Metropolitan Water Reclamation District of Greater Chicago

MONITORING AND RESEARCH DEPARTMENT

REPORT NO. 16-21

TUNNEL AND RESERVOIR PLAN

THORNTON TRANSITIONAL FLOOD CONTROL

RESERVOIR AND WELLS

ANNUAL GROUNDWATER MONITORING REPORT

FOR 2015

July 2016

Metropolitan Water Reclamation District of Greater Chicago
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ANNUAL GROUNDWATER MONITORING REPORT
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Monitoring and Research Department
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July 2016

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LIST OF ABBREVIATIONS

°C	degrees Celsius
Ag	silver
As	arsenic
B	boron
Ba	barium
BG	billion gallons
BOD_5	five-day biochemical oxygen demand
Cd	cadmium
CFU	colony forming units
Cl^-	chloride
CN^-	cyanide
Cr	chromium
CSO	combined sewer overflow
Cu	copper
EC	electrical conductivity
F^-	fluoride
FC	fecal coliform
Fe	iron
ft	feet
Hg	mercury
IEPA	Illinois Environmental Protection Agency
L	liter
m	meter
mg	milligram
mL	milliliter
Mn	manganese
mS	millisiemens
NH_3-N	ammonia nitrogen
Ni	nickel
NO_2+NO_3-N	nitrite plus nitrate
Pb	lead
SO_4^{2-}	sulfide
SOW	Scope of Work
TDS	total dissolved solids

ANNUAL DATA FOR MONITORING WELLS AND TRANSITIONAL RESERVOIR

Introduction

This report is submitted annually to fulfill the reporting requirements of the Illinois Environmental Protection Agency (IEPA) regarding the utilization of the Thornton Transitional Reservoir for flood control. The reporting requirements, stated in Section 7 of the Scope of Work (SOW) approved by the IEPA on August 6, 2001, and modified May 9, 2005, for Groundwater Quality Monitoring of the Reservoir and adjacent wells, include:

1. Analytical data for the monitoring wells and transitional reservoir for the previous year.

2. Review and comparison of analytical data for the monitoring wells with calculated statistical limits for previously analyzed background samples in order to evaluate exceedances in the concentration limits of analytes.

Project Description

The Reservoir is located in the West Lobe of the Thornton Quarry, southeast of the intersection of the Tri-State Tollway and Halsted Street in Thornton, Illinois (Figure 1). The Reservoir was the final structure to be implemented for the Little Calumet River Watershed under the Natural Resources Conservation Service Little Calumet Watershed Plan of November 1998. The Reservoir provides 3.7 billion gallons (BG) of floodwater storage, increased from the original volume of 3.1 BG due to additional rock mining. This provides sufficient volume to capture a 100-year storm event from Thorn Creek at a point just south of the Tri-State Tollway. This project provides flood control benefits for 21 businesses and 4,400 residences, at an average cost of $6.8 million per year. Within the Little Calumet watershed are the Illinois communities of Blue Island, Calumet City, Dixmoor, Dolton, Glenwood, Harvey, Lansing, Phoenix, Riverdale, and South Holland, which all benefit from the implemented flood control measures.

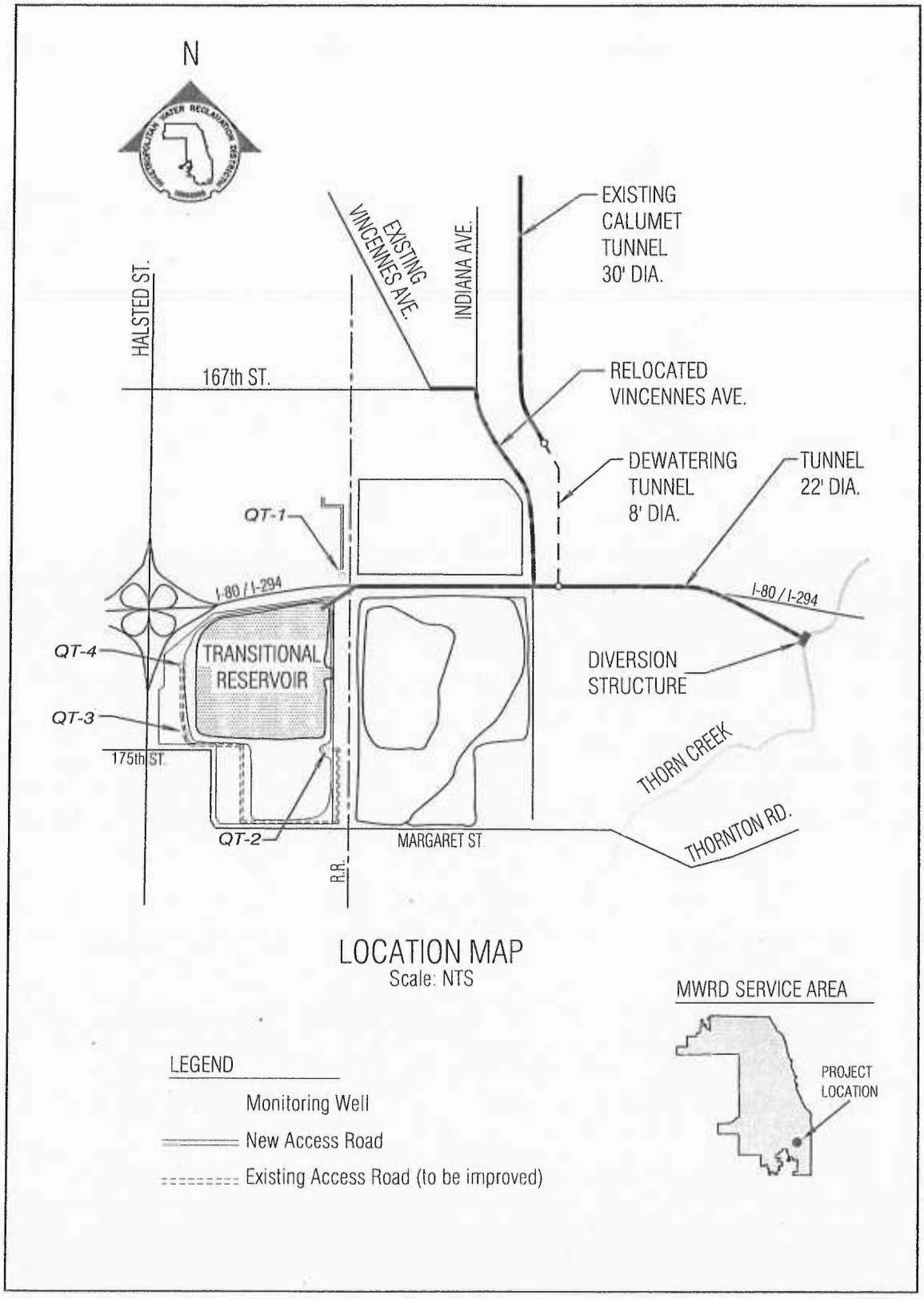
The Reservoir consists of a diversion structure at Thorn Creek, a 24-foot diameter dropshaft, and 22-foot diameter conveyance tunnel to the Lower West Lobe of Thornton Quarry. The project also includes an 8-foot diameter tunnel connected to the Calumet Tunnel and Reservoir Plan System that is utilized for Reservoir dewatering purposes only.

The rationale for collecting groundwater quality data for the four monitoring wells QT-1, QT-2, QT-3, and QT-4 and the Transitional Reservoir is to detect any potential contamination of groundwater in the monitoring wells and/or reservoir which may result from exfiltration during a fill or diversion event, and to immediately implement measures to curtail and/or correct such contamination.

