

Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

***MONITORING AND RESEARCH
DEPARTMENT***

REPORT NO. 14-47

2013 ANNUAL SUMMARY REPORT

*WATER QUALITY WITHIN THE WATERWAYS SYSTEM OF
THE METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO*

NOVEMBER 2014

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

2013 ANNUAL SUMMARY REPORT
WATER QUALITY WITHIN THE WATERWAYS SYSTEM OF
THE METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO

By

Zainul Abedin
Biostatistician

Monitoring and Research Department
Thomas C. Granato, Director

November 2014

TABLE OF CONTENTS

	<u>Page</u>
LIST OF TABLES	iv
TABLE LOCATOR BY PARAMETER IN APPENDIX AII	x
LIST OF FIGURES	xiii
ACKNOWLEDGEMENTS	xiv
DISCLAIMER	xiv
INTRODUCTION	1
WATER QUALITY MONITORING NETWORK	2
Description of Waterways	2
Water Use Designations	2
Scope of Waterways Data	2
Water Sampling	4
Water Quality Parameters and Standards	4
Water Quality Sampling Locations and Frequency	9
WATER QUALITY MINITORING STANDARDS UPSTREAM AND DOWNSTREAM OF THE METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO OUTFALLS	12
Surface Water Sample Locations and Sample Frequencies	12
Annual Summary Results for Water Quality Upstream and Downstream of the Metropolitan Water Reclamation District of Greater Chicago Outfalls	14
North Side Water Reclamation Plant	27
Stickney Water Reclamation Plant	27
Calumet Water Reclamation Plant	27
John E. Egan Water Reclamation Plant	27

TABLE OF CONTENTS (Continued)

	<u>Page</u>
James C. Kirie Water Reclamation Plant	28
Hanover Park Water Reclamation Plant	28
REFERENCES	29

TABLE OF CONTENTS (Continued)

	<u>Page</u>
APPENDICES	
Waterways Data Management System Description	AI
Water Quality Results: Annual Mean and Mean History	AII
Statistical Analysis of Upstream and Downstream Locations, Sample Means, and Applicable Significance Probability Tests	AIII

LIST OF TABLES

<u>Table No.</u>		<u>Page</u>
1	Total Number of Waterways Samples Collected Monthly at Bridge Run Locations During 2013	5
2	Water Sample Assays Performed and Corresponding Water Quality Standards in 2013	6
3	Locations Sampled and Annual Sampling Frequencies of General Use Waters in 2013	10
4	Locations Sampled and Annual Sampling Frequencies of Secondary Contact Waters in 2013	11
5	Annual Sampling Frequencies at Upstream and Downstream Locations of the Water Reclamation Plants in 2013	13
6	Comparison of Levels of 52 Water Quality Parameters Assayed at Upstream and Downstream Locations for the Terrence J. O'Brien Water Reclamation Plant in 2013	15
7	Comparison of Levels of 52 Water Quality Parameters Assayed at Upstream and Downstream Locations for the Stickney Water Reclamation Plant in 2013	17
8	Comparison of Levels of 52 Water Quality Parameters Assayed at Upstream and Downstream Locations for the Calumet Water Reclamation Plant in 2013	19
9	Comparison of Levels of 52 Water Quality Parameters Assayed at Upstream and Downstream Locations for the John E. Egan Water Reclamation Plant in 2013	21
10	Comparison of Levels of 52 Water Quality Parameters Assayed at Upstream and Downstream Locations for the James C. Kirie Water Reclamation Plant in 2013	23
11	Comparison of Levels of 52 Water Quality Parameters Assayed at Upstream and Downstream Locations for the Hanover Park Water Reclamation Plant in 2013	25
AI-1	Analytical Laboratory Division Quality Control Management And Citation in 2013	AI-1
AI-2	Directory of Water Quality Parameters Assayed in 2013	AI-2
AI-3	Directory of Sampling Stations in Water Quality Monitoring Network	AI-4

LIST OF TABLES (Continued)

Table <u>No.</u>		<u>Page</u>
AII-1	Waterways Sample Means in 2013	AII-1
AII-2	Biochemical Oxygen Demand Mean History 2003 Through 2013	AII-14
AII-3	Carbonaceous Biochemical Oxygen Demand Mean History 2003 Through 2013	AII-15
AII-4	Dissolved Oxygen Mean History 2003 Through 2013	AII-16
AII-5	Temperature Mean History 2003 Through 2013	AII-17
AII-6	pH Mean History 2003 Through 2013	AII-18
AII-7	Total Alkalinity Mean History 2003 Through 2013	AII-19
AII-8	Chloride Mean History 2003 Through 2013	AII-20
AII-9	Turbidity Mean History 2003 Through 2013	AII-21
AII-10	Total Kjeldahl Nitrogen Mean History 2003 Through 2013	AII-22
AII-11	Ammonia Nitrogen Mean History 2003 Through 2013	AII-23
AII-12	Un-ionized Ammonia Mean History 2003 Through 2013	AII-24
AII-13	Organic Nitrogen Mean History 2003 Through 2013	AII-25
AII-14	Nitrite Plus Nitrate Nitrogen Mean History 2003 Through 2013	AII-26
AII-15	Total Solids Mean History 2003 Through 2013	AII-27
AII-16	Total Suspended Solids Mean History 2003 Through 2013	AII-28
AII-17	Volatile Suspended Solids Mean History 2003 Through 2013	AII-29
AII-18	Total Dissolved Solids Mean History 2003 Through 2013	AII-30
AII-19	Phenols Mean History 2003 Through 2013	AII-31
AII-20	Sulfate Mean History 2003 Through 2013	AII-32

LIST OF TABLES (Continued)

