

**COMPREHENSIVE CHEMICAL ANALYSIS**  
**CITY OF CHICAGO - DEPARTMENT OF WATER MANAGEMENT - BUREAU OF WATER SUPPLY**  
**WATER QUALITY DIVISION-WATER PURIFICATION LABORATORIES**

LABORATORY ACCREDITATION NUMBER: 100228

1st Quarter

| PARAMETER                     | IEPA<br>MCL | DETERMINED<br>AS         | STORET<br>NUMBER | Sample Date                    | 2/25/2019 | 2/25/2019 | 2/25/2019       | 2/27/2019                        | 2/25/2019 | 2/25/2019 | 2/25/2019       | 2/26/19<br>2/27/2019     | 2/26/2019           |  |  |
|-------------------------------|-------------|--------------------------|------------------|--------------------------------|-----------|-----------|-----------------|----------------------------------|-----------|-----------|-----------------|--------------------------|---------------------|--|--|
|                               |             |                          |                  | LAB ID Nos.                    | 19C1693   | 19C1694   | 19C1695         | 19C1783-<br>19C1788              | 19C1672   | 19C1673   | 19C1674         | 19C1721-23<br>19C1789-90 | 19C1716-<br>19C1720 |  |  |
|                               |             |                          |                  | SOUTH WATER PURIFICATION PLANT |           |           |                 | JARDINE WATER PURIFICATION PLANT |           |           |                 |                          |                     |  |  |
|                               |             |                          |                  | 1                              | 2A        | 2B        | 3               | 4                                | 5A        | 5B        | 6               | 7                        |                     |  |  |
| RAW<br>LAKE                   | OUTLETS     |                          | ***DISTRIBUTION  | RAW<br>LAKE                    | OUTLETS   |           | ***DISTRIBUTION | RAW<br>LAKE                      | OUTLETS   |           | ***DISTRIBUTION |                          |                     |  |  |
|                               | 73rd Street | 79th Street              | SOUTH            |                                | North     | Central   | Central         | North                            |           |           |                 |                          |                     |  |  |
| TEMPERATURE                   |             | °C                       | 00010            | 4                              | 3         | 3         | 7               | 2                                | 2         | 3         | 5               | 8                        |                     |  |  |
| TURBIDITY                     | TT          | N.T.U.                   | 82079            | 0.70                           | 0.10      | 0.10      | 0.15            | 0.90                             | 0.10      | 0.10      | 0.20            | 0.20                     |                     |  |  |
| THRESHOLD ODOR, STRAIGHT      | *3          | T.O.N                    | 00086            | 1 M                            | 2 Cc      | 2 Cc      | 1 Cc            | 1 M                              | 2 Cc      | 1 Cc      | 1 Cc            | 1 Cc                     |                     |  |  |
| THRESHOLD ODOR, DECHLORINATED | *3          | T.O.N.                   |                  | 1 M                            | 1 M       | 1 M       | 1 M             | 1 M                              | 1 M       | 1 M       | 1 M             | 1 M                      |                     |  |  |
| COLOR                         | *15         | Pt.-Co. CU               | 00080            | 9                              | 1         | 0         | 1               | 6                                | 2         | 1         | 1               | 3                        |                     |  |  |
| pH                            | *6.5-8.5    | STD. Units               | 00040            | 8.2                            | 7.8       | 7.8       | 7.9             | 8.2                              | 7.8       | 7.8       | 7.9             | 7.8                      |                     |  |  |
| FREE CHLORINE RESIDUAL        |             | CL <sub>2</sub> , mg/L   | 50064            | ND                             | 1.27      | 1.31      | 0.88            | ND                               | 1.22      | 1.13      | 0.99            | 0.85                     |                     |  |  |
| SATURATION INDEX, LANGELIER   |             | UNITS +/-                |                  | -0.14                          | -0.54     | -0.53     | -0.36           | -0.23                            | -0.52     | -0.52     | -0.34           | -0.35                    |                     |  |  |
| ALKALINITY, PHENOLPHTHALEIN   |             | 0                        | 00415            | 0                              | 0         | 0         | 0               | 0                                | 0         | 0         | 0               | 0                        |                     |  |  |
| ALKALINITY, TOTAL             |             | CaCO <sub>3</sub> , mg/L | 00410            | 118                            | 115       | 117       | 111             | 114                              | 108       | 110       | 115             | 110                      |                     |  |  |
| CONDUCTIVITY                  |             | uS/cm                    |                  | 306                            | 320       | 319       | 320             | 310                              | 318       | 319       | 321             | 317                      |                     |  |  |
