

Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

***RESEARCH AND DEVELOPMENT
DEPARTMENT***

REPORT NO. 07-45

TUNNEL AND RESERVOIR PLAN

THORNTON TRANSITIONAL FLOOD CONTROL RESERVOIR

WATER QUALITY MONITORING WELLS

2006 ANNUAL GROUNDWATER MONITORING REPORT

July 2007

Terrence J. O'Brien
President
Kathleen Therese Meany
Vice President
Gloria Alitto Majewski
Chairman of Finance
Frank Avila
Patricia Horton
Barbara J. McGowan
Cynthia M. Santos
Debra Shore
Patricia Young

Metropolitan Water Reclamation District of Greater Chicago

100 EAST ERIE STREET CHICAGO, ILLINOIS 60611-3154 312-751-5600

Louis Kollias, P.E., BCEE
Director of Research and Development

312-751-5190

July 27, 2007

Ms. Marcia Willhite, Chief
Bureau of Water
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, IL 62794-9276

Dear Ms. Willhite:

Subject: Tunnel and Reservoir Plan, Thornton Transitional Flood Control Reservoir
Water Quality Monitoring Wells, 2006 Annual Groundwater Monitoring
Report

Enclosed are three copies of "Tunnel and Reservoir Plan, Thornton Transitional Flood Control Reservoir Water Quality Monitoring Wells, 2006 Annual Groundwater Monitoring Report."

Very truly yours,

Louis Kollias
Director
Research and Development

LK:JSJ:lmf

Enclosures

cc w/enc: Ms. Sally K. Swanson (USEPA Region V—WC15J) (2)

Mr. Sobanski

Dr. Granato

Dr. O'Connor

Dr. Jain

Mr. MacDonald

Library

cc w/o enc: Mr. Jamjun

Ms. Nason

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
WATER QUALITY MONITORING WELLS
2006 ANNUAL GROUNDWATER MONITORING REPORT

TABLE OF CONTENTS

	<u>Page</u>
LIST OF TABLES	ii
LIST OF FIGURES	iv
INTRODUCTION	1
Objective	1
Project Description	1
Field Sampling	2
Analytical Data Results	2
Discussion of Results	2

LIST OF TABLES

<u>Table No.</u>		<u>Page</u>
1	List of Parameters to Be Analyzed According to Table 2 from the IEPA's Scope of Work	4
2	Parameters from Table 2 of IEPA's SOW in Water Quality Monitoring Well QT-1 during the April 17, 2006, Fill Event	5
3	Parameters from Table 2 of IEPA's SOW in Water Quality Monitoring Well QT-2 during the April 17, 2006, Fill Event	7
4	Parameters from Table 2 of IEPA's SOW in Water Quality Monitoring Well QT-3 during the April 17, 2006, Fill Event	9
5	Parameters from Table 2 of IEPA's SOW in Water Quality Monitoring Well QT-4 during the April 17, 2006, Fill Event	11
6	Parameters from Table 2 of IEPA's SOW in Thornton Transitional Reservoir during the April 17, 2006, Fill Event	13
7	Parameters from Table 2 of IEPA's SOW in Water Quality Monitoring Well QT-1 during the August 29, 2006, and September 13, 2006, Fill Events	15
8	Parameters from Table 2 of IEPA's SOW in Water Quality Monitoring Well QT-2 during the August 29, 2006, and September 13, 2006, Fill Events	17
9	Parameters from Table 2 of IEPA's SOW in Water Quality Monitoring Well QT-3 during the August 29, 2006, and September 13, 2006, Fill Events	19
10	Parameters from Table 2 of IEPA's SOW in Water Quality Monitoring Well QT-4 during the August 29, 2006, and September 13, 2006, Fill Events	21
11	Parameters from Table 2 of IEPA's SOW in Thornton Transitional Reservoir during the August 29, 2006, and September 13, 2006, Fill Events	23
12	Parameters from Table 2 of IEPA's SOW in Water Quality Monitoring Well QT-1 during the December 1, 2006, Fill Event	25

LIST OF TABLES (Continued)

<u>Table No.</u>		<u>Page</u>
13	Parameters from Table 2 of IEPA's SOW in Water Quality Monitoring Well QT-2 during the December 1, 2006, Fill Event	27
14	Parameters from Table 2 of IEPA's SOW in Water Quality Monitoring Well QT-3 during the December 1, 2006, Fill Event	29
15	Parameters from Table 2 of IEPA's SOW in Water Quality Monitoring Well QT-4 during the December 1, 2006, Fill Event	31
16	Parameters from Table 2 of IEPA's SOW in Thornton Transitional Reservoir during the December 1, 2006, Fill Event	33

LIST OF FIGURES

<u>Figure No.</u>		<u>Page</u>
1	Thornton Transitional Reservoir Monitoring Well Locations	35

INTRODUCTION

The purpose of this report is to meet the reporting requirements of the Illinois Environmental Protection Agency (IEPA) relative to annual flood control utilization for the Thornton Transitional Flood Control Reservoir (Reservoir) for 2006. The specific informational requirements are described in the June 26, 2001, Scope of Work (SOW) for Groundwater Quality Monitoring of the Reservoir. The SOW was approved in a letter from the IEPA dated August 6, 2001.

The reporting requirements are found in Section 7 of the SOW. The requirements for the annual flood control utilization of the Reservoir shall include:

1. The year's monitoring wells sample analysis results.
2. Reservoir content grab sample results.
3. Detailed review and comparison of the monitoring well sampling analysis results, utilizing the monitoring well statistical background determinations.

Objective

The objective of collecting groundwater quality data from the four monitoring wells QT-1, QT-2, QT-3, and QT-4 and Reservoir content grab samples is to assess any possible contamination of the monitoring wells which may result from the seepage produced during the fill event for any of the parameters indicated in Table 2 of the SOW (Table 1).

Project Description

The Reservoir is 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 is the final structural measure to be implemented for the Little Calumet River Watershed under the Natural Resources Conservation Service (NRCS) Little Calumet Watershed Plan of November 1998. The Reservoir will provide 3.1 billion gallons of floodwater storage, which represents the capture of the 100-year storm event from Thorn Creek at a point just south of the Tri-State Tollway.

The project will provide flood control benefits for 21 businesses and 4,400 residences, for an average benefit of \$6.8 million per year. Within the Little Calumet watershed are the communities of Blue Island, Calumet City, Dixmoor, Dolton, Glenwood, Harvey, Lansing, Phoenix, Riverdale, and South Holland, which will receive flood control benefits.

The Reservoir consists of a diversion structure at Thornton 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 (TARP) System that will be utilized for Reservoir dewatering purposes only.

Field Sampling

There were four fill events at the Thornton Transitional Reservoir during the year 2006: April 17, 2006; August 29, 2006; September 13, 2006; and December 1, 2006.

The April fill event began on April 17, 2006, resulting in storage of 1.880 billion gallons of CSO in the Reservoir. The August fill event began on August 29, 2006, resulting in storage of 790 million gallons of CSO in the Reservoir. On September 13, 2006, with CSO water elevation in the Reservoir from the August 29, 2006, and September 13, 2006, Fill Events, another diversion occurred. This event resulted in an additional 660 million gallons of stormwater diverted to the Reservoir. The final diversion took place on December 1, 2006, resulting in storage of 442 million gallons of CSO in the Reservoir.

