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Metropolitan Water Reclamation District of Greater Chicago

***MONITORING AND RESEARCH
DEPARTMENT***

REPORT NO. 23-25

TUNNEL AND RESERVOIR PLAN

***THORNTON TRANSITIONAL FLOOD CONTROL RESERVOIR
AND WELLS ANNUAL GROUNDWATER MONITORING REPORT
FOR 2022***

July 2023

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Metropolitan Water Reclamation District of Greater Chicago

CECIL LUE-HING RESEARCH AND DEVELOPMENT COMPLEX
6001 West Pershing Road Cicero, Illinois 60804-4112

July 17, 2023

Mr. Sanjay Sofat
Bureau of Water
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, IL 62794-9276

Dear Mr. Sofat:

Subject: Tunnel and Reservoir Plan Gloria Alitto Majewski Chicago Underflow Plan
Reservoir Water Quality Monitoring Wells Annual Groundwater Monitoring
Report for 2022

The report entitled “Tunnel and Reservoir Plan Gloria Alitto Majewski Chicago Underflow
Plan Reservoir Water Quality Monitoring Wells Annual Groundwater Monitoring Report for 2022” is
attached.

Very truly yours,



Albert E. Cox, Ph.D.
Environmental Monitoring and Research Manager
Monitoring and Research Department

AC:EE:lf
Attachment
cc: Mr. Ryan Bahr (USEPA Region 5 - WC15J)
Mr. E. Podcerwinski
Dr. H. Zhang
cc w/o att: Mr. J. Murray
Mr. A. Gronski

Metropolitan Water Reclamation District of Greater Chicago
100 East Erie Street Chicago, Illinois 60611-2803 (312) 751-5600

**TUNNEL AND RESERVOIR PLAN
THORNTON TRANSITIONAL FLOOD CONTROL RESERVOIR AND WELLS
ANNUAL GROUNDWATER MONITORING REPORT
FOR 2022**

By

**Essam El-Naggar
Environmental Soil Scientist**

**Guanglong Tian
Principal Environmental Scientist**

**Albert Cox
Environmental Monitoring and Research Manager**

**Heng Zhang
Assistant Director of Monitoring and Research
Environmental Monitoring and Research Division**

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LIST OF ABBREVIATIONS

| Abbreviation | Definition |
|-------------------------------|-------------------------|
| °C | degrees Celsius |
| CFU | colony forming units |
| Cl ⁻ | chloride |
| EC | electrical conductivity |
| m | meter |
| mg | milligram |
| mL | milliliter |
| mS | millisiemens |
| NH ₃ -N | ammonia nitrogen |
| SO ₄ ²⁻ | sulfate |
| TDS | total dissolved solids |
| Temp. | temperature |
| TOC | total organic carbon |

ANNUAL DATA FOR MONITORING WELLS

Introduction

Four monitoring wells, QK-1 through QK-4, are located on the perimeter of the Gloria Alitto Majewski Chicagoland Underflow Plan Reservoir (Reservoir). Well QK-1 is positioned at the northwest corner of the Reservoir, with QK-2, QK-3, and QK-4 at the northeast, southeast, and southwest corners, respectively ([Figure 1](#)). In addition, there are nine privately owned water supply wells, W1X through W9X, which are located within 1,000 feet of the Reservoir. The four monitoring wells are sampled quarterly and for at least six consecutive weeks following each Reservoir fill event in which the Reservoir is used to store combined sewer flow from the Metropolitan Water Reclamation District of Greater Chicago's Tunnel and Reservoir Plan system (Illinois Environmental Protection Agency memorandum dated October 14, 1997). Fill-event samples may substitute for quarterly samples, depending on the occurrence of fill events. Groundwater elevations are also measured during each sampling event. There are no observation wells associated with this site.

In 2022, three fill events were observed on March 31, April 22, and May 3, 2022. Extended sampling was implemented for the monitoring wells (QK1, QK-2, QK-3, and QK-4) during these fill events. Following the first fill event, the four monitoring wells were sampled once a week for three consecutive weeks. Subsequently, wells were sampled during the week when the second fill event occurred, and following the third fill event, for six consecutive weeks. Monitoring wells were also sampled during the first, third, and fourth quarters of 2022.