| BROMIDE                       |             | Br, mg/L                 | 71870            | O/S                            | O/S       | O/S       | O/S             | O/S                              | O/S       | O/S       | O/S             | O/S                      |                     |  |  |
| CHLORIDE                      | *250        | Cl, mg/L                 | 00940            | O/S                            | O/S       | O/S       | O/S             | O/S                              | O/S       | O/S       | O/S             | O/S                      |                     |  |  |
| FLUORIDE                      | 4           | F, mg/L                  | 00951            | 0.115                          | 0.724     | 0.720     | 0.706           | 0.118                            | 0.733     | 0.742     | 0.732           | 0.740                    |                     |  |  |
| SULFATE                       | *250        | SO <sub>4</sub> , mg/L   | 00945            | O/S                            | O/S       | O/S       | O/S             | O/S                              | O/S       | O/S       | O/S             | O/S                      |                     |  |  |
| HARDNESS                      |             | CaCO <sub>3</sub> , mg/L | 00900            | 144                            | 146       | 140       | 145             | 143                              | 146       | 145       | 147             | 144                      |                     |  |  |
| CALCIUM                       |             | Ca, mg/L                 | 00916            | 35.1                           | 35.1      | 35.1      | 35.8            | 35.4                             | 35.9      | 36.5      | 35.8            | 35.5                     |                     |  |  |
| MAGNESIUM                     |             | Mg, mg/L                 | 00927            | 12.4                           | 12.5      | 12.4      | 12.7            | 12.6                             | 12.7      | 12.9      | 12.7            | 12.6                     |                     |  |  |
| POTASSIUM                     |             | K, mg/L                  | 00937            | 1.29                           | 1.31      | 1.32      | 1.34            | 1.31                             | 1.40      | 1.43      | 1.36            | 1.34                     |                     |  |  |
| SODIUM                        |             | Na, mg/L                 | 00006            | 8.55                           | 9.33      | 9.40      | 9.47            | 9.22                             | 10.2      | 10.4      | 10.3            | 9.97                     |                     |  |  |
| SOLIDS, TOTAL DISSOLVED       | *500        | TDS, mg/L                | 00150            | 141                            | 138       | 105       | 150             | 157                              | 152       | 142       | 125             | 138                      |                     |  |  |
| SOLIDS, TOTAL                 |             | Tot. Sol., mg/L          | 00500            | 196                            | 161       | 173       | 175             | 209                              | 182       | 209       | 180             | 171                      |                     |  |  |
| TOTAL ORGANIC CARBON          |             | TOC, mg/L                | 00680            | 1.77                           | 1.50      | 1.49      | 1.52            | 1.74                             | 1.50      | 1.50      | 1.56            | 1.48                     |                     |  |  |
| OXYGEN DEMAND, CHEMICAL       |             | O, mg/L                  | 00335            | 6.8                            | 5.3       | 4.4       | 5.7             | 6.0                              | 4.8       | 4.9       | 4.0             | 5.6                      |                     |  |  |
| NITROGEN, AMMONIA             |             | N, mg/L                  | 00610            | <0.1                           | <0.1      | <0.1      | <0.1            | <0.1                             | <0.1      | <0.1      | <0.1            | <0.1                     |                     |  |  |
| NITROGEN, NITRATE             | 10          | N, mg/L                  | 00620            | O/S                            | O/S       | O/S       | O/S             | O/S                              | O/S       | O/S       | O/S             | O/S                      |                     |  |  |
| NITROGEN, NITRITE             | 1           | N, mg/L                  | 00615            | O/S                            | O/S       | O/S       | O/S             | O/S                              | O/S       | O/S       | O/S             | O/S                      |                     |  |  |
| ORTHOPHOSPHATE                |             | PO <sub>4</sub> , mg/L   | 00660            | 0.060                          | 0.695     | 0.591     | 0.636           | 0.060                            | 0.530     | 0.541     | 0.541           | 0.539                    |                     |  |  |
| PHOSPHATE, TOTAL              |             | PO <sub>4</sub> , mg/L   | 00650            | 0.019                          | 1.35      | 1.22      | 1.22            | 0.018                            | 1.17      | 1.19      | 1.18            | 1.15                     |                     |  |  |
| CYANIDE, TOTAL***             | 200         | CN, ug/L                 | 00720            | <12                            | <12       | <12       | <12             | <12                              | <12       | <12       | <12             | <12                      |                     |  |  |