During these fill events, in accordance with the SOW, samples were collected from the four water quality wells surrounding the Reservoir and grab samples were taken from the Reservoir. The parameters analyzed for are found in Table 2 of the SOW (Table 1).

Analytical Data Results

Tables 2, 3, 4, and 5 contain the results of the analyses of the four water quality monitoring wells along with the calculated upper 95 percent confidence limits for the April 17, 2006, fill event. Table 6 contains the results of the grab samples from the Reservoir. Tables 7, 8, 9, and 10 contain the results of the analyses the four water quality monitoring wells along with the calculated upper 95 percent confidence limits for the August 29, 2006, and September 13, 2006, fill events. Table 11 contains the results of the grab samples from the Reservoir. Tables 12, 13, 14, and 15 contain the results of analyses of the four water quality monitoring wells along with the calculated upper 95 percent confidence limits for the December 1, 2006, fill events. Table 16 contains the results of the grab samples from the Reservoir.

Discussion of Results

During all four fill events, samples of both the surrounding water quality monitoring wells and the Reservoir itself were collected as long as there was water in the Reservoir per requirements of the SOW.

During the April 17, 2006, fill event, the 95 percent upper confidence limit from the background concentration was exceeded for the following parameters in the following wells: QT-1 (Table 2) chloride, sulfate, total dissolved solids, and nitrate nitrogen; QT-2 (Table 3) iron, sulfate, and manganese; QT-3 (Table 4) chloride, lead, and manganese; and QT-4 (Table 5) cadmium and nitrate nitrogen. There were still some significant changes from the background

values once the Reservoir was dry on May 10, 2006: QT-1 chloride; QT-2 iron, sulfate, and manganese; QT-3 chloride and lead; and none were observed for QT-4.

During the August 29, 2006, and September 13, 2006, fill events, the 95 percent upper confidence limit from the background concentration was exceeded for the following parameters in the following wells: QT-1 (Table 7) chloride and total dissolved solids; QT-2 (Table 8) iron, sulfate, total dissolved solids, and manganese; QT-3 (Table 9) chloride, mercury, and manganese; and QT-4 (Table 10) mercury and nitrate nitrogen. There were still some significant changes from the background values once the reservoir was dry on October 8, 2006: QT-1 chloride and total dissolved solids; QT-2 iron and manganese; QT-3 chloride and manganese; and none were observed for QT-4.

During the December 1, 2006, fill event, the 95 percent upper confidence limit from the background concentration was exceeded for the following parameters in the following wells: QT-1 (Table 12) chloride, copper, total dissolved solids, and nitrate nitrogen; QT-2 (Table 13) none; QT-3 (Table 14) chloride; and QT-4 (Table 15) none. There were still some significant changes from the background values once the reservoir was dry on December 11, 2006: QT-1 chloride and total dissolved solids; QT-2 none; QT-3 chloride; and none were observed for QT-4.

TABLE 1: LIST OF PARAMETERS TO BE ANALYZED ACCORDING TO TABLE 2 FROM THE IEPA'S SCOPE OF WORK

Arsenic	Ammonia
Boron	Barium
Chloride	Cadmium
Copper	Chromium
Fecal Coliform	Cyanide
Iron	Fluoride
Lead	Manganese
Mercury	Nickel
Phenols	Silver
Sulfate	Temperature
Total Dissolved Solids	Nitrate

Biochemical Oxygen Demand (5-day and 21-day)

TABLE 2: PARAMETERS FROM TABLE 2 OF IEPA'S SOW IN WATER QUALITY MONITORING WELL QT-1 DURING THE APRIL 17, 2006, FILL EVENT

Date	Table 2 (SOW) Parameters											Total			
	Arsenic (mg/L)	Boron (mg/L)	Chloride (mg/L)	Copper (mg/L)	Fecal Coliform (cfu/100 mL)	Iron (mg/L)	Lead (mg/L)	Mercury (µg/L)	Phenols (µg/L)	Sulfate (mg/L)	Dissolved Solids (mg/L)	Ammonia Nitrogen (mg/L)	Excursion	95% Upper Confidence Limit	
4/20/06*			414		<1					388	2028	0.45			
4/27/06	<0.002	0.468	419	<0.003	<1	20.180	0.014	<0.05	3	411	1442	0.30			
5/4/06	<0.002	0.366	523	<0.003	<1	31.720	<0.002	<0.05	2	561	1786	0.39			
5/11/06					Well could not be sampled**										
6/15/06	<0.002	0.368	629	<0.003	<1	33.430	0.002	<0.05	<2	447	2258	0.34			
7/13/06	<0.002	0.268	727	0.007	<1	31.060	0.006	<0.05	2	451	2374	0.34			
Revised	0.003	NA	552	0.018	NA	47.612	0.015	0.15	NA	489	2279	NA			
Excursion	No	NA	Yes	No	NA	No	No	No	NA	Yes	Yes	NA			

TABLE 2 (Continued): PARAMETERS FROM TABLE 2 OF IEPA'S SOW IN WATER QUALITY MONITORING WELL QT-1 DURING THE APRIL 17, 2006, FILL EVENT

Table 2 (SOW) Parameters												
Date	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cyanide (mg/L)	Fluoride (mg/L)	Manganese (mg/L)	Nickel (mg/L)	Silver (mg/L)	Temperature °C	Nitrate		
										Nitrogen (mg/L)	BOD ₅ (mg/L)	BOD ₂₁ (mg/L)
4/20/06*									14	0.028		
4/27/06	0.0799	<0.0004	<0.004	<0.003	0.37	0.072	0.007	<0.0008	14	<0.005	0	4
5/4/06	0.0833	0.0010	<0.004	<0.003	0.35	0.092	<0.002	<0.0008	15	<0.005	2	4
5/11/06					Well could not be sampled**							
6/15/06	0.0847	0.0010	<0.004	<0.003	0.35	0.088	<0.002	<0.0008	16	0.011	3	3
7/13/06	0.0879	<0.0004	<0.004	<0.003	0.38	0.073	<0.002	<0.0008	16	<0.005	0	4
Revised 95% Upper Confidence Limit	0.0963	0.0012	0.005	0.002	0.57	0.146	NA	***	NA	0.024	NA	NA
Excursion	No	No	No	No	No	No	NA	NA	NA	Yes	NA	NA

NA—not applicable.

No = concentration did not exceed 95 percent upper confidence limit; Yes = concentration exceeded 95 percent upper confidence limit.

*Some parameters were not analyzed because the wrong test schedule was used for the analysis.