Summary of Data

Monitoring Wells. The analytical data for groundwater sampled during 2022 from monitoring wells QK-1 through QK-4 are presented in [Table 1](#). Physical characteristics, such as elevation, groundwater temperature, and estimated time of recharge for each well between initial pump-down and sampling, are also included along with summary statistics for the fill events data. For total organic carbon and ammonia nitrogen results below reporting limit, the reported limits were used in summary statistics calculations.

FIGURE 1: MAP OF FOUR WATER QUALITY MONITORING WELLS AND NINE PRIVATE WELLS SURROUNDING THE GLORIA ALITTO MAJEWSKI CHICAGO UNDERFLOW PLAN RESERVOIR OF THE TUNNEL AND RESERVOIR PLAN

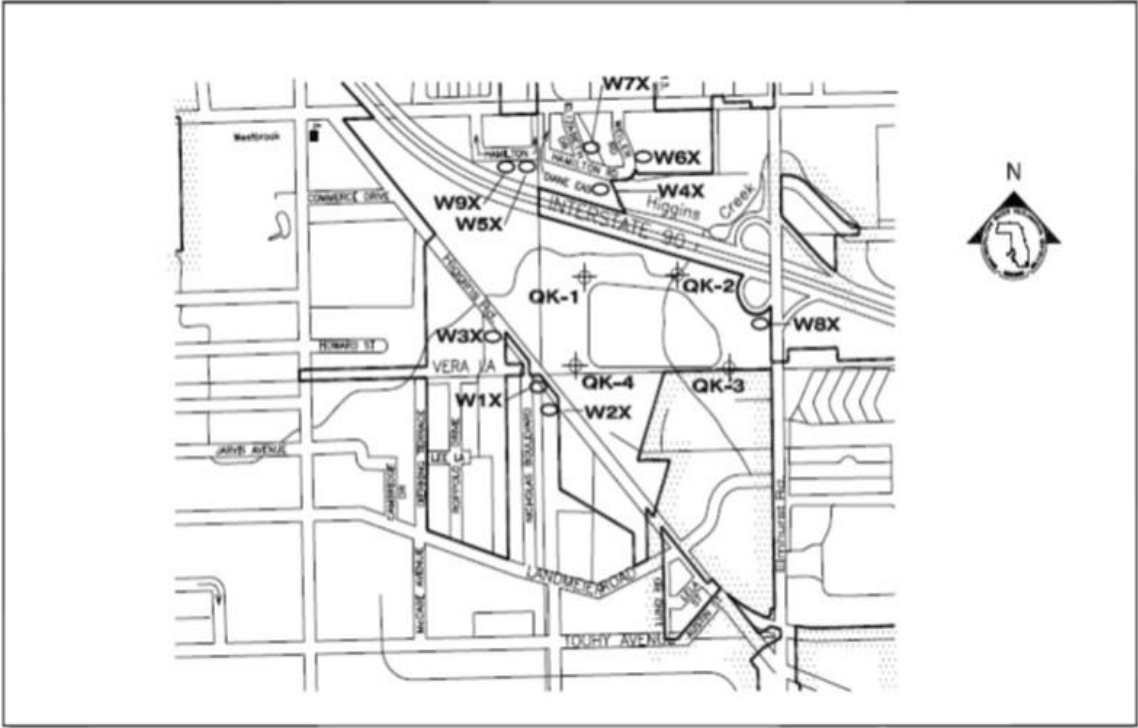


TABLE 1: ANALYSIS OF CHEMICAL AND PHYSICAL PARAMETERS AND FECAL COLIFORM IN GROUNDWATER FROM MONITORING WELLS ADJACENT TO THE GLORIA ALITTO MAJEWSKI CHICAGOLAND UNDERFLOW PLAN RESERVOIR OF THE TUNNEL AND RESERVOIR PLAN DURING 2022

