Protecting Our Water Environment

Metropolitan Water Reclamation District of Greater Chicago

MONITORING AND RESEARCH DEPARTMENT

REPORT NO. 26-11

THORNTON COMPOSITE RESERVOIR

GROUNDWATER MONITORING REPORT

FOR FOURTH QUARTER 2025

April 2026

Protecting Our Water Environment

Metropolitan Water Reclamation District of Greater Chicago

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March 12, 2026

Mr. Matthew Maas
Division Manager
Bureau of Water
Division of Public Water Supplies
Illinois Environmental Protection Agency
2520 W. Iles Avenue
Springfield, IL 62794

Dear Mr. Maas:

Subject: Transmittal of the Report "Thornton Composite Reservoir Groundwater Monitoring Report Fourth Quarter 2025"

Please find attached the report entitled "Thornton Composite Reservoir Groundwater Monitoring Report Fourth Quarter 2025" transmitted electronically. The report is prepared for transmittal to the Illinois Environmental Protection Agency (IEPA) in accordance with the Thornton Composite Reservoir (TCR) Groundwater Monitoring Plan. Also attached is the Excel spreadsheet of the Thornton Composite Reservoir raw data as required by the IEPA.

If you have any questions or would like to have additional information, please contact Mr. Benjamin Morgan at (708) 588-3743 or MorganB@mwrd.org.

Very truly yours,

Albert Cox

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

AC:lf
Attachments
cc: Mr. E. Podczerwinski

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THORNTON COMPOSITE RESERVOIR GROUNDWATER MONITORING REPORT FOURTH QUARTER 2025

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LIST OF ABBREVIATIONS

Acronym	Definition
CCD	Chicago City Datum
CFU	colony forming unit
CSF	combined sewer flow
EC	electrical conductivity
GMP	Groundwater Monitoring Plan
GPS	Groundwater Protection System
IAC	Illinois Administrative Code
TCR	Thornton Composite Reservoir
TDS	total dissolved solids
TOC	total organic carbon

ACKNOWLEDGMENTS

This report for the Thornton Composite Reservoir Groundwater Monitoring was generated by the Monitoring and Research Department. All samples were collected by Monitoring and Research Department staff. Analyses were performed by the Analytical Laboratories Division and the Analytical Microbiology Laboratory of the Metropolitan Water Reclamation District of Greater Chicago (District). Special thanks are due to Ms. Laura Franklin for typing and formatting this report.

DISCLAIMER

Mention of proprietary equipment and chemicals in this report does not constitute endorsement by the District.

INTRODUCTION

A Groundwater Protection System (GPS) was constructed for the Thornton Composite Reservoir (TCR) to protect against the exfiltration of combined sewer flow (CSF) into the surrounding dolomite aquifers. The CSF and minimal amounts of stormwater are stored in the reservoir during and after large storm events. To monitor the performance of the GPS, a network of monitoring wells located outside the perimeter of the GPS is being monitored as discussed in the Revised Groundwater Monitoring Plan (GMP) (Black & Veatch, 2016). As explained in the Revised GMP, one sample of reservoir water, one from the Main Quarry Sump, and one from each of the seven wells are collected annually and analyzed for the Illinois Administrative Code (IAC) Title 35 Part 620 Class I groundwater constituents. In addition, following a reservoir fill event or during a routine quarterly event, groundwater is sampled from the seven wells and the Main Quarry Sump and tested for a targeted list of parameters that are more likely to be detected in CSF water.

The monitoring well system consists of one deep well, TB-124, which monitors the underlying Galena Aquifer, and six vertical Westbay multi-level monitoring wells, TB-118, TB-119, TB-120, TB-121, TB-122, and TB-123, which monitor the Silurian dolomite aquifers. As discussed in the Revised GMP, following a reservoir fill event, sampling is required every two weeks while the water in the reservoir remains above an elevation of -280 feet Chicago City Datum (CCD). Groundwater is sampled from each well at the first sample interval port immediately below the reservoir water elevation. Each of the multilevel monitoring wells is capable of monitoring four distinct 20-foot intervals in the Silurian dolomite aquifer.

The locations of the monitoring wells, the quarry sump, the TCR, and the GPS are presented in Figure 1. The Main Quarry Sump is located beyond the south boundary of the GPS and is not a component of the TCR but is an integral part of the Hanson Material Services mining quarry to the south of the TCR. This sump facilitates mining operations by minimizing the water level at the bottom of the quarry. It is possible that the bottom of this sump could extend beyond the lowest depth of the TCR (-297.5 feet CCD). The sump contains mainly groundwater and small quantities of surface runoff, and it is sampled quarterly and during fill events, along with the wells, to evaluate the potential migration of contaminants from the TCR to the sump.

Table 1 lists the characteristics of all wells at the TCR site (well location coordinates, elevations, and depths, and the sampling port interval elevations).