**Well dry.

***Background value was below detection limit, 95 percent upper confidence limit could not be determined.

TABLE 3: PARAMETERS FROM TABLE 2 OF IEPA'S SOW IN WATER QUALITY MONITORING WELL QT-2 DURING THE APRIL 17, 2006, FILL EVENT

Date	Table 2 (SOW) Parameters											Total		
	Arsenic (mg/L)	Boron (mg/L)	Chloride (mg/L)	Copper (mg/L)	Fecal Coliform (cfu/100 mL)	Iron (mg/L)	Lead (mg/L)	Mercury (µg/L)	Phenols (µg/L)	Sulfate (mg/L)	Dissolved Solids (mg/L)	Ammonia Nitrogen (mg/L)	Excursion	95% Upper Confidence Limit
4/20/06*	<0.002	0.159	175	<0.003	110	4.780	0.008	<0.05	<2	116	1088	0.52	No	NA
4/27/06	<0.002	0.250	127	<0.003	18	2.740	0.009	0.14	<2	200	520	0.28	No	NA
5/4/06	<0.002	0.355	155	<0.003	4	3.610	0.003	<0.05	2	504	1096	0.36	No	NA
5/11/06	<0.002	0.322	175	<0.003	2	5.680	0.005	<0.05	<2	740	1680	0.49	No	NA
6/15/06	<0.002	0.291	193	<0.003	<1	3.620	0.006	0.07	<2	633	1634	0.46	No	NA
7/13/06	0.006	NA	420	0.027	NA	4.497	0.015	0.23	NA	718	2485	NA	No	NA

TABLE 3 (Continued): PARAMETERS FROM TABLE 2 OF IEPA'S SOW IN WATER QUALITY MONITORING WELL QT-2 DURING THE APRIL 17, 2006, FILL EVENT

Table 2 (SOW) Parameters												
Date	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cyanide (mg/L)	Fluoride (mg/L)	Manganese (mg/L)	Nickel (mg/L)	Silver (mg/L)	Temperature °C	Nitrate		
										Nitrogen (mg/L)	BOD ₅ (mg/L)	BOD ₂₁ (mg/L)
4/20/06*									14	0.232	0	5
4/27/06	0.0244	0.0010	<0.004	<0.003	0.25	0.1382	0.017	<0.0008	15	0.277	0	5
5/4/06	0.0370	<0.0004	<0.004	<0.003	0.35	0.1114	0.022	<0.0008	15	0.118	0	5
5/11/06	0.0420	<0.0004	<0.004	<0.003	0.32	0.0571	0.030	<0.0008	15	0.013	0	4
6/15/06	0.0388	0.0010	<0.004	<0.003	0.31	0.0941	0.032	<0.0008	16	0.008	0	5
7/13/06	0.0380	<0.0004	<0.004	<0.003	0.29	0.0303	0.029	<0.0008	16	0.034	0	4
Revised 95% Upper Confidence Limit	0.0742	0.0012	0.007	0.002	0.35	0.0574	NA	0.0002	NA	4.416	NA	NA
Excursion	No	No	No	No	No	Yes	NA	No	NA	No	NA	NA

NA—not applicable.

No = concentration did not exceed 95 percent upper confidence limit; Yes = concentration exceeded 95 percent upper confidence limit.

*Some parameters were not analyzed because the wrong test schedule was used for the analysis.

TABLE 4: PARAMETERS FROM TABLE 2 OF IEPA'S SOW IN WATER QUALITY MONITORING WELL QT-3 DURING THE APRIL 17, 2006, FILL EVENT

Date	Arsenic (mg/L)	Boron (mg/L)	Chloride (mg/L)	Copper (mg/L)	Fecal		Iron (mg/L)	Lead (mg/L)	Mercury (µg/L)	Phenols (µg/L)	Sulfate (mg/L)	Total	
					Coliform (cfu/100 mL)	Coliform (cfu/100 mL)						Dissolved Solids (mg/L)	Ammonia Nitrogen (mg/L)
4/20/06*	<0.002	0.315	209	<0.003	<1	<1	7.51	0.013	<0.05	2	150	1076	0.29
4/27/06	<0.002	0.284	214	<0.003	<1	<1	10.10	0.011	<0.05	<2	177	962	0.28
5/4/06	<0.002	0.333	226	<0.003	<1	<1	13.58	0.012	<0.05	<2	185	890	0.26
5/11/06	<0.002	0.314	240	<0.003	<1	<1	13.81	0.003	<0.05	<2	174	980	0.29
6/15/06	<0.002	0.238	234	0.012	<1	<1	17.49	0.007	<0.05	<2	153	1054	0.34
7/13/06	<0.002	0.238	234	0.012	<1	<1	17.49	0.007	<0.05	<2	167	1002	0.26
Revised 95% Upper Confidence Limit	**	NA	180	0.022	NA	NA	30.588	0.012	0.06	NA	224	1270	NA
Excursion	NA	NA	Yes	No	NA	NA	No	Yes	No	NA	No	No	NA

TABLE 4 (Continued): PARAMETERS FROM TABLE 2 OF IEPA'S SOW IN WATER QUALITY MONITORING WELL QT-3 DURING THE APRIL 17, 2006, FILL EVENT

Table 2 (SOW) Parameters												
Date	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cyanide (mg/L)	Fluoride (mg/L)	Manganese (mg/L)	Nickel (mg/L)	Silver (mg/L)	Temperature °C	Nitrate		
										Nitrogen (mg/L)	BOD ₅ (mg/L)	BOD ₂₁ (mg/L)
4/20/06*									14	0.033		
4/27/06	0.052	<0.0004	<0.004	<0.003	0.29	0.0857	<0.002	<0.0008	14	0.002	0	5
5/4/06	0.052	<0.0004	<0.004	<0.003	0.29	0.1293	<0.002	<0.0008	15	0.000	0	4
5/11/06	0.060	<0.0004	<0.004	<0.003	0.29	0.1541	<0.002	<0.0008	15	0.014	0	4
6/15/06	0.057	<0.0004	<0.004	<0.003	0.25	0.1570	<0.002	<0.0008	15	0.002	0	3
7/13/06	0.051	<0.0004	0.004	<0.003	0.27	0.2494	0.003	<0.0008	15	0.000	0	3
Revised 95% Upper Confidence Limit	0.100	0.0006	0.007	0.002	0.38	0.1793	NA	0.0196	NA	0.331	NA	NA
Excursion	No	No	No	No	No	Yes	NA	No	NA	No	NA	NA

NA—not applicable.

No = concentration did not exceed 95 percent upper confidence limit; Yes = concentration exceeded 95 percent upper confidence limit.

*Some parameters were not analyzed because the wrong test schedule was used for the analysis.

**Background value was below detection limit, 95 percent upper confidence limit could not be determined.

TABLE 5: PARAMETERS FROM TABLE 2 OF IEPA'S SOW IN WATER QUALITY MONITORING WELL QT-4 DURING THE APRIL 17, 2006, FILL EVENT

Date	Table 2 (SOW) Parameters											Total	
	Arsenic (mg/L)	Boron (mg/L)	Chloride (mg/L)	Copper (mg/L)	Fecal Coliform (cfu/100 mL)	Iron (mg/L)	Lead (mg/L)	Mercury (µg/L)	Phenols (µg/L)	Sulfate (mg/L)	Dissolved Solids (mg/L)	Ammonia Nitrogen (mg/L)	
4/20/06*	<0.002	0.548	457	<0.003	<1	3.88	0.010	<0.05	3	246	1672	0.38	
4/27/06	<0.002	0.548	436	<0.003	<1	3.88	0.010	<0.05	3	270	1338	0.37	
5/4/06	<0.002	0.451	410	<0.003	<1	19.15	0.008	<0.05	2	299	1402	0.39	
5/11/06	<0.002	0.484	423	<0.003	<1	18.78	0.005	<0.05	2	280	1462	0.40	
6/15/06	<0.002	0.473	436	<0.003	<1	20.83	0.007	<0.05	<2	259	1626	0.41	
7/13/06	<0.002	0.358	431	0.005	<1	22.35	0.008	<0.05	<2	286	1592	0.41	
Revised 95% Upper Confidence Limit	**	NA	611	0.073	NA	31.51	0.024	0.07	NA	300	1873	NA	
Excursion	NA	NA	No	No	NA	No	No	No	NA	No	No	NA	