| Event | Sample Date | pH | EC ¹ mS/m | TDS ¹ | TOC ¹ | Cl ⁻ | SO ₄ ²⁻ mg/L | NH ₃ -N | Hardness | Fecal Coliform CFU/100 mL | Temp. °C | Water Elevation ² feet | Recharge Time hours |
|-------------------------|-------------|-----|-------------------------|------------------|------------------|-----------------|---------------------------------------|--------------------|----------|---------------------------------|-------------|---|---------------------------|
| -----Well QK-1----- | | | | | | | | | | | | | |
| 1 st Quarter | 03/17/22 | 7.2 | 129 | 1,458 | <5.0 | 63 | 771 | <0.30 | 962 | <1 | 18.1 | -76 | <4 |
| 1 st Fill | 04/07/22 | 7.0 | 136 | 1,500 | <5.0 | 74 | 757 | 0.50 | 927 | 1,200 | 11.5 | -62 | <4 |
| | 04/12/22 | 7.1 | 141 | 2,034 | <10.0 | 63 | 767 | 0.30 | 932 | 1,400 | 12.6 | -74 | <4 |
| | 04/19/22 | 7.1 | 139 | 1,492 | <5.0 | 62 | 759 | <0.30 | 971 | 410 | 11.3 | -77 | <4 |
| | Minimum | 7.0 | 136 | 1,492 | <5.0 | 62 | 757 | <0.30 | 927 | 410 | 11.3 | -77 | |
| | Median | 7.1 | 139 | 1,500 | 5.0 | 63 | 759 | 0.30 | 932 | 1,200 | 11.5 | -74 | |
| | Mean | 7.0 | 139 | 1,675 | 6.7 | 66 | 761 | 0.37 | 943 | 1,003 | 11.8 | -71 | |
| | Maximum | 7.1 | 141 | 2,034 | <10 | 74 | 767 | 0.50 | 971 | 1,400 | 12.6 | -62 | |
| | Std. Dev. | 0.1 | 2 | 311 | 2.9 | 7 | 5 | 0.11 | 24 | 523 | 0.7 | 8 | |
| Coeff. of Var. % | 0.8 | 2 | 19 | 43 | 10 | 1 | 31 | 3 | 52 | 5.9 | 11 | | |
| 2 nd Fill | 04/26/22 | 6.9 | 140 | 1,500 | <5.0 | 61 | 745 | <0.30 | 956 | 74 | 11.5 | -74 | <4 |
| 3 rd Fill | 05/04/22 | 7.1 | 148 | 1,480 | <5.0 | 61 | 742 | <0.30 | 843 | 220 | 13.2 | -76 | <4 |
| | 05/11/22 | 7.0 | 147 | 1,580 | <5.0 | 63 | NDR ³ | <0.30 | 823 | 8 | 14.2 | -74 | <4 |
| | 05/19/22 | 7.1 | 146 | 1,568 | <5.0 | 63 | 750 | <0.30 | 867 | 1 | 13.2 | -76 | <4 |
| | 05/24/22 | 7.0 | 141 | 1,502 | <5.0 | 62 | 742 | <0.30 | 1,029 | 1 | 12.8 | -75 | <4 |
| | 06/01/22 | 7.0 | 150 | 1,478 | <5.0 | 65 | 772 | 0.42 | 946 | 1 | 14.9 | -73 | <4 |
| | 06/08/22 | 7.0 | 148 | 1,550 | <5.0 | 68 | 771 | <0.30 | 1,072 | <1 | 13.0 | -76 | <4 |

TABLE 1 (Continued): ANALYSIS OF CHEMICAL AND PHYSICAL PARAMETERS AND FECAL COLIFORM IN GROUNDWATER FROM MONITORING WELLS ADJACENT TO THE GLORIA ALITTO MAJEWSKI CHICAGOLAND UNDERFLOW PLAN RESERVOIR OF THE TUNNEL AND RESERVOIR PLAN DURING 2022

