CITY OF EVERETT
2017 Water Quality Summary

Table 1: Primary Standards (Mandatory Health-Related Standards)

Physical Parameters, Bacteria, Inorganics, Disinfection By-Products, Radionuclides
Established by DOH and the USEPA

Unless otherwise noted, values listed are for samples collected after treatment and at the entry point to the water distribution system.

Parameter	Unit	Maximum Contaminant Level	2017 Range of Results	2017 Average Result
Physical				
Turbidity (combined filter effluent)	NTU	TT	0.01–0.08	0.02
Asbestos[1]	MF/L > 10µm	7	–	Less than 0.11
Microbiological				
Total Coliform Bacteria[2]	Positive (present) or negative (absent)	5% positive per month	None	0%
Inorganic Chemicals				
Antimony	ppm	0.006	–	Less than 0.0005
Arsenic	ppm	0.010	<0.0001–0.0002	0.0001
Barium	ppm	2	0.0033–0.0044	0.0039
Beryllium	ppm	0.004	–	Less than 0.0003
Cadmium	ppm	0.005	–	Less than 0.0002
Chromium	ppm	0.1	–	Less than 0.0005
Copper[3]	ppm	1.3	0.002–0.473	0.122
Lead[3]	ppm	0.015	<0.001–0.009	0.002
Mercury	ppm	0.002	–	Less than 0.000006
Nickel	ppm	0.1	–	Less than 0.0005
Selenium	ppm	0.05	–	Less than 0.0005
Thallium	ppm	0.002	–	Less than 0.0005
Cyanide	ppm	0.2	–	Less than 0.005
Fluoride[4]	ppm	4.0	0.2–0.8	0.7
Nitrate (NO_3)	ppm	10	0.028–0.100	0.066
Nitrite (NO_2)	ppm	1	<0.002–0.002	Less than 0.002
Radionuclides				
Gross Alpha	pCi/L	15	–	Less than 3
Gross Beta	pCi/L	50	–	Less than 3
Radium-228	pCi/L	5	–	Less than 1
Chlorine By-Products (also called Disinfection By-Products or DBPs)				
Total Trihalomethanes (TTHM)[5]	ppm	0.080	0.032–0.059	0.043
Haloacetic Acids (5)[5,6]	ppm	0.060	0.022–0.043	0.035

[1]Sample collected in 2017 from a service supplied by an asbestos concrete (AC) water main.
[2]Everett collects approximately 125 samples per month or 1,500 per year. No more than 5 percent of the monthly total can be coliform positive. No coliforms were detected in samples collected in 2017.
[3]Samples collected from 108 consumer taps across the greater Everett water service area which includes most of SW Snohomish County. The result listed in the "average" column is the 90th percentile result, which is the highest result in 90 percent of the samples when ranked from highest to lowest. The action limit, or AL, for lead is 0.015 mg/L. The action limit for copper is 1.3 mg/L. In 2015, 100 percent of copper and lead sample results were below their respective action limits. Tap samples must be collected every three years. The next round of regional monitoring is scheduled for collection during the summer of 2018.
[4]Fluoride is added to your water in carefully controlled levels for dental health. The minimum value of 0.2 ppm was due to a maintenance-related feed outage that lasted no more than a day in duration.
[5]The TTHM and HAA5 results were calculated using the running annual average results from the fourth quarter of 2017 and are from eight required locations in Everett's service area.
[6]Haloacetic Acids (5) or HAA5 is the sum of the concentrations of trichloroacetic acid, dichloroacetic acid, monocholoroacetic acid, tribromoacetic acid and dibromoacetic acid. There are five additional HAA compounds that are not regulated.

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Table 2A: Secondary Standards and Aesthetic Standards

Established by DOH and the USEPA

Unless otherwise noted, values listed are for samples collected after treatment and at the entry point to the water distribution system.