The analytes measured are:

1. pH, electrical conductivity (EC), total dissolved solids (TDS), BOD_5, CN^-, F^-, Cl^-, SO_4^{2-}, NH_3-N, NO_2+NO_3-N, and phenol.

FIGURE 1: THORNTON TRANSITIONAL RESERVOIR
MONITORING WELL LOCATIONS



2. Metals and trace elements: Ag, As, B, Ba, Cd, Cr, Cu, Fe, Hg, Mn, Ni, and Pb.

3. Other parameters: fecal coliform (FC), groundwater temperature, and water elevation.

There were two significant rain events and subsequent diversion/fill events during June 15 through 17 and December 29 through 31, 2015 (Table 1). Due to the fact that the Thornton composite reservoir was placed online, accumulated water in the Thornton Transitional Reservoir could not be removed from the reservoir since the first fill event in 2015. This triggered the sampling of both well (groundwater) and reservoir (water from Thornton Creek with combined sewer overflow [CSO]) for analysis and evaluation for the rest of 2015. Analytical data for all sampling events are reported in Tables 2 through 6.

Summary of Data for Monitoring Wells and Reservoir

Following the June 15 through 17, 2015, fill event until the end of 2015, water was present in the Reservoir. This accumulation of water required a total of approximately 29 weekly sampling events. Samples for the second fill event in December will be recorded in the annual report for 2016. Analytical data generated during this prolonged period are presented (Tables 2 through 6) for wells QT-1, -2, -3, -4, and the Reservoir, respectively. Well QT-4 was sampled only 19 times due to problems accessing this well during the specified period.

Several parameters exceeded the 95 percent upper confidence limits established for the background samples. There was no exceedance in wells QT-1 through QT-4 for CN^-, NO_2+NO_3-N, FC, Ag, Hg, and Pb. However, there were exceedances in all wells for EC, TDS, F^-, Cl^-, SO_4^{2-}, NH_3-N, B, Ba, Fe, and Mn. Exceedances for Cd, Cu, Ni, and BOD_5 were sporadic in the wells. The confidence limit for BOD_5 was exceeded only once in well QT-1 and twice in QT-2. It should be noted that several exceedances were one-time events during the sampling period, and are not expected to trigger any potential problems.

The Rsr experienced exceedances for all analytes except CN^-, phenol, Ag, As, Cr, Cu, Hg, Ni, and Pb (Table 6). In a few instances, those exceedances were single incidents which could possibly be regarded as anomalies.

Any event during which the concentrations of analytes exceed the upper limit of the 95 percent confidence interval of background samples is regarded as an excursion. An excursion may be defined as an elevated reading within a specific isolated location and indicates the potential for contamination relative to background groundwater concentrations. Notably, in nearly all cases where excursions were observed for any parameter in a well, the corresponding concentration of that parameter in the reservoir was much lower, indicating that the reservoir is most likely not the source of contamination causing the observed excursions.

TABLE 1: DIVERSION TO THE THORNTON TRANSITIONAL FLOOD CONTROL RESERVOIR DURING 2015

Date of Diversion	Volume Collected in Thornton Transitional Reservoir	Rainfall (measured at Calumet WRP)	Date Reservoir Completely Drained	Number of Weeks Sampled
	million gallons	inches		
6/15–17/2015	1,184	1.08	NA[1]	29
12/29–31/2015	1,886	2.43	NA	—

[1]Reservoir contained water June through December 2015.

TABLE 2: ANALYSIS OF GROUNDWATER FROM MONITORING WELL QT-1 AT THE THORNTON TRANSITIONAL RESERVOIR SITE SAMPLED DURING 2015

Date Sampled[1]	pH	EC[2]	TDS[2]	BOD_5	CN^-	F^-	Cl^-	SO_4^{2-}	NH_3-N	NO_2+NO_3-N	Phenol	Ag	As	B
			mS/m	mg/L										
Upper 95% Confidence Limit	N[4]	398	2,428	2	0.005	0.36	1,055	294	0.40	0.15	0.005	0.001	0.050	0.29
06/25/15	7.2	350	1,990	<2	<0.005	0.48	746	249	0.55	<0.15	<0.005	<0.001	<0.050	0.63
07/01/15	7.6	392	2,430	<2	<0.005	0.35	587	297	0.43	<0.15	0.006	<0.001	<0.050	0.28
07/09/15	8.1	415	2,460	<2	<0.005	0.36	970	315	0.43	<0.15	<0.005	<0.001	<0.050	0.25
07/16/15	7.1	414	2,426	NA[5]	<0.005	0.40	968	292	0.41	<0.15	<0.005	<0.001	<0.050	0.26
07/23/15	6.8	406	2,404	<2	<0.005	0.33	966	288	0.42	<0.15	<0.005	<0.001	<0.050	0.23
07/30/15	7.0	412	2,328	<2	<0.005	0.35	979	304	0.45	<0.15	<0.005	<0.001	<0.050	0.24
08/06/15	7.0	383	2,236	<2	<0.005	0.30	980	299	0.41	<0.15	<0.005	<0.001	<0.050	0.24
08/13/15	7.1	351	2,406	<2	<0.005	0.33	979	300	0.40	<0.15	<0.005	<0.001	<0.050	0.24
08/20/15	7.4	401	2,356	<2	<0.005	0.37	1,778	297	0.38	<0.15	<0.005	<0.001	<0.050	0.25
08/27/15	7.3	377	2,484	<2	<0.005	0.35	954	298	0.43	<0.15	<0.005	<0.001	<0.050	0.23
09/03/15	7.2	411	2,458	<2	<0.005	0.37	1,016	273	0.38	<0.15	<0.005	<0.001	<0.050	0.29
09/10/15	8.0	378	2,422	<2	<0.005	0.36	954	269	0.39	<0.15	<0.005	<0.001	<0.050	0.34
09/16/15	7.2	375	2,414	6	<0.005	0.37	964	280	0.35	<0.15	<0.005	<0.001	<0.050	0.24
09/24/15	7.2	408	2,418	<2	<0.005	0.35	976	286	0.35	<0.15	<0.005	<0.001	<0.050	0.17
10/01/15	7.2	388	2,516	<2	<0.005	0.38	1,035	286	0.45	<0.15	<0.005	<0.001	<0.050	0.24
10/08/15	7.0	368	2,400	NA	<0.005	0.37	993	299	0.34	<0.15	<0.005	<0.001	<0.050	0.23
10/15/15	7.6	387	2,472	<2	<0.005	0.37	1,017	279	0.36	<0.15	<0.005	<0.001	<0.050	0.25
10/22/15	6.6	319	2,506	<2	<0.005	0.35	1,009	274	0.39	<0.15	<0.005	<0.001	<0.050	0.25
10/29/15	7.2	389	2,310	<2	<0.005	0.28	968	279	0.42	<0.15	<0.005	<0.001	<0.050	0.26
11/04/15	8.3	382	2,394	<2	<0.005	0.35	1,024	285	0.35	<0.15	<0.005	<0.001	<0.050	0.21
11/12/15	7.0	404	2,418	<2	<0.005	0.37	970	276	0.31	<0.15	<0.005	<0.001	<0.050	0.23
11/19/15	6.9	411	2,364	<2	<0.005	0.33	954	297	0.33	<0.15	<0.005	<0.001	<0.050	0.23
11/24/15	7.6	330	2,284	<2	<0.005	0.26	933	287	0.30	<0.15	<0.005	<0.001	<0.050	0.25
12/03/15	7.1	418	2,410	<2	<0.005	0.34	958	312	0.28	<0.15	0.007	<0.001	<0.050	0.23
12/10/15	6.9	416	2,312	<2	<0.005	0.27	945	273	0.32	<0.15	<0.005	<0.001	<0.050	0.24