TABLE 5 (Continued): PARAMETERS FROM TABLE 2 OF IEPA'S SOW IN WATER QUALITY MONITORING WELL QT-4 DURING THE APRIL 17, 2006, FILL EVENT

Table 2 (SOW) Parameters												
Date	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cyanide (mg/L)	Fluoride (mg/L)	Manganese (mg/L)	Nickel (mg/L)	Silver (mg/L)	Temperature °C	Nitrate		
										Nitrogen (mg/L)	BOD ₅ (mg/L)	BOD ₂₁ (mg/L)
4/20/06*									13	0.026		
4/27/06	0.0935	0.0010	0.004	<0.003	0.24	0.0632	<0.002	<0.0008	14	0.005	0	5
5/4/06	0.0939	<0.0004	<0.004	<0.003	0.29	0.1370	<0.002	<0.0008	15	0.024	0	4
5/11/06	0.0973	<0.0004	0.014	<0.003	0.34	0.1351	<0.002	<0.0008	15	0.010	0	4
6/15/06	0.0992	<0.0004	<0.004	<0.003	0.24	0.1462	<0.002	<0.0008	15	0.410	0	2
7/13/06	0.0979	<0.0004	<0.004	<0.003	0.25	0.1675	<0.002	<0.0008	15	<0.005	0	3
Revised 95% Upper Confidence Limit	0.1576	0.0009	0.074	0.002	0.37	0.2332	NA	0.0043	NA	0.262	NA	NA
Excursion	No	Yes	No	No	No	No	NA	No	NA	Yes	NA	NA

NA—not applicable.

No = concentration did not exceed 95 percent upper confidence limit; Yes = concentration exceeded 95 percent upper confidence limit.

*Some parameters were not analyzed because the wrong test schedule was used for the analysis.

**Background value was below detection limit, 95 percent upper confidence limit could not be determined.

TABLE 6: PARAMETERS FROM TABLE 2 OF IEPA'S SOW IN THORNTON TRANSITIONAL RESERVOIR DURING THE APRIL 17, 2006, FILL EVENT

Date	Table 2 (SOW) Parameters										Total	
	Arsenic (mg/L)	Boron (mg/L)	Chloride (mg/L)	Copper (mg/L)	Fecal Coliform (cfu/100 mL)	Iron (mg/L)	Lead (mg/L)	Mercury (µg/L)	Phenols (µg/L)	Sulfate (mg/L)	Dissolved Solids (mg/L)	Ammonia Nitrogen (mg/L)
4/19/06	<0.002	0.084	56.8	0.007	4500	3.64	0.013	<0.05	1	50	292	0.30
4/27/06	<0.002	0.086	40.9	0.004	9	2.51	0.009	<0.05	1	44	196	0.12
5/3/06	<0.002	0.110	60.4	<0.003	9	1.70	0.008	0.20	1	97	280	0.08

TABLE 6 (Continued): PARAMETERS FROM TABLE 2 OF IEPA'S SOW IN THORNTON TRANSITIONAL RESERVOIR DURING THE APRIL 17, 2006, FILL EVENT

Table 2 (SOW) Parameters												
Date	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cyanide (mg/L)	Fluoride (mg/L)	Manganese (mg/L)	Nickel (mg/L)	Silver (mg/L)	Temperature °C	Nitrate Nitrogen (mg/L)	BOD ₅ (mg/L)	BOD ₂₁ (mg/L)
4/27/06	0.0271	0.0010	<0.004	0.003	0.21	0.0388	0.006	<0.008	11	1.044	4	7
5/3/06	0.0272	<0.0004	<0.004	0.003	0.26	0.0201	0.009	<0.008	14	1.306	7	9

TABLE 7: PARAMETERS FROM TABLE 2 OF IEPA'S SOW IN WATER QUALITY MONITORING WELL QT-1 DURING THE AUGUST 29, 2006, AND SEPTEMBER 13, 2006, FILL EVENTS

Date	Table 2 (SOW) Parameters											Total	
	Arsenic (mg/L)	Boron (mg/L)	Chloride (mg/L)	Copper (mg/L)	Fecal Coliform (cfu/100 mL)	Iron (mg/L)	Lead (mg/L)	Mercury (µg/L)	Phenols (µg/L)	Sulfate (mg/L)	Dissolved Solids (mg/L)	Ammonia Nitrogen (mg/L)	
8/31/06	<0.002	0.302	583	0.008	<1	29.880	<0.002	<0.05	<2	443	2496	0.31	
9/8/06	<0.002	0.271	799	0.006	<1	22.470	0.005	<0.05	3	417	2010	0.41	
9/13/06	<0.002	0.319	797	<0.003	<1	10.040	0.006	<0.05	*	351	2488	0.36	
9/20/06	<0.002	0.259	789	0.005	<1	19.530	<0.002	<0.05	<2	417	2526	0.33	
9/28/06	<0.002	0.248	800	<0.003	<1	23.040	<0.002	<0.05	2	425	2324	0.39	
10/5/06	<0.002	0.284	780	0.005	<1	22.010	<0.002	<0.05	<2	356	1978	0.35	
10/12/06	<0.002	0.273	805	0.007	<1	27.270	<0.002	0.05	<2	459	2318	0.22	
Revised 95% Upper Confidence Limit	0.003	NA	552	0.018	NA	47.612	0.015	0.15	NA	489	2279	NA	
Excursion	No	NA	Yes	No	NA	No	No	No	NA	No	Yes	NA	

TABLE 7 (Continued): PARAMETERS FROM TABLE 2 OF IEPA'S SOW IN WATER QUALITY MONITORING WELL QT-1 DURING THE AUGUST 29, 2006, AND SEPTEMBER 13, 2006, FILL EVENTS

Table 2 (SOW) Parameters												
Date	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cyanide (mg/L)	Fluoride (mg/L)	Manganese (mg/L)	Nickel (mg/L)	Silver (mg/L)	Temperature °C	Nitrate		
										Nitrogen (mg/L)	BOD ₅ (mg/L)	BOD ₂₁ (mg/L)
8/31/06	0.0897	0.0010	<0.004	<0.003	0.36	0.062	<0.002	<0.008	18	<0.005	0	3
9/8/06	0.0912	<0.0004	<0.004	<0.003	0.38	0.008	0.002	<0.008	17	<0.005	0	2
9/13/06	0.0781	0.0010	<0.004	*	0.34	0.106	<0.002	<0.008	18	<0.005	0	3
9/20/06	0.0724	0.0010	<0.004	<0.003	0.36	0.061	<0.002	<0.008	18	<0.005	0	1
9/28/06	0.0904	<0.0004	<0.004	<0.003	0.36	0.105	<0.002	<0.008	17	<0.005	3	4
10/5/06	0.0920	<0.0004	<0.004	<0.003	0.38	0.100	<0.002	<0.008	18	<0.005	0	4
10/12/06	0.0960	<0.0004	<0.004	<0.003	0.38	0.108	<0.002	<0.008	17	<0.005	3	3
Revised 95% Upper Confidence Limit	0.0963	0.0012	0.005	0.002	0.57	0.146	NA	**	NA	0.024	NA	NA
Excursion	No	No	No	No	No	No	NA	NA	NA	No	NA	NA

NA—not applicable.