Parameter	Unit	Maximum Contaminant Level	2017 Range of Results	2017 Average Result
Physical				
Conductivity[1]	µmhos/cm	700	45–61	54
Total Dissolved Solids (TDS)	ppm	500	26–39	33
Color	c.u.	15	–	Less than 5
Chemical				
Chloride	ppm	250	2.0–2.3	2.1
Sulfate	ppm	250	2.8–3.6	3.2
Iron	ppm	0.3	–	Less than 0.01
Manganese	ppm	0.05	0.0003–0.0104	0.0017
Silver	ppm	0.1	–	Less than 0.0005
Zinc	ppm	5.0	–	Less than 0.005
Free Chlorine Residual[2,3]	ppm	4	0.21–1.07	0.64

[1]Samples collected monthly in 2017 from 26 sample sites located across the Everett water distribution system.
[2]Monitored monthly at 120–125 locations throughout the Everett water distribution system. A minimum of 120 samples must be collected each month at the same time and same locations as coliform bacteria sample collection.
[3]Chlorine residual varies within the distribution system. The residual level decays with time.

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Table 2B: Unregulated Parameters

Established by DOH and the USEPA

Unless otherwise noted, values listed are for samples collected after treatment and at the entry point to the water distribution system.

Parameter	Unit	Maximum Contaminant Level	2017 Range of Results	2017 Average Result
Conventional				
Temperature (plant intake)[1]	°C	No Standard	4.3–20.3	11.2
Temperature (distribution system)[2]	°C	No Standard	4.2–24.0	12.8
Alkalinity (as $CaCO_3$)[2]	ppm	No Standard	13.9–29.1	16.8
Total Hardness (as $CaCO_3$)[2]	ppm	No Standard	9.6–15.8	12.5
Turbidity[2]	NTU	No Standard	0.09–0.19	0.12
Calcium Hardness (as $CaCO_3$)[2]	ppm	No Standard	7.3–13.0	9.6
pH	s.u.	≥7.4 (daily avg)	7.1–8.1	7.6
pH[2]	s.u.	No Standard	7.4–9.1	7.9
Inorganic				
Silica (total SiO_2)[2,3]	ppm	No Standard	3.4–5.2	4.3
Aluminum[2]	ppm	No Standard	0.005–0.05	0.02
Boron	ppm	No Standard	–	0.003
Copper[4]	ppm	No Standard	0.0006–0.0010	0.0008
Lead[4]	ppm	No Standard	<0.0001–0.0001	Less than 0.0001
Molybdenum	ppm	No Standard	–	Less than 0.0005
Potassium	ppm	No Standard	–	0.22
Sodium	ppm	No Standard	5.40–6.63	5.87
Organic Carbon and DBP Precursors				
Total Organic Carbon (untreated)[1]	ppm	No Standard	0.64–0.86	0.81
Total Organic Carbon	ppm	No Standard	0.49–0.65	0.56
Total Organic Carbon[2]	ppm	No Standard	0.47–0.75	0.58
Dissolved Organic Carbon (untreated)[1]	ppm	No Standard	0.69–0.93	0.82
Dissolved Organic Carbon	ppm	No Standard	0.50–0.63	0.56
UV-254 Absorbance[1]	cm^{-1}	No Standard	0.025–0.033	0.029
UV-254 Absorbance	cm^{-1}	No Standard	0.008–0.010	0.009
Microbiological				
Giardia lamblia cysts[1,5]	cysts/L	No Standard	–	0
Cryptosporidium oocysts[1,5]	oocysts/L	No Standard	–	0

[1] Samples collected from untreated raw water influent to the treatment plant.

[2]Values are from Everett distribution system and were collected in 2016 as part of the monthly water quality parameters (WQP) monitoring and/or quarterly disinfection by-product monitoring programs.

[3]Total silica results are based on results from a strong acid digestion analysis method. Insoluble particulate silicates are not detected by this method.

[4]These results are for treatment plant effluent and represent the treated water before contact with distribution system piping or home plumbing. Lead and copper are monitored every three years at consumer taps in the distribution system. See Table 1 for the most recent consumer tap results.

[5]In 2017,*Cryptosporidium* and *Giardia* were monitored on a monthly basis at the plant intake.

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Table 3: Volatile Organic Chemicals (VOC) – Regulated Compounds

USEPA has set a maximum allowable contaminant level, or MCL, and requires monitoring

Unless otherwise noted, values listed are for samples collected after treatment and at the entry point to the water distribution system.