Prior to the TCR becoming operational in November 2015, eight (8) sampling events were conducted on a quarterly basis for two years (May 2012 through March 2014) to provide background data on the existing groundwater quality. In order to evaluate the effectiveness of the grout curtain and the GPS, the Revised GMP (2016) presents the analysis of data for all samples collected during the background monitoring period and provides a baseline for comparison with routine monitoring data. Changes over time in groundwater calcium and magnesium concentrations would also be useful in tracking the occurrence of infiltration/exfiltration. Groundwater analytical data routinely generated for the monitoring wells, reservoir, and sump will also be compared with the IAC Title 35 Part 620 Class I Groundwater Standards (Illinois Pollution Control Board, Illinois Environmental Protection Agency, 2013) to evaluate any exceedances in groundwater standards.

FIGURE 1: MONITORING WELL AND MAIN QUARRY SUMP LOCATIONS

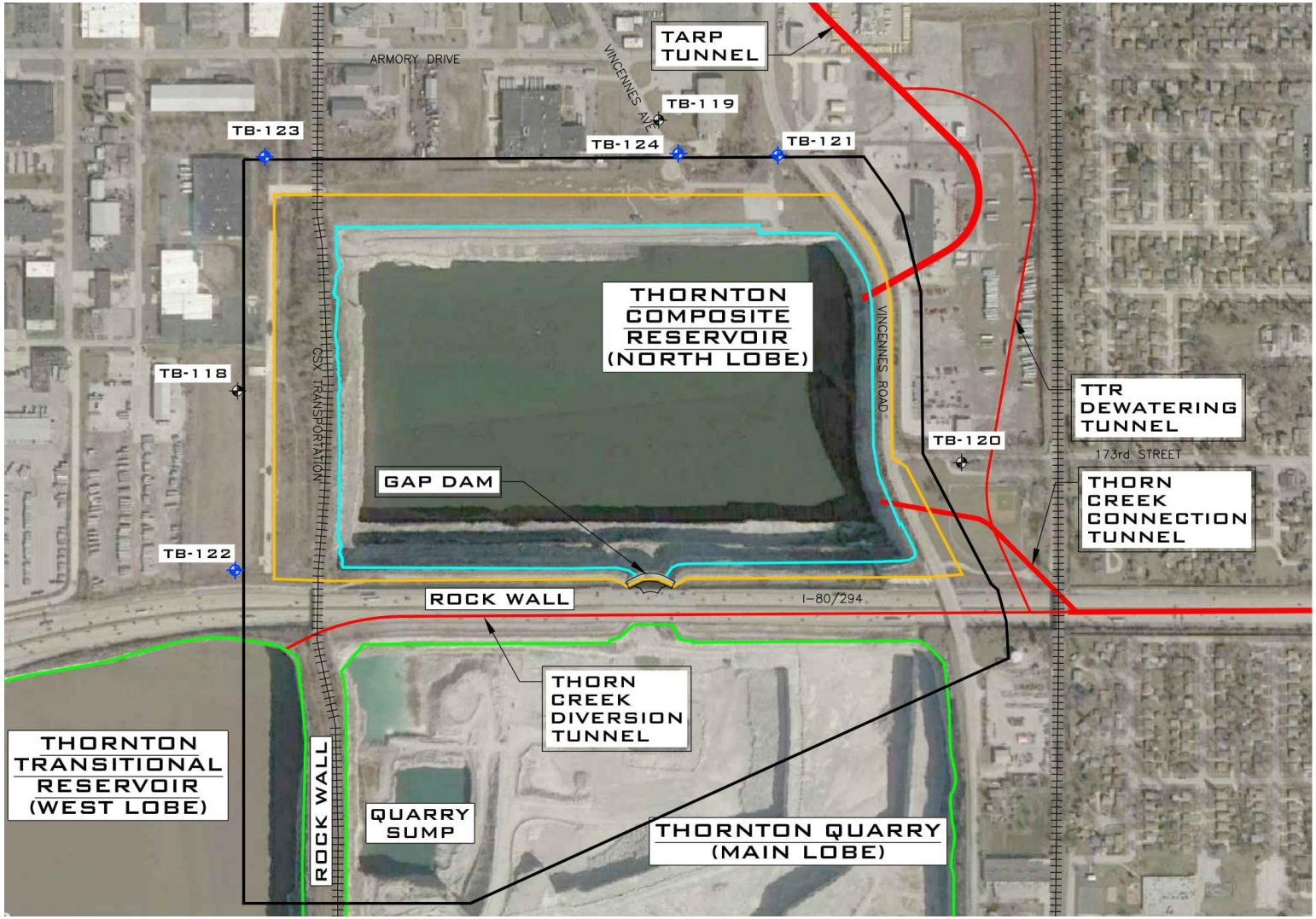

TABLE 1: CHARACTERISTICS OF MONITORING WELLS TB-118 THROUGH TB-124 AT THE THORNTON COMPOSITE RESERVOIR SITE

Well ID	Coordinates[1] Northing (ft)	Coordinates[1] Easting (ft)	Ground Surface Elevation (ft, CCD[2])	Top of Riser Elevation (ft, CCD)	Depth of Well (ft)	Sampling Port Interval (ft, CCD) Interval 1	Interval 2	Interval 3	Interval 4
TB-118	1,791,110.38	693,560.44	38.5	41.5	532	-85 to -105	-212 to -232	-283 to -303	-392 to -412
TB-119	1,792,316.63	695,509.39	27.9	29.5	529	-85 to -105	-212 to -232	-283 to -303	-392 to -412
TB-120	1,790,782.31	696,888.93	40.0	42.1	540	-86 to -106	-213 to -233	-284 to -304	-393 to -413
TB-121	1,792,193.10	696,044.98	29.4	30.4	461	-84 to -104	-211 to -231	-282 to -302	-391 to -411
TB-122	1,790,288.61	693,549.38	48.8	51.7	480	-85 to -105	-212 to -232	-283 to -303	-392 to -412
TB-123	1,792,185.60	693,685.69	28.9	31.8	460	-84 to -104	-211 to -231	-282 to -302	-391 to -411
TB-124[3]	1,792,200.77	695,591.56	29.6	29.2	728	-663 to -698			

[1]Illinois State Plane Coordinate System (NAD 1927).
[2]Chicago City Datum (CCD).
[3]TB-124 is a conventional well screened from -663 to -698 ft CCD. Samples are taken at approximately 650 ft below ground surface.

There were no fill events during the fourth quarter of 2025. Per the Revised GMP, one complete set of annual monitoring event samples was collected during November 17 – 25, 2025, at the Reservoir, the Main Quarry Sump, and all monitoring wells. Some metals parameters were inadvertently not analyzed in these samples, so a supplemental sampling was conducted from February 24 – 26, 2026, only for metals analyses. The TCR remained continuously below the fill event threshold between the November annual monitoring sampling and the supplemental sampling.