Table No.		Page
AII-21	Fats, Oils, and Greases Mean History 2003 Through 2013	AII-33
AII-22	Total Phosphorus Mean History 2003 Through 2013	AII-34
AII-23	Total Cyanide Mean History 2003 Through 2013	AII-35
AII-24	Weak Acid Dissociable Cyanide Mean History 2003 Through 2013	AII-36
AII-25	Total Fluoride Mean History 2003 Through 2013	AII-37
AII-26	Total Organic Carbon Mean History 2003 Through 2013	AII-38
AII-27	Fecal Coliform Mean History 2003 Through 2013	AII-39
AII-28	Escherichia Coli Mean History 2003 Through 2013	AII-40
AII-29	Total Calcium Mean History 2003 Through 2013	AII-41
AII-30	Total Magnesium Mean History 2003 Through 2013	AII-42
AII-31	Hardness Mean History 2003 Through 2013	AII-43
AII-32	Gross Alpha Radioactivity Mean History 2003 Through 2013	AII-44
AII-33	Gross Beta Radioactivity Mean History 2003 Through 2013	AII-45
AII-34	Chlorophyll <i>a</i> Mean History 2003 Through 2013	AII-46
AII-35	Benzene Mean History 2003 Through 2013	AII-47
AII-36	Ethylbenzene Mean History 2003 Through 2013	AII-48
AII-37	Toluene Mean History 2003 Through 2013	AII-49
AII-38	Xylene Mean History 2003 Through 2013	AII-50
AII-39	Meta and/or Para Xylenes Mean History 2003 Through 2013	AII-51
AII-40	Ortho Xylene Mean History 2003 Through 2013	AII-52

LIST OF TABLES (Continued)

<u>Table No.</u>		<u>Page</u>
AII-41	Total Silver Mean History 2003 Through 2013	AII-53
AII-42	Total Arsenic Mean History 2003 Through 2013	AII-54
AII-43	Total Barium Mean History 2003 Through 2013	AII-55
AII-44	Total Boron Mean History 2003 Through 2013	AII-56
AII-45	Total Cadmium Mean History 2003 Through 2013	AII-57
AII-46	Total Copper Mean History 2003 Through 2013	AII-58
AII-47	Total Chromium Mean History 2003 Through 2013	AII-59
AII-48	Total Hexavalent Chromium Mean History 2003 Through 2013	AII-60
AII-49	Total Iron Mean History 2003 Through 2013	AII-61
AII-50	Total Lead Mean History 2003 Through 2013	AII-62
AII-51	Total Nickel Mean History 2003 Through 2013	AII-63
AII-52	Total Manganese Mean History 2003 Through 2013	AII-64
AII-53	Total Mercury Mean History 2003 Through 2013	AII-65
AII-54	Low Level Mercury Mean History 2003 Through 2013	AII-66
AII-55	Total Zinc Mean History 2003 Through 2013	AII-67
AII-56	Total Selenium Mean History 2003 Through 2013	AII-68
AII-57	Soluble Calcium Mean History 2003 Through 2013	AII-69
AII-58	Soluble Magnesium Mean History 2003 Through 2013	AII-70
AII-59	Soluble Silver Mean History 2003 Through 2013	AII-71
AII-60	Soluble Arsenic Mean History 2003 Through 2013	AII-72

LIST OF TABLES (Continued)

<u>Table No.</u>		<u>Page</u>
AII-61	Soluble Barium Mean History 2003 Through 2013	AII-73
AII-62	Soluble Boron Mean History 2003 Through 2013	AII-74
AII-63	Soluble Cadmium Mean History 2003 Through 2013	AII-75
AII-64	Soluble Copper Mean History 2003 Through 2013	AII-76
AII-65	Soluble Chromium Mean History 2003 Through 2013	AII-77
AII-66	Soluble Iron Mean History 2003 Through 2013	AII-78
AII-67	Soluble Lead Mean History 2003 Through 2013	AII-79
AII-68	Soluble Nickel Mean History 2003 Through 2013	AII-80
AII-69	Soluble Manganese Mean History 2003 Through 2013	AII-81
AII-70	Soluble Mercury Mean History 2003 Through 2013	AII-82
AII-71	Soluble Zinc Mean History 2003 Through 2013	AII-83
AII-72	Soluble Selenium Mean History 2003 Through 2013	AII-84
AIII-1	Significance Probabilities Due to or Associated with Testing for Equality of Mean Concentrations of 52 Water Quality Parameters Assayed at Upstream and Downstream Locations of the Terrence J. O'Brien Water Reclamation Plant in 2013	AIII-1
AIII-2	Significance Probabilities Due to or Associated with Testing for Equality of Mean Concentrations of 52 Water Quality Parameters Assayed at Upstream and Downstream Locations of the Stickney Water Reclamation Plant in 2013	AIII-4
AIII-3	Significance Probabilities Due to or Associated with Testing for Equality of Mean Concentrations of 52 Water Quality Parameters Assayed at Upstream and Downstream Locations of the Calumet Water Reclamation Plant in 2013	AIII-7

LIST OF TABLES (Continued)

<u>Table No.</u>		<u>Page</u>
AIII-4	Significance Probabilities Due to or Associated with Testing for Equality of Mean Concentrations of 52 Water Quality Parameters Assayed at Upstream and Downstream Locations of the John E. Egan Water Reclamation Plant in 2013	AIII-10
AIII-5	Significance Probabilities Due to or Associated with Testing for Equality of Mean Concentrations of 52 Water Quality Parameters Assayed at Upstream and Downstream Locations of the James C. Kirie Water Reclamation Plant in 2013	AIII-13
AIII-6	Significance Probabilities Due to or Associated with Testing for Equality of Mean Concentrations of 52 Water Quality Parameters Assayed at Upstream and Downstream Locations of the Hanover Park Water Reclamation Plant in 2013	AIII-16

