

2017 Water Quality Report to Member Agencies—The Metropolitan Water District of Southern California

Source Waters

| Parameter | Units | Range Average | Source Water * | | | | | | | Major Sources in Drinking Water |
|--|-------|------------------|------------------------|-----------------|----------------|-----------------|---------------------|-------------|--------------------|---|
| | | | Blended | | Colorado River | | State Water Project | | | |
| | | | Diamond Valley Lake | Lake Skinner | Lake Havasu | Lake Mathews | Castaic Lake | Lake Perris | Silverwood Lake | |
| Percent State Water Project | % | Range Average | 100 | 0 - 91 61 | 0 | 0 | 100 | 100 | 100 | NA |
| PRIMARY STANDARDS-Mandatory Health-Related | | | | | | | | | | |
| ORGANIC CHEMICALS | | | | | | | | | | |
| Synthetic Organic Compounds (a) | | | | | | | | | | |
| 2,4,5 -TP (Silvex) | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Residue of banned herbicide |
| 2,4-D | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Runoff from herbicide used on row crops, rangeland, lawns, and aquatic weeds |
| Alachlor | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Runoff from herbicide used on row crops |
| Atrazine | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Runoff from herbicide used on row crops and along railroad and highway right-of-ways |
| Bentazon | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Runoff/leaching from herbicide used on beans, peppers, corn, peanuts, rice, and ornamental grasses |
| Benzo(a)pyrene | ppt | Range Average | ND | ND | ND | ND | ND | ND | ND | Leaching from linings and coatings in water storage tanks and distribution mains |
| Carbofuran | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Leaching of soil fumigant used on rice, alfalfa, and grape vineyards |
| Chlordane | ppt | Range Average | ND | ND | ND | ND | ND | ND | ND | Residue of banned insecticide |
| Dalapon | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Runoff from herbicide used on right-of-ways, and crops and landscape maintenance |
| Di(2-ethylhexyl)adipate | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Discharge from chemical factories |
| Di(2-ethylhexyl)phthalate | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Discharge from rubber and chemical factories; ingredient in pesticides |
| Dibromochloropropane (DBCP) | ppt | Range Average | ND | ND | ND | ND | ND | ND | ND | Banned nematocide that may still be present in soils due to runoff/leaching |
| Dinoseb | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Runoff from herbicide used on soybeans, vegetables, and fruits |
| Dioxin (2,3,7,8-TCDD) | ppq | Range Average | ND | ND | ND | ND | ND | ND | ND | Waste incineration emissions; chemical factory discharge |
| Diquat | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Runoff from herbicide used for terrestrial and aquatic weeds |
| Endothall | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Runoff from herbicide used for terrestrial and aquatic weeds |
| Endrin | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Residue of banned insecticide and rodenticide |
| Ethylene Dibromide (EDB) | ppt | Range Average | ND | ND | ND | ND | ND | ND | ND | Petroleum refinery discharges; underground gas tank leaks; banned nematocide that maybe still present in soils due to runoff and leaching |
| Glyphosate | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Runoff from herbicide use |
| Heptachlor | ppt | Range Average | ND | ND | ND | ND | ND | ND | ND | Residue of banned insecticide |
| Heptachlor Epoxide | ppt | Range Average | ND | ND | ND | ND | ND | ND | ND | Breakdown product of heptachlor |

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| Hexachlorobenzene | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Discharge from metal refineries and agrichemicals factories; wastewater chlorination reaction byproduct |
| Hexachlorocyclopentadiene | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Discharge from chemical factories |
| Lindane | ppt | Range Average | ND | ND | ND | ND | ND | ND | ND | Runoff/leaching from insecticide used on cattle, lumber, and gardens |
| Methoxychlor | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Runoff/leaching from insecticide uses on fruits, vegetables, alfalfa, and livestock |
| Molinate (Ordram) | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Runoff/leaching from herbicide used on rice |
| Oxamyl (Vydate) | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Runoff/leaching from insecticide uses |
| Pentachlorophenol | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Discharge from wood preserving factories; insecticidal and herbicidal uses |
| Picloram | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Herbicide runoff |
| Polychlorinated Biphenyls (PCBs) | ppt | Range Average | ND | ND | ND | ND | ND | ND | ND | Runoff from landfills; discharge of waste chemicals |
| Simazine | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Herbicide runoff |
| Thiobencarb | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Runoff/leaching from herbicide used on rice |
| Toxaphene | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Runoff/leaching from insecticide used on cotton and cattle |
| Volatile Organic Compounds | | | | | | | | | | |
| 1,1,1-Trichloroethane | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Metal degreasing site discharge; manufacture of food wrappings |
| 1,1,2,2-Tetrachloroethane | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Discharge from industrial, agricultural use, and chemical factories; solvent used in production of TCE, pesticides, varnish, and lacquers |
| 1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113) | ppm | Range Average | ND | ND | ND | ND | ND | ND | ND | Discharge from metal degreasing sites and other factories; dry cleaning solvent; refrigerant |
| 1,1,2-Trichloroethane | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Discharge from industrial chemical factories |
| 1,1-Dichloroethane | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Extraction and degreasing solvent; fumigant |
| 1,1-Dichloroethylene | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Discharge from industrial chemical factories |
| 1,2,4-Trichlorobenzene | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Discharge from textile-finishing factories |
| 1,2-Dichlorobenzene | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Discharge from industrial chemical factories |
| 1,2-Dichloroethane | ppt | Range Average | ND | ND | ND | ND | ND | ND | ND | Discharge from industrial chemical factories |
| 1,2-Dichloropropane | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Industrial chemical factory discharge; primary component of some fumigants |
| 1,3-Dichloropropene | ppt | Range Average | ND | ND | ND | ND | ND | ND | ND | Runoff/leaching from nematocide used on croplands |
| 1,4-Dichlorobenzene | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Discharge from industrial chemical factories |

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| | | | Diamond Valley Lake | Lake Skinner | Lake Havasu | Lake Mathews | Castaic Lake | Lake Perris | Silverwood Lake | |
| Benzene | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Plastics factory discharge; gas tanks and landfill leaching |
| Carbon Tetrachloride | ppt | Range Average | ND | ND | ND | ND | ND | ND | ND | Discharge from chemical plants and other industrial waste |
| cis -1,2-Dichloroethylene | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Industrial chemical factory discharge; byproduct of TCE and PCE biodegradation |
| Dichloromethane (Methylene Chloride) | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Discharge from pharmaceutical and chemical factories |
| Ethylbenzene | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Petroleum refinery discharge; industrial chemical factories |
| Methyl-tert-butyl Ether (MTBE) | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Gasoline discharge from watercraft engines |
| Monochlorobenzene | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Discharge from industrial and agricultural use, chemical factories, and dry cleaners |
| Styrene | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Rubber and plastics factories discharge; landfill leaching |
| Tetrachloroethylene (PCE) | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Discharge from factories, dry cleaners, and auto shops |
| Toluene | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Discharge from petroleum and chemical refineries |
| trans -1,2-Dichloroethylene | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Industrial chemical factory discharge; byproduct of TCE and PCE biodegradation |
| Trichloroethylene (TCE) | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Discharge from metal degreasing sites and other factories |
| Trichlorofluoromethane (Freon-11) | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Industrial factory discharge; degreasing solvent; propellant |
| Vinyl Chloride | ppt | Range Average | ND | ND | ND | ND | ND | ND | ND | Leaching from PVC piping; plastic factory discharge; byproduct of TCE and PCE biodegradation |
| Xylenes | ppm | Range Average | ND | ND | ND | ND | ND | ND | ND | Discharge from petroleum and chemical refineries; fuel solvent |
| INORGANIC CHEMICALS | | | | | | | | | | |
| Aluminum | ppb | Range Average | ND | 57 | ND | ND | ND | ND | 150 | Residue from water treatment process; natural deposits erosion |
| Antimony | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Petroleum refinery discharges; fire retardants; solder; electronics |
| Arsenic | ppb | Range Average | 3.1 | ND | 2.2 | 2.2 | 3.2 - 3.6 3.4 | ND | ND | Natural deposits erosion, glass and electronics production wastes |
| Asbestos (b) | MFL | Range Average | ND | ND | ND | ND | ND | ND | ND | Asbestos cement pipes internal corrosion; natural deposits erosion |
| Barium | ppb | Range Average | ND | ND | 125 | 131 | ND | ND | ND | Oil and metal refineries discharge; natural deposits erosion |
| Beryllium | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Discharge from metal refineries, aerospace, and defense industries |
| Cadmium | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Internal corrosion of galvanized pipes; discharge from electroplating, industrial factories, and metal refineries; runoff from waste batteries and paints; natural deposits erosion |
| Chromium | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Discharge from steel and pulp mills; natural deposits erosion |
| Copper | ppm | Range Average | ND | ND | ND | ND | ND | ND | ND | Internal corrosion of household pipes; natural deposits erosion; leaching from wood preservatives |