This report presents field activities, observations, and analytical data for surface and groundwater monitoring samples taken at the Main Quarry Sump, the TCR, and at all monitoring wells from November 17 – 25, 2025, and from February 24 – 26, 2026.

FIELD ACTIVITIES

For this report period, one complete set of samples for the annual monitoring event was collected at the TCR, the Main Quarry Sump, the deep well, and at sampling port 3 of all multilevel wells from November 17 – 25, 2025. A second set of aliquots only for metals analyses was collected at the TCR, the Main Quarry Sump, the deep well, and at sampling port 3 of all multilevel wells from February 24 – 26, 2026. Sample collection dates are shown in Table 2.

Using a YSI Pro 1030 991301 pH/conductivity/temperature meter, the pH, electrical conductivity (EC) as specific conductance, and temperature of each sample were measured and recorded immediately after collection.

Prior to sampling of monitoring wells, hydrostatic pressure was measured, at Port 3 in multilevel wells, or at 650 feet below surface level in well TB-124, to calculate the groundwater elevation. Table 3 lists the elevations at Port 3 of each well and the corresponding groundwater elevations during the annual monitoring event sampling in November 2025.

All samples were packed in ice and transported to the Metropolitan Water Reclamation District of Greater Chicago's (District's) Analytical Laboratories Division for the analysis of selected inorganic constituents (IAC Title 35 Part 620 Class I Groundwater Standards) in accordance with the Revised GMP. Additional aliquots were also prepared in the field and transported in ice to the District's Analytical Microbiology Laboratory for fecal coliform (FC) analysis. An additional set of aliquots was prepared in the field and transported in ice to a contract laboratory for analysis of selected organic constituents (IAC Title 35 Part 620 Class I Groundwater Standards) in accordance with the Revised GMP.

TABLE 2: DEVICES AND CORRESPONDING DATES OF SAMPLING DURING THE ANNUAL MONITORING EVENT IN NOVEMBER 2025

Date of Sampling	Device/Structure Sampled
11/17/25	TB-119
11/18/25	TB-120
11/19/25	TB-121, TB-121 Duplicate
11/20/25	TB-124
11/21/25	TB-123, Main Quarry Sump, Thornton Composite Reservoir
11/24/25	TB-118[1], TB-122
11/25/25	TB-118[2]
02/24/26[3]	TB-119, TB-120, TB-124
02/25/26[3]	TB-121, TB-121 Duplicate, TB-123
02/26/26[3]	TB-118, TB-122, Main Quarry Sump, Thornton Composite Reservoir

[1]Aliquots collected only for analyses of fecal coliform and inorganic parameters.
[2]Aliquots collected only for analyses of organic parameters.
[3]Aliquots were collected in February 2026 only for analysis of metals, some of which were inadvertently not analyzed in the original samples and could not be re-analyzed due to sample disposal.