TABLE LOCATOR BY PARAMETER IN APPENDIX AII

	Sample Mean During 2013	Mean History Through 2013
Parameter	Page	Page
Biochemical Oxygen Demand		AII-14
Carbonaceous Biochemical Oxygen Demand		AII-15
Dissolved Oxygen	AII-1	AII-16
Temperature	AII-1	AII-17
pH	AII-1	AII-18
Total Alkalinity	AII-1	AII-19
Chloride	AII-2	AII-20
Turbidity		AII-21
Total Kjeldahl Nitrogen	AII-2	AII-22
Ammonia Nitrogen	AII-2	AII-23
Un-ionized Ammonia	AII-2	AII-24
Organic Nitrogen	AII-3	AII-25
Nitrite Plus Nitrate Nitrogen	AII-3	AII-26
Total Solids	AII-3	AII-27
Total Suspended Solids	AII-3	AII-28
Volatile Suspended Solids	AII-4	AII-29
Total Dissolved Solids	AII-4	AII-30
Phenols	AII-4	AII-31
Sulfate	AII-4	AII-32
Fats, Oils, and Greases	AII-5	AII-33
Total Phosphorus	AII-5	AII-34
Total Cyanide	AII-5	AII-35
Weak Acid Dissociable Cyanide	AII-5	AII-36
Total Fluoride	AII-6	AII-37
Total Organic Carbon	AII-6	AII-38
Fecal Coliform	AII-6	AII-39

TABLE LOCATOR BY PARAMETER IN APPENDIX AII (Continued)

Parameter	Sample Mean During 2013	Mean History Through 2013
	Page	Page
Escherichia Coli		AII-40
Total Calcium	AII-6	AII-41
Total Magnesium	AII-7	AII-42
Hardness	AII-7	AII-43
Gross Alpha Radioactivity	AII-7	AII-44
Gross Beta Radioactivity	AII-7	AII-45
Chlorophyll <i>a</i>	AII-8	AII-46
Benzene	AII-8	AII-47
Ethylbenzene	AII-8	AII-48
Toluene	AII-8	AII-49
Xylene	AII-9	AII-50
Meta and/or Para Xylenes	AII-9	AII-51
Ortho Xylene	AII-9	AII-52
Total Silver	AII-9	AII-53
Total Arsenic		AII-54
Total Barium	AII-10	AII-55
Total Boron	AII-10	AII-56
Total Cadmium		AII-57
Total Copper		AII-58
Total Chromium		AII-59
Total Hexavalent Chromium	AII-10	AII-60
Total Iron		AII-61
Total Lead		AII-62
Total Nickel		AII-63
Total Manganese	AII-10	AII-64
Total Mercury	AII-11	AII-65

TABLE LOCATOR BY PARAMETER IN APPENDIX AII (Continued)

Parameter	Sample Mean During 2013	Mean History Through 2013
	Page	Page
Low Level Mercury	AII-11	AII-66
Total Zinc		AII-67
Total Selenium	AII-11	AII-68
Soluble Calcium		AII-69
Soluble Magnesium		AII-70
Soluble Silver	AII-11	AII-71
Soluble Arsenic	AII-12	AII-72
Soluble Barium		AII-73
Soluble Boron		AII-74
Soluble Cadmium	AII-12	AII-75
Soluble Copper	AII-12	AII-76
Soluble Chromium	AII-12	AII-77
Soluble Iron	AII-13	AII-78
Soluble Lead	AII-13	AII-79
Soluble Nickel	AII-13	AII-80
Soluble Manganese		AII-81
Soluble Mercury		AII-82
Soluble Zinc	AII-13	AII-83
Soluble Selenium		AII-84

LIST OF FIGURES

<u>Figure No.</u>		<u>Page</u>
1	WATERWAYS AND 2013 SAMPLING LOCATIONS IN THE DISTRICTS SERVICE AREA	3

ACKNOWLEDGEMENTS

We recognize and appreciate the efforts of the staff of the Analytical Laboratories, Industrial Waste, and Environmental Monitoring and Research Divisions in collecting and analyzing waterways samples.

We appreciate the review by Ms. Jennifer Wasik, Supervising Aquatic Biologist, of the Aquatic Ecology and Water Quality Section, and Dr. Albert Cox, Environmental Monitoring and Research Manager, for checking the accuracy of the information presented in this report.

We acknowledge the helpful comments of Dr. Heng Zhang, Assistant Director of Monitoring and Research, Environmental Monitoring and Research Division.

This manuscript was produced by an automated L^AT_EX program that accessed auxiliary programs in SAS and Visual Basic. These auxiliary programs generate data for text, tables, figures, and results of statistical analysis to logically feed the L^AT_EX program responsible for final output of the manuscript.

Thanks and special appreciation go to Ms. Laura Franklin, Administrative Specialist, Ms. Kathleen Quinlan, Senior Administrative Specialist, and Ms. Bettina Gregor, Secretary, for proof-reading, offering editorial comments, and other assistance formatting this report.

DISCLAIMER

Mention of proprietary equipment and chemicals in this report does not constitute endorsement by the Metropolitan Water Reclamation District of Greater Chicago.

INTRODUCTION

The Metropolitan Water Reclamation District of Greater Chicago (District) has an environmental monitoring program that monitors the water quality of the streams and canals within its jurisdiction. Detailed annual water quality summaries of all water quality data collected have been published by the District for the years 1972 through 2012. Complete tabulations of waterway surveillance data collected by the District are available for the years 1970 through 2013.

It should be noted that the Illinois Environmental Protection Agency has also conducted water quality sampling programs within the waterways in the District's service area, and has published annual summaries of its water quality network computerized database since 1971.

The primary purpose of this report is to establish a repository for the waterways data. The tables included in the appendices are formatted as 'stand-alone' to facilitate reproduction and transmittal of specific data requests.