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| Cyanide | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Discharge from steel/metal, plastic, and fertilizer factories |
| Fluoride | ppm | Range Average | 0.1 | 0.1 | 0.3 | 0.3 | 0.1 | 0.1 | ND | Erosion of natural deposits; discharge from fertilizer and aluminum factories |
| Lead | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Internal corrosion of household water plumbing systems; industrial manufacturers' discharge; erosion of natural deposits |
| Mercury | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Erosion of natural deposits; factory discharge; landfill runoff |
| Nickel | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Erosion of natural deposits; discharge from metal factories |
| Nitrate (as Nitrogen) | ppm | Range Average | ND | ND | 0.4 | ND | 0.6 | ND | 0.4 | Runoff and leaching from fertilizer use; leaching from septic tank and sewage; natural deposits erosion |
| Nitrite (as Nitrogen) | ppm | Range Average | ND | ND | ND | ND | ND | ND | ND | Runoff and leaching from fertilizer use; septic tank and sewage; natural deposits erosion |
| Perchlorate (c) | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Industrial waste discharge |
| Selenium | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Refineries, mines, and chemical waste discharge; runoff from livestock lots |
| Thallium | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Leaching from ore processing; discharge from electronics, glass, and pharmaceutical factories |
| Radiologicals | | | | | | | | | | |
| Gross Alpha Particle Activity | pCi/L | Range Average | ND - 6.1 ND | ND - 3.7 ND | 3.3 - 6.3 4.3 | ND - 3.2 ND | ND | ND | ND | Erosion of natural deposits |
| Gross Beta Particle Activity | pCi/L | Range Average | ND - 5.2 ND | ND | 5.1 - 5.3 5.2 | ND - 12 4.3 | ND | ND - 5.4 ND | ND - 4.8 ND | Decay of natural and man-made deposits |
| Radium-226 | pCi/L | Range Average | ND | ND | ND | ND | ND | ND | ND | Erosion of natural deposits |
| Radium-228 | pCi/L | Range Average | ND | ND | ND | ND | ND | ND | ND | Erosion of natural deposits |
| Combined Radium-226 + 228 | pCi/L | Range Average | ND | ND | ND | ND | ND | ND | ND | Erosion of natural deposits |
| Strontium-90 | pCi/L | Range Average | ND | ND | ND | ND | ND | ND | ND | Decay of natural and man-made deposits |
| Tritium | pCi/L | Range Average | ND | ND | ND | ND | ND | ND | ND | Decay of natural and man-made deposits |
| Uranium | pCi/L | Range Average | ND | ND - 1.3 ND | 2.5 - 3.0 2.7 | 2.8 - 3.3 3.1 | ND - 1.2 ND | 1.4 - 2.1 1.6 | ND | Erosion of natural deposits |
| SECONDARY STANDARDS-Aesthetic Standards (d) | | | | | | | | | | |
| Aluminum | ppb | Range Average | ND | 57 | ND | ND | ND | ND | 150 | Residue from water treatment process; natural deposits erosion |
| Chloride | ppm | Range Average | 63 - 80 72 | 52 - 58 55 | 89 - 92 90 | 94 - 95 94 | 70 - 92 81 | 87 - 96 92 | 24 - 27 26 | Runoff/leaching from natural deposits; seawater influence |
| Color | Color Units | Range Average | 5 - 10 8 | 5 - 15 10 | 2 - 5 4 | 1 - 2 2 | 10 | 5 - 7 6 | 10 - 20 15 | Naturally-occurring organic materials |
| Copper | ppm | Range Average | ND | ND | ND | ND | ND | ND | ND | Internal corrosion of household pipes; natural deposits erosion; wood preservatives leaching |
| Foaming Agents - Methylene Blue Active Substances (MBAS) | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Municipal and industrial waste discharges |
| Iron | ppb | Range Average | ND | ND | ND | ND | ND | ND | 194 | Leaching from natural deposits; industrial wastes |

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| Manganese | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Leaching from natural deposits |
| MTBE | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Gasoline discharge from watercraft engines |
| Odor Threshold | TON | Range Average | 7 | 10 | 5 | 5 | 2 | 10 | 7 | Naturally-occurring organic materials |
| Silver | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Industrial discharges |
| Specific Conductance | µS/cm | Range Average | 461 - 555 508 | 465 - 500 482 | 969 - 976 972 | 969 - 978 974 | 512 - 562 537 | 566 - 577 572 | 225 - 226 226 | Substances that form ions in water; seawater influence |
| Sulfate | ppm | Range Average | 47 - 62 54 | 71 - 77 74 | 230 - 240 235 | 235 - 247 241 | 56 - 59 58 | 51 - 58 54 | 14 - 23 18 | Runoff/leaching from natural deposits; industrial wastes |
| Thiobencarb | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Runoff/leaching from rice herbicide |
| Total Dissolved Solids (TDS) | ppm | Range Average | 254 - 315 284 | 282 - 284 283 | 619 - 642 630 | 605 - 646 626 | 293 - 341 317 | 302 - 331 316 | 122 - 138 130 | Runoff/leaching from natural deposits |
| Turbidity | NTU | Range Average | 0.4 - 0.5 0.4 | 1.0 - 1.2 1.1 | 0.5 - 0.9 0.7 | 0.9 - 1.4 1.2 | 1.2 - 1.4 1.3 | 0.9 - 1.6 1.2 | 1.2 - 2.7 2.0 | Soil runoff |
| Zinc | ppm | Range Average | ND | ND | ND | ND | ND | ND | ND | Runoff/leaching from natural deposits; industrial wastes |
| OTHER PARAMETERS | | | | | | | | | | |
| Microbiological (e,f) | | | | | | | | | | |
| Total Coliform Bacteria | CFU/100 mL | Range Median | 27 - 4,200 96 | 2 - 18,000 300 | 25 - 18,000 550 | 1 - 4,500 510 | NC | 56 - 11,000 580 | 94 - 10,000 1,200 | Naturally present in the environment |
| E. coli | CFU/100 mL | Range Median | ND - 4 ND | ND - 11 3 | ND - 2 ND | ND - 81 9 | NC | ND - 420 16 | ND - 10 2 | Human and animal fecal waste |
| General Minerals | | | | | | | | | | |
| Alkalinity (as CaCO ₃) | ppm | Range Average | 77 - 86 82 | 70 - 81 76 | 128 128 | 103 - 124 114 | 76 - 82 79 | 80 - 85 82 | 46 - 50 48 | Runoff/leaching of natural deposits; carbonate, bicarbonate, hydroxide, and occasionally borate, silicate, and phosphate |
| Calcium | ppm | Range Average | 24 - 28 26 | 29 - 30 30 | 73 - 78 76 | 62 - 77 70 | 27 | 25 - 26 26 | 12 - 14 13 | Runoff/leaching from natural deposits |
| Hardness (as CaCO ₃) | ppm | Range Average | 106 - 124 115 | 116 - 118 117 | 278 - 292 285 | 262 - 286 274 | 114 - 120 117 | 108 - 112 110 | 56 - 57 56 | Runoff/leaching from natural deposits; sum of polyvalent cations, generally magnesium and calcium present in the water |
| Magnesium | ppm | Range Average | 11 - 14 12 | 12 12 | 26 - 27 26 | 27 - 28 28 | 12 - 14 13 | 13 - 14 14 | 6.3 - 6.5 6.4 | Runoff/leaching from natural deposits |
| Potassium | ppm | Range Average | 3.0 - 3.5 3.2 | 2.9 - 3.1 3.0 | 4.4 - 4.8 4.6 | 4.8 - 4.9 4.8 | 3.1 - 3.2 3.2 | 3.2 - 3.4 3.3 | 1.5 - 2.2 1.8 | Salt present in the water; naturally-occurring |
| Sodium | ppm | Range Average | 48 - 61 54 | 45 - 50 48 | 95 - 96 96 | 100 - 101 100 | 52 - 68 60 | 66 - 73 70 | 20 - 21 20 | Salt present in the water; naturally-occurring |
| Unregulated Contaminants | | | | | | | | | | |
| Boron | ppb | Range Average | 170 | 110 | 110 | 120 | 190 | 180 | 110 | Runoff/leaching from natural deposits; industrial wastes |
| Chromium VI (g) | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Runoff/leaching from natural deposits; discharge from industrial waste factories |
| Dichlorodifluoromethane (Freon-12) | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Industrial waste discharge |
| Ethyl-tert-butyl ether (ETBE) | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Used as gasoline additive |
| tert-Amyl-methyl ether (TAME) | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | Used as gasoline additive |