TABLE 2 (Continued): ANALYSIS OF GROUNDWATER FROM MONITORING WELL QT-1 AT THE THORNTON TRANSITIONAL RESERVOIR SITE SAMPLED DURING 2015

Date Sampled[1]	pH	EC[2]	TDS[2]	BOD_5	CN^-	F^-	Cl^-	SO_4^{2-}	NH_3-N	NO_2+NO_3-N	Phenol	Ag	As	B
			mS/m	mg/L										
12/17/15	7.0	373	2,442	<2	<0.005	0.32	966	279	0.31	<0.15	<0.005	<0.001	<0.050	0.23
12/22/15	6.8	410	2,406	<2	<0.005	0.31	967	311	0.29	<0.15	<0.005	<0.001	<0.050	0.20
Excursion		Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	No	No	No	Yes

[1]Samples retrieved weekly from QT-1 following rain event of June 15 through 17, 2015, and also due to prolonged presence of water in reservoir; reservoir also sampled weekly.
[2]EC = electrical conductivity; TDS = total dissolved solids.
[3]Relative to Chicago city datum (579.48 ft above mean sea level) at intersection of Madison and State Streets.
[4]No limit.
[5]No analysis.

TABLE 2 (Continued): ANALYSIS OF GROUNDWATER FROM MONITORING WELL QT-1 AT THE THORNTON TRANSITIONAL RESERVOIR SITE SAMPLED DURING 2015

Date Sampled[1]	Ba	Cd	Cr	Cu	Fe	Hg	Mn	Ni	Pb	Fecal Coliform	Temp.	Water Elevation[3]
	mg/L									CFU/100 mL	°C	ft
Upper 95% Confidence Limit	0.078	0.011	0.018	0.007	11	0.0002	0.190	0.021	0.02	1	N	N
06/25/15	0.031	<0.001	<0.005	<0.005	5.5	<0.0002	0.198	<0.005	<0.02	<1	14.7	-158
07/01/15	0.070	0.002	<0.005	0.005	7.9	<0.0002	0.104	<0.005	<0.02	<1	12.8	-162
07/09/15	0.081	0.002	<0.005	0.005	10	<0.0002	0.098	<0.005	<0.02	<1	13.5	-161
07/16/15	0.091	0.001	<0.005	<0.005	9.4	<0.0002	0.054	<0.005	<0.02	<1	12.7	-158
07/23/15	0.085	0.001	<0.005	<0.005	10	<0.0002	0.060	<0.005	<0.02	<1	13.8	-163
07/30/15	0.088	0.001	<0.005	<0.005	7.6	<0.0002	0.037	<0.005	<0.02	<1	14.1	-162
08/06/15	0.080	0.001	<0.005	<0.005	9.3	<0.0002	0.054	<0.005	<0.02	<1	16.6	-163
08/13/15	0.068	<0.001	0.124	0.005	3.7	<0.0002	0.025	0.147	<0.02	<1	13.9	-149
08/20/15	0.073	0.009	<0.005	<0.005	8.8	<0.0002	0.086	<0.005	<0.02	<1	14.4	-162
08/27/15	0.075	<0.001	<0.005	<0.005	9.1	<0.0002	0.057	<0.005	<0.02	<1	13.8	-148
09/03/15	0.076	<0.001	<0.005	0.006	6.5	<0.0002	0.043	<0.005	<0.02	<1	14.2	-150
09/10/15	0.070	0.004	<0.005	0.008	7.4	<0.0002	0.147	<0.005	<0.02	<1	15.2	-148
09/16/15	0.074	0.004	<0.005	0.005	9.7	<0.0002	0.058	<0.005	<0.02	<1	13.9	-149
09/24/15	0.078	0.079	<0.005	0.017	10	<0.0002	0.150	<0.005	<0.02	<1	13.4	-151
10/01/15	0.081	0.001	<0.005	0.008	11	<0.0002	0.071	<0.005	<0.02	<1	13.2	-154
10/08/15	0.080	<0.001	<0.005	<0.005	11	<0.0002	0.103	<0.005	<0.02	<1	16.6	-153
10/15/15	0.071	0.002	<0.005	<0.005	8.4	<0.0002	0.061	<0.005	<0.02	<1	12.7	-157
10/22/15	0.073	0.002	<0.005	<0.005	10	<0.0002	0.066	<0.005	<0.02	<1	12.5	-149
10/29/15	0.054	0.001	<0.005	<0.005	9.7	<0.0002	0.452	<0.005	<0.02	<1	12.3	-150
11/04/15	0.071	<0.001	<0.005	<0.005	14	<0.0002	0.239	<0.005	<0.02	<1	13.1	-147
11/12/15	0.077	0.002	<0.005	<0.005	12	<0.0002	0.079	<0.005	<0.02	<1	12.6	-149
11/19/15	0.080	0.002	<0.005	<0.005	9.9	<0.0002	0.140	<0.005	<0.02	<1	11.9	-148
11/24/15	0.062	0.002	<0.005	0.009	12	<0.0002	0.428	<0.005	<0.02	<1	13.6	-151
12/03/15	0.080	0.001	<0.005	<0.005	13	<0.0002	0.089	<0.005	<0.02	<1	12.3	-147
12/10/15	0.064	0.003	<0.005	<0.005	15	<0.0002	0.604	<0.005	<0.02	<1	12.7	-149

TABLE 2 (Continued): ANALYSIS OF GROUNDWATER FROM MONITORING WELL QT-1 AT THE THORNTON TRANSITIONAL RESERVOIR SITE SAMPLED DURING 2015

Date Sampled[1]	Ba	Cd	Cr	Cu	Fe	Hg	Mn	Ni	Pb	Fecal Coliform	Temp.	Water Elevation[3]
	mg/L									CFU/100 mL	°C	ft
12/17/15	0.080	0.002	<0.005	<0.005	12	<0.0002	0.081	<0.005	<0.02	<1	12.9	-146
12/22/15	0.076	<0.001	<0.005	<0.005	7.2	<0.0002	0.051	<0.005	<0.02	<1	12.2	-147
Excursion	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No	N	N

[1]Samples retrieved weekly from QT-1 following rain event of June 15 through 17, 2015, and also due to prolonged presence of water in reservoir; reservoir also sampled weekly.
[2]EC = electrical conductivity; TDS = total dissolved solids.
[3]Relative to Chicago city datum (579.48 ft above mean sea level) at intersection of Madison and State Streets.
[4]No limit.
[5]No analysis.