\* Federal Primary/Secondary MCLs

\*\* Action Level

TT - Treatment Technique

ND - not detected

Distribution samples results are averages

O/S - Instrument out of Service

R - Data rejected

\*\*\*Cyanide - LFM Did not meet QC Criteria

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**WATER QUALITY DIVISION-WATER PURIFICATION LABORATORIES**  
 LABORATORY ACCREDITATION NUMBER: 100228

1st Quarter

| PARAMETER   | IEPA MCL    | DETERMINED AS | STORET NUMBER   | Sample Date                    | 2/25/2019 | 2/25/2019 | 2/25/2019       | 2/27/2019                        | 2/25/2019 | 2/25/2019 | 2/25/2019 | 2/26/19<br>2/27/2019     | 2/26/2019           |  |  |
|-------------|-------------|---------------|-----------------|--------------------------------|-----------|-----------|-----------------|----------------------------------|-----------|-----------|-----------|--------------------------|---------------------|--|--|
|             |             |               |                 | LAB ID Nos.                    | 19C1693   | 19C1694   | 19C1695         | 19C1783-<br>19C1788              | 19C1672   | 19C1673   | 19C1674   | 19C1721-23<br>19C1789-90 | 19C1716-<br>19C1720 |  |  |
|             |             |               |                 | SOUTH WATER PURIFICATION PLANT |           |           |                 | JARDINE WATER PURIFICATION PLANT |           |           |           |                          |                     |  |  |
|             |             |               |                 | 1                              | 2A        | 2B        | 3               | 4                                | 5A        | 5B        | 6         | 7                        |                     |  |  |
| RAW LAKE    | OUTLETS     |               | ***DISTRIBUTION | RAW LAKE                       | OUTLETS   |           | ***DISTRIBUTION |                                  |           |           |           |                          |                     |  |  |
|             | 73rd Street | 79th Street   | SOUTH           |                                | North     | Central   | Central         | North                            |           |           |           |                          |                     |  |  |
| ALUMINUM    | *50-200     | Al, µg/L      | 01105           | 137                            | 320       | 65.1      | 31.3            | 32.4                             | 52.0      | 52.7      | 47.6      | 44.4                     |                     |  |  |
| ANTIMONY    | 6           | Sb, µg/L      | 01268           | <1                             | <1        | <1        | <1              | <1                               | <1        | <1        | <1        | <1                       |                     |  |  |
| ARSENIC     | 10          | As, µg/L      | 01002           | <1                             | <1        | <1        | <1              | <1                               | <1        | <1        | <1        | <1                       |                     |  |  |
| BARIUM      | 2000        | Ba, µg/L      | 01007           | 20.3                           | 20.3      | 19.7      | 18.8            | 20.4                             | 20.0      | 19.6      | 19.3      | 18.9                     |                     |  |  |
| BERYLLIUM   | 4           | Be, µg/L      | 01012           | <1                             | <1        | <1        | <1              | <1                               | <1        | <1        | <1        | <1                       |                     |  |  |
| BORON       |             | B, µg/L       | 01022           | 28.7                           | 37.9      | 26.4      | 25.2            | 24.7                             | 25.1      | 24.7      | 24.9      | 24.6                     |                     |  |  |
| CADMIUM     | 5           | Cd, µg/L      | 01027           | <1                             | <1        | <1        | <1              | <1                               | <1        | <1        | <1        | <1                       |                     |  |  |
| CHROMIUM    | 100         | Cr, µg/L      | 01034           | 1.16                           | 1.12      | 1.10      | 1.05            | 1.02                             | <1        | 1.25      | 1.00      | <1                       |                     |  |  |
| COBALT      |             | Co, µg/L      | 01037           | <1                             | <1        | <1        | <1              | <1                               | <1        | <1        | <1        | <1                       |                     |  |  |
| COPPER      | **1300      | Cu, µg/L      | 01042           | 2.35                           | 1.23      | <1        | 2.69            | <1                               | <1        | <1        | 1.18      | 2.90                     |                     |  |  |
| IRON        | *300        | Fe, µg/L      | 00031           | 23.3                           | 12.4      | 1.97      | 7.17            | 18.4                             | <1        | <1        | 7.62      | 12.9                     |                     |  |  |
| LEAD        | **15.0      | Pb, µg/L      | 01051           | <1                             | <1        | <1        | 1.22            | <1                               | <1        | <1        | 2.59      | <1                       |                     |  |  |
| LITHIUM *** |             | Li, µg/L      | 01132           | 2.96                           | 3.13      | 2.95      | 3.00            | 2.91                             | 2.92      | 2.92      | 2.95      | 2.92                     |                     |  |  |
| MANGANESE   | *50         | Mn, µg/L      | 01055           | <1                             | <1        | <1        | <1              | <1                               | <1        | <1        | <1        | 1.60                     |                     |  |  |
| MERCURY     | 2           | Hg, µg/L      | 71900           | <0.5                           | <0.5      | <0.5      | 0.178           | <0.5                             | <0.5      | <0.5      | 0.505     | <0.5                     |                     |  |  |
| MOLYBDENUM  |             | Mo, µg/L      | 01062           | <1                             | 1.02      | 1.02      | 1.01            | 1.00                             | 1.00      | 1.00      | 1.02      | <1                       |                     |  |  |
| NICKEL      |             | Ni, µg/L      | 01067           | <1                             | <1        | <1        | <1              | <1                               | <1        | <1        | <1        | <1                       |                     |  |  |
| SELENIUM    | 50          | Se, µg/L      | 01147           | <1                             | <1        | <1        | <1              | <1                               | <1        | <1        | <1        | <1                       |                     |  |  |
| SILICON     |             | Si, µg/L      | 01142           | 1212                           | 1339      | 1354      | 1375            | 1253                             | 1380      | 1368      | 1358      | 1361                     |                     |  |  |
| SILVER      | *100        | Ag, µg/L      | 01077           | <1                             | <1        | <1        | <1              | <1                               | <1        | <1        | <1        | <1                       |                     |  |  |
| STRONTIUM   |             | Sr, µg/L      | 01082           | 124                            | 128       | 126       | 127             | 128                              | 126       | 126       | 128       | 126                      |                     |  |  |
| THALLIUM    | 2           | Tl, µg/L      | 01059           | <1                             | <1        | <1        | <1              | <1                               | <1        | <1        | <1        | <1                       |                     |  |  |
| TITANIUM    |             | Ti, µg/L      | 01152           | 1.13                           | 2.23      | 1.93      | 1.47            | 1.19                             | 1.86      | 1.94      | 1.41      | 1.35                     |                     |  |  |
| VANADIUM    |             | V, µg/L       | 00985           | <1                             | <1        | <1        | <1              | <1                               | <1        | <1        | <1        | <1                       |                     |  |  |
| ZINC        | *5000       | Zn, µg/L      | 01092           | 30.4                           | 82.1      | 8.93      | 9.09            | <1                               | <1        | <1        | 21.0      | 31.4                     |                     |  |  |

\* Federal Primary/Secondary MCLs

\*\* Action Level

TT - Treatment Technique

ND - not detected

Distribution samples results are averages

\*\*\*Lithium - LFM did not meet QC Criteria

CHIEF WATER CHEMIST

DIRECTOR OF LABORATORIES

DEPUTY COMMISSIONER

MANAGER OF WATER QUALITY

**COMPREHENSIVE CHEMICAL ANALYSIS**  
**CITY OF CHICAGO - DEPARTMENT OF WATER MANAGEMENT - BUREAU OF WATER SUPPLY**  
**WATER QUALITY DIVISION-WATER PURIFICATION LABORATORIES**  
 LABORATORY ACCREDITATION NUMBER: 100228