Parameter	Maximum Contaminant Level (mg/L)	2017 Average Result (mg/L)
Benzene	0.005	ND[1]
Carbon tetrachloride	0.005	ND
1,2-Dibromo-3-chloropropane (DBCP)[2]	0.0002	ND
o-Dichlorobenzene	0.6	ND
p-Dichlorobenzene	0.075	ND
cis-l,2-Dichloroethylene	0.07	ND
trans-1,2-Dichloroethylene	0.1	ND
1,2-Dichloroethane	0.005	ND
1,1-Dichloroethylene	0.007	ND
1,1-Dichloropropane	0.005	ND
Ethylbenzene	0.7	ND
Dichloromethane (Methylene chloride)	0.005	ND
Monochlorobenzene (Chlorobenzene)	0.1	ND
Styrene	0.1	ND
Tetrachloroethylene	0.005	ND
Toluene	1.0	ND
1,2,4-Trichlorobenzene	0.07	ND
1,1,1-Trichloroethane	0.2	ND
1,1,2-Trichloroethane	0.005	ND
Trichloroethylene	0.005	ND
Vinyl chloride	0.002	ND
Xylenes (total)	10	ND
Trihalomethanes[3]		
Total Trihalomethanes (TTHM)[4]	0.080	0.043
Bromodichloromethane	No Standard	0.002
Dibromochloromethane	No Standard	ND
Tribromomethane (bromoform)	No Standard	ND
Trichloromethane (chloroform)	No Standard	0.041
Haloacetic Acids[3]		
Haloacetic acids [5] (HAA5)[5]	0.060	0.035
Dichloroacetic acid	No Standard	0.013
Dibromoacetic acid	No Standard	ND
Monobromoacetic acid	No Standard	ND
Monochloroacetic acid	No Standard	0.002
Trichloroacetic acid	No Standard	0.021

[1]ND = None detected.
[2]DBCP was last monitored in 2012. The State DOH has issued monitoring waivers through 2019. It is not used or produced in the Sultan Basin Watershed and has never been detected in Everett's water.
[3]Results are for quarterly samples collected basis from eight compliance locations in Everett's distribution system.
[4]Total Trihalomethanes (TTHM) is the sum of the concentrations of four trihalomethane compounds in a sample. Only TTHM has an MCL assigned to it. The individual trihalomethanes listed above have no MCL, but must be monitored to determine TTHM.
[5]Haloacetic acids (5) or HAA5 is the sum of the concentrations of five individual haloacetic acid compounds. Only the sum HAA5 has an MCL assigned to it. The five haloacetic acid compounds that are measured to determine HAA5 are listed.

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Table 4: Volatile Organic Chemicals (VOC) – Unregulated Compounds

No MCL, but monitoring is required by the USEPA or DOH

Unless otherwise noted, values listed are for samples collected after treatment and at the entry point to the water distribution system.

Parameter	2017 Average Result (mg/L)
Tert-Amyl methyl ether	ND[1]
Bromobenzene	ND
Bromochloromethane	ND
Bromomethane	ND
2-Butanone (MEK)	ND
n-Butylbenzene	ND
sec-Butylbenzene	ND
tert-Butylbenzene	ND
Carbon Disulfide	ND
Chloroethane	ND
Chloromethane	ND
o-Chlorotoluene	ND
p-Chlorotoluene	ND
m-Dichlorobenzene	ND
1,1-Dichloroethane	ND
Dibromomethane	ND
Dichlorodifluoromethane	ND
1,3-Dichloropropane	ND
2,2-Dichloropropane	ND
1,1-Dichloropropene	ND
cis-1,3-Dichloropropene	ND
trans-1,3-Dichloropropene	ND
Di-isoproply ether	ND
Hexachlorobutadiene	ND
Isopropylbenzene	ND
p-Isopropyltoluene	ND
4-Methyl-2-pentanone (MIBK)	ND
Methyl tertiary butyl ether (MTBE)	ND
Naphthalene	ND
n-Propylbenzene	ND
1,1,1,2-Tetrachloroethane	ND
1,1,2,2-Tetrachloroethane	ND
Trichlorotrifuoroethane (Freon 113)	ND
Trichlorofluoromethane	ND
1,2,3-Trichlorobenzene	ND
1,2,3-Trichloropropane	ND
1,2,4-Trimethylbenzene	ND
1,3,5-Trimethylbenzene	ND
m/p-Xylene	ND
o-Xylene	ND