TABLE 3: ANALYSIS OF GROUNDWATER FROM MONITORING WELL QT-2 AT THE THORNTON TRANSITIONAL RESERVOIR SITE SAMPLED DURING 2015

Date Sampled[1]	pH	EC[2]	TDS[2]	BOD_5	CN^-	F^-	Cl^-	SO_4^{2-}	NH_3-N	NO_2+NO_3-N	Phenol	Ag	As	B
		mS/m	mg/L											
Upper 95% Confidence Limit	N[4]	181	1,339	3	0.005	0.27	153	585	0.20	0.15	0.006	0.001	0.076	0.23
06/25/15	7.4	164	1,168	<2	<0.005	0.29	170	458	0.16	<0.15	<0.005	<0.001	<0.050	0.18
07/01/15	7.6	171	1,270	7	<0.005	0.27	163	499	0.22	<0.15	<0.005	<0.001	0.057	0.18
07/09/15	7.9	174	1,260	<2	<0.005	0.26	161	520	0.17	<0.15	<0.005	<0.001	<0.050	0.19
07/16/15	7.1	139	1,288	<2	<0.005	0.31	166	509	0.19	<0.15	<0.005	<0.001	<0.050	0.22
07/23/15	7.2	176	1,242	<2	<0.005	0.24	171	501	0.17	<0.15	<0.005	<0.001	<0.050	0.19
07/30/15	7.2	184	1,224	<2	<0.005	0.31	174	548	0.18	<0.15	<0.005	<0.001	<0.050	0.19
08/06/15	7.3	185	1,214	<2	<0.005	0.30	173	563	0.16	<0.15	<0.005	<0.001	<0.050	0.21
08/13/15	7.2	180	1,382	<2	<0.005	0.29	169	578	0.17	<0.15	<0.005	<0.001	0.276	0.19
08/20/15	7.4	192	1,362	<2	<0.005	0.26	158	603	0.17	<0.15	<0.005	<0.001	<0.050	0.23
08/27/15	7.1	191	1,560	<2	<0.005	0.26	157	616	0.25	<0.15	<0.005	<0.001	<0.050	0.23
09/03/15	7.1	192	1,444	<2	<0.005	0.26	161	610	0.16	<0.15	<0.005	<0.001	<0.050	0.27
09/10/15	7.3	191	1,384	<2	<0.005	0.27	158	636	0.18	<0.15	<0.005	<0.001	<0.050	0.27
09/16/15	7.1	181	1,388	<2	<0.005	0.29	150	596	0.15	<0.15	<0.005	<0.001	<0.050	0.24
09/24/15	7.1	188	1,412	<2	<0.005	0.26	142	641	0.16	<0.15	<0.005	<0.001	<0.050	0.23
10/01/15	6.9	187	1,466	3	<0.005	0.27	141	629	0.20	<0.15	<0.005	<0.001	<0.050	0.23
10/08/15	7.0	181	1,362	<2	<0.005	0.26	133	660	0.18	<0.15	<0.005	<0.001	<0.050	0.22
10/15/15	7.7	184	1,360	<2	<0.005	0.25	138	564	0.18	<0.15	<0.005	<0.001	<0.050	0.23
10/22/15	6.7	143	1,380	<2	<0.005	0.24	133	560	0.21	<0.15	<0.005	<0.001	<0.050	0.24
10/29/15	7.0	179	1,308	<2	<0.005	0.25	128	583	0.29	<0.15	<0.005	<0.001	<0.050	0.23
11/04/15	8.1	179	1,228	<2	<0.005	0.26	123	560	0.16	<0.15	<0.005	<0.001	<0.050	0.21
11/12/15	6.9	176	1,262	<2	<0.005	0.26	125	567	0.17	<0.15	<0.005	<0.001	<0.050	0.22
11/19/15	7.4	179	1,220	<2	<0.005	0.26	120	625	0.20	<0.15	<0.005	<0.001	<0.050	0.21
11/24/15	7.1	170	1,200	<2	<0.005	0.25	119	588	0.19	<0.15	<0.005	<0.001	<0.050	0.21
12/03/15	7.3	167	1,136	<2	<0.005	0.24	122	500	0.16	<0.15	<0.005	<0.001	<0.050	0.22
12/10/15	7.1	168	1,142	<2	<0.005	0.27	118	488	0.18	<0.15	<0.005	<0.001	<0.050	0.23

TABLE 3 (Continued): ANALYSIS OF GROUNDWATER FROM MONITORING WELL QT-2 AT THE THORNTON TRANSITIONAL RESERVOIR SITE SAMPLED DURING 2015

Date Sampled[1]	pH	EC[2]	TDS[2]	BOD_5	CN^-	F^-	Cl^-	SO_4^{2-}	NH_3-N	NO_2+NO_3-N	Phenol	Ag	As	B
		mS/m	mg/L											
12/17/15	7.2	156	1,162	<2	<0.005	0.27	118	489	0.20	<0.15	0.010	<0.001	<0.050	0.21
12/22/15	7.3	166	1,134	<2	<0.005	0.26	114	523	0.20	<0.15	<0.005	<0.001	<0.050	0.17
Excursion		Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes

TABLE 3 (Continued): ANALYSIS OF GROUNDWATER FROM MONITORING WELL QT-2 AT THE THORNTON TRANSITIONAL RESERVOIR SITE SAMPLED DURING 2015

Date Sampled[1]	Ba	Cd	Cr	Cu	Fe	Hg	Mn	Ni	Pb	Fecal Coliform	Temp.	Water Elevation[3]
	mg/L									CFU/100 mL	°C	ft
Upper 95% Confidence Limit	0.076	0.002	0.005	0.005	8.1	0.0002	0.116	0.026	<0.02	1	N	N
06/25/15	0.036	0.001	<0.005	<0.005	3.8	<0.0002	0.053	0.009	<0.02	<1	15.3	-192
07/01/15	0.037	0.001	<0.005	<0.005	5.7	<0.0002	0.059	0.009	<0.02	<1	14.0	-198
07/09/15	0.045	0.001	<0.005	<0.005	6.4	<0.0002	0.057	0.010	<0.02	<1	14.8	-182
07/16/15	0.045	0.001	<0.005	<0.005	6.3	<0.0002	0.052	0.009	<0.02	<1	15.2	-189
07/23/15	0.042	<0.001	0.005	<0.005	7.4	<0.0002	0.071	0.009	<0.02	<1	14.4	-185
07/30/15	0.043	<0.001	0.006	<0.005	6.6	<0.0002	0.053	0.010	<0.02	<1	14.2	-191
08/06/15	0.041	<0.001	<0.005	<0.005	7.5	<0.0002	0.051	0.010	<0.02	<1	15.0	-190
08/13/15	0.373	0.002	<0.005	<0.005	8.3	<0.0002	0.580	0.138	<0.02	<1	14.6	-184
08/20/15	0.041	0.002	<0.005	<0.005	8.7	<0.0002	0.064	0.013	<0.02	<1	14.4	-192
08/27/15	0.041	<0.001	<0.005	<0.005	8.2	<0.0002	0.054	0.014	<0.02	<1	14.4	-183
09/03/15	0.040	<0.001	<0.005	<0.005	8.4	<0.0002	0.054	0.015	<0.02	<1	15.1	-186
09/10/15	0.039	0.001	0.006	<0.005	7.0	<0.0002	0.043	0.013	<0.02	<1	14.3	-184
09/16/15	0.040	0.002	0.006	0.005	8.4	<0.0002	0.049	0.016	<0.02	<1	14.5	-182
09/24/15	0.040	0.007	<0.005	0.006	8.8	<0.0002	0.051	0.018	<0.02	<1	15.5	-186
10/01/15	0.040	<0.001	<0.005	<0.005	8.6	<0.0002	0.049	0.010	<0.02	<1	13.8	-188
10/08/15	0.039	0.001	<0.005	<0.005	9.4	<0.0002	0.063	0.009	<0.02	<1	15.1	-185
10/15/15	0.035	0.002	<0.005	<0.005	7.9	<0.0002	0.049	0.013	<0.02	<1	13.8	-184
10/22/15	0.035	0.001	<0.005	<0.005	8.1	<0.0002	0.055	0.013	<0.02	<1	14.0	-185
10/29/15	0.035	0.002	<0.005	<0.005	8.5	<0.0002	0.064	0.011	<0.02	<1	13.1	-185
11/04/15	0.036	<0.001	<0.005	<0.005	8.1	<0.0002	0.060	0.011	<0.02	<1	15.7	-187
11/12/15	0.035	<0.001	<0.005	<0.005	8.3	<0.0002	0.062	0.010	<0.02	<1	12.6	-184
11/19/15	0.036	0.002	<0.005	<0.005	8.7	<0.0002	0.073	0.010	<0.02	<1	12.9	-184
11/24/15	0.035	0.002	<0.005	<0.005	8.0	<0.0002	0.065	0.009	<0.02	<1	13.3	-185
12/03/15	0.034	<0.001	<0.005	<0.005	7.6	<0.0002	0.059	0.010	<0.02	<1	13.0	-181