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| tert-Butyl alcohol (TBA) | ppb | Range Average | ND | ND | ND | ND | ND | ND | ND | MTBE breakdown product; used as gasoline additive |
| Vanadium | ppb | Range Average | ND | 3.1 | ND | ND | 4.2 | 3.3 | 3.3 | Naturally-occurring; industrial waste discharge |
| Miscellaneous | | | | | | | | | | |
| pH | pH Units | Range | 7.4 - 8.4 | 8.0 - 8.2 | 7.9 - 8.2 | 7.8 - 8.3 | 7.2 - 7.7 | 7.7 - 8.0 | 7.5 - 7.7 | NA |
| | | Average | 7.9 | 8.1 | 8.0 | 8.0 | 7.5 | 7.8 | 7.6 | |
| Radon | pCi/L | Range | ND | ND | ND | ND | ND | ND | ND | Gas produced by the decay of naturally-occurring uranium in soil and water |
| | | Average | | | | | | | | |
| Total Organic Carbon (TOC) | ppm | Range | 2.9 - 3.1 | 3.2 - 4.7 | 3.0 - 3.3 | 2.9 - 3.3 | 3.4 - 3.6 | 3.9 - 4.5 | 3.0 - 5.0 | Various natural and man-made sources; TOC is a precursor for the formation of disinfection byproducts |
| | | Average | 3.0 | 3.9 | 3.1 | 3.1 | 3.5 | 4.2 | 4.0 | |

DEFINITION OF TERMS AND FOOTNOTES

*As a wholesale water system, Metropolitan provides its member agencies with relevant source water information and monitoring results that they may need for their annual water quality report. Metropolitan's compliance with state or federal regulations is determined at the treatment plant effluent locations and/or distribution system, or plant influent. MCLs, PHGs, and state DLRs are included in the Treatment Plant Effluent Report.

Definition of Terms

Average - Result based on arithmetic mean
CaCO₃ - Calcium Carbonate
CFU - Colony-Forming Units
DLR - Detection Limits for Purposes of Reporting
MCL - Maximum Contaminant Level
MFL - Million Fibers per Liter
NA - Not Applicable
NC - Not Collected
ND - Not Detected
NTU - Nephelometric Turbidity Units
PHG - Public Health Goal

pCi/L - picoCuries per Liter
ppb - parts per billion or micrograms per liter (µg/L)
ppm - parts per million or milligrams per liter (mg/L)
ppq - parts per quadrillion or picograms per liter (pg/L)
ppt - parts per trillion or nanograms per liter (ng/L)
Range - Results based on minimum and maximum values; range and average values are the same for samples collected once or twice annually
SWRCB - State Water Resources Control Board
TON - Threshold Odor Number
µS/cm - microSiemen per centimeter; or micromho per centimeter (µmho/cm)

Footnotes

- (a) Data are from samples collected in 2015. Metropolitan's required triennial monitoring (2017-2019) will be performed in 2018.
- (b) Data are from 2011 and reported once every nine-year compliance cycle until the next samples are collected.
- (c) Metropolitan's perchlorate reporting level is 0.1 ppb, which is below the state DLR of 4 ppb. Data above Metropolitan's reporting level but below the DLR are reported as ND in this report. These data are available upon request.
- (d) State Secondary Standards apply to water supplied to the public by community water systems; annual monitoring is required for approved surface water sources or distribution system entry points of the effluent of source water treatment.
- (e) Monthly median per State guidelines and recommendations.
- (f) Castaic Lake samples were collected from Jensen Treatment Plant Influent and are reported in the Treatment Plant Influent Report.
- (g) Previous chromium VI MCL of 10 ppb was withdrawn on 9/11/2017. Metropolitan's chromium VI reporting level is 0.03 ppb, which is below the state DLR of 1 ppb. Data above Metropolitan's reporting level but below the DLR are reported as ND in this report. These data are available upon request.

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Treatment Plant Influent

| Parameter | Unit | Range Average | Treatment Plant Influent * | | | | | Major Sources in Drinking Water |
|--|--------------|----------------------|----------------------------|-------------------|-------------------|-------------------|-------------------|---|
| | | | Diemer Plant | Jensen Plant | Mills Plant | Skinner Plant | Weymouth Plant | |
| Percent State Water Project (a) | % | Range Average | 0 - 100 71 | 60 - 100 97 | 100 | 0 - 100 62 | 0 - 100 74 | NA |
| LONG TERM 2 ENHANCED SURFACE WATER TREATMENT RULE (LT2ESWTR) (b) ** | | | | | | | | |
| <i>Cryptosporidium</i> | oocysts/10 L | Range Average | ND ND | ND ND | ND ND | ND ND | ND ND | Human and animal fecal waste |
| <i>E. coli</i> | CFU/100 mL | Range Average | ND - 5 3 | ND - 4 1 | ND - 6 3 | 2 - 7 4 | ND - 9 5 | Human and animal fecal waste |
| Turbidity | NTU | Range Average | 0.6 - 6.4 3.9 | 1.8 - 2.2 2.0 | 0.8 - 6.6 4.3 | 0.7 - 2.4 1.4 | 0.7 - 7.5 4.6 | Soil runoff |
| OTHER PARAMETERS | | | | | | | | |
| Microbiological ** | | | | | | | | |
| Total Coliform Bacteria (c) | CFU/100 mL | Range Median | 2 - 2,900 600 | 43 - 2,300 260 | 74 - 6,600 710 | 73 - 1,600 390 | 12 - 6,300 880 | Naturally present in the environment |
| <i>E. coli</i> (c) | CFU/100 mL | Range Median | ND - 10 2 | ND - 2 ND | ND - 6 1 | 1 - 9 2 | ND - 9 1 | Human and animal fecal waste |
| <i>Cryptosporidium</i> (d) | oocysts/10 L | Range Average | ND ND | ND ND | ND ND | ND ND | ND ND | Human and animal fecal waste |
| <i>Giardia</i> (d,e) | cysts/10 L | Range Average | ND ND | ND ND | ND ND | ND - 1 0.083 | ND ND | Human and animal fecal waste |
| Chemical | | | | | | | | |
| Alkalinity (as CaCO ₃) ** | ppm | Range Highest RAA | 44 - 127 111 | 67 - 88 88 | 33 - 67 69 | 46 - 125 117 | 39 - 126 111 | Runoff/leaching of natural deposits; carbonate, bicarbonate, hydroxide, and occasionally borate, silicate, and phosphate |
| Aluminum | ppb | Range Average | 160 160 | ND ND | 170 170 | 57 57 | 190 190 | Residue from water treatment process; natural deposits erosion |
| Antimony | ppb | Range Average | ND ND | ND ND | ND ND | ND ND | ND ND | Petroleum refinery discharges; fire retardants; solder; electronics |
| Arsenic | ppb | Range Average | ND ND | 3.2 3.2 | ND ND | ND ND | ND ND | Natural deposits erosion, glass and electronics production wastes |
| Barium | ppb | Range Average | ND ND | ND ND | ND ND | ND ND | ND ND | Oil and metal refineries discharges; natural deposits erosion |
| Beryllium | ppb | Range Average | ND ND | ND ND | ND ND | ND ND | ND ND | Discharge from metal refineries, aerospace, and defense industries |
| Boron | ppb | Range Average | 100 100 | 190 190 | 100 100 | 110 110 | 100 100 | Runoff/leaching from natural deposits; Industrial wastes |
| Cadmium | ppb | Range Average | ND ND | ND ND | ND ND | ND ND | ND ND | Internal corrosion of galvanized pipes; discharge from electroplating, industrial factories, and metal refineries; runoff from waste batteries and paints; natural deposits erosion |
| Chromium | ppb | Range Average | ND ND | ND ND | ND ND | ND ND | ND ND | Discharge from steel and pulp mills; natural deposits erosion |
| Chromium VI (f) | ppb | Range Average | ND ND | ND ND | ND ND | ND ND | ND ND | Runoff/leaching from natural deposits; Industrial wastes |
| Copper | ppm | Range Average | ND ND | ND ND | ND ND | ND ND | ND ND | Internal corrosion of household pipes; natural deposits erosion; leaching from wood preservatives |
| Fluoride ** | ppm | Range Average | 0.1 - 0.3 0.1 | 0.1 - 0.3 0.2 | ND - 0.1 0.1 | 0.1 - 0.4 0.2 | ND - 0.3 0.1 | Erosion of natural deposits; discharge from fertilizer and aluminum factories |
| Hardness (as CaCO ₃) | ppm | Range Average | 60 - 300 127 | 94 - 128 120 | 26 - 94 59 | 54 - 292 145 | 39 - 302 117 | Runoff/leaching from natural deposits; sum of polyvalent cations, generally magnesium and calcium present in the water |
| Iron | ppb | Range Average | 193 193 | ND ND | 207 207 | ND ND | 184 184 | Leaching from natural deposits; industrial wastes |
| Lead | ppb | Range Average | ND ND | ND ND | ND ND | ND ND | ND ND | Internal corrosion of household water plumbing systems; industrial manufacturers' discharge; erosion of natural deposits |
| Manganese | ppb | Range Average | ND ND | ND ND | ND ND | ND ND | ND ND | Leaching from natural deposits |
| Mercury | ppb | Range Average | ND ND | ND ND | ND ND | ND ND | ND ND | Erosion of natural deposits; factory discharge; landfill runoff |