| Event | Sample Date | pH | EC ¹ mS/m | TDS ¹ | TOC ¹ | Cl ⁻ | SO ₄ ²⁻ mg/L | NH ₃ -N | Hardness | Fecal Coliform CFU/100 mL | Temp. °C | Water Elevation ² feet | Recharge Time hours | |
|---------------------|-------------------------|----------|-------------------------|------------------|------------------|-----------------|---------------------------------------|--------------------|----------|---------------------------------|-------------|---|---------------------------|----|
| | Minimum | 7.0 | 141 | 1,478 | <5.0 | 61 | 742 | <0.30 | 823 | <1 | 12.8 | -76 | | |
| | Median | 7.0 | 148 | 1,526 | <5.0 | 63 | 750 | 0.30 | 907 | 1 | 13.2 | -75 | | |
| | Mean | 7.0 | 147 | 1,526 | <5.0 | 63 | 756 | 0.32 | 930 | 39 | 13.6 | -75 | | |
| | Maximum | 7.1 | 150 | 1,580 | <5.0 | 68 | 772 | 0.42 | 1,072 | 220 | 14.9 | -73 | | |
| | Std. Dev. | 0.0 | 3 | 45 | 0.0 | 3 | 15 | 0.05 | 103 | 89 | 0.8 | 1 | | |
| | Coeff. of Var. % | 0.5 | 2 | 3 | 0.0 | 4.0 | 2.0 | 15 | 11 | 230 | 6.0 | 2 | | |
| 4 | 3 rd Quarter | 08/09/22 | 6.9 | 136 | 1,500 | <5.0 | 63 | 755 | <0.30 | 1,000 | <1 | 14.0 | -75 | <4 |
| | 4 th Quarter | 10/19/22 | 7.1 | 137 | 1,480 | <5.0 | 56 | 716 | <0.30 | 948 | <1 | 12.3 | -76 | <4 |
| -----Well QK-2----- | | | | | | | | | | | | | | |
| | 1 st Quarter | 03/17/22 | 7.6 | 84 | 824 | <5.0 | 5 | 521 | <0.30 | 481 | <1 | 13.3 | -83 | <4 |
| | 1 st Fill | 04/07/22 | 7.8 | 87 | 894 | <5.0 | 5 | 528 | <0.30 | 458 | <1 | 12.0 | -77 | <4 |
| | | 04/12/22 | 7.8 | 92 | 920 | <5.0 | 5 | 555 | <0.30 | 513 | <1 | 12.4 | -81 | <4 |
| | | 04/19/22 | 7.7 | 92 | 944 | <5.0 | 5 | 498 | <0.30 | 498 | <1 | 11.9 | -83 | <4 |
| | Minimum | 7.7 | 87 | 894 | <5.0 | 5 | 528 | <0.30 | 458 | <1 | 11.9 | -83 | | |
| | Median | 7.8 | 92 | 920 | <5.0 | 5 | 540 | <0.30 | 498 | <1 | 12.0 | -81 | | |
| | Mean | 7.8 | 90 | 919 | <5.0 | 5 | 541 | <0.30 | 490 | <1 | 12.1 | -80 | | |
| | Maximum | 7.8 | 92 | 944 | <5.0 | 5 | 555 | <0.30 | 513 | <1 | 12.4 | -77 | | |
| | Std. Dev. | 0.1 | 2.6 | 25 | 0 | 0 | 13 | 0 | 28.4 | 0 | 0.3 | 3 | | |
| | Coeff. of Var. % | 0.7 | 3 | 3 | 0 | 0 | 2 | 0 | 6 | 0 | 2.2 | 4 | | |

TABLE 1 (Continued): ANALYSIS OF CHEMICAL AND PHYSICAL PARAMETERS AND FECAL COLIFORM IN GROUNDWATER FROM MONITORING WELLS ADJACENT TO THE GLORIA ALITTO MAJEWSKI CHICAGOLAND UNDERFLOW PLAN RESERVOIR OF THE TUNNEL AND RESERVOIR PLAN DURING 2022

| Event | Sample Date | pH | EC ¹ mS/m | TDS ¹ | TOC ¹ | Cl ⁻ | SO ₄ ²⁻ mg/L | NH ₃ -N | Hardness | Fecal Coliform CFU/100 mL | Temp. °C | Water Elevation ² feet | Recharge Time hours |
|-------------------------|------------------|-----------------|-------------------------|------------------|------------------|-----------------|---------------------------------------|--------------------|----------|------------------------------|-------------|--------------------------------------|------------------------|
| 2 nd Fill | 04/26/22 | 7.9 | 81 | 942 | <5.0 | 5 | 524 | <0.30 | 498 | <1 | 12.1 | -78 | <4 |
| 3 rd Fill | 05/04/22 | NS ⁴ | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | <4 |
| | 05/11/22 | 7.6 | 93 | 956 | <5.0 | 5 | NDR | <0.30 | 447 | 43 | 14.2 | -83 | <4 |
| | 05/19/22 | 7.7 | 94 | 958 | <5.0 | 5 | 499 | <0.30 | 510 | 180 | 13.5 | -82 | <4 |
| | 05/24/22 | 7.7 | 88 | 926 | <5.0 | 5 | 491 | <0.30 | 521 | 290 | 13.3 | -82 | <4 |
| | 06/01/22 | 7.8 | 91 | 876 | <5.0 | 5 | 499 | <0.30 | 445 | 13 | 14.4 | -81 | <4 |
| | 06/08/22 | 7.9 | 88 | 868 | <5.0 | 5 | 511 | <0.30 | 520 | 22 | 13.6 | -81 | <4 |
| | Minimum | 7.6 | 88 | 868 | <5.0 | 5 | 491 | <0.30 | 445 | 7 | 13.3 | -83 | |
| | Median | 7.7 | 91 | 926 | <5.0 | 5 | 499 | <0.30 | 510.0 | 33 | 13.6 | -82 | |
| | Mean | 7.7 | 91 | 917 | <5.0 | 5 | 500 | <0.30 | 488.6 | 93 | 13.8 | -82 | |
| | Maximum | 7.9 | 94 | 958 | <5.0 | 0 | 511 | <0.30 | 521 | 290 | 14.4 | -81 | |
| | Std. Dev. | 0.1 | 2.8 | 43 | 0 | 0 | 8.2 | 0.0 | 39 | 116 | 0.5 | 0.8 | |
| | Coeff. of Var. % | 1.1 | 3.1 | 4.7 | 0 | 0 | 1.6 | 0.0 | 8.0 | 126 | 3.4 | -1.0 | |
| 3 rd Quarter | 08/09/22 | 7.8 | 89 | 864 | <5.0 | 5 | 522 | <0.30 | 476 | <1 | 14.5 | -82 | <4 |
| 4 th Quarter | 10/19/22 | 7.8 | 91 | 916 | <5.0 | 5 | 497 | <0.30 | 463 | <1 | 12.4 | -81 | <4 |