No = concentration did not exceed 95 percent upper confidence limit; Yes = concentration exceeded 95 percent upper confidence limit.

*Not analyzed due to insufficient sample size.

**Background value was below detection limit, 95 percent upper confidence limit could not be determined.

TABLE 8: PARAMETERS FROM TABLE 2 OF IEPA'S SOW IN WATER QUALITY MONITORING WELL QT-2 DURING THE AUGUST 29, 2006, AND SEPTEMBER 13, 2006, FILL EVENTS

Date	Arsenic (mg/L)	Boron (mg/L)	Chloride (mg/L)	Copper (mg/L)	Fecal		Iron (mg/L)	Lead (mg/L)	Mercury (µg/L)	Phenols (µg/L)	Sulfate (mg/L)	Total	
					Coliform (cfu/100 mL)	Coliform						Dissolved Solids (mg/L)	Ammonia Nitrogen (mg/L)
8/31/06													
9/8/06													
9/13/06	<0.002	0.228	124	<0.003	2	0.280	0.006	0.12	<2	485	1624	0.16	
9/20/06	<0.002	0.208	125	<0.003	1	2.980	<0.002	<0.05	4	633	1518	0.09	
9/28/06	<0.002	0.199	118	<0.003	<1	4.860	<0.002	<0.05	2	799	5816	0.16	
10/5/06	<0.002	0.270	135	<0.003	<1	5.550	<0.002	<0.05	<2	733	1468	0.13	
10/12/06	<0.002	0.260	132	<0.003	<1	6.310	<0.002	0.05	<2	670	1352	0.07	
Revised 95% Upper Confidence Limit	0.006	NA	420	0.027	NA	4.497	0.015	0.23	NA	718	2485	NA	
Excursion	No	NA	No	No	NA	Yes	No	No	NA	Yes	Yes	NA	

TABLE 8 (Continued): PARAMETERS FROM TABLE 2 OF IEPA'S SOW IN WATER QUALITY MONITORING WELL QT-2 DURING THE AUGUST 29, 2006, AND SEPTEMBER 13, 2006, FILL EVENTS

Table 2 (SOW) Parameters												
Date	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cyanide (mg/L)	Fluoride (mg/L)	Manganese (mg/L)	Nickel (mg/L)	Silver (mg/L)	Temperature °C	Nitrate		
										Nitrogen (mg/L)	BOD ₅ (mg/L)	BOD ₂₁ (mg/L)
8/31/06												
9/8/06												
9/13/06	0.0365	<0.0004	<0.004	<0.003	0.28	0.2007	0.085	<0.008	18	0.365	0	4
9/20/06	0.0322	<0.0004	<0.004	<0.003	0.30	0.1829	0.068	<0.008	17	0.267	0	1
9/28/06	0.0317	<0.0004	<0.004	<0.003	0.30	0.1673	0.074	<0.008	17	0.154	0	2
10/5/06	0.0355	<0.0004	<0.004	<0.003	0.26	0.1618	0.063	<0.008	17	0.062	5	4
10/12/06	0.0351	<0.0004	<0.004	<0.003	0.29	0.1614	0.050	<0.008	16	0.024	0	3
Revised 95% Upper Confidence Limit	0.0742	0.0012	0.007	0.002	0.35	0.0574	NA	0.0002	NA	4.416	NA	NA
Excursion	No	No	No	No	No	Yes	NA	No	NA	No	NA	NA

NA—not applicable.

No = concentration did not exceed 95 percent upper confidence limit; Yes = concentration exceeded 95 percent upper confidence limit.

*Unable to sample due to pump failure.

TABLE 9: PARAMETERS FROM TABLE 2 OF IEPA'S SOW IN WATER QUALITY MONITORING WELL QT-3 DURING THE AUGUST 29, 2006, AND SEPTEMBER 13, 2006, FILL EVENTS

Date	Table 2 (SOW) Parameters											Total	
	Arsenic (mg/L)	Boron (mg/L)	Chloride (mg/L)	Copper (mg/L)	Fecal Coliform (cfu/100 mL)	Iron (mg/L)	Lead (mg/L)	Mercury (µg/L)	Phenols (µg/L)	Sulfate (mg/L)	Dissolved Solids (mg/L)	Ammonia Nitrogen (mg/L)	
8/31/06	<0.002	0.246	273	0.013	1	7.980	0.003	<0.05	<2	170	1164	0.27	
9/8/06	<0.002	0.244	262	0.006	<1	9.160	0.005	<0.05	3	161	1172	0.35	
9/13/06	<0.002	0.245	266	<0.003	<1	7.690	0.005	0.08	*	192	1190	0.32	
9/20/06	<0.002	0.199	266	<0.003	<1	9.290	<0.002	<0.05	4	177	1252	0.33	
9/28/06	<0.002	0.203	262	<0.003	<1	15.280	<0.002	<0.05	2	184	1200	0.40	
10/5/06	<0.002	0.242	253	<0.003	<1	18.620	<0.002	<0.05	<2	188	1052	0.31	
10/12/06	<0.002	0.246	265	<0.003	<1	19.710	0.002	0.05	<2	189	1044	0.41	
Revised 95% Upper Confidence Limit	**	NA	180	0.022	NA	30.588	0.012	0.06	NA	224	1270	NA	
Excursion	NA	NA	Yes	No	NA	No	No	Yes	NA	No	No	NA	

TABLE 9 (Continued): PARAMETERS FROM TABLE 2 OF IEPA'S SOW IN WATER QUALITY MONITORING WELL QT-3 DURING THE AUGUST 29, 2006, AND SEPTEMBER 13, 2006, FILL EVENTS

Table 2 (SOW) Parameters												
Date	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cyanide (mg/L)	Fluoride (mg/L)	Manganese (mg/L)	Nickel (mg/L)	Silver (mg/L)	Temperature °C	Nitrate		
										Nitrogen (mg/L)	BOD ₅ (mg/L)	BOD ₂₁ (mg/L)
8/31/06	0.0656	<0.0004	<0.004	<0.003	0.23	0.0878	0.002	<0.008	18	0.008	0	3
9/8/06	0.0548	<0.0004	<0.004	<0.003	0.25	0.2539	0.002	<0.008	18	<0.005	0	3
9/13/06	0.0590	<0.0004	<0.004	*	0.23	0.1517	0.002	<0.008	17	<0.005	3	4
9/20/06	0.0513	<0.0004	<0.004	<0.003	0.30	0.0580	<0.002	<0.008	17	<0.005	0	2
9/28/06	0.0652	<0.0004	<0.004	<0.003	0.25	0.1775	<0.002	<0.008	16	<0.005	0	3
10/5/06	0.0685	<0.0004	<0.004	<0.003	0.25	0.2040	0.005	<0.008	17	<0.005	3	4
10/12/06	0.0742	<0.0004	<0.004	<0.003	0.31	0.2061	<0.002	<0.008	16	<0.005	2	3
Revised 95% Upper Confidence Limit	0.1000	0.0006	0.007	0.002	0.38	0.1793	NA	0.0196	NA	0.331	NA	NA
Excursion	No	No	No	No	No	Yes	NA	No	NA	No	NA	NA

NA—not applicable.

No = concentration did not exceed 95 percent upper confidence limit; Yes = concentration exceeded 95 percent upper confidence limit.

*Not analyzed due to insufficient sample size.