2017 Water Quality Report to Member Agencies—The Metropolitan Water District of Southern California

Treatment Plant Influent

| Parameter | Unit | Range Average | Treatment Plant Influent * | | | | | Major Sources in Drinking Water |
|-------------------------------|----------|------------------|----------------------------|--------------|-------------|---------------|----------------|---|
| | | | Diemer Plant | Jensen Plant | Mills Plant | Skinner Plant | Weymouth Plant | |
| Nickel | ppb | Range | ND | ND | ND | ND | ND | Erosion of natural deposits; discharge from metal factories |
| | | Average | | | | | | |
| Perchlorate (g) | ppb | Range | ND | ND | ND | ND | ND | Industrial waste discharge |
| | | Average | | | | | | |
| pH | pH Units | Range | 7.6 - 8.5 | 7.1 - 8.2 | 7.5 - 8.2 | 7.5 - 8.4 | 7.4 - 8.4 | NA |
| | | Average | 8.0 | 7.5 | 7.8 | 8.0 | 8.0 | |
| Selenium | ppb | Range | ND | ND | ND | ND | ND | Refineries, mines, and chemical waste discharge; runoff from livestock lots |
| | | Average | | | | | | |
| Specific Conductance | µS/cm | Range | 273 - 610 | 392 - 620 | 144 - 554 | 235 - 989 | 369 - 582 | Substances that form ions in water; seawater influence |
| | | Average | 486 | 545 | 274 | 536 | 475 | |
| Silver | ppb | Range | ND | ND | ND | ND | ND | Industrial discharges |
| | | Average | | | | | | |
| Thallium | ppb | Range | ND | ND | ND | ND | ND | Leaching from ore processing; discharge from electronics, glass, and pharmaceutical factories |
| | | Average | | | | | | |
| Total Organic Carbon (TOC) ** | ppm | Range | 2.9 - 5.5 | 3.1 - 4.4 | 2.8 - 5.7 | 2.9 - 5.2 | 2.8 - 5.7 | Various natural and man-made sources |
| | | Highest RAA | 3.6 | 3.5 | 4.0 | 3.5 | 3.6 | |
| Turbidity | NTU | Range | 0.7 - 6.5 | 0.6 - 4.4 | 0.5 - 7.8 | 0.4 - 5.9 | 0.6 - 6.8 | Soil runoff |
| | | Average | 2.4 | 1.5 | 2.7 | 1.3 | 2.4 | |
| Vanadium | ppb | Range | 3.4 | 4.2 | 3.2 | 3.1 | 3.0 | Naturally-occurring; industrial waste discharge |
| | | Average | | | | | | |
| Zinc | ppm | Range | ND | ND | ND | ND | ND | Runoff/leaching from natural deposits; industrial wastes |
| | | Average | | | | | | |

DEFINITION OF TERMS AND FOOTNOTES

*As a wholesale water system, Metropolitan provides its member agencies with relevant source water information and monitoring results that they may need for their annual water quality report. Metropolitan's compliance with state or federal regulations is determined at the treatment plant effluent locations and/or distribution system, or plant influent as noted by a double asterisk (**). MCLs, PHGs and state DLRs are included in the Treatment Plant Effluent Report.

Definition of Terms

Average - Result based on arithmetic mean
CaCO₃ - Calcium Carbonate
CFU - Colony-Forming Units
DLR - Detection Limits for Purposes of Reporting
MCL - Maximum Contaminant Level
MFL - Million Fibers per Liter
NA - Not Applicable
ND - Not Detected
NTU - Nephelometric Turbidity Units

PHG - Public Health Goal
ppb - parts per billion or micrograms per liter (µg/L)
ppm - parts per million or milligrams per liter (mg/L)
RAA - Running Annual Average; highest RAA is the highest of all Running Annual Averages calculated as average of all samples collected within a 12-month period
Range - Results based on minimum and maximum values; range and average are the same for samples collected once or twice annually
µS/cm - microSiemen per centimeter; or micromho per centimeter (µmho/cm)

Footnotes

- (a) The Jensen Treatment Plant received Los Angeles Aqueduct water as part of its influent during the months of March and June 2017.
- (b) Samples collected from January to March 2017 during the second round of LT2ESWTR required monitoring of *Cryptosporidium*, *E. coli*, and turbidity in the plant influent. No *Cryptosporidium* oocysts were detected during the entire LT2ESTWR monitoring period (April 2015 to March 2017), which places Metropolitan plants in LT2ESWTR Bin 1, meaning that no additional treatment is required.
- (c) Monthly median per State guidelines and recommendations.
- (d) Samples collected from January to December 2017.
- (e) A single *Giardia* cyst was detected in the Skinner Treatment Plant Influent which equates to an annual average of 0.083 cyst/10 L.
- (f) Previous chromium VI MCL of 10 ppb was withdrawn on 9/11/2017. Metropolitan's chromium VI reporting level is 0.03 ppb, which is below the state DLR of 1 ppb. Data above Metropolitan's reporting level but below the DLR are reported as ND in this report. These data are available upon request.
- (g) Metropolitan's perchlorate reporting level is 0.1 ppb, which is below the state DLR of 4 ppb. Data above Metropolitan's reporting level but below the DLR are reported as ND in this report. These data are available upon request.

2017 Water Quality Report to Member Agencies—The Metropolitan Water District of Southern California
Treatment Plant Effluents and Distribution System

| Parameter | Units | State MCL | PHG | State DLR | Range Average | Treatment Plant Effluent | | | | | Distribution System | Major Sources in Drinking Water |
|---|---------------|-----------|----------|-----------|----------------------------|--------------------------|--------------|-------------|---------------|----------------|---------------------|--|
| | | | | | | Diemer Plant | Jensen Plant | Mills Plant | Skinner Plant | Weymouth Plant | | |
| Percent State Water Project (a) | % | NA | NA | NA | Range | 0 - 100 | 60 - 100 | 100 | 0 - 100 | 0 - 100 | | NA |
| | | | | | Average | 71 | 97 | | 62 | 74 | | |
| PRIMARY STANDARDS-Mandatory Health-Related CLARITY | | | | | | | | | | | | |
| Combined Filter Effluent Turbidity (b) | NTU | TT | NA | NA | Highest | 0.08 | 0.06 | 0.08 | 0.10 | 0.04 | | Soil runoff |
| | % | | | | % ≤ 0.3 | 100 | 100 | 100 | 100 | 100 | | |
| MICROBIOLOGICAL (c) | | | | | | | | | | | | |
| Total Coliform Bacteria (d) | % | 5.0 | MCLG = 0 | NA | Range | 0 | 0 | 0 | 0 | 0 | 0 - 0.2 | Naturally present in the environment |
| | | | | | Average | | | | | | 0.1 | |
| <i>E. coli</i> (e) | NA | TT | MCLG = 0 | NA | Number of Positive Samples | 0 | 0 | 0 | 0 | 0 | 0 | Human and animal fecal waste |
| Heterotrophic Plate Count (HPC) Bacteria (f) | CFU/mL | TT | NA | NA | Range | ND - 1 | ND - 1 | ND | ND - 1 | ND - 1 | NA | Naturally present in the environment |
| | | | | | Median | ND | ND | | ND | ND | | |
| <i>Cryptosporidium</i> | oocysts/200 L | TT | MCLG = 0 | NA | Range | ND | ND | ND | ND | ND | | Human and animal fecal waste |
| | | | | | Average | | | | | | | |
| <i>Giardia</i> | cysts/200 L | TT | MCLG = 0 | NA | Range | ND | ND | ND | ND | ND | | Human and animal fecal waste |
| | | | | | Average | | | | | | | |
| ORGANIC CHEMICALS | | | | | | | | | | | | |
| Synthetic Organic Compounds (g) | | | | | | | | | | | | |
| 2,4,5 - TP (Silvex) | ppb | 50 | 3 | 1 | Range | ND | ND | ND | ND | ND | | Residue of banned herbicide |
| | | | | | Average | | | | | | | |
| 2,4-D | ppb | 70 | 20 | 10 | Range | ND | ND | ND | ND | ND | | Runoff from herbicide used on row crops, rangeland, lawns, and aquatic weeds |
| | | | | | Average | | | | | | | |
| Acrylamide (h) | ppm | TT | MCLG = 0 | NA | Range | NA | NA | NA | NA | NA | | Water treatment chemical impurities |
| | | | | | Average | | | | | | | |
| Alachlor | ppb | 2 | 4 | 1 | Range | ND | ND | ND | ND | ND | | Runoff from herbicide used on row crops |
| | | | | | Average | | | | | | | |
| Atrazine | ppb | 1 | 0.15 | 0.5 | Range | ND | ND | ND | ND | ND | | Runoff from herbicide used on row crops and along railroad and highway right-of-ways |
| | | | | | Average | | | | | | | |
| Bentazon | ppb | 18 | 200 | 2 | Range | ND | ND | ND | ND | ND | | Runoff/leaching from herbicide used on beans, peppers, corn, peanuts, rice, and ornamental grasses |
| | | | | | Average | | | | | | | |
| Benzo(a)pyrene | ppt | 200 | 7 | 100 | Range | ND | ND | ND | ND | ND | | Leaching from linings and coatings of water storage tanks and distribution mains |
| | | | | | Average | | | | | | | |
| Carbofuran | ppb | 18 | 0.7 | 5 | Range | ND | ND | ND | ND | ND | | Leaching of soil fumigant used on rice, alfalfa, and grape vineyards |
| | | | | | Average | | | | | | | |
| Chlordane | ppt | 100 | 30 | 100 | Range | ND | ND | ND | ND | ND | | Residue of banned insecticide |
| | | | | | Average | | | | | | | |
| Dalapon | ppb | 200 | 790 | 10 | Range | ND | ND | ND | ND | ND | | Runoff from herbicide used on right-of-ways, and crops and landscape maintenance |
| | | | | | Average | | | | | | | |
| Di(2-ethylhexyl)adipate | ppb | 400 | 200 | 5 | Range | ND | ND | ND | ND | ND | | Discharge from chemical factories |
| | | | | | Average | | | | | | | |
| Di(2-ethylhexyl)phthalate | ppb | 4 | 12 | 3 | Range | ND | ND | ND | ND | ND | | Discharge from rubber and chemical factories; ingredient in pesticides |
| | | | | | Average | | | | | | | |
| Dibromochloropropane (DBCP) | ppt | 200 | 1.7 | 10 | Range | ND | ND | ND | ND | ND | | Banned nematocide that may still be present in soils due to runoff/leaching |
| | | | | | Average | | | | | | | |
| Dinoseb | ppb | 7 | 14 | 2 | Range | ND | ND | ND | ND | ND | | Runoff from herbicide used on soybeans, vegetables, and fruits |
| | | | | | Average | | | | | | | |
| Dioxin (2,3,7,8-TCDD) | ppq | 30 | 0.05 | 5 | Range | ND | ND | ND | ND | ND | | Waste incineration emissions; chemical factory discharge |
| | | | | | Average | | | | | | | |
| Diquat | ppb | 20 | 6 | 4 | Range | ND | ND | ND | ND | ND | | Runoff from herbicide used for terrestrial and aquatic weeds |
| | | | | | Average | | | | | | | |
| Endothall | ppb | 100 | 94 | 45 | Range | ND | ND | ND | ND | ND | | Runoff from herbicide used for terrestrial and aquatic weeds; defoliant |
| | | | | | Average | | | | | | | |
| Endrin | ppb | 2 | 0.3 | 0.1 | Range | ND | ND | ND | ND | ND | | Residue of banned insecticide and rodenticide |
| | | | | | Average | | | | | | | |