TABLE 1 (Continued): ANALYSIS OF CHEMICAL AND PHYSICAL PARAMETERS AND FECAL COLIFORM IN GROUNDWATER FROM MONITORING WELLS ADJACENT TO THE GLORIA ALITTO MAJEWSKI CHICAGOLAND UNDERFLOW PLAN RESERVOIR OF THE TUNNEL AND RESERVOIR PLAN DURING 2022

| Event | Sample Date | pH | EC ¹ mS/m | TDS ¹ | TOC ¹ | Cl ⁻ | SO ₄ ²⁻ mg/L | NH ₃ -N | Hardness | Fecal Coliform CFU/100 mL | Temp. °C | Water Elevation ² feet | Recharge Time hours |
|-------------------------|-------------|-----|-------------------------|------------------|------------------|-----------------|---------------------------------------|--------------------|----------|---------------------------------|-------------|---|---------------------------|
| -----Well QK-3----- | | | | | | | | | | | | | |
| 1 st Quarter | 03/17/22 | 8.1 | 76 | 706 | <5.0 | 67 | 276 | 0.60 | 448 | <1 | 12.2 | -90 | <4 |
| 1 st Fill | 04/07/22 | 7.3 | 106 | 1,080 | <5.0 | 115 | 442 | <0.30 | 620 | 2,400 | 11.6 | -77 | <4 |
| | 04/12/22 | 7.5 | 104 | 834 | <5.0 | 81 | 339 | 0.40 | 494 | 170 | 12.3 | -87 | <4 |
| | 04/19/22 | 7.5 | 81 | 814 | <5.0 | 70 | 334 | 0.44 | 481 | 91 | 11.5 | -88 | <4 |
| | Minimum | 7.3 | 81 | 814 | <5.0 | 70 | 334 | <0.30 | 481 | 91 | 11.5 | -88 | |
| | Median | 7.5 | 104 | 834 | <5.0 | 81 | 339 | 0.40 | 494 | 170 | 11.6 | -87 | |
| | Mean | 7.5 | 97 | 909 | <5.0 | 89 | 372 | 0.38 | 532 | 887 | 11.8 | -84 | |
| | Maximum | 7.5 | 106 | 1,080 | <5.0 | 115 | 442 | 0.44 | 620 | 2,400 | 12.3 | -77 | |
| | Std. Dev. | 0.1 | 14 | 148 | 0.0 | 23 | 61 | 0.1 | 77 | 1,311 | 0.4 | 6 | |
| Coeff. of Var. % | 1.7 | 14 | 16 | 0.0 | 26 | 16 | 19 | 14 | 148 | 3.7 | 7 | | |
| 2 nd Fill | 04/26/22 | 7.5 | 81 | 768 | <5.0 | 68 | 284 | 0.58 | 458 | 35 | 11.7 | -89 | <4 |
| 3 rd Fill | 05/04/22 | 7.6 | 90 | 750 | <5.0 | 72 | 271 | 0.59 | 377 | 11,000 | 12.0 | -85 | <4 |
| | 05/11/22 | 7.6 | 107 | 786 | <5.0 | 70 | NDR | 0.65 | 411 | 430 | 13.3 | -88 | <4 |
| | 05/19/22 | 7.6 | 86 | 778 | <5.0 | 69 | 288 | 0.66 | 481 | 110 | 13.2 | -88 | <4 |
| | 05/24/22 | 7.6 | 82 | 750 | <5.0 | 69 | 264 | 0.49 | 454 | 47 | 12.9 | -88 | <4 |
| | 06/01/22 | 7.5 | 85 | 748 | <5.0 | 73 | 314 | 0.52 | 457 | 27 | 13.1 | -88 | <4 |
| | 06/08/22 | 7.5 | 81 | 764 | <5.0 | 72 | 287 | 0.50 | 497 | 14 | 13.3 | -88 | <4 |