**Background value was below detection limit, 95 percent upper confidence limit could not be determined.

TABLE 10: PARAMETERS FROM TABLE 2 OF IEPA'S SOW IN WATER QUALITY MONITORING WELL QT-4 DURING THE AUGUST 29, 2006, AND SEPTEMBER 13, 2006, FILL EVENTS

Date	Table 2 (SOW) Parameters											Total	
	Arsenic (mg/L)	Boron (mg/L)	Chloride (mg/L)	Copper (mg/L)	Fecal Coliform (cfu/100 mL)	Iron (mg/L)	Lead (mg/L)	Mercury (µg/L)	Phenols (µg/L)	Sulfate (mg/L)	Dissolved Solids (mg/L)	Ammonia Nitrogen (mg/L)	
8/31/06	<0.002	0.384	395	0.001	<1	23.68	0.006	<0.05	4	298	1604	0.33	
9/8/06	<0.002	0.372	413	0.006	<1	11.99	0.003	<0.05	2	253	1528	0.43	
9/13/06	<0.002	0.400	397	<0.003	<1	8.78	0.007	0.12	*	246	1476	0.43	
9/20/06	<0.002	0.341	401	<0.003	<1	15.34	<0.002	<0.05	5	258	1646	0.36	
9/28/06	<0.002	0.350	395	<0.003	<1	17.27	<0.002	<0.05	2	271	1462	0.46	
10/5/06	<0.002	0.412	401	<0.003	<1	13.75	<0.002	<0.05	<2	272	1406	0.44	
10/12/06	<0.002	0.413	412	<0.003	<1	16.78	<0.002	<0.05	<2	284	1400	0.35	
Revised 95% Upper Confidence Limit	**	NA	611	0.073	NA	31.51	0.024	0.07	NA	300	1873	NA	
Excursion	NA	NA	No	No	NA	No	No	Yes	NA	No	No	NA	

TABLE 10 (Continued): PARAMETERS FROM TABLE 2 OF IEPA'S SOW IN WATER QUALITY MONITORING WELL QT-4 DURING THE AUGUST 29, 2006, AND SEPTEMBER 13, 2006, FILL EVENTS

Table 2 (SOW) Parameters												
Date	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cyanide (mg/L)	Fluoride (mg/L)	Manganese (mg/L)	Nickel (mg/L)	Silver (mg/L)	Temperature °C	Nitrate		
										Nitrogen (mg/L)	BOD ₅ (mg/L)	BOD ₂₁ (mg/L)
8/31/06	0.0958	<0.0004	<0.004	<0.003	0.26	0.1519	<0.002	<0.008	18	0.009	0	5
9/8/06	0.0784	<0.0004	<0.004	<0.003	0.23	0.1702	<0.002	<0.008	17	0.925	0	3
9/13/06	0.0833	<0.0004	<0.004	*	0.25	0.1471	<0.002	<0.008	17	<0.005	0	2
9/20/06	0.0780	<0.0004	<0.004	<0.003	0.29	0.0687	<0.002	<0.008	18	<0.005	0	2
9/28/06	0.0889	<0.0004	<0.004	<0.003	0.27	0.1536	<0.002	<0.008	17	<0.005	0	4
10/5/06	0.0956	<0.0004	<0.004	<0.003	0.25	0.1479	<0.002	<0.008	16	<0.005	0	5
10/12/06	0.1011	<0.0004	<0.004	<0.003	0.27	0.1954	<0.002	<0.008	17	<0.005	0	2
Revised 95% Upper Confidence Limit	0.1576	0.0009	0.074	0.002	0.37	0.2332	NA	0.0043	NA	0.262	NA	NA
Excursion	No	No	No	No	No	No	NA	No	NA	Yes	NA	NA

NA—not applicable.

No = concentration did not exceed 95 percent upper confidence limit; Yes = concentration exceeded 95 percent upper confidence limit.

*Not analyzed due to insufficient sample size.

**Background value was below detection limit, 95 percent upper confidence limit could not be determined.

TABLE 11: PARAMETERS FROM TABLE 2 OF IEPA'S SOW IN THORNTON TRANSITIONAL RESERVOIR DURING THE AUGUST 29, 2006, AND SEPTEMBER 13, 2006, FILL EVENTS

Date	Arsenic (mg/L)	Boron (mg/L)	Chloride (mg/L)	Copper (mg/L)	Fecal		Iron (mg/L)	Lead (mg/L)	Mercury (µg/L)	Phenols (µg/L)	Sulfate (mg/L)	Total	
					Coliform (cfu/100 mL)							Dissolved Solids (mg/L)	Ammonia Nitrogen (mg/L)
8/30/06	<0.002	0.075	31.6	0.005	178	2.87	0.007	0.09	<2	047	200	0.45	
9/6/06	<0.002	0.007	38.1	<0.003	<100	0.65	0.003	<0.05	<2	050	168	0.13	
9/15/06	<0.002	0.084	40.6	0.004	1300	2.01	0.004	0.07	<2	061	286	0.35	
9/21/06	<0.002	0.098	24.8	<0.003	40	0.63	0.003	<0.05	<2	076	326	0.12	
9/28/06	<0.002	0.108	74.9	<0.003	100	1.20	0.004	<0.05	<2	126	146	0.21	
10/4/06	<0.002	0.109	54.8	0.006	8500	2.36	0.007	<0.05	<2	084	282	0.15	

TABLE 11 (Continued): PARAMETERS FROM TABLE 2 OF IEPA'S SOW IN THORNTON TRANSITIONAL RESERVOIR DURING THE AUGUST 29, 2006, AND SEPTEMBER 13, 2006, FILL EVENTS

Table 2 (SOW) Parameters												
Date	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cyanide (mg/L)	Fluoride (mg/L)	Manganese (mg/L)	Nickel (mg/L)	Silver (mg/L)	Temperature °C	Nitrate Nitrogen (mg/L)	BOD ₅ (mg/L)	BOD ₂₁ (mg/L)
8/30/06	0.0269	<0.0004	0.004	<0.003	0.20	0.0487	0.004	<0.008	24	1.014	3	8
9/6/06	0.0184	<0.0004	<0.004	<0.003	0.21	0.0084	0.003	<0.008	22	0.961	4	5
9/15/06	0.0318	<0.0004	<0.004	<0.003	0.27	0.0317	0.004	<0.008	22	1.055	5	5
9/21/06	0.0258	<0.0004	<0.004	<0.003	0.37	0.0123	0.005	<0.008	19	0.949	4	7
9/28/06	0.0284	<0.0004	<0.004	<0.003	0.26	0.0389	0.007	<0.008	18	1.075	3	6
10/4/06	0.0282	<0.0004	<0.004	<0.003	0.21	0.0399	0.004	<0.008	17	0.958	3	7

TABLE 12: PARAMETERS FROM TABLE 2 OF IEPA'S SOW IN WATER QUALITY MONITORING WELL QT-1 DURING THE DECEMBER 1, 2006, FILL EVENT