2nd Quarter

|             |          |          |          |                              |          |          |          |                              |                     |
|-------------|----------|----------|----------|------------------------------|----------|----------|----------|------------------------------|---------------------|
| Sample Date | 6/3/2019 | 6/3/2019 | 6/3/2019 | 6/5/19-6/6/19                | 6/3/2019 | 6/3/2019 | 6/3/2019 | 6/5/19-6/6/19                | 6/5/2019            |
| LAB ID Nos. | 19C5031  | 19C5033  | 19C5034  | 19C5197-5199<br>19C5264-5266 | 19C5027  | 19C5029  | 19C5030  | 19C5194-5196<br>19C5200-5267 | 19C5189-<br>19C5193 |

| PARAMETER                       | IEPA<br>MCL | DETERMINED<br>AS         | STORET<br>NUMBER | SOUTH WATER PURIFICATION PLANT |             |             |                          | JARDINE WATER PURIFICATION PLANT |         |         |                 |       |
|---------------------------------|-------------|--------------------------|------------------|--------------------------------|-------------|-------------|--------------------------|----------------------------------|---------|---------|-----------------|-------|
|                                 |             |                          |                  | 1                              | 2A          | 2B          | 3                        | 4                                | 5A      | 5B      | 6               | 7     |
|                                 |             |                          |                  | RAW<br>LAKE                    | OUTLETS     |             | ***DISTRIBUTION<br>SOUTH | RAW<br>LAKE                      | OUTLETS |         | ***DISTRIBUTION |       |
|                                 |             |                          |                  |                                | 73rd Street | 79th Street |                          |                                  | North   | Central | Central         | North |
| TEMPERATURE ‡                   |             | °C                       | 00010            | 10                             | 11          | 12          | 17                       | 9                                | 9       | 10      | 16              | 16    |
| TURBIDITY                       | TT          | N.T.U.                   | 82079            | 0.45                           | 0.05        | 0.05        | 0.16                     | 0.65                             | 0.05    | 0.05    | 0.10            | 0.11  |
| THRESHOLD ODOR, STRAIGHT ‡      | *3          | T.O.N                    | 00086            | 1 M                            | 1 Cc        | 1 Cc        | 1 Cc                     | 1 M                              | 1 Cc    | 1 Cc    | 1 Cc            | 1 Cc  |
| THRESHOLD ODOR, DECHLORINATED ‡ | *3          | T.O.N.                   |                  | 1 M                            | 1 M         | 1 M         | 1 M                      | 1 M                              | 1 M     | 1 M     | 1 M             | 1 M   |
| COLOR (Apparent) ‡              | *15         | Pt.-Co. ACU              | 00080            | 4                              | 2           | 0           | 1                        | 6                                | 2       | 1       | 1               | 1     |
| pH                              | *6.5-8.5    | STD. Units               | 00040            | 8.3                            | 7.9         | 7.9         | 8.0                      | 8.3                              | 7.9     | 7.9     | 8.0             | 7.9   |
| FREE CHLORINE RESIDUAL ‡        |             | CL <sub>2</sub> , mg/L   | 50064            | ND                             | 1.25        | 1.31        | 0.81                     | ND                               | 1.12    | 1.13    | 0.86            | 0.83  |
| SATURATION INDEX, LANGELIER ‡   |             | UNITS +/-                |                  | 0.20                           | -0.55       | -0.55       | -0.06                    | 0.26                             | -0.54   | -0.49   | -0.10           | -0.14 |
| ALKALINITY, PHENOLPHTHALEIN     |             | 0                        | 00415            | 1                              | 0           | 0           | 0                        | 1                                | 0       | 0       | 0               | 0     |
| ALKALINITY, TOTAL               |             | CaCO <sub>3</sub> , mg/L | 00410            | 107                            | 101         | 101         | 101                      | 106                              | 101     | 101     | 100             | 100   |
| CONDUCTIVITY                    |             | uS/cm                    |                  | 306                            | 310         | 310         | 308                      | 303                              | 310     | 311     | 306             | 307   |
| BROMIDE ‡                       |             | Br, mg/L                 | 71870            | <0.1                           | <0.1        | <0.1        | <0.1                     | <0.1                             | <0.1    | <0.1    | <0.1            | <0.1  |
| CHLORIDE                        | *250        | Cl, mg/L                 | 00940            | 16.1                           | 17.7        | 17.7        | 17.7                     | 15.7                             | 17.4    | 17.4    | 17.1            | 17.4  |
| FLUORIDE                        | 4           | F, mg/L                  | 00951            | <0.5                           | 0.79        | 0.78        | 0.77                     | <0.5                             | 0.71    | 0.71    | 0.72            | 0.72  |
| SULFATE                         | *250        | SO <sub>4</sub> , mg/L   | 00945            | 21.8                           | 24.5        | 24.6        | 24.4                     | 21.8                             | 25.4    | 25.2    | 24.7            | 24.6  |
| HARDNESS                        |             | CaCO <sub>3</sub> , mg/L | 00900            | 137                            | 135         | 138         | 138                      | 139                              | 135     | 136     | 135             | 135   |
| CALCIUM                         |             | Ca, mg/L                 | 00916            | 34.8                           | 35.2        | 35.4        | 36.2                     | 35.4                             | 35.7    | 35.2    | 35.8            | 35.9  |
| MAGNESIUM ‡                     |             | Mg, mg/L                 | 00927            | 12.5                           | 12.6        | 12.7        | 12.9                     | 12.8                             | 12.9    | 12.7    | 12.9            | 12.9  |
| POTASSIUM ‡                     |             | K, mg/L                  | 00937            | 1.29                           | 1.35        | 1.35        | 1.40                     | 1.32                             | 1.37    | 1.35    | 1.36            | 1.37  |
| SODIUM ‡                        |             | Na, mg/L                 | 00006            | 10.0                           | 10.6        | 10.6        | 10.9                     | 10.0                             | 10.6    | 10.4    | 10.4            | 10.5  |
| SOLIDS, TOTAL DISSOLVED         | *500        | TDS, mg/L                | 00150            | 168                            | 172         | 174         | 154                      | 163                              | 172     | 170     | 147             | 163   |
| SOLIDS, TOTAL                   |             | Tot. Sol., mg/L          | 00500            | 180                            | 184         | 186         | 179                      | 172                              | 185     | 181     | 179             | 183   |
| TOTAL ORGANIC CARBON            |             | TOC, mg/L                | 00680            | 1.76                           | 1.70        | 1.69        | 1.64                     | 1.84                             | 1.65    | 1.64    | 1.60            | 1.71  |
| OXYGEN DEMAND, CHEMICAL ‡       |             | O, mg/L                  | 00335            | 6.86                           | 5.93        | 6.57        | 9.42                     | 6.36                             | 5.72    | 6.49    | 7.20            | 6.75  |
| NITROGEN, AMMONIA ‡             |             | N, mg/L                  | 00610            | <0.1                           | <0.1        | <0.1        | <0.1                     | <0.1                             | <0.1    | <0.1    | <0.1            | <0.1  |
| NITROGEN, NITRATE ‡             | 10          | N, mg/L                  | 00620            | 0.300                          | 0.291       | 0.292       | 0.287                    | 0.285                            | 0.284   | 0.285   | 0.279           | 0.285 |
| NITROGEN, NITRITE               | 1           | N, mg/L                  | 00615            | <0.1                           | <0.1        | <0.1        | <0.1                     | <0.1                             | <0.1    | <0.1    | <0.1            | <0.1  |
| ORTHOPHOSPHATE                  |             | PO <sub>4</sub> , mg/L   | 00660            | <0.06                          | 0.741       | 0.527       | 0.639                    | <0.06                            | 0.496   | 0.518   | 0.557           | 0.552 |
| PHOSPHATE, TOTAL                |             | PO <sub>4</sub> , mg/L   | 00650            | <0.06                          | 1.32        | 1.05        | 1.16                     | <0.06                            | 1.12    | 1.12    | 1.11            | 1.11  |
| CYANIDE, TOTAL                  | 200         | CN, ug/L                 | 00720            | <12                            | <12         | <12         | <12                      | <12                              | <12     | <12     | <12             | <12   |