[1]ND = None detected

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Table 5: Synthetic Organic Chemicals (SOC) – Regulated Compounds

USEPA has set a maximum allowable contaminant level, or MCL, and requires monitoring

Unless otherwise noted, values listed are for samples collected after treatment and at the entry point to the water distribution system.

Contaminant	Maximum Contaminant Level (mg/L)	2017 Average Result (mg/L)
Alachlor (Lasso)	0.002	ND[1]
Aldicarb (Temik)[2]	0.003	ND
Aldicarb sulfone[2]	0.002	ND
Aldicarb sulfoxide[2]	0.004	ND
Atrazine	0.003	ND
Benzo(a)pyrene	0.0002	ND
Carbofuran	0.04	ND
Chlordane	0.002	ND
2,4,D	0.07	ND
Dalapon	0.2	ND
Di(ethylhexyl)adipate	0.4	ND
Di(2-ethylhexyl) phthalate	0.006	ND
Dinoseb	0.007	ND
Diquat[3]	0.02	ND
Endrin	0.002	ND
Endothall[3]	0.1	ND
Ethylene dibromide (EDB)[4]	0.00005	ND
Glyphosate (Rodeo, Roundup)[3]	0.7	ND
Heptachlor	0.0004	ND
Heptachlor epoxide (“B”)	0.0002	ND
Hexachlorobenzene	0.001	ND
Hexachlorocyclopentadiene (HEX)	0.05	0.000051
Lindane (BHC-gamma)	0.0002	ND
Methoxychlor	0.04	ND
Oxamyl (Vydate)	0.2	ND
Pentachlorophenol	0.001	ND
Picloram (Tordon)	0.5	ND
Polychlorinated biphenyls (PCBs, Aroclors)[5]	0.0005	ND
Simazine	0.004	ND
Toxaphene	0.003	ND
2,4,5-TP (Silvex)	0.05	ND
2,3,7,8-TCDD (Dioxin)[6]	3×10^{-8}	ND

[1]ND = None detected.
[2]MCLs for Aldicarb, Aldicarb Sulfone and Aldicarb Sulfoxide were established in 1991, however, EPA has postponed the regulation of these compounds indefinitely pending the results of further research, a possible ban on their use and an update of the MCL values. These substances have never been used in the Sultan Basin Watershed.
[3]Diquat, Endothall and Glyphosate were last monitored in 2005. The State DOH has issued monitoring waivers. They are not used or produced in the Sultan Basin watershed and have never been detected in Everett’s water.
[4]EDB was last monitored in 2012. The State DOH has issued monitoring waivers through 2019. It is not used or produced in the Sultan Basin Watershed and has never been detected in Everett’s water.
[5]Total PCBs is calculated as the sum of seven PCB Aroclors (1016, 1221, 1232, 1242, 1248, 1254 and 1260).
[6]Dioxin was last monitored in 2002. The State DOH has issued a general monitoring waiver for it. It is not used or produced in the Sultan Basin Watershed and has never been detected in Everett’s water.

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Table 6: Synthetic Organic Chemicals (SOC) – Unregulated Compounds

No MCL, but monitoring is required by the USEPA or DOH

Unless otherwise noted, values listed are for samples collected after treatment and at the entry point to the water distribution system.