In addition to the data formats included in Appendices AI, AII, and AIII, custom data presentation formats are available in hardcopy and electronic media.

WATER QUALITY MONITORING NETWORK

Description of Waterways

The District has an environmental monitoring program that monitors the water quality of the waterways that are impacted by its operations. A map depicting the waterways is shown in Figure 1. These include both man-made and natural waterways. Principal man-made water courses are: the North Shore Channel, connecting Lake Michigan at Wilmette to the North Branch of the Chicago River; the Chicago Sanitary and Ship Canal (Main Channel), extending from Damen Avenue to the Lockport Powerhouse; and the Calumet-Sag Channel, connecting the Little Calumet River with the Main Channel. The functions of the canal system are to:

- Provide navigational passage for boats and barges.
- Serve as receiving waters for the tributary streams and water reclamation plant (WRP) effluents, combined sewer overflows, and stormwater runoff.
- Convey the flows from the Chicago Metropolitan Area to the Des Plaines River watershed through the waterway system, exiting at the Lockport Powerhouse.

The principal natural river systems monitored under the District's surveillance programs are: the Chicago River System, including the North Branch of the Chicago River; the Des Plaines River System, flowing south from Lake County and joining with the discharge from the Main Channel downstream of the powerhouse at Lockport; and the Calumet River System, which flows into the Calumet-Sag Channel.

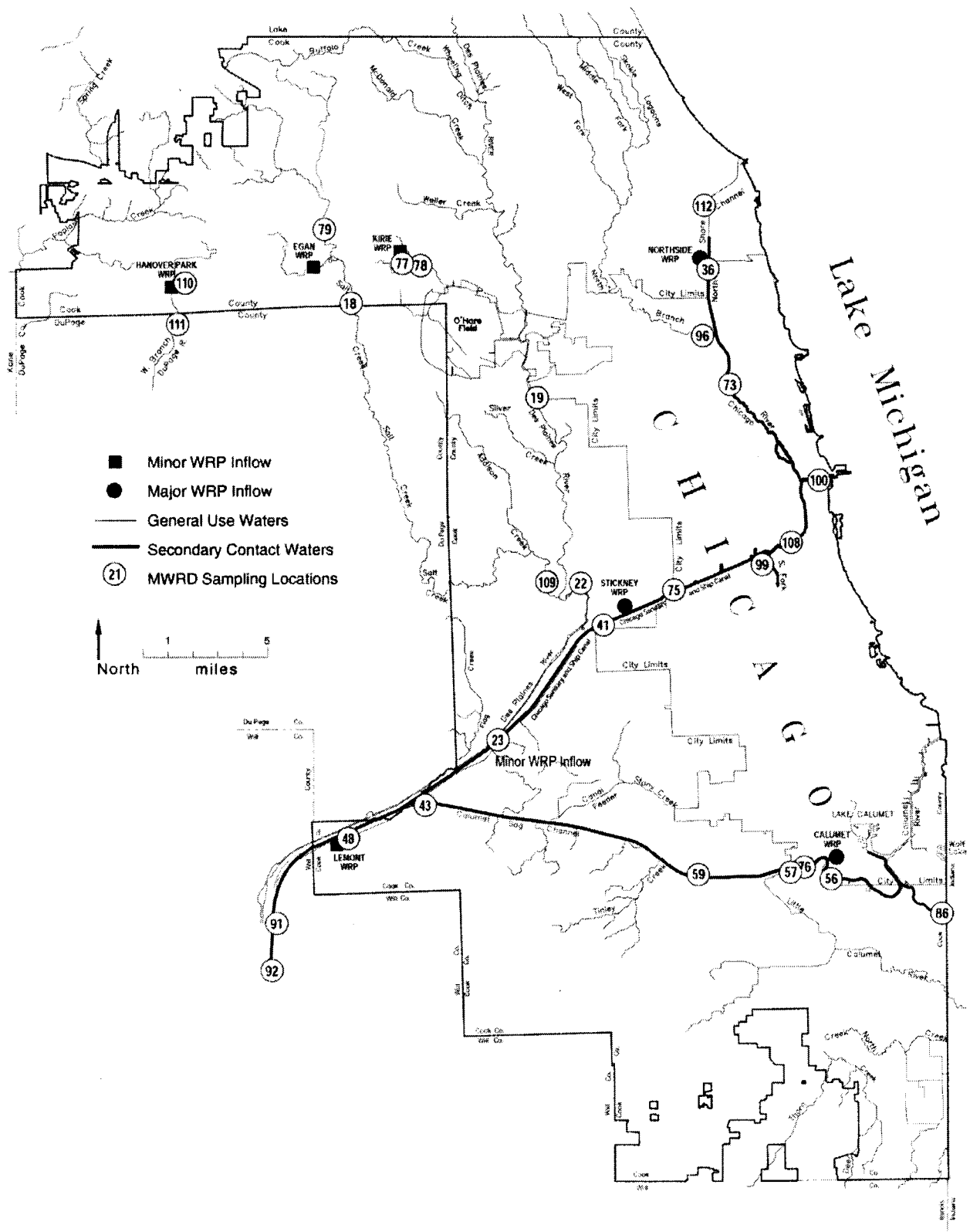
Water Use Designations. Illinois Pollution Control Board (IPCB) Regulations, Section 303.201, specify that "except as otherwise specifically provided, all waters of the State must meet the General Use standards for Subpart B of Part 302." Section 303.441 delineates those waters which do not qualify for General Use but "... are designated as secondary contact and indigenous aquatic life waters [Secondary Contact Waters] and must meet the water quality standards of 35 Ill. Adm. Code 302, Subpart D." The waters within District boundaries classified for use as Secondary Contact Waters are shown in Figure 1. In general, the Secondary Contact Waters coincide with the man-made canals or modified waterways in the Chicago and Calumet River Systems. A complete listing of the District's waterways sampling station water use designations is shown in Table AI-2, Appendix AI.