TABLE 3: SUMMARY OF ELEVATIONS AT SAMPLING PORT 3 OF EACH WELL AND CORRESPONDING GROUNDWATER ELEVATIONS DURING ANNUAL MONITORING EVENT SAMPLING IN NOVEMBER 2025

Sample Date	Well ID	Sampling Port Elevation	Groundwater Elevation
		(ft CCD[1])	
11/24/25	TB-118	-289	-84
11/17/25	TB-119	-289	-165
11/18/25	TB-120	-290	-219
11/19/25	TB-121	-288	-168
11/24/25	TB-122	-288	-157
11/21/25	TB-123	-288	-49
11/20/25	TB-124[2]	NA[3]	-339

[1]Chicago City Datum.
[2]TB-124 is a conventional well screened from -663 to -698 ft CCD. Samples were taken at approximately 650 ft below ground surface during the annual monitoring event sampling in November 2025.
[3]Not applicable.

ANALYTICAL RESULTS

Table 4 lists the analytical methods used by the laboratory for measured parameters. Analytical results were reviewed to identify any analytes that exceeded the Illinois Class I Groundwater Standards (35 IAC Part 620).

The analytical data for all well samples, the Main Quarry Sump, and the TCR collected during the annual monitoring event from November 17 – 25, 2025, and during the supplemental resampling for metals analysis from February 24 – 26, 2026, are presented in Table 5. There were a few exceedances of the Class I Groundwater Standards, including total dissolved solids (TDS), chloride, sulfate, boron, and cobalt, as indicated in bold font in Table 5. Among these parameters, none showed a value higher than the background maximum. Groundwater FC bacteria were not detected during the annual monitoring event in any sample (Table 5). Cobalt in all well samples and vanadium in all samples were below the laboratory reporting limits, but the reporting limits were higher than the Class I Groundwater Standards.

Almost all organic parameters were undetectable in the annual monitoring event samples (Table 5). Only bis(2-ethylhexyl)phthalate in wells TB-118 and TB-120 exceeded the Class I Groundwater Standards during the annual monitoring event, and concentrations in these wells also exceeded the background maximum. Atrazine in all samples except those from TB-118 and TB-122, bis(2-ethylhexyl)phthalate in all samples except those from TB-118 and TB-120, and mecoprop, simazine, alpha-BHC, 2,6-dinitrotoluene, 1,4-dioxane, and dibenz(a,h)anthracene in all samples were below the laboratory reporting limits, but the reporting limits were higher than the Class I Groundwater Standards. Laboratory reporting limits for bis(2-ethylhexyl)phthalate in all samples were also higher than the background maximum concentration of 0.0052 mg/L. There were no exceedances of Class I Groundwater Standards for radioactivity parameters in the annual monitoring event samples.

TABLE 4: ANALYTICAL METHODS USED FOR REQUIRED PARAMETERS

Parameters	Analytical Method
Inorganic	
Chloride, fluoride, sulfate	USEPA 300.0
Total dissolved solids	SM 2540C (Rev 2015/2020)
Boron and Target Analyte List metals except calcium, magnesium, and mercury	USEPA 200.8
Hardness (as calcium and magnesium)	USEPA 200.7
Mercury	SM 3112B
Ammonia (as N)	USEPA 350.1
Total organic carbon	SM 5310B (Rev 2014)
Cyanide	USEPA Kelada-01
Organic	
Herbicides including 2,4-D, 2,4,5-TP (Silvex), dalapon, dicamba, dinoseb, mecoprop, pentachlorophenol, and picloram	SW-846 8151A
Endothall	USEPA 548.1
Polychlorinated biphenyls	SW-846 8082A
Pesticides including alachlor, alpha-BHC, chlordane, endrin, gamma-BHC, heptachlor, heptachlor epoxide, methoxychlor, and toxaphene; simazine	SW-846 8081B
Aldicarb and carbofuran	USEPA 531.2
All explosives	SW-846 8330B
1,2-dibromo-3-chloropropane and ethylene dibromide	USEPA 504.1
All other volatile organic compounds	SW-846 8260D
Phenolics, total recoverable	SW-846 9066
All other semivolatile volatile organic compounds and atrazine	SW-846 8270E
Radiological	
Radium-226 (pCi/L[1])	USEPA 903.0
Radium-228 (pCi/L)	USEPA 904.0
Others	
Fecal coliform	SM 9222D

[1]pCi/L = picocuries per liter.