2017 Water Quality Report to Member Agencies—The Metropolitan Water District of Southern California
Treatment Plant Effluents and Distribution System

| Parameter | Units | State MCL | PHG | State DLR | Range Average | Treatment Plant Effluent | | | | | Distribution System | Major Sources in Drinking Water |
|---|-------|-----------|----------|-----------|------------------|--------------------------|-----------------|-------------|------------------|-------------------|------------------------|---|
| | | | | | | Diemer Plant | Jensen Plant | Mills Plant | Skinner Plant | Weymouth Plant | | |
| Epichlorohydrin (h) | ppm | TT | MCLG = 0 | NA | Range Average | NA | NA | NA | NA | NA | | Water treatment chemical impurities |
| Ethylene Dibromide (EDB) | ppt | 50 | 10 | 20 | Range Average | ND | ND | ND | ND | ND | | Petroleum refinery discharges; underground gas tank leaks; banned nematocide that maybe still present in soils due to runoff and leaching |
| Glyphosate | ppb | 700 | 900 | 25 | Range Average | ND | ND | ND | ND | ND | | Runoff from herbicide use |
| Heptachlor | ppt | 10 | 8 | 10 | Range Average | ND | ND | ND | ND | ND | | Residue of banned insecticide |
| Heptachlor Epoxide | ppt | 10 | 6 | 10 | Range Average | ND | ND | ND | ND | ND | | Breakdown product of heptachlor |
| Hexachlorobenzene | ppb | 1 | 0.03 | 0.5 | Range Average | ND | ND | ND | ND | ND | | Discharge from metal refineries and agrichemicals factories; wastewater chlorination reaction byproduct |
| Hexachlorocyclopentadiene | ppb | 50 | 2 | 1 | Range Average | ND | ND | ND | ND | ND | | Discharge from chemical factories |
| Lindane | ppt | 200 | 32 | 200 | Range Average | ND | ND | ND | ND | ND | | Runoff/leaching from insecticide used on cattle, lumber, and gardens |
| Methoxychlor | ppb | 30 | 0.09 | 10 | Range Average | ND | ND | ND | ND | ND | | Runoff/leaching from insecticide uses on fruits, vegetables, alfalfa, and livestock |
| Molinate (Ordram) | ppb | 20 | 1 | 2 | Range Average | ND | ND | ND | ND | ND | | Runoff/leaching from herbicide used on rice |
| Oxamyl (Vydate) | ppb | 50 | 26 | 20 | Range Average | ND | ND | ND | ND | ND | | Runoff/leaching from insecticide uses |
| Pentachlorophenol | ppb | 1 | 0.3 | 0.2 | Range Average | ND | ND | ND | ND | ND | | Discharge from wood preserving factories; insecticidal and herbicidal uses |
| Picloram | ppb | 500 | 166 | 1 | Range Average | ND | ND | ND | ND | ND | | Herbicide runoff |
| Polychlorinated Biphenyls (PCBs) | ppt | 500 | 90 | 500 | Range Average | ND | ND | ND | ND | ND | | Runoff from landfills; discharge of waste chemicals |
| Simazine | ppb | 4 | 4 | 1 | Range Average | ND | ND | ND | ND | ND | | Herbicide runoff |
| Thiobencarb | ppb | 70 | 42 | 1 | Range Average | ND | ND | ND | ND | ND | | Runoff/leaching from herbicide used on rice |
| Toxaphene | ppb | 3 | 0.03 | 1 | Range Average | ND | ND | ND | ND | ND | | Runoff/leaching from insecticide used on cotton and cattle |
| Volatile Organic Compounds | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | ppb | 200 | 1,000 | 0.5 | Range Average | ND | ND | ND | ND | ND | | Metal degreasing site discharge; manufacture of food wrappings |
| 1,1,2,2-Tetrachloroethane | ppb | 1 | 0.1 | 0.5 | Range Average | ND | ND | ND | ND | ND | | Discharge from industrial, agricultural use, and chemical factories; solvent used in production of TCE, pesticides, varnish, and lacquers |
| 1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113) | ppm | 1.2 | 4 | 0.01 | Range Average | ND | ND | ND | ND | ND | | Discharge from metal degreasing sites and other factories; dry cleaning solvent; refrigerant |
| 1,1,2-Trichloroethane | ppb | 5 | 0.3 | 0.5 | Range Average | ND | ND | ND | ND | ND | | Discharge from industrial chemical factories |
| 1,1-Dichloroethane | ppb | 5 | 3 | 0.5 | Range Average | ND | ND | ND | ND | ND | | Extraction and degreasing solvent; fumigant |
| 1,1-Dichloroethylene | ppb | 6 | 10 | 0.5 | Range Average | ND | ND | ND | ND | ND | | Discharge from industrial chemical factories |
| 1,2,4-Trichlorobenzene | ppb | 5 | 5 | 0.5 | Range Average | ND | ND | ND | ND | ND | | Discharge from textile-finishing factories |
| 1,2-Dichlorobenzene | ppb | 600 | 600 | 0.5 | Range Average | ND | ND | ND | ND | ND | | Discharge from industrial chemical factories |
| 1,2-Dichloroethane | ppt | 500 | 400 | 500 | Range Average | ND | ND | ND | ND | ND | | Discharge from industrial chemical factories |
| 1,2-Dichloropropane | ppb | 5 | 0.5 | 0.5 | Range Average | ND | ND | ND | ND | ND | | Industrial chemical factory discharge; primary component of some fumigants |