TABLE 1 (Continued): ANALYSIS OF CHEMICAL AND PHYSICAL PARAMETERS AND FECAL COLIFORM IN GROUNDWATER FROM MONITORING WELLS ADJACENT TO THE GLORIA ALITTO MAJEWSKI CHICAGOLAND UNDERFLOW PLAN RESERVOIR OF THE TUNNEL AND RESERVOIR PLAN DURING 2022

| Event | Sample Date | pH | EC ¹ mS/m | TDS ¹ | TOC ¹ | Cl ⁻ | SO ₄ ²⁻ mg/L | NH ₃ -N | Hardness | Fecal Coliform CFU/100 mL | Temp. °C | Water Elevation ² feet | Recharge Time hours |
|-------------------------|------------------|-----|-------------------------|------------------|------------------|-----------------|---------------------------------------|--------------------|----------|---------------------------------|-------------|---|---------------------------|
| | Minimum | 7.5 | 81 | 748 | <5.0 | 69 | 264 | 0.49 | 377 | 14 | 12.0 | -88 | |
| | Median | 7.6 | 86 | 757 | <5.0 | 71 | 287 | 0.56 | 456 | 79 | 13.2 | -88 | |
| | Mean | 7.5 | 88 | 763 | <5.0 | 71 | 285 | 0.57 | 446 | 1,938 | 13.0 | -87 | |
| | Maximum | 7.6 | 107 | 786 | <5.0 | 73 | 314 | 0.66 | 497 | 11,000 | 13.3 | -85 | |
| | Std. Dev. | 0.0 | 9.6 | 16 | 0 | 1.6 | 20 | 0.07 | 45 | 4442 | 0.5 | 1.2 | |
| | Coeff. of Var. % | 0.6 | 11 | 2 | 0 | 2 | 7 | 13 | 10 | 229 | 3.8 | 1 | |
| 3 rd Quarter | 08/09/22 | 7.4 | 84 | 764 | <5.0 | 70 | 301 | 0.56 | 475 | <1 | 13.6 | -88 | <4 |
| 4 th Quarter | 10/19/22 | 7.5 | 86 | 796 | <5.0 | 54 | 309 | 0.49 | 458 | <1 | 12.5 | -88 | <4 |
| -----Well QK-4----- | | | | | | | | | | | | | |
| 1 st Quarter | 03/17/22 | 7.6 | 78 | 762 | NDR | 94 | 299 | 0.34 | 443 | <1 | 12.0 | -65 | <4 |
| 1 st Fill | 04/07/22 | 7.6 | 83 | 786 | <5.0 | 90 | 313 | 0.54 | 428 | 40 | 11.2 | -60 | <4 |
| | 04/12/22 | 7.5 | 84 | 774 | <5.0 | 83 | 331 | 0.47 | 428 | <1 | 12.3 | -64 | <4 |
| | 04/19/22 | 7.3 | 111 | 766 | <5.0 | 94 | 310 | 0.52 | 442 | <1 | 11.3 | -70 | <4 |
| | Minimum | 7.3 | 83 | 766 | <5.0 | 83 | 310 | 0.47 | 428 | <1 | 11.2 | -70 | |
| | Median | 7.5 | 84 | 774 | <5.0 | 90 | 313 | 0.52 | 428 | 1 | 11.3 | -64 | |
| | Mean | 7.5 | 93 | 775 | <5.0 | 89 | 318 | 0.51 | 433 | 14 | 11.6 | -64 | |
| | Maximum | 7.6 | 111 | 786 | <5.0 | 94 | 331 | 0.54 | 442 | 40 | 12.3 | -60 | |
| | Std. Dev. | 0.2 | 15.8 | 10.1 | 0 | 5.5 | 11.1 | 0.03 | 8.1 | 23 | 0.6 | 5.0 | |
| | Coeff. of Var. % | 2.3 | 17 | 1 | 0 | 6 | 3 | 6.4 | 2 | 161 | 5.2 | 8 | |