TABLE 5: ANALYSIS OF GROUNDWATER SAMPLED AT MONITORING WELLS TB-118 THROUGH TB-124, THE MAIN QUARRY SUMP, AND THE THORNTON COMPOSITE RESERVOIR DURING THE ANNUAL MONITORING EVENT IN NOVEMBER 2025

Parameter	Part 620 Groundwater Standard	Background	Lab RL[1]	Well								Sump	Reservoir
				TB-118	TB-119	TB-120	TB-121	TB-121-D[2]	TB-122	TB-123	TB-124		
	1,111.000012												
pH	6.5 – 9.0	8.4	NL[3]	7.0	7.2	7.3	7.1	7.1	7.2	7.3	8.2	7.9	8.2
EC (mS/m)	NL	415	NL	236	93	98	155	155	180	86	224	186	155
Fecal coliform (CFU/100 mL)	NL	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Concentration (mg/L)												
TDS	1,200	2,960	25	**1,284**	598	566	1,048	1,066	938	544	**1,516**	**1,288**	1,064
TOC	NL	1	5	28	<5	<5	<5	<5	12	13	6	9	44
Cyanide, Total	0.2	BRL[4]	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.008
Fluoride	4	3.2	2	0.52	0.56	0.59	0.43	0.42	0.93	0.56	1.19	0.37	0.33
Chloride	200	1,230	0.5	**425**	112	116	**327**	**327**	**277**	69	**284**	**230**	191
Sulfate	400	890	1.0	184	125	68	170	169	97	122	**617**	**501**	372
Ammonia as N	NL	ND[5]	0.3	0.49	0.48	0.43	0.71	1.62	0.51	0.57	0.96	<0.30	0.43
Metals[6]													
Ag	0.058	0.003	0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Al	1.9	ND		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
As	0.01	0.025	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.003	0.003
B	2	3.78	0.005	0.769	0.867	1.011	0.947	0.915	**2.34**	1.628	0.979	0.342	0.314
Ba	2	0.217	0.002	0.034	0.040	0.033	0.090	0.088	0.014	0.051	0.015	0.022	0.048
Be	0.004	0.0002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cd	0.005	0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Co	0.0012	0.035	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	**0.018**	0.003
Cr	0.1	86.4	0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Cu	0.5	0.004	0.002	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.006	0.007
Fe	5	3.23	0.02	0.156	0.226	0.051	0.029	0.026	0.027	0.026	0.141	0.146	3.618
Hg	0.002	0.0007	0.0005	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Li	0.04	ND	NA[7]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mn	0.15	0.183	0.002	0.006	0.007	0.004	0.003	0.003	0.003	0.002	0.002	0.006	0.265
Mo	0.308	ND		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.008	0.005	0.008
Ni	0.077	0.093	0.002	0.006	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.004	0.051	0.011
Pb	0.0075	0.006	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Sb	0.006	0.012	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Se	0.02	0.008	0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Tl	0.002	0.013	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
V	0.00027	BRL	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Zn	1.2	9.95	0.01	0.017	0.013	0.020	<0.010	<0.010	<0.010	<0.010	0.360	<0.010	0.010
Ca	NL	276	0.5	163	102	89.2	137	136	75.5	78.8	54.7	143	154
Mg	NL	153	0.5	80.1	51.6	45.0	71.1	70.8	39.2	42.4	72.5	107	68.1

TABLE 5 (Continued): ANALYSIS OF GROUNDWATER SAMPLED AT MONITORING WELLS TB-118 THROUGH TB-124, THE MAIN QUARRY SUMP, AND THE THORNTON COMPOSITE RESERVOIR DURING THE ANNUAL MONITORING EVENT IN NOVEMBER 2025