2017 Water Quality Report to Member Agencies—The Metropolitan Water District of Southern California
Treatment Plant Effluents and Distribution System

| Parameter | Units | State MCL | PHG | State DLR | Range Average | Treatment Plant Effluent | | | | | Distribution System | Major Sources in Drinking Water |
|--------------------------------------|-------|-----------|------------|-----------|----------------------|--------------------------|-----------------|---------------|------------------|-------------------|------------------------|---|
| | | | | | | Diemer Plant | Jensen Plant | Mills Plant | Skinner Plant | Weymouth Plant | | |
| 1,3-Dichloropropene | ppt | 500 | 200 | 500 | Range Average | ND | ND | ND | ND | ND | | Runoff/leaching from nematocide used on croplands |
| 1,4-Dichlorobenzene | ppb | 5 | 6 | 0.5 | Range Average | ND | ND | ND | ND | ND | | Discharge from industrial chemical factories |
| Benzene | ppb | 1 | 0.15 | 0.5 | Range Average | ND | ND | ND | ND | ND | | Plastics factory discharge; gas tanks and landfill leaching |
| Carbon Tetrachloride | ppt | 500 | 100 | 500 | Range Average | ND | ND | ND | ND | ND | | Discharge from chemical plants and other industrial waste |
| cis-1,2-Dichloroethylene | ppb | 6 | 100 | 0.5 | Range Average | ND | ND | ND | ND | ND | | Industrial chemical factory discharge; byproduct of TCE and PCE biodegradation |
| Dichloromethane (Methylene Chloride) | ppb | 5 | 4 | 0.5 | Range Average | ND | ND | ND | ND | ND | | Discharge from pharmaceutical and chemical factories; insecticide |
| Ethylbenzene | ppb | 300 | 300 | 0.5 | Range Average | ND | ND | ND | ND | ND | | Petroleum refinery discharge; industrial chemical factories |
| Methyl-tert-butyl ether (MTBE) | ppb | 13 | 13 | 3 | Range Average | ND | ND | ND | ND | ND | | Gasoline discharge from watercraft engines |
| Monochlorobenzene | ppb | 70 | 70 | 0.5 | Range Average | ND | ND | ND | ND | ND | | Discharge from industrial and agricultural use, chemical factories, and dry cleaners |
| Styrene | ppb | 100 | 0.5 | 0.5 | Range Average | ND | ND | ND | ND | ND | | Rubber and plastics factories discharge; landfill leaching |
| Tetrachloroethylene (PCE) | ppb | 5 | 0.06 | 0.5 | Range Average | ND | ND | ND | ND | ND | | Discharge from factories, dry cleaners, and auto shops |
| Toluene | ppb | 150 | 150 | 0.5 | Range Average | ND | ND | ND | ND | ND | | Discharge from petroleum and chemical refineries |
| trans-1,2-Dichloroethylene | ppb | 10 | 60 | 0.5 | Range Average | ND | ND | ND | ND | ND | | Industrial chemical factory discharge; byproduct of TCE and PCE biodegradation |
| Trichloroethylene (TCE) | ppb | 5 | 1.7 | 0.5 | Range Average | ND | ND | ND | ND | ND | | Discharge from metal degreasing sites and other factories |
| Trichlorofluoromethane (Freon-11) | ppb | 150 | 1,300 | 5 | Range Average | ND | ND | ND | ND | ND | | Industrial factory discharge; degreasing solvent; propellant and refrigerant |
| Vinyl Chloride | ppt | 500 | 50 | 500 | Range Average | ND | ND | ND | ND | ND | | Leaching from PVC piping; plastic factory discharge; byproduct of TCE and PCE biodegradation |
| Xylenes | ppm | 1.750 | 1.8 | 0.0005 | Range Average | ND | ND | ND | ND | ND | | Discharge from petroleum and chemical refineries; fuel solvent |
| INORGANIC CHEMICALS | | | | | | | | | | | | |
| Aluminum | ppb | 1,000 | 600 | 50 | Range Highest RAA | ND - 130 159 | ND - 120 89 | ND - 85 93 | ND | ND - 210 170 | | Residue from water treatment process; natural deposits erosion |
| Antimony | ppb | 6 | 1 | 6 | Range Average | ND | ND | ND | ND | ND | | Petroleum refinery discharges; fire retardants; solder; electronics |
| Arsenic | ppb | 10 | 0.004 | 2 | Range Average | ND | ND - 2.4 ND | ND | ND | ND | | Natural deposits erosion, glass and electronics production wastes |
| Asbestos (i) | MFL | 7 | 7 | 0.2 | Range Average | ND | ND | ND | ND | ND | | Asbestos cement pipes internal corrosion; natural deposits erosion |
| Barium | ppb | 1,000 | 2,000 | 100 | Range Average | ND | ND | ND | ND | ND | | Oil and metal refineries discharge; natural deposits erosion |
| Beryllium | ppb | 4 | 1 | 1 | Range Average | ND | ND | ND | ND | ND | | Discharge from metal refineries, aerospace, and defense industries |
| Cadmium | ppb | 5 | 0.04 | 1 | Range Average | ND | ND | ND | ND | ND | | Internal corrosion of galvanized pipes; discharge from electroplating, industrial factories, and metal refineries; runoff from waste batteries and paints; natural deposits erosion |
| Chromium | ppb | 50 | MCLG = 100 | 10 | Range Average | ND | ND | ND | ND | ND | | Discharge from steel and pulp mills; natural deposits erosion |
| Copper (j) | ppm | AL = 1.3 | 0.3 | 0.05 | Range Average | ND | ND | ND | ND | ND | | Internal corrosion of household pipes; natural deposits erosion; leaching from wood preservatives |
| Cyanide | ppb | 150 | 150 | 100 | Range Average | ND | ND | ND | ND | ND | | Discharge from steel/metal, plastic, and fertilizer factories |

2017 Water Quality Report to Member Agencies—The Metropolitan Water District of Southern California
Treatment Plant Effluents and Distribution System

| Parameter | Units | State MCL | PHG | State DLR | Range Average | Treatment Plant Effluent | | | | | Distribution System | Major Sources in Drinking Water |
|---|-------|------------|-------------|-----------|-----------------------|--------------------------|------------------|------------------|------------------|-------------------|------------------------|--|
| | | | | | | Diemer Plant | Jensen Plant | Mills Plant | Skinner Plant | Weymouth Plant | | |
| Fluoride (k) | ppm | 2.0 | 1 | 0.1 | Range Average | 0.6 - 0.9 0.7 | 0.6 - 0.8 0.7 | 0.6 - 0.9 0.7 | 0.5 - 0.9 0.7 | 0.5 - 0.9 0.7 | | Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories |
| Lead (j) | ppb | AL = 15 | 0.2 | 5 | Range Average | ND | ND | ND | ND | ND | | Internal corrosion of household water plumbing systems; industrial manufacturers' discharge; erosion of natural deposits |
| Mercury | ppb | 2 | 1.2 | 1 | Range Average | ND | ND | ND | ND | ND | | Erosion of natural deposits; factory discharge; landfill runoff |
| Nickel | ppb | 100 | 12 | 10 | Range Average | ND | ND | ND | ND | ND | | Erosion of natural deposits; discharge from metal factories |
| Nitrate (as Nitrogen) | ppm | 10 | 10 | 0.4 | Range Average | ND | 0.6 | 0.5 | ND | ND | | Runoff and leaching from fertilizer use; leaching from septic tank and sewage; natural deposits erosion |
| Nitrite (as Nitrogen) | ppm | 1 | 1 | 0.4 | Range Average | ND | ND | ND | ND | ND | | Runoff and leaching from fertilizer use; septic tank and sewage; natural deposits erosion |
| Perchlorate (l) | ppb | 6 | 1 | 4 | Range Average | ND | ND | ND | ND | ND | | Industrial waste discharge |
| Selenium | ppb | 50 | 30 | 5 | Range Average | ND | ND | ND | ND | ND | | Refineries, mines, and chemical waste discharge; runoff from livestock lots |
| Thallium | ppb | 2 | 0.1 | 1 | Range Average | ND | ND | ND | ND | ND | | Leaching from ore processing; discharge from electronics, glass, and pharmaceutical factories |
| Radiologicals | | | | | | | | | | | | |
| Gross Alpha Particle Activity | pCi/L | 15 | MCLG = 0 | 3 | Range Average | ND | ND - 3 ND | ND | ND - 4 ND | ND | | Erosion of natural deposits |
| Gross Beta Particle Activity | pCi/L | 50 | MCLG = 0 | 4 | Range Average | ND | ND | ND | ND - 5 ND | ND | | Decay of natural and man-made deposits |
| Radium-226 | pCi/L | NA | 0.05 | 1 | Range Average | ND | ND | ND | ND | ND | | Erosion of natural deposits |
| Radium-228 | pCi/L | NA | 0.019 | 1 | Range Average | ND | ND | ND | ND | ND | | Erosion of natural deposits |
| Combined Radium-226 + 228 | pCi/L | 5 | MCLG = 0 | NA | Range Average | ND | ND | ND | ND | ND | | Erosion of natural deposits |
| Strontium-90 | pCi/L | 8 | 0.35 | 2 | Range Average | ND | ND | ND | ND | ND | | Decay of natural and man-made deposits |
| Tritium | pCi/L | 20,000 | 400 | 1,000 | Range Average | ND | ND | ND | ND | ND | | Decay of natural and man-made deposits |
| Uranium | pCi/L | 20 | 0.43 | 1 | Range Average | ND | ND - 1 ND | ND | ND - 3 ND | ND | | Erosion of natural deposits |
| DISINFECTION BYPRODUCTS, DISINFECTANT RESIDUALS, AND DISINFECTION BYPRODUCT PRECURSORS | | | | | | | | | | | | |
| Total Trihalomethanes (TTHM) - Plant Effluent | ppb | 80 | NA | 1.0 | Range Average | 11 - 26 16 | 14 - 77 22 | 9.9 - 33 21 | 14 - 38 19 | 14 - 79 35 | | Byproduct of drinking water chlorination |
| Haloacetic Acids (five) (HAA5) - Plant Effluent | ppb | 60 | NA | 1.0 | Range Average | 1.6 - 5.2 3.8 | 4.7 - 6.4 5.7 | 4.0 - 10 6.8 | 4.0 - 8.8 5.4 | 6.4 - 22 13 | | Byproduct of drinking water chlorination |
| Total Trihalomethanes (TTHM) - Plant Core Locations and Distribution System (m) | ppb | 80 | NA | 1.0 | Range Highest LRAA | 15 - 24 24 | 19 - 41 28 | 12 - 40 30 | 17 - 27 22 | 21 - 43 44 | 12 - 84 55 | Byproduct of drinking water chlorination |
| Haloacetic Acids (five) (HAA5) - Plant Core Locations and Distribution System | ppb | 60 | NA | 1.0 | Range Highest LRAA | 2.2 - 8.5 5.9 | 5.6 - 7.9 6.8 | 2.8 - 12 8.8 | 3.9 - 9.1 7.0 | 6.4 - 26 17 | 2.2 - 35 23 | Byproduct of drinking water chlorination |
| Total Chlorine Residual | ppm | MRDL = 4.0 | MRDLG = 4.0 | NA | Range Highest RAA | | | | | | 1.1 - 3.1 2.4 | Drinking water disinfectant added for treatment |
| Bromate (n) | ppb | 10 | 0.1 | 1.0 | Range Highest RAA | ND - 5.8 2.3 | 3.3 - 8.9 7.4 | ND - 7.8 3.2 | ND - 12 4.1 | 2.6 - 5.0 NA | | Byproduct of drinking water ozonation |
| Total Organic Carbon (TOC) | ppm | TT | NA | 0.30 | Range Highest RAA | 1.8 - 3.0 2.4 | 2.3 - 3.1 2.5 | 1.6 - 3.2 2.6 | 1.9 - 3.1 2.5 | 2.0 - 2.9 2.5 | | Various natural and man-made sources; TOC is a precursor for the formation of disinfection byproducts |
| SECONDARY STANDARDS - Aesthetic Standards | | | | | | | | | | | | |
| Aluminum (o) | ppb | 200 | 600 | 50 | Range Highest RAA | ND - 130 159 | ND - 120 89 | ND - 85 93 | ND | ND - 210 170 | | Residue from water treatment process; natural deposits erosion |
| Chloride | ppm | 500 | NA | NA | Range Average | 34 - 66 50 | 74 - 94 84 | 30 - 41 36 | 56 - 72 64 | 29 - 66 48 | | Runoff/leaching from natural deposits; seawater influence |