TABLE 3 (Continued): ANALYSIS OF GROUNDWATER FROM MONITORING WELL QT-2 AT THE THORNTON TRANSITIONAL RESERVOIR SITE SAMPLED DURING 2015

Date Sampled[1]	Ba	Cd	Cr	Cu	Fe	Hg	Mn	Ni	Pb	Fecal Coliform	Temp.	Water Elevation[3]
	mg/L									CFU/100 mL	°C	ft
12/10/15	0.036	0.002	<0.005	<0.005	6.6	<0.0002	0.048	0.010	<0.02	<1	13.6	-183
12/17/15	0.035	0.001	<0.005	<0.005	7.4	<0.0002	0.062	0.011	<0.02	<1	12.7	-181
12/22/15	0.034	<0.001	<0.005	<0.005	7.3	<0.0002	0.053	0.009	<0.02	<1	13.0	-180
Excursion	Yes	Yes	No	No	Yes	No	Yes	Yes	No	No	N	N

[1]Samples retrieved weekly from QT-2 following rain event of June 15 through 17, 2015, and also due to prolonged presence of water in reservoir; reservoir also sampled weekly.
[2]EC = electrical conductivity; TDS = total dissolved solids.
[3]Relative to Chicago city datum (579.48 ft above mean sea level) at intersection of Madison and State Streets.
[4]No limit.

TABLE 4: ANALYSIS OF GROUNDWATER FROM MONITORING WELL QT-3 AT THE THORNTON TRANSITIONAL RESERVOIR SITE SAMPLED DURING 2015

Date Sampled[1]	pH	EC[2]	TDS[2]	BOD_5	CN^-	F^-	Cl^-	SO_4^{2-}	NH_3-N	NO_2+NO_3-N	Phenol	Ag	As	B
		mS/m	mg/L											
Upper 95% Confidence Limit	N[4]	214	1,336	2	0.005	0.22	372	212	0.31	0.15	0.005	0.001	0.050	0.18
06/25/15	7.3	201	1,096	<2	<0.005	0.26	297	183	0.39	<0.15	<0.005	<0.001	<0.050	0.30
07/01/15	7.9	117	1,234	<2	<0.005	0.23	340	213	0.35	<0.15	0.008	<0.001	<0.050	0.25
07/09/15	7.9	209	1,308	<2	<0.005	0.22	343	221	0.36	<0.15	<0.005	<0.001	<0.050	0.22
07/16/15	7.0	210	1,310	<2	<0.005	0.24	329	216	0.37	<0.15	<0.005	<0.001	<0.050	0.22
07/23/15	7.0	208	1,286	<2	<0.005	0.18	347	218	0.36	<0.15	<0.005	<0.001	<0.050	0.16
07/30/15	7.1	213	1,226	<2	<0.005	0.19	354	229	0.33	<0.15	0.006	<0.001	<0.050	0.18
08/06/15	7.1	210	1,206	<2	<0.005	0.18	354	221	0.32	<0.15	<0.005	<0.001	<0.050	0.18
08/13/15	6.9	208	1,358	<2	<0.005	0.16	367	213	0.34	<0.15	<0.005	<0.001	<0.050	0.16
08/20/15	7.2	217	1,270	<2	<0.005	0.22	340	211	0.32	<0.15	<0.005	<0.001	<0.050	0.14
08/27/15	7.0	106	1,470	<2	<0.005	0.21	357	216	0.31	<0.15	<0.005	<0.001	<0.050	0.16
09/03/15	7.1	170	1,354	<2	<0.005	0.25	364	197	0.26	<0.15	<0.005	<0.001	<0.050	0.13
09/10/15	7.1	213	1,316	<2	<0.005	0.24	360	211	0.32	<0.15	<0.005	<0.001	<0.050	0.22
09/16/15	6.9	205	1,296	<2	<0.005	0.24	366	196	0.27	<0.15	<0.005	<0.001	<0.050	0.18
09/24/15	7.0	206	1,304	<2	<0.005	0.22	359	204	0.25	<0.15	<0.005	<0.001	<0.050	0.13
10/01/15	6.9	216	1,392	<2	<0.005	0.23	363	205	0.32	<0.15	<0.005	<0.001	<0.050	0.17
10/08/15	6.9	208	1,284	<2	<0.005	0.21	358	207	0.27	<0.15	<0.005	<0.001	<0.050	0.12
10/15/15	7.9	222	1,352	<2	<0.005	0.20	374	197	0.27	<0.15	<0.005	<0.001	<0.050	0.18
10/22/15	6.6	172	1,368	<2	<0.005	0.18	397	209	0.31	<0.15	<0.005	<0.001	<0.050	0.17
10/29/15	7.0	166	1,340	<2	<0.005	0.20	386	192	0.32	<0.15	<0.005	<0.001	<0.050	0.12
11/04/15	8.2	218	1,282	<2	<0.005	0.22	389	198	0.23	<0.15	<0.005	<0.001	<0.050	0.12
11/12/15	6.9	206	1,330	<2	<0.005	0.21	382	210	0.23	<0.15	<0.005	<0.001	<0.050	0.15
11/19/15	6.9	227	1,290	<2	<0.005	0.21	378	212	0.25	<0.15	<0.005	<0.001	<0.050	0.11
11/24/15	7.2	221	1,290	<2	<0.005	0.21	377	211	0.22	<0.15	<0.005	<0.001	<0.050	0.11
12/03/15	7.1	228	1,330	<2	<0.005	0.19	383	225	0.20	<0.15	0.007	<0.001	<0.050	0.16
12/10/15	6.9	229	1,338	<2	<0.005	0.21	382	189	0.22	<0.15	<0.005	<0.001	<0.050	0.12

TABLE 4 (Continued): ANALYSIS OF GROUNDWATER FROM MONITORING WELL QT-3 AT THE THORNTON TRANSITIONAL RESERVOIR SITE SAMPLED DURING 2015

Date Sampled[1]	pH	EC[2]	TDS[2]	BOD_5	CN^-	F^-	Cl^-	SO_4^{2-}	NH_3-N	NO_2+NO_3-N	Phenol	Ag	As	B
		mS/m	mg/L											
12/17/15	7.1	217	1,382	<2	<0.005	0.19	387	197	0.23	<0.15	<0.005	<0.001	<0.050	0.16
12/22/15	7.1	225	1,328	<2	<0.005	0.20	387	214	0.21	<0.15	<0.005	<0.001	<0.050	0.15
Excursion		Yes	Yes	No	No	Yes	Yes	Yes	Yes	No	No	No	No	Yes

TABLE 4 (Continued): ANALYSIS OF GROUNDWATER FROM MONITORING WELL QT-3 AT THE THORNTON TRANSITIONAL RESERVOIR SITE SAMPLED DURING 2015