Parameter	Part 620 Groundwater Standard	Background	Lab RL[1]	Well								Sump	Reservoir
				TB-118	TB-119	TB-120	TB-121	TB-121-D[2]	TB-122	TB-123	TB-124		
	Concentration (mg/L)												
Herbicides													
2,4-D	0.07	BRL	0.0011	<0.001	<0.0011	<0.0011	<0.0011	<0.0011	<0.00097	<0.00099	<0.00099	<0.00099	<0.0011
2,4,5-TP (Silvex)	0.05	BRL	0.0011	<0.001	<0.0011	<0.0011	<0.0011	<0.0011	<0.00097	<0.00099	<0.00099	<0.00099	<0.0011
Atrazine	0.003	BRL	0.0046	<0.0020	<0.0041	<0.0046	<0.0041	<0.0043	<0.0020	<0.0039	<0.0044	<0.0041	<0.0045
Dalapon	0.2	BRL	0.0022	<0.002	<0.0021	<0.0022	<0.0022	<0.0021	<0.0019	<0.002	<0.002	<0.002	<0.0022
Dicamba	0.12	BRL	0.0011	<0.001	<0.0011	<0.0011	<0.0011	<0.0011	<0.00097	<0.00099	<0.00099	<0.00099	<0.0011
Dinoseb	0.007	BRL	0.0022	<0.002	<0.0021	<0.0022	<0.0022	<0.0021	<0.0019	<0.002	<0.002	<0.002	<0.0022
Endothall[8]	0.1	BRL	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Mecoprop	0.1	BRL	0.28	<0.25	<0.26	<0.27	<0.28	<0.27	<0.24	<0.25	<0.25	<0.25	<0.28
Picloram	0.5	BRL	0.0011	<0.001	<0.0011	<0.0011	<0.0011	<0.0011	<0.00097	<0.00099	<0.00099	<0.00099	<0.0011
Simazine	0.004	BRL	0.0058	<0.0051	<0.0051	<0.0058	<0.0051	<0.0054	<0.0051	<0.0049	<0.0055	<0.0051	<0.0056
Polychlorinated Biphenyls													
PCB-1016	NL	BRL	0.00046	<0.00041	<0.00041	<0.00046	<0.00041	<0.00043	<0.00041	<0.00039	<0.00044	<0.00041	<0.00045
PCB-1221	NL	BRL	0.00046	<0.00041	<0.00041	<0.00046	<0.00041	<0.00043	<0.00041	<0.00039	<0.00044	<0.00041	<0.00045
PCB-1232	NL	BRL	0.00046	<0.00041	<0.00041	<0.00046	<0.00041	<0.00043	<0.00041	<0.00039	<0.00044	<0.00041	<0.00045
PCB-1242	NL	BRL	0.00046	<0.00041	<0.00041	<0.00046	<0.00041	<0.00043	<0.00041	<0.00039	<0.00044	<0.00041	<0.00045
PCB-1248	NL	BRL	0.00046	<0.00041	<0.00041	<0.00046	<0.00041	<0.00043	<0.00041	<0.00039	<0.00044	<0.00041	<0.00045
PCB-1254	NL	BRL	0.00046	<0.00041	<0.00041	<0.00046	<0.00041	<0.00043	<0.00041	<0.00039	<0.00044	<0.00041	<0.00045
PCB-1260	NL	BRL	0.00046	<0.00041	<0.00041	<0.00046	<0.00041	<0.00043	<0.00041	<0.00039	<0.00044	<0.00041	<0.00045
Total PCB	0.0005	ND	0.00046	<0.00041	<0.00041	<0.00046	<0.00041	<0.00043	<0.00041	<0.00039	<0.00044	<0.00041	<0.00045
Pesticides													
Alachlor	0.002	BRL	0.00046	<0.00041	<0.00041	<0.00046	<0.00041	<0.00043	<0.00041	<0.00039	<0.00044	<0.00041	<0.00045
Aldicarb	0.003	0.0048	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.005
alpha-BHC	0.000012	BRL	0.000046	<0.000041	<0.000041	<0.000046	<0.000041	<0.000043	<0.000041	<0.000039	<0.000044	<0.000041	<0.000045
Carbofuran	0.04	BRL	0.009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.009
Chlordane	0.002	BRL	0.000093	<0.000082	<0.000082	<0.000093	<0.000081	<0.000086	<0.000081	<0.000079	<0.000088	<0.000081	<0.00009
Endrin	0.002	BRL	0.000046	<0.000041	<0.000041	<0.000046	<0.000041	<0.000043	<0.000041	<0.000039	<0.000044	<0.000041	<0.000045
gamma-BHC	0.0002	BRL	0.000046	<0.000041	<0.000041	<0.000046	<0.000041	<0.000043	<0.000041	<0.000039	<0.000044	<0.000041	<0.000045
Heptachlor	0.0004	BRL	0.000046	<0.000041	<0.000041	<0.000046	<0.000041	<0.000043	<0.000041	<0.000039	<0.000044	<0.000041	<0.000045
Heptachlor epoxide	0.0002	BRL	0.000046	<0.000041	<0.000041	<0.000046	<0.000041	<0.000043	<0.000041	<0.000039	<0.000044	<0.000041	<0.000045
Methoxychlor	0.04	BRL	0.000093	<0.000082	<0.000082	<0.000093	<0.000081	<0.000086	<0.000081	<0.000079	<0.000088	<0.000081	<0.00009
Toxaphene	0.003	BRL	0.00046	<0.00041	<0.00041	<0.00046	<0.00041	<0.00043	<0.00041	<0.00039	<0.00044	<0.00041	<0.00045
Explosives													
1,3-Dinitrobenzene	0.001	BRL	0.00042	<0.00039	<0.00041	<0.00037	<0.00042	<0.00042	<0.00039	<0.00039	<0.0004	<0.0004	<0.00039
2,4-Dinitrotoluene	0.001	0.0684	0.00011	<0.00039	<0.00041	<0.00037	<0.00042	<0.00042	<0.00039	<0.00039	<0.0004	<0.0004	<0.00039

TABLE 5 (Continued): ANALYSIS OF GROUNDWATER SAMPLED AT MONITORING WELLS TB-118 THROUGH TB-124, THE MAIN QUARRY SUMP, AND THE THORNTON COMPOSITE RESERVOIR DURING THE ANNUAL MONITORING EVENT IN NOVEMBER 2025

