, www.pokwater.com and compares 'our water' with three different bottled water companies.