\* Federal Primary/Secondary MCLs

\*\* Action Level

TT - Treatment Technique

ND - not detected

Distribution samples results are averages

H - Holding Time Exceeded

R - Data rejected

‡ - Non-NELAP Accredited

Dist. Central Samples for Cyanide did not meet LFM QC criteria

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LABORATORY ACCREDITATION NUMBER: 100228

2nd Quarter

| PARAMETER   | IEPA MCL    | DETERMINED AS | STORET NUMBER | Sample Date                    | 6/3/2019 | 6/3/2019 | 6/3/2019 | 6/5/19-6/6/19                    | 6/3/2019 | 6/3/2019 | 6/3/2019 | 6/5/19-6/6/19                | 6/5/2019            |  |  |
|-------------|-------------|---------------|---------------|--------------------------------|----------|----------|----------|----------------------------------|----------|----------|----------|------------------------------|---------------------|--|--|
|             |             |               |               | LAB ID Nos.                    | 19C5031  | 19C5033  | 19C5034  | 19C5197-5199<br>19C5264-5266     | 19C5027  | 19C5029  | 19C5030  | 19C5194-5196<br>19C5200-5267 | 19C5189-<br>19C5193 |  |  |
|             |             |               |               | SOUTH WATER PURIFICATION PLANT |          |          |          | JARDINE WATER PURIFICATION PLANT |          |          |          |                              |                     |  |  |
|             |             |               |               | 1                              | 2A       | 2B       | 3        | 4                                | 5A       | 5B       | 6        | 7                            |                     |  |  |
| RAW LAKE    | OUTLETS     |               |               | ***DISTRIBUTION                | RAW LAKE | OUTLETS  |          | ***DISTRIBUTION                  |          |          |          |                              |                     |  |  |
|             | 73rd Street | 79th Street   | SOUTH         |                                | North    | Central  | Central  | North                            |          |          |          |                              |                     |  |  |
| ALUMINUM    | *50-200     | Al, µg/L      | 01105         | 17.5                           | 86.0     | 88.9     | 78.5     | 21.6                             | 100      | 103      | 83.1     | 77.9                         |                     |  |  |
| ANTIMONY    | 6           | Sb, µg/L      | 01268         | <1                             | <1       | <1       | <1       | <1                               | <1       | <1       | <1       | <1                           |                     |  |  |
| ARSENIC     | 10          | As, µg/L      | 01002         | <1                             | <1       | <1       | <1       | <1                               | <1       | <1       | <1       | <1                           |                     |  |  |
| BARIUM      | 2000        | Ba, µg/L      | 01007         | 20.0                           | 19.7     | 20.1     | 20.5     | 20.3                             | 20.3     | 20.4     | 20.4     | 20.3                         |                     |  |  |
| BERYLLIUM   | 4           | Be, µg/L      | 01012         | <1                             | <1       | <1       | <1       | <1                               | <1       | <1       | <1       | <1                           |                     |  |  |
| BORON ‡     |             | B, µg/L       | 01022         | 23.4                           | 24.2     | 24.2     | 24.9     | 23.9                             | 24.2     | 24.3     | 24.3     | 24.3                         |                     |  |  |
| CADMIUM     | 5           | Cd, µg/L      | 01027         | <1                             | <1       | <1       | <1       | <1                               | <1       | <1       | <1       | <1                           |                     |  |  |
| CHROMIUM    | 100         | Cr, µg/L      | 01034         | 1.27                           | 1.20     | 1.01     | <1       | <1                               | 1.24     | 1.29     | <1       | 1.15                         |                     |  |  |
| COBALT ‡    |             | Co, µg/L      | 01037         | <1                             | <1       | <1       | <1       | <1                               | <1       | <1       | <1       | <1                           |                     |  |  |
| COPPER      | **1300      | Cu, µg/L      | 01042         | 1.17                           | <1       | <1       | <1       | <1                               | <1       | 6.83     | <1       | 1.05                         |                     |  |  |
| IRON        | *300        | Fe, µg/L      | 00031         | 7.50                           | <1       | <1       | 8.58     | 12.5                             | <1       | <1       | 8.71     | 14.6                         |                     |  |  |
| LEAD        | **15.0      | Pb, µg/L      | 01051         | <1                             | <1       | <1       | <1       | <1                               | <1       | <1       | <1       | <1                           |                     |  |  |
| LITHIUM ‡   |             | Li, µg/L      | 01132         | <1                             | 1.08     | 2.03     | 2.36     | 2.29                             | 2.00     | <1       | 1.49     | 2.43                         |                     |  |  |
| MANGANESE   | *50         | Mn, µg/L      | 01055         | <1                             | <1       | <1       | <1       | <1                               | <1       | <1       | <1       | <1                           |                     |  |  |
| MERCURY     | 2           | Hg, µg/L      | 71900         | <0.5                           | <0.5     | <0.5     | <0.5     | <0.5                             | <0.5     | <0.5     | <0.5     | <0.5                         |                     |  |  |
| MOLYBDENUM  |             | Mo, µg/L      | 01062         | 1.01                           | <1       | 1.01     | <1       | 1.03                             | 1.01     | 1.00     | <1       | <1                           |                     |  |  |
| NICKEL      |             | Ni, µg/L      | 01067         | <1                             | <1       | <1       | <1       | <1                               | <1       | <1       | <1       | <1                           |                     |  |  |
| SELENIUM    | 50          | Se, µg/L      | 01147         | <1                             | <1       | <1       | <1       | <1                               | <1       | <1       | <1       | <1                           |                     |  |  |
| SILICON     |             | Si, µg/L      | 01142         | 765                            | 948      | 930      | 917      | 725                              | 882      | 881      | 874      | 864                          |                     |  |  |
| SILVER      | *100        | Ag, µg/L      | 01077         | <1                             | <1       | <1       | <1       | <1                               | <1       | <1       | <1       | <1                           |                     |  |  |
| STRONTIUM ‡ |             | Sr, µg/L      | 01082         | 116                            | 116      | 118      | 118      | 115                              | 116      | 116      | 116      | 116                          |                     |  |  |
| THALLIUM    | 2           | Tl, µg/L      | 01059         | <1                             | <1       | <1       | <1       | <1                               | <1       | <1       | <1       | <1                           |                     |  |  |
| TITANIUM ‡  |             | Ti, µg/L      | 01152         | <1                             | 1.46     | 1.19     | 1.29     | <1                               | 1.22     | 1.24     | 1.20     | 1.18                         |                     |  |  |
| VANADIUM ‡  |             | V, µg/L       | 00985         | <1                             | <1       | <1       | <1       | <1                               | <1       | <1       | <1       | <1                           |                     |  |  |
| ZINC        | *5000       | Zn, µg/L      | 01092         | <1                             | <1       | <1       | 6.58     | <1                               | <1       | <1       | 24.6     | 17.3                         |                     |  |  |