Date	Table 2 (SOW) Parameters											Total	
	Arsenic (mg/L)	Boron (mg/L)	Chloride (mg/L)	Copper (mg/L)	Fecal Coliform (cfu/100 mL)	Iron (mg/L)	Lead (mg/L)	Mercury (µg/L)	Phenols (µg/L)	Sulfate (mg/L)	Dissolved Solids (mg/L)	Ammonia Nitrogen (mg/L)	
12/7/06	<0.002	0.298	772	0.110	<1	32.640	0.004	<0.05	<2	423	2294	0.36	
12/14/06	<0.002	0.290	801	<0.003	<1	26.090	0.010	<0.05	3	417	2336	0.34	
Revised 95% Upper Confidence Limit	0.003	NA	552	0.018	NA	47.612	0.015	0.15	NA	489	2279	NA	
Excursion	No	NA	Yes	Yes	NA	No	No	No	NA	No	Yes	NA	

TABLE 12 (Continued): PARAMETERS FROM TABLE 2 OF IEPA'S SOW IN WATER QUALITY MONITORING WELL QT-1 DURING THE DECEMBER 1, 2006, FILL EVENT

Table 2 (SOW) Parameters											
Date	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cyanide (mg/L)	Fluoride (mg/L)	Manganese (mg/L)	Nickel (mg/L)	Silver (mg/L)	Temperature °C	Nitrate	
										Nitrogen (mg/L)	BOD ₂₁ (mg/L)
12/7/06	0.0882	<0.0004	<0.004	<0.003	<0.04	0.086	<0.002	<0.0008	10	0.015	8
12/14/06	0.0954	<0.0004	<0.004	<0.003	0.35	0.076	<0.002	<0.0008	11	0.031	0
Revised 95% Upper Confidence Limit	0.0963	0.0012	0.005	0.002	0.57	0.146	NA	*	NA	0.024	NA
Excursion	No	No	No	No	No	No	NA	NA	NA	Yes	NA

NA—not applicable.

No = concentration did not exceed 95 percent upper confidence limit; Yes = concentration exceeded 95 percent upper confidence limit.

*Background value was below reporting limit, upper 95% confidence limit could not be determined.

TABLE 13: PARAMETERS FROM TABLE 2 OF IEPA'S SOW IN WATER QUALITY MONITORING WELL QT-2 DURING THE DECEMBER 1, 2006, FILL EVENT

Date	Table 2 (SOW) Parameters											
	Arsenic (mg/L)	Boron (mg/L)	Chloride (mg/L)	Copper (mg/L)	Fecal Coliform (cfu/100 mL)	Iron (mg/L)	Lead (mg/L)	Mercury (µg/L)	Phenols (µg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Ammonia Nitrogen (mg/L)
12/7/06	<0.002	0.354	213	<0.003	<1	1.290	0.005	<0.05	2	209	1592	0.64
12/14/06												
Revised 95% Upper Confidence Limit	0.006	NA	420	0.027	NA	4.497	0.015	0.23	NA	718	2485	NA
Excursion	No	NA	No	No	NA	No	No	No	NA	No	No	NA

TABLE 13 (Continued): PARAMETERS FROM TABLE 2 OF IEPA'S SOW IN WATER QUALITY MONITORING WELL QT-2 DURING THE DECEMBER 1, 2006, FILL EVENT

Table 2 (SOW) Parameters											
Date	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cyanide (mg/L)	Fluoride (mg/L)	Manganese (mg/L)	Nickel (mg/L)	Silver (mg/L)	Temperature °C	Nitrate	
										Nitrogen (mg/L)	BOD ₂₁ (mg/L)
12/7/06											
12/14/06	0.0454	<0.0004	<0.004	<0.003	0.29	0.0321	0.055	<0.0008	14	0.251	3
Revised 95% Upper Confidence Limit	0.0742	0.0012	0.007	0.002	0.35	0.0574	NA	0.0002	NA	4.416	NA
Excursion	No	No	No	No	No	No	NA	No	NA	No	NA

NA—not applicable.

No = concentration did not exceed 95 percent upper confidence limit; Yes = concentration exceeded 95 percent upper confidence limit.

*Well could not be sampled due to generator malfunction.

TABLE 14: PARAMETERS FROM TABLE 2 OF IEPA'S SOW IN WATER QUALITY MONITORING WELL QT-3 DURING THE DECEMBER 1, 2006, FILL EVENT

Date	Arsenic (mg/L)	Boron (mg/L)	Chloride (mg/L)	Copper (mg/L)	Fecal		Iron (mg/L)	Lead (mg/L)	Mercury (µg/L)	Phenols (µg/L)	Sulfate (mg/L)	Total	
					Coliform (cfu/100 mL)	Coliform (cfu/100 mL)						Dissolved Solids (mg/L)	Ammonia Nitrogen (mg/L)
12/7/06	<0.002	0.273	267	<0.003	<1	11.340	<0.002	<0.05	<2	168	1048	0.30	
12/14/06	<0.002	0.276	242	<0.003	<1	10.340	0.007	<0.05	3	171	1022	0.45	
Revised 95% Upper Confidence Limit	*	NA	180	0.022	NA	30.588	0.012	0.06	NA	224	1270	NA	
Excursion	NA	NA	Yes	No	NA	No	No	No	NA	No	No	NA	

TABLE 14 (Continued): PARAMETERS FROM TABLE 2 OF IEPA'S SOW IN WATER QUALITY MONITORING WELL QT-3 DURING THE DECEMBER 1, 2006, FILL EVENT

Table 2 (SOW) Parameters												
Date	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cyanide (mg/L)	Fluoride (mg/L)	Manganese (mg/L)	Nickel (mg/L)	Silver (mg/L)	Temperature °C	Nitrate		
										Nitrogen (mg/L)	BOD ₂₁ (mg/L)	
12/7/06	0.0649	<0.0004	<0.004	<0.003	0.25	0.1219	<0.002	<0.0008	12	0.006	5	1
12/14/06	0.0652	<0.0004	<0.004	<0.003	0.25	0.1203	<0.002	<0.0008	12	0.014	0	2
Revised 95% Upper Confidence Limit	0.1000	0.0006	0.007	0.002	0.38	0.1793	NA	0.0196	NA	0.331	NA	NA
Excursion	No	No	No	No	No	No	NA	No	NA	No	NA	NA

NA—not applicable.

No = concentration did not exceed 95 percent upper confidence limit; Yes = concentration exceeded 95 percent upper confidence limit.

*Background value was below reporting limit, upper 95% confidence limit could not be determined.

TABLE 15: PARAMETERS FROM TABLE 2 OF IEPA'S SOW IN WATER QUALITY MONITORING WELL QT-4 DURING THE DECEMBER 1, 2006, FILL EVENT

Date	Table 2 (SOW) Parameters											Total	
	Arsenic (mg/L)	Boron (mg/L)	Chloride (mg/L)	Copper (mg/L)	Fecal Coliform (cfu/100 mL)	Iron (mg/L)	Lead (mg/L)	Mercury (µg/L)	Phenols (µg/L)	Sulfate (mg/L)	Dissolved Solids (mg/L)	Ammonia Nitrogen (mg/L)	
12/7/06	<0.002	0.414	392	<0.003	<1	23.69	<0.002	<0.05	<2	264	1418	0.41	
12/14/06	<0.002	0.413	379	<0.003	<1	12.24	0.007	<0.05	<2	253	1398	0.38	
Revised 95% Upper Confidence Limit	*	NA	611	0.073	NA	31.51	0.024	0.07	NA	300	1873	NA	
Excursion	NA	NA	No	No	NA	No	No	No	NA	No	No	NA	

TABLE 15 (Continued): PARAMETERS FROM TABLE 2 OF IEPA'S SOW IN WATER QUALITY MONITORING WELL QT-4 DURING THE DECEMBER 1, 2006, FILL EVENT

Date	Table 2 (SOW) Parameters											
	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cyanide (mg/L)	Fluoride (mg/L)	Manganese (mg/L)	Nickel (mg/L)	Silver (mg/L)	Temperature °C	Nitrate Nitrogen (mg/L)	BOD ₅ (mg/L)	BOD ₂₁ (mg/L)
12/7/06	0.0944	<0.0004	<0.004	<0.003	0.26	0.1449	<0.002	<0.0008	12	0.000	8	8
12/14/06	0.0830	<0.0004	<0.004	<0.003	0.25	0.1262	<0.002	<0.0008	12	0.031	0	2
Revised 95% Upper Confidence Limit	0.1576	0.0009	0.074	0.002	0.37	0.2332	NA	0.0043	NA	0.262	NA	NA
Excursion	No	No	No	No	No	No	NA	No	NA	No	NA	NA

NA—not applicable.