Date Sampled[1]	Ba	Cd	Cr	Cu	Fe	Hg	Mn	Ni	Pb	Fecal Coliform	Temp.	Water Elevation[3]
	mg/L									CFU/100 mL		
Upper 95% Confidence Limit	0.083	0.004	0.005	0.006	17	0.0002	0.221	0.006	0.02	1	N	N
06/25/15	0.061	<0.001	<0.005	0.008	9.7	<0.0002	0.104	0.005	<0.02	<1	14.9	-180
07/01/15	0.071	<0.001	<0.005	0.006	5.2	<0.0002	0.074	<0.005	<0.02	<1	12.7	-183
07/09/15	0.083	0.001	<0.005	<0.005	10	<0.0002	0.082	<0.005	<0.02	<1	12.5	-186
07/16/15	0.080	<0.001	<0.005	<0.005	9.9	<0.0002	0.095	<0.005	<0.02	<1	12.9	-184
07/23/15	0.082	0.002	0.005	<0.005	17	<0.0002	0.217	<0.005	<0.02	<1	14.1	-185
07/30/15	0.085	0.001	0.005	<0.005	12	<0.0002	0.149	<0.005	<0.02	<1	14.0	-186
08/06/15	0.083	<0.001	<0.005	<0.005	9.6	<0.0002	0.110	<0.005	<0.02	<1	14.8	-184
08/13/15	0.072	0.001	<0.005	0.008	15	<0.0002	0.207	0.011	<0.02	<1	14.4	-177
08/20/15	0.076	0.004	<0.005	<0.005	19	<0.0002	0.230	<0.005	<0.02	<1	13.3	-186
08/27/15	0.082	<0.001	<0.005	<0.005	13	<0.0002	0.144	<0.005	<0.02	<1	12.9	-177
09/03/15	0.078	<0.001	<0.005	<0.005	20	<0.0002	0.260	<0.005	<0.02	<1	15.5	-180
09/10/15	0.078	0.002	<0.005	<0.005	9.8	<0.0002	0.128	<0.005	<0.02	<1	13.2	-177
09/16/15	0.080	0.002	0.005	<0.005	11	<0.0002	0.118	<0.005	<0.02	<1	13.0	-180
09/24/15	0.079	0.018	<0.005	0.009	22	<0.0002	0.296	<0.005	<0.02	<1	12.9	-181
10/01/15	0.085	0.001	<0.005	<0.005	10	<0.0002	0.122	<0.005	<0.02	<1	12.2	-183
10/08/15	0.082	0.002	<0.005	<0.005	22	<0.0002	0.289	<0.005	<0.02	<1	12.7	-181
10/15/15	0.078	0.001	<0.005	<0.005	9.7	<0.0002	0.114	<0.005	<0.02	<1	12.7	-181
10/22/15	0.082	0.002	<0.005	<0.005	14	<0.0002	0.152	<0.005	<0.02	<1	12.3	-176
10/29/15	0.080	0.003	<0.005	<0.005	22	<0.0002	0.286	<0.005	<0.02	<1	12.8	-179
11/04/15	0.081	0.003	<0.005	<0.005	21	<0.0002	0.329	<0.005	<0.02	<1	14.4	-183
11/12/15	0.087	0.002	<0.005	<0.005	14	<0.0002	0.168	<0.005	<0.02	<1	11.5	-177
11/19/15	0.086	0.004	<0.005	<0.005	23	<0.0002	0.319	<0.005	<0.02	<1	11.5	-178
11/24/15	0.086	0.003	<0.005	<0.005	20	<0.0002	0.328	<0.005	<0.02	<1	11.9	-178
12/03/15	0.085	0.001	<0.005	<0.005	15	<0.0002	0.171	<0.005	<0.02	<1	11.5	-175

TABLE 4 (Continued): ANALYSIS OF GROUNDWATER FROM MONITORING WELL QT-3 AT THE THORNTON TRANSITIONAL RESERVOIR SITE SAMPLED DURING 2015

Date Sampled[1]	Ba	Cd	Cr	Cu	Fe	Hg	Mn	Ni	Pb	Fecal Coliform	Temp.	Water Elevation[3]
	mg/L									CFU/100 mL		
12/10/15	0.088	0.004	<0.005	<0.005	23	<0.0002	0.310	<0.005	<0.02	<1	11.9	-178
12/17/15	0.088	0.003	<0.005	<0.005	14	<0.0002	0.164	<0.005	<0.02	<1	11.6	-174
12/22/15	0.087	<0.001	<0.005	<0.005	10	<0.0002	0.109	<0.005	<0.02	<1	11.8	-175
Excursion	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	No	N	N

[1]Samples retrieved weekly from QT-3 following rain event of June 15 through 17, 2015, and also due to prolonged presence of water in reservoir; reservoir also sampled weekly.
[2]EC = electrical conductivity; TDS = total dissolved solids.
[3]Relative to Chicago city datum (579.48 ft above mean sea level) at intersection of Madison and State Streets.
[4]No limit.

TABLE 5: ANALYSIS OF GROUNDWATER FROM MONITORING WELL QT-4 AT THE THORNTON TRANSITIONAL RESERVOIR SITE SAMPLED DURING 2015

Date Sampled[1]	pH	EC[2]	TDS[2]	BOD_5	CN^-	F^-	Cl^-	SO_4^{2-}	NH_3-N	NO_2+NO_3-N	Phenol	Ag	As	B
		mS/m	mg/L											
Upper 95% Confidence Limit	N[4]	210	1,314	<2	0.005	0.25	321	252	0.39	0.15	0.005	0.001	0.050	0.43
07/30/15	8.0	166	1,254	<2	<0.005	0.26	335	231	0.44	<0.15	<0.005	<0.001	<0.050	0.36
08/06/15	7.7	166	1,180	<2	<0.005	0.15	314	252	0.41	<0.15	<0.005	<0.001	<0.050	0.38
08/13/15	7.0	203	1,286	<2	<0.005	0.22	323	251	0.43	<0.15	<0.005	0.001	<0.050	0.37
08/27/15	7.1	207	1,388	<2	<0.005	0.25	305	242	0.39	<0.15	<0.005	<0.001	<0.050	0.42
09/03/15	7.2	209	1,292	<2	<0.005	0.25	287	229	0.35	<0.15	<0.005	<0.001	<0.050	0.51
09/10/15	7.0	209	1,316	<2	<0.005	0.27	307	237	0.40	<0.15	<0.005	<0.001	<0.050	0.53
09/24/15	7.4	212	1,306	<2	<0.005	0.24	311	253	0.33	<0.15	<0.005	<0.001	<0.050	0.37
10/01/15	7.0	212	1,348	<2	<0.005	0.26	311	254	0.42	<0.15	<0.005	<0.001	<0.050	0.42
10/08/15	6.9	203	1,302	<2	<0.005	0.24	317	258	0.35	<0.15	<0.005	<0.001	<0.050	0.42
10/15/15	8.0	210	1,310	<2	<0.005	0.25	303	230	0.36	<0.15	<0.005	<0.001	<0.050	0.44
10/22/15	6.7	216	1,316	<2	<0.005	0.23	323	250	0.40	<0.15	<0.005	<0.001	<0.050	0.43
10/29/15	7.4	174	1,322	<2	<0.005	0.24	332	247	0.44	<0.15	<0.005	<0.001	<0.050	0.42
11/04/15	8.5	210	1,244	<2	<0.005	0.25	309	244	0.32	<0.15	<0.005	<0.001	<0.050	0.36
11/12/15	6.8	213	1,304	<2	<0.005	0.26	320	245	0.32	<0.15	<0.005	<0.001	<0.050	0.42
11/24/15	7.0	204	1,274	<2	<0.005	0.23	327	254	0.30	<0.15	<0.005	<0.001	<0.050	0.40
12/03/15	7.1	212	1,286	<2	<0.005	0.23	319	262	0.30	<0.15	0.005	<0.001	<0.050	0.42
12/10/15	7.0	218	1,302	<2	<0.005	0.24	325	226	0.30	<0.15	<0.005	<0.001	<0.050	0.40
12/17/15	7.2	203	1,290	<2	<0.005	0.23	319	232	0.32	<0.15	<0.005	<0.001	<0.050	0.42
12/22/15	7.0	213	1,280	<2	<0.005	0.23	318	273	0.29	<0.15	<0.005	<0.001	<0.050	0.36
Excursion		Yes	Yes	No	No	Yes	Yes	Yes	Yes	No	No	No	No	Yes