\* Federal Primary/Secondary MCLs

\*\* Action Level

TT - Treatment Technique

ND - not detected

Distribution samples results are averages

‡ - Non-NELAP Accredited

*Paul J. Dault*  
CHIEF WATER CHEMIST

*Harvee Salish*  
DIRECTOR OF LABORATORIES

*Andrew R. Prof*  
MANAGER OF WATER QUALITY

*Andrew R. Prof*  
DEPUTY COMMISSIONER

**COMPREHENSIVE CHEMICAL ANALYSIS**  
**CITY OF CHICAGO - DEPARTMENT OF WATER MANAGEMENT - BUREAU OF WATER SUPPLY**  
**WATER QUALITY DIVISION-WATER PURIFICATION LABORATORIES**

LABORATORY ACCREDITATION NUMBER: 100228

3rd Quarter

| PARAMETER                       | IEPA<br>MCL | DETERMINED<br>AS         | STORET<br>NUMBER | SOUTH WATER PURIFICATION PLANT |             |             |                 | JARDINE WATER PURIFICATION PLANT |         |         |                 |       |
|---------------------------------|-------------|--------------------------|------------------|--------------------------------|-------------|-------------|-----------------|----------------------------------|---------|---------|-----------------|-------|
|                                 |             |                          |                  | 1                              | 2A          | 2B          | 3               | 4                                | 5A      | 5B      | 6               | 7     |
|                                 |             |                          |                  | RAW<br>LAKE                    | OUTLETS     |             | ***DISTRIBUTION | RAW<br>LAKE                      | OUTLETS |         | ***DISTRIBUTION |       |
|                                 |             |                          |                  |                                | 73rd Street | 79th Street | SOUTH           |                                  | North   | Central | Central         | North |
| TEMPERATURE ‡                   |             | °C                       | 00010            | 12                             | 11          | 12          | NA              | 12                               | 11      | 11      | 20              | 21    |
| TURBIDITY                       | TT          | N.T.U.                   | 82079            | 0.40                           | 0.10        | 0.10        | 0.20            | 0.55                             | 0.10    | 0.10    | 0.15            | 0.15  |
| THRESHOLD ODOR, STRAIGHT ‡      | *3          | T.O.N                    | 00086            | 1 Df                           | 1 Cc        | 1 Cc        | 1 Cc            | 1 Df                             | 1 Cc    | 1 Cc    | 1 Cc            | 1 Cc  |
| THRESHOLD ODOR, DECHLORINATED ‡ | *3          | T.O.N.                   |                  | 1 Df                           | 1 M         | 1 M         | 1 M             | 1 Df                             | 1 M     | 1 M     | 1 M             | 1 M   |
| COLOR (Apparent) ‡              | *15         | Pt.-Co. ACU              | 00080            | 7                              | 4           | 5           | 1               | 7                                | 1       | <1      | <1              | <1    |
| pH                              | *6.5-8.5    | STD. Units               | 00040            | 8.3                            | 7.9         | 7.9         | 7.9             | 8.4                              | 7.8     | 7.9     | 7.9             | 8.0   |
| FREE CHLORINE RESIDUAL ‡        |             | CL <sub>2</sub> , mg/L   | 50064            | ND                             | 1.28        | 1.29        | NA              | ND                               | 1.29    | 1.27    | NA              | 0.79  |
| SATURATION INDEX, LANGELIER ‡   |             | UNITS +/-                |                  | 0.14                           | -0.28       | -0.27       | NA              | 0.24                             | -0.40   | -0.31   | -0.04           | -0.02 |
| ALKALINITY, PHENOLPHTHALEIN     |             | 0                        | 00415            | 5                              | 0           | 0           | 0               | 3                                | 0       | 0       | 0               | 0     |
| ALKALINITY, TOTAL               |             | CaCO <sub>3</sub> , mg/L | 00410            | 110                            | 107         | 107         | 102             | 108                              | 103     | 103     | 111             | 111   |
| CONDUCTIVITY                    |             | uS/cm                    |                  | 295                            | 299         | 299         | 300             | 292                              | 298     | 299     | 300             | 299   |
| BROMIDE ‡                       |             | Br, mg/L                 | 71870            | <0.1                           | <0.1        | <0.1        | <0.1            | <0.1                             | <0.1    | <0.1    | <0.1            | <0.1  |