No = concentration did not exceed 95 percent upper confidence limit; Yes = concentration exceeded 95 percent upper confidence limit.

*Background value was below reporting limit, upper 95% confidence limit could not be determined.

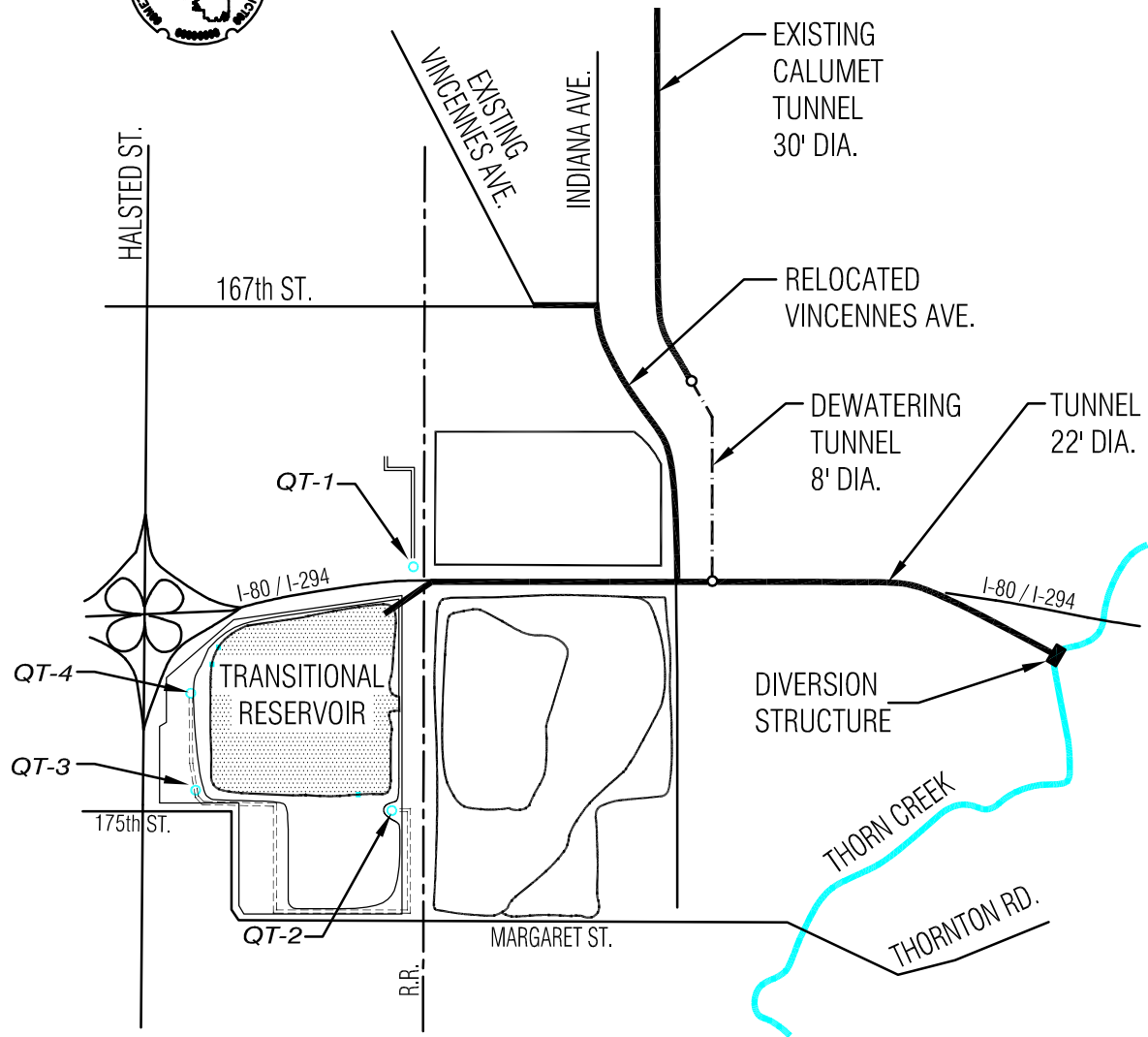
TABLE 16: PARAMETERS FROM TABLE 2 OF IEPA'S SOW IN THORNTON TRANSITIONAL RESERVOIR DURING THE DECEMBER 1, 2006, FILL EVENT

Date	Table 2 (SOW) Parameters										Total	
	Arsenic (mg/L)	Boron (mg/L)	Chloride (mg/L)	Copper (mg/L)	Fecal Coliform (cfu/100 mL)	Iron (mg/L)	Lead (mg/L)	Mercury (µg/L)	Phenols (µg/L)	Sulfate (mg/L)	Dissolved Solids (mg/L)	Ammonia Nitrogen (mg/L)
12/4/06	<0.002	0.075	88	0.005	9900	2.83	0.006	<0.05	<2	51.2	198	0.300
12/11/06	Reservoir could not be sampled*											

TABLE 16 (Continued): PARAMETERS FROM TABLE 2 OF IEPA'S SOW IN THORNTON TRANSITIONAL RESERVOIR DURING THE DECEMBER 1, 2006, FILL EVENT

Table 2 (SOW) Parameters												
Date	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cyanide (mg/L)	Fluoride (mg/L)	Manganese (mg/L)	Nickel (mg/L)	Silver (mg/L)	Temperature °C	Nitrate Nitrogen (mg/L)	BOD ₅ (mg/L)	BOD ₂₁ (mg/L)
12/4/06	0.0321	<0.0004	0.005	<0.003	0.27	0.0518	0.005	<0.0008	2	0.666	6	10
12/11/06	Reservoir could not be sampled*											

*Sample could not be collected because the reservoir surface was covered with ice.

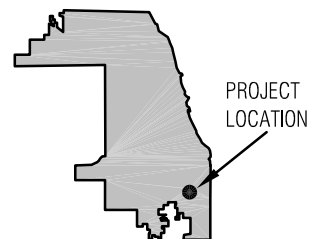


LOCATION MAP
Scale: NTS

LEGEND

-  Monitoring Well
-  New Access Road
-  Existing Access Road (to be improved)

MWRD SERVICE AREA



**THORNTON TRANSITIONAL RESERVOIR
MONITORING WELL LOCATIONS**

**METROPOLITAN WATER RECLAMATION
DISTRICT OF GREATER CHICAGO
ENGINEERING DEPARTMENT
11-03 PLANNING JJK**