Scope of Waterways Data

The waterways data management system was designed to store and manage data resulting from the assays of water samples taken at locations throughout the waterways in the District's service area. In addition to storage, retrieval, and updating capabilities, the data management system includes programs for:

- The generation of reports and graphs.
- The generation of annual summary statistics.

FIGURE 1: WATERWAYS AND 2013 SAMPLING LOCATIONS IN THE DISTRICT'S SERVICE AREA



- Comparisons of water quality with the results from previous years.

The major computations of data are presented in tables appearing in the main body of this report and in Appendices AII and AIII. The water quality parameter directory is shown in Appendix AI. Water quality parameters assayed in 2013 and sampling stations are listed in Tables AI-2 and AI-3, respectively.

Summary water quality results for 2013 are listed in Appendix AII. Annual mean values of all water quality parameters assayed at all stations sampled (grab samples only) are tabulated in Table AII-1. If concentration was less than the reporting limit, the reporting limit was used to calculate the mean. This table presents the values of the water quality parameters, which can be used to determine relationships between these parameters.

In comparing data from a historical perspective, it is desirable to view summary data from past years together with data from the current year. Tables AII-47 through AII-45 (Appendix AII) were designed to present the mean values of various parameters for 2003 through 2013 for each parameter and all locations sampled.

Finally, Tables AIII-1 through AIII-6 present comprehensive statistical analysis required to show whether the upstream and downstream means of various water quality parameters for each WRP are significantly different.

Water Sampling

Surface water grab samples were taken at 28 locations during 2013. Their geological locations are shown in Figure 1. The samples were taken at a nominal monthly frequency, with one of the three principal river systems being sampled on a given day. The total number of samples collected monthly in each river system during 2013 is shown in Table 1. Note that samples taken in the West Branch of the DuPage River (upstream and downstream of the Hanover Park WRP outfall, are included with the Des Plaines River data. In addition, weekly grab samples were taken at the Lockport Powerhouse.

Locations sampled in the respective river systems during 2013 are shown without an asterisk in Table AI-3 of Appendix AI. Eleven sites were sampled in the Chicago River System, six sites in the Calumet River System, and 11 sites in the Des Plaines River System including 4 locations in the DuPage River System. The waterway system sampling station numbers correspond to the numbers on the map shown in Figure 1. The complete waterway sampling stations directory of all 107 stations, of which the 28 sampling locations in 2013 are a subset, is listed in Table AI-3, Appendix AI.

Water Quality Parameters and Standards

The District's laboratories performed 52 analyses on each of the water samples collected from the waterways during 2013. A list of these analyses and additional parameters computed from these analyses are shown in Table 2. Table 2 shows the water quality standard for each parameter as defined by the IPCB in the State of Illinois Rules and Regulations, Title 35(2). The related IPCB rule section numbers are also included. The boron, fluoride, and manganese General Use Water Quality Standards were revised in December 2012, and are reflected in this report.

TABLE 1: TOTAL NUMBER OF WATERWAYS SAMPLES COLLECTED
MONTHLY AT BRIDGE RUN LOCATIONS DURING 2013

Month	River System		
	Chicago	Calumet	Des Plaines
January	11	4	6
February	14	4	8
March	14	6	8
April	15	5	12
May	14	5	12
June	14	6	11
July	15	6	12
August	14	6	11
September	15	6	11
October	14	6	12
November	14	6	10
December	12	NS	8

NS = No sample was taken at any location of this river system.

TABLE 2: WATER SAMPLE ASSAYS PERFORMED AND
CORRESPONDING WATER QUALITY STANDARDS IN 2013¹

Parameter	Water Use Designations			
	General Use ²		Secondary Contact ³	
	Standard	Section ⁴	Standard	Section ⁴
Dissolved Oxygen	mg/L ⁵	302.206	mg/L ⁵	302.405
Temperature	°C ⁶	302.211	°C ⁶	302.408
pH	6.5-9.0	302.204	6.0-9.0	302.404
Total Alkalinity	NAS		NAS	
Chloride	500 mg/L	302.208	NAS	
Total Kjeldahl Nitrogen	NAS		NAS	
Ammonia Nitrogen	mg/L ⁷	302.212	NAS	
Un-ionized Ammonia	NAS		0.1 mg/L	302.407
Organic Nitrogen	NAS		NAS	
Nitrite Plus Nitrate Nitrogen	NAS		NAS	
Total Solids	NAS		NAS	
Total Suspended Solids	NAS		NAS	
Volatile Suspended Solids	NAS		NAS	
Total Dissolved Solids	NAS		1,500 mg/L	302.407
Phenols	100 µg/L	302.208	300 µg/L	302.407
Sulfate	mg/L ⁸	302.208	NAS	
Fats, Oils, and Greases	NAS		15 mg/L	302.407
Total Phosphorus	NAS		NAS	
Total Cyanide	NAS		0.1 mg/L	302.407
WAD Cyanide	0.022 mg/L	302.208	NAS	
Total Fluoride	mg/L ⁹	302.208	15 mg/L	302.407
Total Organic Carbon	NAS		NAS	
Fecal Coliform	400 cfu/100mL	302.209	NAS	
Total Calcium	NAS		NAS	
Total Magnesium	NAS		NAS	
Hardness	NAS		NAS	