Parameter	Part 620 Groundwater Standard	Background	Lab RL[1]	Well								Sump	Reservoir
				TB-118	TB-119	TB-120	TB-121	TB-121-D[2]	TB-122	TB-123	TB-124		
	Concentration (mg/L)												
2,6-Dinitrotoluene	0.0001	0.0197	0.00042	<0.00039	<0.00041	<0.00037	<0.00042	<0.00042	<0.00039	<0.00039	<0.0004	<0.0004	<0.00039
1,3,5-Trinitrobenzene	0.46	BRL	0.00042	<0.00039	<0.00041	<0.00037	<0.00042	<0.00042	<0.00039	<0.00039	<0.0004	<0.0004	<0.00039
2,4,6-Trinitrotoluene	0.0077	BRL	0.00042	<0.00039	<0.00041	<0.00037	<0.00042	<0.00042	<0.00039	<0.00039	<0.0004	<0.0004	<0.00039
Nitrobenzene	0.0077	BRL	0.00042	<0.00039	<0.00041	<0.00037	<0.00042	<0.00042	<0.00039	<0.00039	<0.0004	<0.0004	<0.00039
HMX	0.77	0.044	0.00022	<0.00039	<0.00041	<0.00037	<0.00042	<0.00042	<0.00039	<0.00039	<0.0004	<0.0004	<0.00039
RDX	0.062	0.00021	0.00022	<0.00039	<0.00041	<0.00037	<0.00042	<0.00042	<0.00039	<0.00039	<0.0004	<0.0004	<0.00039
Volatile Organic Compounds													
1,1,1-Trichloroethane	0.2	BRL	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1,2-Trichloroethane	0.005	BRL	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1-Dichloroethane	0.77	BRL	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1-Dichloroethene	0.007	BRL	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,2-Dichloroethane	0.005	BRL	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,2-Dichloropropane	0.005	BRL	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,2-Dibromo-3-Chloropropane	0.0002	BRL	0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Ethylene Dibromide	0.00005	BRL	0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
1,4-Dioxane	0.00078	BRL	0.018	<0.016	<0.017	<0.018	<0.017	<0.017	<0.016	<0.016	<0.016	<0.017	<0.017
2-Butanone	2.3	BRL	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Acetone	3.5	BRL	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Benzene	0.005	BRL	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Carbon disulfide	0.38	0.008	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Carbon tetrachloride	0.005	BRL	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chlorobenzene	0.1	BRL	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chloroform	0.07	BRL	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
cis-1,2-Dichloroethene	0.07	BRL	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dichlorodifluoromethane	0.77	BRL	0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Ethylbenzene	0.7	BRL	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Isopropylbenzene	0.38	BRL	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Methylene Chloride	0.005	BRL	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methyl tert-butyl ether	0.038	BRL	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Styrene	0.1	BRL	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Tetrachloroethene	0.005	BRL	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Toluene	1	0.008	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
trans-1,2-Dichloroethene	0.1	BRL	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Trichloroethene	0.005	BRL	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Trichlorofluoromethane	1.2	BRL	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Vinyl chloride	0.002	BRL	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Xylenes, Total	10	BRL	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

TABLE 5 (Continued): ANALYSIS OF GROUNDWATER SAMPLED AT MONITORING WELLS TB-118 THROUGH TB-124, THE MAIN QUARRY SUMP, AND THE THORNTON COMPOSITE RESERVOIR DURING THE ANNUAL MONITORING EVENT IN NOVEMBER 2025