| CHLORIDE                        | *250        | Cl, mg/L                 | 00940            | 13.0                           | 14.8        | 14.8        | 16.4            | 12.8                             | 14.5    | 14.5    | 16.2            | 15.9  |
| FLUORIDE                        | 4           | F, mg/L                  | 00951            | <0.5                           | 0.75        | 0.73        | 0.75            | <0.5                             | 0.66    | 0.66    | 0.69            | 0.68  |
| SULFATE                         | *250        | SO <sub>4</sub> , mg/L   | 00945            | 21.4                           | 23.9        | 23.8        | 26.8            | 21.3                             | 24.8    | 24.7    | 27.8            | 27.4  |
| HARDNESS                        |             | CaCO <sub>3</sub> , mg/L | 00900            | 137                            | 135         | 135         | 136             | 136                              | 135     | 136     | 136             | 136   |
| CALCIUM                         |             | Ca, mg/L                 | 00916            | 32.8                           | 33.4        | 32.9        | 32.9            | 32.9                             | 32.9    | 32.7    | 32.8            | 32.6  |
| MAGNESIUM ‡                     |             | Mg, mg/L                 | 00927            | 12.0                           | 12.2        | 12.1        | 12.0            | 12.0                             | 12.0    | 11.9    | 12.0            | 11.9  |
| POTASSIUM ‡                     |             | K, mg/L                  | 00937            | 1.26                           | 1.36        | 1.29        | 1.32            | 1.26                             | 1.28    | 1.28    | 1.29            | 1.27  |
| SODIUM ‡                        |             | Na, mg/L                 | 00006            | 7.95                           | 8.57        | 8.40        | 8.45            | 7.88                             | 8.17    | 8.16    | 8.26            | 8.12  |
| SOLIDS, TOTAL DISSOLVED         | *500        | TDS, mg/L                | 00150            | 167                            | 167         | 171         | 167             | 161                              | 169     | 169     | 163             | 165   |
| SOLIDS, TOTAL                   |             | Tot. Sol., mg/L          | 00500            | 189                            | 192         | 193         | 182             | 189                              | 194     | 191     | 184             | 187   |
| TOTAL ORGANIC CARBON            |             | TOC, mg/L                | 00680            | 1.84                           | 1.86        | 1.87        | 1.80            | 1.92                             | 1.79    | 1.84    | 1.70            | 1.68  |
| OXYGEN DEMAND, CHEMICAL ‡       |             | O, mg/L                  | 00335            | 8.40                           | 8.71        | 7.09        | 7.00            | 9.94                             | 6.47    | 8.68    | 7.73            | 7.19  |
| NITROGEN, AMMONIA ‡             |             | N, mg/L                  | 00610            | <0.1                           | <0.1        | <0.1        | <0.1            | <0.1                             | <0.1    | <0.1    | <0.1            | <0.1  |
| NITROGEN, NITRATE ‡             | 10          | N, mg/L                  | 00620            | 0.258                          | 0.244       | 0.243       | 0.229           | 0.250                            | 0.252   | 0.251   | 0.242           | 0.235 |
| NITROGEN, NITRITE               | 1           | N, mg/L                  | 00615            | <0.1                           | <0.1        | <0.1        | <0.1            | <0.1                             | <0.1    | <0.1    | <0.1            | <0.1  |
| ORTHOPHOSPHATE                  |             | PO <sub>4</sub> , mg/L   | 00660            | <0.06                          | 0.774       | 0.605       | 0.736           | <0.06                            | 0.479   | 0.495   | 0.535           | 0.537 |
| PHOSPHATE, TOTAL                |             | PO <sub>4</sub> , mg/L   | 00650            | <0.06                          | 1.34        | 1.12        | 1.23            | <0.06                            | 0.970   | 0.962   | 0.976           | 0.953 |
| CYANIDE, TOTAL                  | 200         | CN, ug/L                 | 00720            | <12                            | <12         | <12         | <12             | <12                              | <12     | <12     | <12             | <12   |

\* Federal Primary/Secondary MCLs

\*\* Action Level

TT - Treatment Technique

ND - not detected

Distribution samples results are averages

H - Holding Time Exceeded

R - Data rejected

‡ - Non-NELAP Accredited

Nitrogen-Nitrite - LFM did not meet QC Criteria for North, South & Central Districts