TABLE 2 (Continued): WATER SAMPLE ASSAYS PERFORMED AND
CORRESPONDING WATER QUALITY STANDARDS IN 2013¹

Parameter	Water Use Designations			
	General Use ²		Secondary Contact ³	
	Standard	Section ⁴	Standard	Section ⁴
Gross Alpha Radioactivity	NAS		NAS	
Gross Beta Radioactivity	100 pCi/L	302.207	NAS	
Chlorophyll <i>a</i>	NAS		NAS	
Benzene	310 $\mu\text{g/L}^*$	302.658	NAS	
	4200 $\mu\text{g/L}$	302.208	NAS	
Ethylbenzene	150 $\mu\text{g/L}$	302.208	NAS	
Toluene	2000 $\mu\text{g/L}$	302.208	NAS	
Xylene	920 $\mu\text{g/L}$	302.208	NAS	
Meta and/or Para Xylenes	NAS		NAS	
Ortho Xylene	NAS		NAS	
Total Silver	0.005 mg/L	302.208	1.1 mg/L	302.407
Total Barium	5 mg/L	302.208	5 mg/L	302.407
Total Boron	40.1 mg/L	302.208	NAS	
Total Hexavalent Chromium	16 $\mu\text{g/L}$	302.208	300 $\mu\text{g/L}$	302.407
Total Manganese	NAS		1 mg/L	302.407
Total Mercury	0.012 $\mu\text{g/L}^*$	302.208	NAS	
	NAS		0.5 $\mu\text{g/L}$	302.407
Low Level Mercury	NAS		NAS	
Total Selenium	1 mg/L	302.208	1 mg/L	302.407
Soluble Silver	NAS		NAS	
Soluble Arsenic	0.36 mg/L	302.208	NAS	
Soluble Cadmium	mg/L ¹⁰	302.208	NAS	
Soluble Copper	mg/L ¹¹	302.208	NAS	
Soluble Chromium	mg/L ¹²	302.208	NAS	
Soluble Iron	1 mg/L	302.208	0.5 mg/L	302.407
Soluble Lead	mg/L ¹³	302.208	NAS	

TABLE 2 (Continued): WATER SAMPLE ASSAYS PERFORMED AND CORRESPONDING WATER QUALITY STANDARDS IN 2013¹

Parameter	Water Use Designations			
	General Use ²		Secondary Contact ³	
	Standard	Section ⁴	Standard	Section ⁴
Soluble Nickel	mg/L ¹⁴	302.208	NAS	
Soluble Zinc	mg/L ¹⁵	302.208	NAS	

¹Water Quality Standards from “State of Illinois Rules and Regulations,” Title 35: Environmental Protection, Subtitle C: Water Pollution.

²General Use Waters Designations, defined in Section 302.201 from 1 above. See Figure 1, for delineation.

³Secondary Contact and Indigenous Aquatic Life Waters Use Designation, defined in section 303.441 from 1 above. See Figure 1, for delineation.

⁴Section Number from 1 above.

⁵For General Use waters the Standard is 5.0 mg/L in March through July and 3.5 mg/L in other months. For Secondary Contact Waters the standard is 4.0 mg/L but 3.0 mg/L for Calumet-Sag Channel.

⁶Standard depends on month for General Use Waters. It is 90.3°C for Secondary Contact waters.

⁷ $\text{Min}[0.411/(1 + 10^{7.204-\text{pH}}) + 58.4/(1 + 10^{\text{pH}-7.204}), 15]$

⁸General Use standard depends on hardness and chloride value of certain range.

⁹General Use standard is evaluated by the equation $e^{6.7319+0.5394 \ln(\text{Hard})}$.

¹⁰ $\text{Min}[(1.138672 - 0.041838 \ln(\text{Hard})) * e^{-2.918+1.128 \ln(\text{Hard})} * 0.001, 0.05]$

¹¹ $e^{-1.464+0.9422 \ln(\text{Hard})} * 0.000960$

¹² $e^{3.688+0.819 \ln(\text{Hard})} * 0.000316$

¹³ $[1.46203 - 0.145712 \ln(\text{Hard})] * e^{-1.301+1.273 \ln(\text{Hard})} * 0.001$

¹⁴ $e^{0.5173+0.846 \ln(\text{Hard})} * 0.000998$

¹⁵ $e^{0.9035+0.8473 \ln(\text{Hard})} * 0.000978$

NAS = No Applicable Standard.

*Human Health Standard.

Water Quality Sampling Locations and Frequency

By definition, all sampling locations not in waters classified as Secondary Contact Waters are within General Use Waters. The delineation of these two water use classifications is shown in Figure 1. The Des Plaines River System is entirely within the General Use classification. The General Use Waters in the Chicago and Calumet River Systems consist mostly of the streams that are tributary to the principal man-made channels and modified river sections.

The frequency of sampling during 2013 was once per month at all locations except Lockport Forebay. Tables 3 and 4 show the frequency of sampling at all General Use and Secondary Contact water locations, respectively, in 2013.

In the General Use Waters, 52 parameters were analyzed in 2013, of which 28 parameters are covered by the State of Illinois Water Quality Standards. Two parameters (benzene and total mercury) were subject to IPCB Human Health Standards.

In the Secondary Contact Waters, 52 parameters were analyzed in 2013, of which 16 parameters were subject to IPCB Water Quality Standards. Summary results are shown in Appendix AII at each sampling station.

TABLE 3: LOCATIONS SAMPLED AND ANNUAL SAMPLING
FREQUENCIES OF GENERAL USE WATERS IN 2013

Map No. ¹	Station Name	Annual No. of Samples
<u>Chicago River System</u>		
96	Albany Avenue, North Branch Chicago River	12
112	Dempster Street, North Shore Channel	10
100	Wells Street, Chicago River	<u>12</u>
		34
<u>Calumet River System</u>		
57	Ashland Avenue, Little Calumet River	<u>10</u>
		10
<u>Des Plaines River System</u>		
79	Higgins Road, Salt Creek	8
18	Devon Avenue, Salt Creek	12
109	Brookfield Avenue, Salt Creek	11
77	Elmhurst Road, Higgins Creek	4
78	Wille Road, Higgins Creek	12
19	Belmont Avenue, Des Plaines River	12
22	Ogden Avenue, Des Plaines River	12
23	Willow Springs Road, Des Plaines River	11
91	Material Service Road, Des Plaines River	12
110	Springinguth Road, West Branch DuPage River	8
111	Arlington Drive, West Branch DuPage River	<u>12</u>
		114

¹Refer to Figure 1.