Parameter	Part 620 Groundwater Standard	Background	Lab RL[1]	Well								Sump	Reservoir
				TB-118	TB-119	TB-120	TB-121	TB-121-D[2]	TB-122	TB-123	TB-124		
	Concentration (mg/L)												
Semivolatile Organic Compounds													
1,2,4-Trichlorobenzene	0.07	0.05	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,2-Dichlorobenzene	0.6	0.049	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,4-Dichlorobenzene	0.075	0.048	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1-Methylnaphthalene	0.27	ND	0.0018	<0.0016	<0.0017	<0.0018	<0.0017	<0.0017	<0.0016	<0.0016	<0.0016	<0.0017	<0.0017
2-Methylnaphthalene	0.015	0.034	0.0018	<0.0016	<0.0017	<0.0018	<0.0017	<0.0017	<0.0016	<0.0016	<0.0016	<0.0017	<0.0017
2-Methylphenol	0.19	BRL	0.0018	<0.0016	<0.0017	<0.0018	<0.0017	<0.0017	<0.0016	<0.0016	<0.0016	<0.0017	<0.0017
Acenaphthene	0.23	0.077	0.00088	<0.00081	<0.00087	<0.00088	<0.00086	<0.00087	<0.0008	<0.00082	<0.00079	<0.00084	<0.00086
Anthracene	1.2	BRL	0.00088	<0.00081	<0.00087	<0.00088	<0.00086	<0.00087	<0.0008	<0.00082	<0.00079	<0.00084	<0.00086
Benzo[a]anthracene	0.00025	BRL	0.00015	<0.00013	<0.00014	<0.00014	<0.00014	<0.00014	<0.00013	<0.00013	<0.00013	<0.00014	<0.00014
Benzo[a]pyrene	0.0002	BRL	0.00018	<0.00016	<0.00017	<0.00018	<0.00017	<0.00017	<0.00016	<0.00016	<0.00016	<0.00017	<0.00017
Benzo[b]fluoranthene	0.00025	BRL	0.00018	<0.00016	<0.00017	<0.00018	<0.00017	<0.00017	<0.00016	<0.00016	<0.00016	<0.00017	<0.00017
Benzo[k]fluoranthene	0.0025	BRL	0.00018	<0.00016	<0.00017	<0.00018	<0.00017	<0.00017	<0.00016	<0.00016	<0.00016	<0.00017	<0.00017
Benzoic acid	15	BRL	0.018	<0.016	<0.017	<0.018	<0.017	<0.017	<0.016	<0.016	<0.016	<0.017	<0.017
Bis(2-ethylhexyl)phthalate	0.006	0.0052	0.0088	**0.009**	<0.0087	**0.012**	<0.0086	<0.0087	<0.008	<0.0082	<0.0079	<0.0084	<0.0086
Chrysene	0.025	BRL	0.00018	<0.00016	<0.00017	<0.00018	<0.00017	<0.00017	<0.00016	<0.00016	<0.00016	<0.00017	<0.00017
Dibenz[a,h]anthracene	0.0001	BRL	0.00026	<0.00024	<0.00026	<0.00026	<0.00026	<0.00026	<0.00024	<0.00024	<0.00024	<0.00025	<0.00026
Diethyl phthalate	3.1	BRL	0.0044	<0.004	<0.0044	<0.0044	<0.0043	<0.0043	<0.004	<0.0041	<0.0039	<0.0042	<0.0043
Di-n-butyl phthalate	0.38	BRL	0.0044	<0.004	<0.0044	<0.0044	<0.0043	<0.0043	<0.004	<0.0041	<0.0039	<0.0042	<0.0043
Fluoranthene	0.15	0.113	0.00088	<0.00081	<0.00087	<0.00088	<0.00086	<0.00087	<0.0008	<0.00082	<0.00079	<0.00084	<0.00086
Fluorene	0.15	BRL	0.00088	<0.00081	<0.00087	<0.00088	<0.00086	<0.00087	<0.0008	<0.00082	<0.00079	<0.00084	<0.00086
Hexachlorocyclopentadiene	0.05	BRL	0.018	<0.016	<0.017	<0.018	<0.017	<0.017	<0.016	<0.016	<0.016	<0.017	<0.017
Indeno[1,2,3-cd]pyrene	0.00025	BRL	0.00018	<0.00016	<0.00017	<0.00018	<0.00017	<0.00017	<0.00016	<0.00016	<0.00016	<0.00017	<0.00017
Naphthalene	0.077	BRL	0.00088	<0.00081	<0.00087	<0.00088	<0.00086	<0.00087	<0.0008	<0.00082	<0.00079	<0.00084	<0.00086
Pentachlorophenol	0.001	0.169	0.00056	<0.0005	<0.00053	<0.00054	<0.00055	<0.00053	<0.00048	<0.0005	<0.00049	<0.00049	<0.00056
Phenolics, Total	0.1	0.062	0.005	<0.005	<0.005	<0.005	0.0063	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Pyrene	0.12	0.126	0.00088	<0.00081	<0.00087	<0.00088	<0.00086	<0.00087	<0.0008	<0.00082	<0.00079	<0.00084	<0.00086
Radioactivity	pCi/L												
Radium-226+Radium-228	5	5.05	1.58	3.45	1.94	1.61	4.69	3.66	1.98	2.87	4.67	1.05	1.81

[1]RL: Laboratory reporting limit. Minimum detectable concentration shown for Radioactivity parameters. Where analyses for the same parameter had different RL/MDCs, the maximum is shown.
[2]Duplicate sample.
[3]NL: No regulatory limit established under Illinois Administrative Code Title 35 Part 620.
[4]BRL: Below reporting limit in background monitoring samples.
[5]ND: Not determined during background monitoring.
[6]All metals results reported here, apart from Hg, are from the February 2026 resampling.
[7]NA: Not analyzed.

REFERENCES

Black & Veatch, 2014, "Background Groundwater Quality Report for Thornton Composite Reservoir," prepared for the Metropolitan Water Reclamation District of Greater Chicago, July 2014.

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