2017 Water Quality Report to Member Agencies—The Metropolitan Water District of Southern California
Treatment Plant Effluents and Distribution System

| Parameter | Units | State MCL | PHG | State DLR | Range Average | Treatment Plant Effluent | | | | | Distribution System | Major Sources in Drinking Water |
|--|-------------|------------|----------|-----------|------------------|--------------------------|------------------|------------------|------------------|-------------------|------------------------|--|
| | | | | | | Diemer Plant | Jensen Plant | Mills Plant | Skinner Plant | Weymouth Plant | | |
| Color | Color Units | 15 | NA | NA | Range Average | 1 | 1 - 2 2 | 1 | 1 | 2 | | Naturally-occurring organic materials |
| Copper (j) | ppm | 1.0 | 0.3 | 0.05 | Range Average | ND | ND | ND | ND | ND | | Internal corrosion of household pipes; natural deposits erosion; wood preservatives leaching |
| Foaming Agents - Methylene Blue Active Substances (MBAS) | ppb | 500 | NA | NA | Range Average | ND | ND | ND | ND | ND | | Municipal and industrial waste discharges |
| Iron | ppb | 300 | NA | 100 | Range Average | ND | ND | ND | ND | ND | | Leaching from natural deposits; industrial wastes |
| Manganese | ppb | 50 | NL = 500 | 20 | Range Average | ND | ND | ND | 27 | ND | | Leaching from natural deposits |
| MTBE | ppb | 5 | 13 | 3 | Range Average | ND | ND | ND | ND | ND | | Gasoline discharge from watercraft engines |
| Odor Threshold (p) | TON | 3 | NA | 1 | Range Average | 2 | 2 | 3 | 3 | 3 | | Naturally-occurring organic materials |
| Silver | ppb | 100 | NA | 10 | Range Average | ND | ND | ND | ND | ND | | Industrial discharges |
| Specific Conductance | µS/cm | 1,600 | NA | NA | Range Average | 351 - 630 490 | 557 - 626 592 | 278 - 307 292 | 455 - 571 513 | 299 - 621 460 | | Substances that form ions in water; seawater influence |
| Sulfate | ppm | 500 | NA | 0.5 | Range Average | 65 - 127 96 | 61 - 78 70 | 26 - 39 32 | 66 - 81 74 | 46 - 123 84 | | Runoff/leaching from natural deposits; industrial wastes |
| Thiobencarb | ppb | 1 | 42 | 1 | Range Average | ND | ND | ND | ND | ND | | Runoff/leaching from rice herbicide |
| Total Dissolved Solids (TDS) | ppm | 1,000 | NA | NA | Range Average | 213 - 374 294 | 316 - 373 344 | 163 - 170 166 | 259 - 321 290 | 179 - 364 272 | | Runoff/leaching from natural deposits |
| Turbidity (b) | NTU | 5 | NA | 0.1 | Range Average | ND | ND | ND | ND | ND | | Soil runoff |
| Zinc | ppm | 5.0 | NA | 0.05 | Range Average | ND | ND | ND | ND | ND | | Runoff/leaching from natural deposits; industrial wastes |
| OTHER PARAMETERS | | | | | | | | | | | | |
| General Minerals | | | | | | | | | | | | |
| Alkalinity (as CaCO ₃) | ppm | NA | NA | NA | Range Average | 48 - 74 61 | 85 - 86 86 | 41 - 55 48 | 62 - 78 70 | 43 - 71 57 | | Runoff/leaching of natural deposits; carbonate, bicarbonate, hydroxide, and occasionally borate, silicate, and phosphate |
| Calcium | ppm | NA | NA | NA | Range Average | 20 - 36 28 | 27 | 13 - 14 14 | 27 - 32 30 | 14 - 35 24 | | Runoff/leaching from natural deposits |
| Hardness (as CaCO ₃) | ppm | NA | NA | NA | Range Average | 82 - 156 119 | 118 - 120 119 | 58 - 63 60 | 109 - 129 119 | 58 - 152 105 | | Runoff/leaching from natural deposits; sum of polyvalent cations, generally magnesium and calcium present in the water |
| Magnesium | ppm | NA | NA | NA | Range Average | 8.1 - 16 12 | 12 - 14 13 | 6.1 - 7.5 6.8 | 11 - 13 12 | 6.2 - 16 11 | | Runoff/leaching from natural deposits |
| Potassium | ppm | NA | NA | NA | Range Average | 2.4 - 3.2 2.8 | 3.1 - 3.2 3.2 | 1.8 - 2.1 2.0 | 2.8 - 3.2 3.0 | 2.2 - 3.2 2.7 | | Salt present in the water; naturally-occurring |
| Sodium | ppm | NA | NA | NA | Range Average | 39 - 63 51 | 58 - 80 69 | 32 | 48 - 56 52 | 35 - 64 50 | | Salt present in the water; naturally-occurring |
| Unregulated Contaminants | | | | | | | | | | | | |
| Boron | ppb | NL = 1,000 | NA | 100 | Range Average | 100 | 190 | 100 | 110 | 110 | | Runoff/leaching from natural deposits; industrial wastes |
| Chromium VI (q) | ppb | NA | 0.02 | 1 | Range Average | ND | ND | ND | ND | ND | | Runoff/leaching from natural deposits; discharge from industrial wastes |
| Dichlorodifluoromethane (Freon-12) | ppb | NL = 1,000 | NA | 0.5 | Range Average | ND | ND | ND | ND | ND | | Industrial waste discharge |
| Ethyl-tert-butyl ether (ETBE) | ppb | NA | NA | 3 | Range Average | ND | ND | ND | ND | ND | | Used as gasoline additive |
| N-Nitrosodimethylamine (NDMA) | ppt | NL = 10 | 3 | 2 | Range Average | ND | ND - 3.2 | ND - 2.4 | ND - 3.1 | ND | ND - 3.3 | Byproduct of drinking water chloramination; industrial processes |
| tert-Amyl-methyl ether (TAME) | ppb | NA | NA | 3 | Range Average | ND | ND | ND | ND | ND | | Used as gasoline additive |

