



# Water Quality Laboratory

## Inorganics Analyses

Period of 01/01/2017 TO 12/31/2017

Distribution Site Representing Washington Aqueduct Service Area

Date Report Generated: 12/12/2017

| Parameter                           | MCL <sup>1</sup> | Units <sup>2</sup> | Jan-17 | Feb-17 | Mar-17 | Apr-17 | May-17 | Jun-17 | Jul-17 | Aug-17 | Sep-17 | Oct-17 | Nov-17 | Dec-17 | Quant Limit <sup>3</sup> |
|-------------------------------------|------------------|--------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------------------------|
| Aggressive Index Number             |                  | Units              | 12     | 11     | 12     | 11     | 11     | -      | 12     | 12     | 12     | 12     | 12     | -      | N/A                      |
| Alkalinity, Bicarbonate             |                  | mg/L               | 62     | 60     | 74     | 45     | 54     | -      | 97     | 61     | 95     | 110    | 96     | -      | 0                        |
| Alkalinity, Carbonate               |                  | mg/L               | 0      | 0      | 0      | 0      | 0      | -      | 0      | 0      | 0      | 0      | 0      | -      | 0                        |
| Alkalinity, Hydroxyl                |                  | mg/L               | 0      | 0      | 0      | 0      | 0      | -      | 0      | 0      | 0      | 0      | 0      | -      | 0                        |
| Alkalinity, Phenolphthalein         |                  | mg/L               | 0      | 0      | 0      | 0      | 0      | -      | 0      | 0      | 0      | 0      | 0      | -      | 0                        |
| Alkalinity, Total                   |                  | mg/L               | 62     | 60     | 74     | 45     | 54     | -      | 97     | 61     | 95     | 110    | 96     | -      | 0                        |
| Bromide                             |                  | mg/L               | 0.03   | 0.02   | 0.01   | BQL    | 0.01   | -      | 0.01   | 0.01   | 0.01   | 0.02   | 0.02   | -      | 0.01                     |
| Carbon Dioxide                      |                  | mg/L               | 1      | 2      | 1      | 2      | 3      | -      | 1      | 1      | 2      | 3      | 4      | -      | N/A                      |
| Chloride                            | 250 S            | mg/L               | 34.4   | 31.6   | 34.0   | 30.7   | 25.2   | -      | 33.3   | 30.4   | 40.8   | 47.2   | 41.7   | -      | 5.0                      |
| Chlorine, Free                      |                  | mg/L               | 0.4    | 0.2    | 0.1    | 2.5    | 0.3    | -      | 0.3    | 0.4    | 0.3    | 0.4    | 0.2    | -      | 0.0                      |
| Chlorine, Total                     |                  | mg/L               | 3.4    | 3.4    | 3.1    | 2.8    | 3.4    | -      | 3.2    | 3.2    | 3.9    | 3.7    | 3.5    | -      | 0.0                      |
| Color                               | 15 S             | Units              | 0      | 0      | 0      | 0      | 0      | -      | 0      | 0      | 0      | 0      | 0      | -      | 0                        |
| Dissolved Oxygen                    |                  | mg/L               | 12.0   | 11.7   | 11.3   | 10.4   | 9.3    | -      | 7.6    | 7.7    | 9.2    | 8.6    | 9.8    | -      | 0.0                      |
| Fluoride                            | 4.0 P / 2.0 S    | mg/L               | 0.7    | 0.6    | 0.6    | 0.6    | 0.6    | -      | 0.7    | 0.6    | 0.7    | 0.6    | 0.7    | -      | 0.2                      |
| Hardness, Calcium                   |                  | mg/L               | 87     | 81     | 95     | 63     | 72     | -      | 119    | 83     | 110    | 122    | 115    | -      | 10                       |