TABLE 1 (Continued): ANALYSIS OF CHEMICAL AND PHYSICAL PARAMETERS AND FECAL COLIFORM IN GROUNDWATER FROM MONITORING WELLS ADJACENT TO THE GLORIA ALITTO MAJEWSKI CHICAGOLAND UNDERFLOW PLAN RESERVOIR OF THE TUNNEL AND RESERVOIR PLAN DURING 2022

| Event | Sample Date | pH | EC ¹ mS/m | TDS ¹ | TOC ¹ | Cl ⁻ | SO ₄ ²⁻ mg/L | NH ₃ -N | Hardness | Fecal Coliform CFU/100 mL | Temp. °C | Water Elevation ² feet | Recharge Time hours |
|-------------------------|-------------|-----|-------------------------|------------------|------------------|-----------------|---------------------------------------|--------------------|----------|---------------------------------|-------------|---|---------------------------|
| 2 nd Fill | 04/26/22 | 7.5 | 83 | 768 | <0.5 | 81 | 322 | 0.52 | 435 | <1 | 11.0 | -64 | <4 |
| 3 rd Fill | 05/04/22 | 7.5 | 91 | 804 | <5.0 | 80 | 309 | 0.55 | 383 | <1 | 11.6 | -65 | <4 |
| | 05/11/22 | 7.5 | 85 | 828 | <5.0 | 108 | NDR | 0.69 | 438 | <1 | 13.3 | -72 | <4 |
| | 05/19/22 | 7.5 | 90 | 818 | <5.0 | 84 | 311 | 0.70 | 446 | <1 | 12.4 | -79 | <4 |
| | 05/24/22 | 7.5 | 84 | 778 | <5.0 | 79 | 325 | 0.43 | 435 | <1 | 12.7 | -76 | <4 |
| | 06/01/22 | 7.5 | 85 | 770 | <5.0 | 83 | 318 | 0.50 | 405 | <1 | 13.3 | -64 | <4 |
| | 06/08/22 | 7.5 | 86 | 788 | <5.0 | 83 | 315 | 0.47 | 484 | <1 | 12.7 | -77 | <4 |
| | Minimum | 7.5 | 84 | 770 | <5.0 | 79 | 309 | 0.43 | 383 | <1 | 11.6 | -79 | |
| | Median | 7.5 | 85 | 796 | <5.0 | 83 | 315 | 0.52 | 437 | <1 | 12.7 | -74 | |
| Mean | 7.5 | 87 | 798 | <5.0 | 86 | 315 | 0.55 | 432 | <1 | 12.7 | -72 | | |
| Maximum | 7.5 | 91 | 828 | <5.0 | 108 | 325 | 0.70 | 484 | <1 | 13.3 | -64 | | |
| Std. Dev. | 0.0 | 3.0 | 22.9 | 0 | 10.7 | 6.3 | 0.1 | 34.9 | 0 | 0.6 | 6.4 | | |
| Coeff. of Var. % | 0.3 | 3 | 3 | 0 | 12 | 2 | 21 | 8 | 0 | 5.0 | 9 | | |
| 3 rd Quarter | 08/09/22 | 7.4 | 83 | 762 | <10 | 85 | 328 | 0.54 | 437 | <1 | 12.9 | -64 | <4 |
| 4 th Quarter | 10/19/22 | 7.5 | 100 | 872 | <5.0 | 122 | 262 | 0.52 | 466 | <1 | 14.0 | -64 | <4 |

¹EC = electrical conductivity; TDS = total dissolved solids; TOC = total organic carbon.

²Relative to Chicago City Datum (579.48 feet above mean sea level) at the intersection of State and Madison Streets.

³NDR = No data reported due to storage temperature exceeding the preservation requirement for sulfate analysis or due to measurement error for TOC.

⁴NS = No sample was collected due to restricted access to the well during maintenance at the site.