NA - Not Available

**COMPREHENSIVE CHEMICAL ANALYSIS**  
**CITY OF CHICAGO - DEPARTMENT OF WATER MANAGEMENT - BUREAU OF WATER SUPPLY**  
**WATER QUALITY DIVISION-WATER PURIFICATION LABORATORIES**

LABORATORY ACCREDITATION NUMBER: 100228

3rd Quarter

| PARAMETER   | IEPA MCL | DETERMINED AS | STORET NUMBER | SOUTH WATER PURIFICATION PLANT |             |             |                 | JARDINE WATER PURIFICATION PLANT |         |         |                 |       |
|-------------|----------|---------------|---------------|--------------------------------|-------------|-------------|-----------------|----------------------------------|---------|---------|-----------------|-------|
|             |          |               |               | 1                              | 2A          | 2B          | 3               | 4                                | 5A      | 5B      | 6               | 7     |
|             |          |               |               | RAW LAKE                       | OUTLETS     |             | ***DISTRIBUTION | RAW LAKE                         | OUTLETS |         | ***DISTRIBUTION |       |
|             |          |               |               |                                | 73rd Street | 79th Street | SOUTH           |                                  | North   | Central | Central         | North |
| ALUMINUM    | *50-200  | Al, µg/L      | 01105         | 14.9                           | 153         | 156         | 129             | 17.5                             | 118     | 121     | 119             | 105   |
| ANTIMONY    | 6        | Sb, µg/L      | 01268         | <1                             | <1          | <1          | <1              | <1                               | <1      | <1      | <1              | <1    |
| ARSENIC     | 10       | As, µg/L      | 01002         | <1                             | <1          | <1          | <1              | <1                               | <1      | <1      | <1              | <1    |
| BARIUM      | 2000     | Ba, µg/L      | 01007         | 20.1                           | 19.2        | 19.2        | 19.5            | 20.0                             | 19.5    | 19.2    | 19.2            | 19.1  |
| BERYLLIUM   | 4        | Be, µg/L      | 01012         | <1                             | <1          | <1          | <1              | <1                               | <1      | <1      | <1              | <1    |
| BORON ‡     |          | B, µg/L       | 01022         | 23.2                           | 23.3        | 23.7        | 23.6            | 23.4                             | 23.4    | 23.5    | 23.3            | 23.2  |
| CADMIUM     | 5        | Cd, µg/L      | 01027         | <1                             | <1          | <1          | <1              | <1                               | <1      | <1      | <1              | <1    |
| CHROMIUM    | 100      | Cr, µg/L      | 01034         | 1.21                           | 1.22        | 1.08        | <1              | <1                               | 1.16    | 1.20    | <1              | <1    |
| COBALT ‡    |          | Co, µg/L      | 01037         | <1                             | <1          | <1          | <1              | <1                               | <1      | <1      | <1              | <1    |
| COPPER      | **1300   | Cu, µg/L      | 01042         | 1.51                           | <1          | <1          | <1              | <1                               | <1      | <1      | <1              | 1.82  |
| IRON        | *300     | Fe, µg/L      | 00031         | 8.53                           | 1.60        | 1.00        | 14.2            | 10.2                             | <1      | <1      | 9.85            | 18.1  |
| LEAD        | **15.0   | Pb, µg/L      | 01051         | <1                             | <1          | <1          | <1              | <1                               | <1      | <1      | <1              | <1    |
| LITHIUM ‡   |          | Li, µg/L      | 01132         | 2.66                           | 2.59        | 2.76        | 2.61            | 2.49                             | 2.29    | 2.32    | 2.89            | 2.54  |
| MANGANESE   | *50      | Mn, µg/L      | 01055         | <1                             | <1          | <1          | <1              | <1                               | <1      | <1      | <1              | 1.22  |
| MERCURY     | 2        | Hg, µg/L      | 71900         | <0.5                           | <0.5        | <0.5        | <0.5            | <0.5                             | <0.5    | <0.5    | <0.5            | <0.5  |
| MOLYBDENUM  |          | Mo, µg/L      | 01062         | <1                             | <1          | <1          | <1              | <1                               | <1      | <1      | <1              | <1    |
| NICKEL      |          | Ni, µg/L      | 01067         | 2.51                           | 2.49        | 2.47        | 2.80            | 2.48                             | 2.44    | 2.41    | 2.62            | 2.59  |
| SELENIUM    | 50       | Se, µg/L      | 01147         | <1                             | <1          | <1          | <1              | <1                               | <1      | <1      | <1              | <1    |
| SILICON     |          | Si, µg/L      | 01142         | 811                            | 934         | 925         | 913             | 852                              | 965     | 960     | 940             | 952   |
| SILVER      | *100     | Ag, µg/L      | 01077         | <1                             | <1          | <1          | <1              | <1                               | <1      | <1      | <1              | <1    |
| STRONTIUM ‡ |          | Sr, µg/L      | 01082         | 110                            | 110         | 109         | 109             | 112                              | 108     | 108     | 108             | 110   |
| THALLIUM    | 2        | Tl, µg/L      | 01059         | <1                             | <1          | <1          | <1              | <1                               | <1      | <1      | <1              | <1    |
| TITANIUM ‡  |          | Ti, µg/L      | 01152         | <1                             | 1.98        | 1.66        | 1.83            | <1                               | 1.50    | 1.48    | 1.48            | 1.48  |
| VANADIUM ‡  |          | V, µg/L       | 00985         | <1                             | <1          | <1          | <1              | <1                               | <1      | <1      | <1              | <1    |
| ZINC        | *5000    | Zn, µg/L      | 01092         | <1                             | <1          | <1          | 4.72            | 6.34                             | 1.38    | <1      | 31.7            | 19.0  |

\* Federal Primary/Secondary MCLs

\*\* Action Level

TT - Treatment Technique

ND - not detected

Distribution samples results are averages

‡ - Non-NELAP Accredited

*Rashid Baitha*  
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