| Hardness, Total                     |                  | mg/L               | 118    | 110    | 123    | 86     | 98     | -      | 157    | 114    | 152    | 175    | 153    | -      | 10                       |
| Methylene Blue Activated Substances | 0.5 S            | mg/L               | -      | -      | -      | -      | -      | -      | BQL    | -      | -      | -      | -      | -      | 0.05                     |
| N, Ammonia (Ammonia as N)           |                  | mg/L               | 0.84   | 0.81   | 0.67   | BQL    | 0.75   | -      | 0.75   | 0.77   | 0.90   | 0.85   | 0.90   | -      | 0.20                     |
| N, Nitrate (Nitrate as N)           | 10 P             | mg/L               | 1.51   | 1.41   | 1.12   | 1.22   | 0.88   | -      | 1.70   | 1.15   | 1.19   | 0.82   | 0.93   | -      | 0.20                     |
| N, Nitrite (Nitrite as N)           | 1 P              | mg/L               | BQL    | BQL    | BQL    | BQL    | BQL    | -      | BQL    | BQL    | BQL    | BQL    | BQL    | -      | 0.01                     |
| pH                                  | 6.5 - 8.5 S      | Units              | 8.1    | 7.8    | 8.0    | 7.6    | 7.6    | -      | 8.2    | 8.0    | 7.9    | 7.8    | 7.7    | -      | N/A                      |
| Phosphate as Phosphorous            |                  | mg/L               | 0.74   | 0.69   | 0.72   | 0.76   | 0.71   | -      | 0.77   | 0.73   | 0.76   | 0.73   | 0.71   | -      | 0.10                     |
| Orthophosphate as PO <sub>4</sub>   |                  | mg/L               | 2.26   | 2.12   | 2.21   | 2.33   | 2.17   | -      | 2.33   | 2.23   | 2.31   | 2.23   | 2.16   | -      | 0.31                     |
| Solids, Total                       |                  | mg/L               | 214    | 206    | 234    | 186    | 184    | -      | 285    | 211    | 277    | 299    | 264    | -      | 1                        |
| Solids, Total Dissolved             | 500 S            | mg/L               | -      | 191    | 248    | 164    | 148    | -      | 204    | 250    | -      | 322    | 296    | -      | 1                        |
| Solids, Total Suspended             |                  | mg/L               | BQL    | BQL    | BQL    | BQL    | BQL    | -      | BQL    | BQL    | BQL    | BQL    | BQL    | -      | 1                        |
| Specific Conductivity               |                  | µmhos/cm           | 375    | 350    | 376    | 303    | 295    | -      | 429    | 377    | 443    | 518    | 459    | -      | 0                        |
| Sulfate                             | 250 S            | mg/L               | 58.0   | 45.5   | 47.8   | 41.1   | 43.3   | -      | 52.8   | 54.0   | 50.1   | 63.4   | 51.6   | -      | 5.0                      |
| Taste                               |                  | Units              | 2      | 2      | 2      | 2      | 4      | -      | 2      | 2      | 2      | 2      | 3      | -      | 1                        |
| Temperature                         |                  | °C                 | 9.6    | 10.3   | 11.1   | 15.7   | 18.0   | -      | 28.5   | 26.3   | 21.9   | 23.5   | 15.3   | -      | N/A                      |
| Threshold Odor Number               | 3 S              | Units              | 8      | 7      | 9      | 8      | 8      | -      | 6      | 8      | 9      | 8      | 3      | -      | 0                        |
| Total Organic Carbon                |                  | mg/L               | 1.5    | 1.5    | 1.7    | 1.8    | 1.8    | -      | 2.4    | 2.2    | 2.2    | 1.7    | 2.0    | -      | 0.5                      |
| Turbidity                           | ≤ 5 P            | NTU                | 0.05   | 0.10   | 0.10   | 0.10   | 0.10   | -      | 0.70   | 0.10   | 0.15   | 0.20   | 0.15   | -      | 0.05                     |