TABLE 5 (Continued): ANALYSIS OF GROUNDWATER FROM MONITORING WELL QT-4 AT THE THORNTON TRANSITIONAL RESERVOIR SITE SAMPLED DURING 2015

Date Sampled[1]	Ba	Cd	Cr	Cu	Fe	Hg	Mn	Ni	Pb	Fecal Coliform	Temp.	Water Elevation[3]
	mg/L									CFU/100mL	°C	(ft)
Upper 95% Confidence Limit	0.080	0.004	0.005	0.050	12	0.0002	0.157	0.117	0.02			
07/30/15	0.082	0.001	<0.005	0.285	12	<0.0002	0.238	0.689	0.05	<1	14.4	-113
08/06/15	0.075	<0.001	<0.005	<0.005	11	<0.0002	0.134	<0.005	<0.02	<1	15.4	-110
08/13/15	0.069	<0.001	<0.005	<0.005	8	<0.0002	0.061	<0.005	<0.02	<1	13.1	-91
08/27/15	0.077	<0.001	<0.005	<0.005	11	<0.0002	0.078	<0.005	<0.02	<1	13.3	-89
09/03/15	0.081	<0.001	<0.005	<0.005	12	<0.0002	0.128	<0.005	<0.02	<1	14.7	-93
09/10/15	0.077	0.002	<0.005	<0.005	9.1	<0.0002	0.067	<0.005	<0.02	<1	13.2	-89
09/24/15	0.080	0.015	<0.005	0.007	14	<0.0002	0.218	<0.005	<0.02	<1	15.2	-94
10/01/15	0.081	0.001	<0.005	<0.005	11	<0.0002	0.088	<0.005	<0.02	<1	13.4	-98
10/08/15	0.083	0.002	<0.005	<0.005	13	<0.0002	0.155	<0.005	<0.02	<1	14.7	-93
10/15/15	0.076	<0.001	<0.005	<0.005	8.8	<0.0002	0.065	<0.005	<0.02	<1	14.4	-88
10/22/15	0.076	0.001	<0.005	<0.005	11	<0.0002	0.085	<0.005	<0.02	<1	13.5	-89
10/29/15	0.074	0.001	<0.005	<0.005	12	<0.0002	0.145	<0.005	<0.02	<1	14.7	-94
11/04/15	0.079	0.002	<0.005	<0.005	14	<0.0002	0.158	<0.005	<0.02	<1	13.6	-95
11/12/15	0.081	0.002	<0.005	<0.005	12	<0.0002	0.092	<0.005	<0.02	<1	14.0	-89
11/24/15	0.079	0.002	<0.005	0.005	12	<0.0002	0.234	<0.005	<0.02	<1	14.1	-95
12/03/15	0.077	0.002	<0.005	<0.005	12	<0.0002	0.103	<0.005	<0.02	<1	13.5	-91
12/10/15	0.083	0.002	<0.005	<0.005	15	<0.0002	0.223	0.052	<0.02	<1	11.7	-91
12/17/15	0.081	0.002	<0.005	<0.005	12	<0.0002	0.094	<0.005	<0.02	<1	12.8	-90
12/22/15	0.079	<0.001	<0.005	<0.005	9.0	<0.0002	0.070	<0.005	<0.02	<1	12.8	-91
Excursion	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	No	N	N

[1]Samples retrieved weekly from QT-4 following rain event of June 15 through 17, 2015, and also due to prolonged presence of water in reservoir; reservoir also sampled weekly.
[2]EC = electrical conductivity; TDS = total dissolved solids.
[3]Relative to Chicago city datum (579.48 ft above mean sea level) at intersection of Madison and State Streets.
[4]No limit.

TABLE 6: ANALYSIS OF FILL-EVENT WATER STORED IN THE THORNTON TRANSITIONAL RESERVOIR AND SAMPLED DURING 2015

Date Sampled[1]	pH	TDS[2]	BOD_5	CN^-	F^-	Cl^-	SO_4^{2-}	NH_3-N	NO_2+NO_3-N	Phenol	Ag	As	B
		mg/L											
Upper 95% Confidence Limit	N[4]	332	6	0.005	0.21	69	61	0.12	0.21	0.005	0.001	0.050	0.10
06/18/15	8.6	294	5	<0.005	0.22	58	47	0.20	0.64	<0.005	<0.001	<0.050	0.08
06/24/15	7.3	286	5	<0.005	0.21	59	48	<0.10	0.60	<0.005	<0.001	<0.050	0.08
07/01/15	7.1	312	8	<0.005	0.21	57	49	0.26	0.54	<0.005	<0.001	<0.050	0.08
07/08/15	7.8	286	6	<0.005	0.19	60	52	<0.10	0.39	<0.005	<0.001	<0.050	0.09
07/15/15	6.0	296	3	<0.005	0.22	60	48	<0.10	<0.15	<0.005	<0.001	<0.050	0.13
07/22/15	9.6	272	12	<0.005	0.21	61	53	<0.10	<0.15	<0.005	<0.001	<0.050	0.08
07/29/15	7.3	258	9	<0.005	0.21	62	56	0.11	<0.15	<0.005	<0.001	<0.050	0.07
08/05/15	7.3	280	3	<0.005	0.18	63	56	0.10	<0.15	<0.005	<0.001	<0.050	0.08
08/12/15	7.8	292	3	<0.005	0.21	65	57	<0.10	<0.15	<0.005	<0.001	<0.050	0.08
08/19/15	7.1	276	<2	<0.005	0.20	65	56	<0.10	<0.15	<0.005	<0.001	<0.050	0.09
08/26/15	8.5	318	<2	<0.005	0.21	64	58	<0.10	<0.15	<0.005	<0.001	<0.050	0.09
09/03/15	8.8	324	10	<0.005	0.20	65	56	<0.10	<0.15	<0.005	<0.001	<0.050	0.10
09/09/15	7.3	378	3	<0.005	0.22	66	55	0.24	<0.15	<0.005	<0.001	<0.050	0.10
09/17/15	6.6	314	<2	<0.005	0.22	67	58	<0.10	<0.15	<0.005	<0.001	<0.050	0.09
09/23/15	8.0	338	<2	<0.005	0.21	67	59	<0.10	<0.15	<0.005	<0.001	<0.050	0.11
09/30/15	7.2	318	<2	<0.005	0.21	70	60	<0.10	<0.15	<0.005	<0.001	<0.050	0.09
10/07/15	8.3	330	<2	<0.005	0.20	70	64	0.23	<0.15	<0.005	<0.001	<0.050	0.10
10/14/15	7.8	354	<2	<0.005	0.20	71	68	<0.10	<0.15	<0.005	<0.001	<0.050	0.08
10/20/15	7.3	350	<2	0.008	0.19	73	58	0.11	<0.15	<0.005	<0.001	<0.050	0.11
10/29/15	6.4	364	3	<0.005	0.20	76	65	<0.10	0.23	<0.005	<0.001	<0.050	0.11
11/04/15	8.0	362	<2	<0.005	0.21	75	65	<0.10	<0.15	<0.005	<0.001	<0.050	0.10
11/12/15	7.5	374	<2	<0.005	0.21	76	68	<0.10	<0.15	<0.005	<0.001	<0.050	0.10
11/20/15	6.2	364	<2	<0.005	0.22	76	79	<0.10	0.33	<0.005	<0.001	<0.050	0.09
11/24/15	8.0	382	3	<0.005	0.20	78	80	<0.10	<0.15	<0.005	<0.001	<0.050	0.10
11/30/15	7.3	386	<2	<0.005	0.19	82	72	<0.10	<0.15	<0.005	<0.001	<0.050	0.10