2017 Water Quality Report to Member Agencies—The Metropolitan Water District of Southern California

Treatment Plant Effluents and Distribution System

| Parameter | Units | State MCL | PHG | State DLR | Range Average | Treatment Plant Effluent | | | | | Distribution System | Major Sources in Drinking Water |
|---------------------------------------|----------|-----------|-----|-----------|------------------|--------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--|
| | | | | | | Diemer Plant | Jensen Plant | Mills Plant | Skinner Plant | Weymouth Plant | | |
| <i>tert</i> -Butyl alcohol (TBA) | ppb | NL = 12 | NA | 2 | Range Average | ND | ND | ND | ND | ND | | MTBE breakdown product; used as gasoline additive |
| Vanadium | ppb | NL = 50 | NA | 3 | Range Average | ND | 4.0 | ND | ND | ND | | Naturally-occurring; industrial waste discharge |
| Miscellaneous | | | | | | | | | | | | |
| Chlorate | ppb | NL = 800 | NA | 20 | Range Average | 27 | 28 | 23 | 23 | 34 | | Byproduct of drinking water chlorination; industrial processes |
| Corrosivity (as Aggressiveness Index) | (r) | AI | NA | NA | Range Average | 12.0 | 12.0 - 12.1 12.0 | 11.9 - 12.0 12.0 | 11.8 - 12.0 11.9 | 11.9 - 12.1 12.0 | | Elemental balance in water; affected by temperature, other factors |
| Corrosivity (as Saturation Index) | (s) | SI | NA | NA | Range Average | 0.21 - 0.29 0.25 | 0.15 - 0.26 0.20 | 0.13 - 0.19 0.16 | 0.04 - 0.25 0.14 | 0.18 - 0.35 0.26 | | Elemental balance in water; affected by temperature, other factors |
| pH | pH Units | NA | NA | NA | Range Average | 8.2 - 8.6 8.4 | 8.2 - 8.3 8.3 | 8.7 - 8.8 8.7 | 8.2 | 8.4 - 8.7 8.5 | | NA |
| Radon | pCi/L | NA | NA | NA | Range Average | ND | ND | ND | ND | ND | | Gas produced by the decay of naturally-occurring uranium in soil and water |

DEFINITION OF TERMS AND FOOTNOTES

Definition of Terms

AI - Aggressiveness Index

AL - Action Level

Average - Result based on arithmetic mean

CaCO₃ - Calcium Carbonate

CFU - Colony-Forming Units

DLR - Detection Limits for Purposes of Reporting

LRAA - Locational Running Annual Average; highest

LRAA is the highest of all Locational Running Annual

Averages calculated as average of all samples

collected within a 12-month period

MCL - Maximum Contaminant Level

MCLG - Maximum Contaminant Level Goal

MFL - Million Fibers per Liter

MRDL - Maximum Residual Disinfectant Level

MRDLG - Maximum Residual Disinfectant Level Goal

NA - Not Applicable

ND - Not Detected

NL - Notification Level to SWRCB

NTU - Nephelometric Turbidity Units

pCi/L - picoCuries per Liter

PHG - Public Health Goal

ppb - parts per billion or micrograms per liter (µg/L)

ppm - parts per million or milligrams per liter (mg/L)

ppq - parts per quadrillion or picograms per liter (pg/L)

ppt - parts per trillion or nanograms per liter (ng/L)

RAA - Running Annual Average; highest RAA is the highest of all Running Annual Averages calculated as average of all samples collected within a 12-month period

Range - Results based on minimum and maximum values; range and average values are the same for samples collected once or twice annually

SI - Saturation Index (Langelier)

SWRCB - State Water Resources Control Board

TON - Threshold Odor Number

TT - Treatment Technique is a required process intended to reduce the level of a contaminant in drinking water

µS/cm - microSiemen per centimeter; or micromho per centimeter (µmho/cm)

Footnotes

- (a) The Jensen Treatment Plant treated Los Angeles Aqueduct water during the months of March and June 2017.
- (b) As a Primary Standard, the turbidity levels of the filtered water were less than or equal to 0.3 NTU in 95% of the online measurements taken each month and did not exceed 1 NTU for more than one hour. Turbidity, a measure of the cloudiness of the water, is an indicator of treatment performance. The turbidity levels for grab samples at these locations were below the state DLR and were in compliance with the Secondary Standards.
- (c) *Legionella* and virus monitoring is not required. However, under the State's Surface Water Treatment Rule, if *Giardia* cysts are removed/inactivated by treatment techniques, *Legionella* and viruses will be controlled. No *Giardia* cysts were detected during the monthly pathogen monitoring in the plant effluent.
- (d) **State Total Coliform Rule (TCR)** - No more than 5.0% total coliform-positive samples in a month: Compliance is based on the monthly combined distribution system sampling from all of the treatment plants. Six total coliform-positive samples were found out of the 8971 samples analyzed in 2017. The MCL was not violated. **Federal Revised Total Coliform Rule (rTCR)** - More than 5.0% total coliform-positive samples in a month triggers Level 1 assessments. No Level 1 assessments, or violations occurred.
- (e) **State Acute TCR (*E. coli*)** MCL - No samples were *E. coli*-positive and the MCL was not violated. **Federal rTCR *E. coli*** MCL and Level 2 TT assessments - No samples were *E. coli*-positive. No MCL violations and no Level 2 assessments occurred.
- (f) All distribution system samples had detectable total chlorine residuals and no HPC was required. However, plant effluents' HPC were analyzed to ensure chlorine disinfection. HPC reporting level is 1 CFU/mL. Values are based on monthly median per State guidelines and recommendations.
- (g) Data are from samples collected in 2015. Metropolitan's required triennial monitoring (2017 - 2019) will be performed in 2018.
- (h) Metropolitan was in compliance with the State's Treatment Technique Requirements regarding the use of acrylamide for water treatment process. Metropolitan does not use water treatment compounds containing epichlorohydrin.
- (i) Data are from 2011 and reported once every nine-year compliance cycle until the next samples are collected.
- (j) As a wholesaler, Metropolitan has no retail customers and is not required to collect samples at the consumers' tap under the Lead and Copper Rule. Results are based on annual compliance monitoring.

2017 Water Quality Report to Member Agencies—The Metropolitan Water District of Southern California
Treatment Plant Effluents and Distribution System

| Parameter | Units | State MCL | PHG | State DLR | Range Average | Treatment Plant Effluent | | | | | Distribution System | Major Sources in Drinking Water |
|-----------|-------|-----------|-----|-----------|---------------|--------------------------|--------------|-------------|---------------|----------------|---------------------|---------------------------------|
| | | | | | | Diemer Plant | Jensen Plant | Mills Plant | Skinner Plant | Weymouth Plant | | |
| (k) | | | | | | | | | | | | |
| (l) | | | | | | | | | | | | |
| (m) | | | | | | | | | | | | |
| (n) | | | | | | | | | | | | |
| (o) | | | | | | | | | | | | |
| (p) | | | | | | | | | | | | |
| (q) | | | | | | | | | | | | |
| (r) | | | | | | | | | | | | |
| (s) | | | | | | | | | | | | |

(k) Metropolitan was in compliance with all provisions of the State's Fluoridation System Requirements.

(l) Metropolitan's perchlorate reporting level is 0.1 ppb, which is below the state DLR of 4 ppb. Data above Metropolitan's reporting level but below the DLR are reported as ND in this report. These data are available upon request.

(m) No MCL exceedance occurred in the Distribution System. Compliance with the State and Federal TTHM MCL is based on LRAA.

(n) No MCL exceedance occurred in the Skinner Treatment Plant Effluent. Compliance with the State and Federal Bromate MCL is based on RAA. Weymouth Treatment Plant's RAA will be calculated once four quarterly data are available.

(o) No MCL exceedance occurred in the Weymouth Treatment Plant effluent. Compliance with the State Aluminum MCL is based on RAA.

(p) No Odor Threshold MCL exceedance occurred in Mills, Skinner, and Weymouth Treatment Plant Effluents because no values were higher than the MCL of 3. The MCL was not violated.

(q) Previous MCL of 10 ppb was withdrawn on 9/11/2017. Metropolitan's chromium VI reporting level is 0.03 ppb, which is below the state DLR of 1 ppb. Data above Metropolitan's reporting level but below the DLR are reported as ND in this report. These data are available upon request.

(r) AI (greater than or equal to) 12.0 = Non-aggressive water
AI (10.0 - 11.9) = Moderately aggressive water
AI (less than or equal to) 10.0 = Highly aggressive water
Reference: *ANSI/AWWA Standard C400-93 (R98)*

(s) Positive SI index = non-corrosive; tendency to precipitate and/or deposit scale on pipes
Negative SI index = corrosive; tendency to dissolve calcium carbonate