TABLE 4: LOCATIONS SAMPLED AND ANNUAL SAMPLING FREQUENCIES OF SECONDARY CONTACT WATERS IN 2013

Map No. ¹	Station Name	Annual No. of Samples
<u>Chicago River System</u>		
36	Touhy Avenue, North Shore Channel	11
73	Diversey Parkway, North Branch Chicago River	12
108	Loomis Street, South Branch Chicago River	12
99	Archer Avenue, South Fork South Branch Chicago River	10
75	Cicero Avenue, Chicago Sanitary & Ship Canal	12
41	Harlem Avenue, Chicago Sanitary & Ship Canal	12
48	Stephen Street, Chicago Sanitary & Ship Canal	12
92	Lockport Forebay, Chicago Sanitary & Ship Canal	<u>51</u>
		132
<u>Calumet River System</u>		
86	Burnham Avenue, Grand Calumet River	9
56	Indiana Avenue, Little Calumet River	8
76	Halsted Street, Little Calumet River	11
59	Cicero Avenue, Calumet-Sag Channel	11
43	Route 83, Calumet-Sag Channel	<u>11</u>
		50

¹Refer to Figure 1.

WATER QUALITY MONITORING UPSTREAM AND DOWNSTREAM LOCATIONS OF THE METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO OUTFALLS

Surface Water Sample Locations and Sample Frequencies

The District currently operates seven WRPs. The receiving waters upstream and downstream of the outfalls (the discharge points of the effluent from the WRPs) for six of these WRPs were sampled during 2013. The treated effluents of three of these WRPs (Hanover Park, John E. Egan, and James C. Kirie) discharge their treated effluents into General Use Waters. The effluents from the Terrence J. O'Brien, Stickney, and Calumet WRPs discharge into Secondary Contact Waters. During 2013, the lack of an upstream sampling location for the Lemont WRP which was downstream of the Calumet-Sag junction precluded an evaluation. Upstream and downstream sampling locations, as well as annual sampling frequencies for the respective WRPs, are shown in Table 5.

The outfalls for Hanover Park, John E. Egan, and James C. Kirie WRPs are located in the West Branch of the DuPage River, Salt Creek, and Higgins Creek, respectively. More specifically, the sampling stations for the plants that discharge to General Use Waters are located as follows:

1. The upstream station for the Hanover Park WRP is located at Springinsguth Road, West Branch DuPage River, 1.6 miles above the outfall, and the downstream station is located at Arlington Drive, 3.0 miles below the outfall.
2. The upstream station for the John E. Egan WRP is located at Higgins Road, 1.4 miles above the outfall, and the downstream station is located at Devon Avenue, 2.4 miles below the outfall.
3. The upstream sampling point for the James C. Kirie WRP is located at Elmhurst Road, about 1,000 feet upstream of the outfall, while the downstream station is at the Wille Road Bridge, about 300 feet downstream of the outfall.

Specific locations of WRPs which have outfalls located within the Secondary Contact Waters of the District's canal system are:

1. The Terrence J. O'Brien WRP treated effluent discharges into the North Shore Channel. The upstream and downstream sample points are located at Dempster Street and Touhy Avenue, respectively. Dempster Street is 1.5 miles above the outfall, and Touhy Avenue is 3,600 feet below.
2. The upstream and downstream sample points for the Stickney WRP are Cicero Avenue and Harlem Avenue, respectively, both on the Chicago Sanitary and Ship Canal. Cicero Avenue is 1.5 miles above and Harlem Avenue is 1.7 miles below the outfall.
3. The upstream sample point for the Calumet WRP is located at Indiana Avenue on the Little Calumet River. Downstream samples of the outfall are taken at Halsted Street on the Little Calumet River. Indiana Avenue is 1.0 mile above and Halsted Street is 1.3 miles below the outfall.

TABLE 5: ANNUAL SAMPLING FREQUENCIES AT
UPSTREAM AND DOWNSTREAM LOCATIONS OF THE
WATER RECLAMATION PLANTS IN 2013

WRP	Upstream Sample			Downstream Sample		
	Location	No. ¹	Freq.	Location	No. ¹	Freq.
Terrence J. O'Brien	Dempster Street, North Shore Channel	112	10	Touhy Avenue, North Shore Channel	36	11
Stickney	Cicero Avenue, Chicago Sanitary & Ship Canal	75	12	Harlem Avenue, Chicago Sanitary & Ship Canal	41	12
Calumet	Indiana Avenue, Little Calumet River	56	8	Halsted Street, Little Calumet River	76	11
John E. Egan	Higgins Road, Salt Creek	79	8	Devon Avenue, Salt Creek	18	12
James C. Kirie	Elmhurst Road, Higgins Creek	77	4	Wille Road, Higgins Creek	78	12
Hanover Park	Springinguth Road, West Branch, Du Page River	110	8	Arlington Drive, West Branch, Du Page River	111	12

¹Location No. of stations are shown in Figure 1.

Annual Summary Results for Water Quality Upstream and Downstream of the Metropolitan Water Reclamation District of Greater Chicago Outfalls

Several statistical analyses were performed to evaluate the effect of flow from each WRP on its receiving stream. The sample values of each parameter at the upstream and downstream locations were first tested to determine if they exhibited normal distribution and then tested for equality of variances. If the upstream and downstream sample data came from normally distributed populations and had equal variance, an exact t-test was used for testing the equality of upstream and downstream means. An approximate t-test was used if the data came from two different normally distributed populations.