Parameter	2017 Average Result (mg/L)	Parameter	2017 Average Result (mg/L)
2,4,5-T	ND[1]	Dicamba	ND
2,4-DB	ND	Dichlorprop	ND
2,4-Dinitrotolulene	ND	Dieldrin	ND
3,5-Dichlorobenzoic acid	ND	Diethylphthalate	ND
3-Hydroxycarbofuran	ND	Dimethoate	ND
Acenaphthylene	ND	Dimethylphthalate	ND
Acifluorfen	ND	Di-n-butylphthalate	ND
Aldrin	ND	Fluoranthene	ND
Alpha-Chlordane	ND	Fluorene	ND
Anthracene	ND	Gamma-Chloradane	ND
Bentazone	ND	Indenol(1,2,3,c,d)Pyrene	ND
Benz(a)Anthracene	ND	Isophorone	ND
Benzo(b)Fluoranthene	ND	Methiocarb	ND
Benzo(g,h,i)Perylene	ND	Methomyl	ND
Benzo(k)Fluoranthene	ND	Metolachlor	ND
Bromacil	ND	Metribuzin	ND
Butachlor	ND	Molinate	ND
Butylbenzylphthalate	ND	Phenanthrene	ND
Caffeine	ND	Propachlor	ND
Carbaryl	ND	Propoxur (Baygon)	ND
Chrysene	ND	Pyrene	ND
DCPA (Dacthal)	ND	Thiobencarb (ELAP)	ND
Diazinon	ND	Trans-Nonachlor	ND
Dibenz(a,h)anthracene	ND	Trifluralin	ND

[1]ND = None detected.

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Units & Acronyms

Unit	Definition
°C	Degrees Centigrade
CFU/100mL	Colony forming units per 100 mL of sample
CFU/mL	Colony forming units per 1 mL of sample
cm^{-1}	UV light absorbance across a 1 centimeter cell path
c.u.	cobalt-platinate standard color units
cysts/L	*Giardia lamblia* cysts per liter of sample
MF/L>10 µm	Millions of asbestos fibers per liter that are greater than 10 microns in length
mg/L	milligrams per liter (equivalent to ppm)
ND	None detected
NTU	Nephlometric Turbidity Units
oocysts/L	*Cryptosporidium spp*. oocysts per liter of sample
ppb	parts per billion (equivalent to µg/L).
pCi/L	picocuries per liter
ppm	parts per million (equivalent to mg/L)
s.u.	standard pH units
µmhos/cm	micro mhos per cm (conductivity unit)
<	Less than. Result was less than or below the detection limit for the analytical method. This result is equivalent to ND.

Acronym	Definition
AC	Asbestos concrete (material used in one type of water main pipe)
AL	Action Limit
DOH	Washington State Department of Health, Office of Drinking Water
HAA	Haloacetic acids
HAA5	Haloacetic acids five (sum of the concentrations of five haloacetic compounds)
HPC	Heterotrophic plate count (a standard analytical method for heterotrophic bacteria)
HPC R2A	Heterotrophic plate count analysis using a specialized method that attempts to mimic water main conditions and detect and evaluate bioslimes. The method uses low nutrient R2A growth media, longer incubation times and cooler incubation temperatures than the standard HPC method.
MCL	Maximum Contaminant Level
THM	Trihalomethane
TT	Treatment technique
TTHM	Total trihalomethanes (sum of concentrations of four compounds)
UV-254	Ultraviolet light absorbance at 254 nanometer wavelength
USEPA	United States Environmental Protection Agency

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Parameters for Home Brewing

Unless otherwise noted, values listed are for samples collected after treatment and at the entry point to the water distribution system.

Parameter	Unit	2017 Range of Results	2017 Average Result
Calcium (Ca)[1]	ppm	2.9–5.2	3.8
Magnesium (Mg)[1]	ppm	0.6–0.7	0.7
Alkalinity (as $CaCO_3$)[1]	ppm	13.9–29.1	16.8
Sulfate (SO_4)	ppm	2.8–3.6	3.2
Chloride (Cl)	ppm	2.0–2.3	2.1
Potassium (K)	ppm	–	0.2
Bicarbonate (HCO_3)	ppm	17.0–35.5	20.5
pH[1,2]	s.u.	7.4–9.1	7.9

[1]Values are from the Everett distribution system and were collected in 2017 as part of the monthly water quality parameters (WQP) monitoring program conducted at 26 locations in Everett.
[2]pH can vary significantly by location and should be measured at the tap you are using.