BQL = The lowest quantitation limit of all analyses for the particular parameter: Below Quantitation Limit

<sup>1</sup>Environmental Protection Agency/Virginia Department of Health established levels for drinking water at points of entry to the water distribution system

P = Primary - enforceable, S = Secondary - non-enforceable, AL = Action Level on specific taps, MCL = Maximum Contaminant Level

<sup>2</sup>mg/L = milligrams per liter, µg/L = micrograms per liter, µmhos/cm = micromhos per centimeter, NTU = Nephelometric Turbidity Units

<sup>3</sup>Quant Limit = Quantitation Limit : lowest level of measurement, N/A = not applicable

- Not sampled

\* Analysis pending



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Metal Analyses

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|-----------|------------------|--------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------------------------|
| Aluminum  | 50 - 200 S       | µg/L               | BQL    | -      | -      | BQL    | -      | -      | 54.7   | -      | -      | 94.1   | -      | -      | 25.0                     |
| Antimony  | 6 P              | µg/L               | BQL    | -      | -      | BQL    | -      | -      | BQL    | -      | -      | BQL    | -      | -      | 2.0                      |
| Arsenic   | 10 P             | µg/L               | BQL    | -      | -      | BQL    | -      | -      | BQL    | -      | -      | BQL    | -      | -      | 2.0                      |
| Barium    | 2000 P           | µg/L               | 33.6   | -      | -      | 30.1   | -      | -      | 42.4   | -      | -      | 49.5   | -      | -      | 25.0                     |
| Beryllium | 4 P              | µg/L               | BQL    | -      | -      | BQL    | -      | -      | BQL    | -      | -      | BQL    | -      | -      | 2.0                      |
| Cadmium   | 5 P              | µg/L               | BQL    | -      | -      | BQL    | -      | -      | BQL    | -      | -      | BQL    | -      | -      | 2.0                      |
| Calcium   |                  | mg/L               | 33.8   | -      | -      | 25.3   | -      | -      | 47.6   | -      | -      | 49.7   | -      | -      | 1.0                      |
| Chromium  | 100 P            | µg/L               | BQL    | -      | -      | BQL    | -      | -      | BQL    | -      | -      | BQL    | -      | -      | 5.0                      |
| Copper    | 1300 AL          | µg/L               | BQL    | BQL    | BQL    | BQL    | BQL    | -      | BQL    | BQL    | BQL    | BQL    | BQL    | -      | 25.0                     |
| Iron      | 300 S            | µg/L               | BQL    | BQL    | BQL    | BQL    | BQL    | -      | BQL    | BQL    | BQL    | BQL    | BQL    | -      | 25.0                     |
| Lead      | 15 AL            | µg/L               | BQL    | -      | -      | BQL    | -      | -      | BQL    | -      | -      | BQL    | -      | -      | 2.0                      |
| Magnesium |                  | mg/L               | 8.2    | -      | -      | 6.3    | -      | -      | 9.9    | -      | -      | 14.4   | -      | -      | 1.0                      |
| Manganese | 50 S             | µg/L               | BQL    | BQL    | BQL    | BQL    | BQL    | -      | BQL    | BQL    | BQL    | BQL    | BQL    | -      | 25.0                     |
| Mercury   | 2 P              | µg/L               | BQL    | -      | -      | BQL    | -      | -      | BQL    | -      | -      | BQL    | -      | -      | 0.50                     |
| Nickel    | 100 P            | µg/L               | BQL    | -      | -      | BQL    | -      | -      | BQL    | -      | -      | BQL    | -      | -      | 5.0                      |
| Potassium |                  | mg/L               | 2.4    | -      | -      | 2.6    | -      | -      | 3.7    | -      | -      | 4.5    | -      | -      | 1.0                      |
| Selenium  | 50 P             | µg/L               | BQL    | -      | -      | BQL    | -      | -      | BQL    | -      | -      | BQL    | -      | -      | 5.0                      |
| Silicon   |                  | mg/L               | 2.1    | -      | -      | 2.6    | -      | -      | 3.2    | -      | -      | BQL    | -      | -      | 1.0                      |
| Silver    | 100 S            | µg/L               | BQL    | -      | -      | BQL    | -      | -      | BQL    | -      | -      | BQL    | -      | -      | 5.0                      |
| Sodium    |                  | mg/L               | 22.3   | 18.1   | 20.9   | 22.5   | 15.7   | -      | 21.5   | 21.3   | 24.8   | 29.7   | 23.2   | -      | 1.0                      |
| Thallium  | 2 P              | µg/L               | BQL    | -      | -      | BQL    | -      | -      | BQL    | -      | -      | BQL    | -      | -      | 2.0                      |
| Zinc      | 5000 S           | µg/L               | BQL    | -      | -      | BQL    | -      | -      | BQL    | -      | -      | BQL    | -      | -      | 25.0                     |

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