TABLE 6 (Continued): ANALYSIS OF FILL-EVENT WATER STORED IN THE THORNTON TRANSITIONAL RESERVOIR AND SAMPLED DURING 2015

Date Sampled[1]	pH	TDS[2]	BOD_5	CN^-	F^-	Cl^-	SO_4^{2-}	NH_3-N	NO_2+NO_3-N	Phenol	Ag	As	B
		mg/L											
12/10/15	6.5	376	<2	<0.005	0.20	83	70	<0.10	<0.15	<0.005	<0.001	<0.050	0.11
12/16/15	6.6	390	<2	<0.005	0.22	81	61	<0.10	<0.15	<0.005	<0.001	<0.050	0.11
12/22/15	7.4	390	<2	<0.005	0.22	84	71	<0.10	<0.15	<0.005	<0.001	<0.050	0.20
12/29/15	7.9	378	NR	<0.005	0.21	79	72	<0.10	<0.15	<0.005	<0.001	<0.050	0.11
Excursion		Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes

TABLE 6 (Continued): ANALYSIS OF FILL-EVENT WATER STORED IN THE THORNTON TRANSITIONAL RESERVOIR AND SAMPLED DURING 2015

Date Sampled[1]	Ba	Cd	Cr	Cu	Fe	Hg	Mn	Ni	Pb	Coliform	Temp.	Elevation[3]
	mg/L									CFU/100 mL	°C	ft
Upper 95% Confidence Limit	0.023	0.001	0.005	0.005	0.24	0.0002	0.015	0.005	0.02	1	N	N
06/18/15	0.029	<0.001	<0.005	0.008	1.1	<0.0002	0.023	0.005	<0.02	1,900	21	18
06/24/15	0.026	<0.001	<0.005	<0.005	0.59	<0.0002	0.011	<0.005	<0.02	310	23	18
07/01/15	0.024	<0.001	<0.005	<0.005	0.26	<0.0002	0.007	<0.005	<0.02	40	23	19
07/08/15	0.024	<0.001	<0.005	<0.005	0.27	<0.0002	0.007	<0.005	<0.02	100	NR[5]	15
07/15/15	0.023	<0.001	<0.005	<0.005	<0.10	<0.0002	0.002	<0.005	<0.02	99	NR	18
07/22/15	0.017	<0.001	<0.005	<0.005	0.17	<0.0002	0.007	<0.005	<0.02	<10	27	17
07/29/15	0.018	<0.001	<0.005	<0.005	<0.10	<0.0002	0.004	<0.005	<0.02	9	22	18
08/05/15	0.020	<0.001	<0.005	<0.005	<0.10	<0.0002	0.005	<0.005	<0.02	30	22	18
08/12/15	0.019	<0.001	<0.005	<0.005	<0.10	<0.0002	0.007	<0.005	<0.02	60	23	17
08/19/15	0.019	<0.001	<0.005	<0.005	<0.10	<0.0002	0.006	<0.005	<0.02	170	21	16
08/26/15	0.022	<0.001	<0.005	<0.005	<0.10	<0.0002	0.011	<0.005	<0.02	20	20	18
09/03/15	0.022	<0.001	<0.005	<0.005	<0.10	<0.0002	0.007	<0.005	<0.02	60	25	17
09/09/15	0.021	<0.001	<0.005	0.005	0.12	<0.0002	0.009	<0.005	<0.02	120	22	18
09/17/15	0.023	0.001	<0.005	<0.005	<0.10	<0.0002	0.013	<0.005	<0.02	280	20	18
09/23/15	0.024	0.002	<0.005	0.005	<0.10	<0.0002	0.010	0.005	<0.02	130	19	18
09/30/15	0.024	<0.001	<0.005	<0.005	<0.10	<0.0002	0.016	<0.005	<0.02	190	19	18
10/07/15	0.023	<0.001	<0.005	<0.005	0.16	<0.0002	0.042	<0.005	<0.02	50	18	18
10/14/15	0.023	<0.001	<0.005	<0.005	0.21	<0.0002	0.040	<0.005	<0.02	9	NR	17
10/20/15	0.025	<0.001	<0.005	<0.005	0.27	<0.0002	0.035	<0.005	<0.02	60	19	17
10/29/15	0.024	<0.001	<0.005	<0.005	0.20	<0.0002	0.020	<0.005	<0.02	730	10	18
11/04/15	0.025	<0.001	<0.005	<0.005	0.13	<0.0002	0.016	<0.005	<0.02	9	NR	18
11/12/15	0.026	<0.001	<0.005	<0.005	0.25	<0.0002	0.025	<0.005	<0.02	890	11.5	18
11/20/15	0.026	0.001	<0.005	<0.005	0.21	<0.0002	0.023	<0.005	<0.02	NR	7.0	18
11/24/15	0.023	<0.001	<0.005	<0.005	0.14	<0.0002	0.015	<0.005	<0.02	<10	8.8	18
11/30/15	0.028	<0.001	<0.005	<0.005	0.42	<0.0002	0.027	<0.005	<0.02	680	7.0	20

TABLE 6 (Continued): ANALYSIS OF FILL-EVENT WATER STORED IN THE THORNTON TRANSITIONAL RESERVOIR AND SAMPLED DURING 2015

Date Sampled[1]	Ba	Cd	Cr	Cu	Fe	Hg	Mn	Ni	Pb	Coliform	Temp.	Elevation[3]
	mg/L									CFU/100 mL	°C	ft
12/10/15	0.027	<0.001	<0.005	<0.005	0.68	<0.0002	0.029	<0.005	<0.02	60	7.0	19
12/16/15	0.026	<0.001	<0.005	<0.005	0.28	<0.0002	0.011	<0.005	<0.02	20	7.0	20
12/22/15	0.025	<0.001	<0.005	<0.005	0.17	<0.0002	0.008	<0.005	<0.02	<10	5.0	18
12/29/15	0.025	<0.001	<0.005	<0.005	0.27	<0.0002	0.012	<0.005	<0.02	9	3.0	18
Excursion	Yes	Yes	No	No	Yes	No	Yes	No	No	Yes	N	N

[1]Samples retrieved weekly from reservoir following rain event of June 15 through 17, 2015, and also due to prolonged presence of water in reservoir.
[2]TDS = total dissolved solids.
[3]Elevation of water in the reservoir, not adjusted to Chicago city datum.
[4]No limit.
[5]No reading or result.