If the sample size for each of the upstream and downstream data sets was less than 30, and did not come from normally distributed populations, a Wilcoxon rank-sum test was used to test for the equality of two population centers. Wilcoxon test applies to sample mean and median if both upstream and downstream populations come from symmetric populations; otherwise, the test applies to population medians only. Symmetry of a population was determined by a box plot if the sample size was small ($n < 30$).

The mean levels for each parameter measured at the upstream and downstream locations of each WRP and the appropriate significance probability associated with the exact t-test/approximate t-test or Wilcoxon rank-sum test are tabulated in Tables 6 through 8. Tables AIII-1 through AIII-3 in Appendix AIII show in detail the significance probability for testing normality and equality of variances of the upstream and downstream data, and the significance probability for testing the equality of upstream and downstream means employing an appropriate test.

Fifty-two water quality parameters, including 34 parameters which have either IPCB General Use, Human Health, or Secondary Contact standards, were assayed for all WRPs in 2013. Comparison of the mean concentrations of the common parameters (maximum 52) at upstream and downstream locations showed that the downstream mean concentrations are significantly different from the upstream mean concentrations for some parameters, and about the same for the other parameters. This was indicated by the significance probabilities given in Tables 6 through 8. A value of 0.05 or smaller indicates that the two means are significantly different, and a value greater than 0.05 indicates there is no significant difference between means.

Steps involved in the evaluation of the results of this type of comparison were:

1. Identify the parameters that exhibit a difference in the mean concentration levels at the upstream and downstream locations.
2. Determine if the mean concentration levels at the upstream and downstream locations for a parameter are different, and if the difference in the levels is attributable to wastewater treatment processing.
3. Determine if the fluctuations in the concentration levels of the parameter adversely affect the quality of the receiving stream as assessed by compliance with the water quality standard for that parameter.

TABLE 6: COMPARISON OF LEVELS OF 52 WATER QUALITY PARAMETERS ASSAYED AT UPSTREAM AND DOWNSTREAM LOCATIONS FOR THE TERRENCE J. O'BRIEN WATER RECLAMATION PLANT IN 2013

Parameter	Abbreviation (Units)	U ¹	vs.	D ²	Sig. Prob. ^{3,4}
Dissolved Oxygen	DO (mg/L)	7.6		7.6	0.943
Temperature	Temp (°C)	15		15	0.871
pH	pH	7.0		7.1	0.369
Total Alkalinity	Alk (mg/L)	123		131	0.249
Chloride	Cl (mg/L)	133		130	0.960
Total Kjeldahl Nitrogen	TKN (mg/L)	1.4		2.1	0.135
Ammonia Nitrogen	NH ₄ -N (mg/L)	0.46		1.08	0.113
Un-ionized Ammonia	NH ₃ -N (mg/L)	0.001		0.004	0.037
Organic Nitrogen	ORG-N (mg/L)	0.94		1.01	0.736
Nitrite Plus Nitrate Nitrogen	NO ₂ + NO ₃ (mg/L)	1.5		6.2	0.000
Total Solids	TS (mg/L)	446		486	0.745
Total Suspended Solids	TSS (mg/L)	21		10	0.108
Volatile Suspended Solids	VSS (mg/L)	6.2		5.5	0.526
Total Dissolved Solids	TDS (mg/L)	425		476	0.681
Phenols	Phenol (µg/L)	<5		<5	-
Sulfate	SO ₄ (mg/L)	32		41	0.088
Fats, Oils, and Greases	FOG (mg/L)	<5		<5	-
Total Phosphorus	TP (mg/L)	0.29		1.18	0.000
Total Cyanide	CN (mg/L)	0.006		<0.005	-
WAD Cyanide	WAD-CN (mg/L)	<0.003		<0.003	0.992
Total Fluoride	F (mg/L)	0.23		0.63	0.000
Total Organic Carbon	TOC (mg/L)	2.9		4.5	0.006
Fecal Coliform*	FC (#/100ml)	373		11161	0.005
Total Calcium	Ca (mg/L)	45		50	0.204
Total Magnesium	Mg (mg/L)	16		18	0.191
Hardness	Hard (mg/L)	178		201	0.194
Gross Alpha Radioactivity	G. Alpha (pCi/L)	1.5		1.6	0.661
Gross Beta Radioactivity	G. Beta (pCi/L)	1.9		3.2	0.012

TABLE 6 (Continued): COMPARISON OF LEVELS OF 52 WATER QUALITY PARAMETERS ASSAYED AT UPSTREAM AND DOWNSTREAM LOCATIONS FOR THE TERRENCE J. O'BRIEN WATER RECLAMATION PLANT IN 2013

Parameter	Abbreviation (Units)	U ¹	vs.	D ²	Sig. Prob. ^{3,4}
Chlorophyll <i>a</i>	Chlrphl ($\mu\text{g/L}$)	12		6	0.289
Benzene	Bzn ($\mu\text{g/L}$)	<2		<2	-
Ethylbenzene	Ebnzn ($\mu\text{g/L}$)	<2		<2	-
Toluene	Toln ($\mu\text{g/L}$)	<2		<2	-
Xylene	Xyln ($\mu\text{g/L}$)	<3		<3	-
Meta and/or Para Xylenes	xylnmp ($\mu\text{g/L}$)	<3		<3	-
Ortho Xylene	xylno ($\mu\text{g/L}$)	<3		<3	-
Total Silver	Ag (mg/L)	<0.001		<0.001	-
Total Barium	Ba (mg/L)	0.027		0.022	0.007
Total Boron	B (mg/L)	0.067		0.127	0.003
Total Hexavalent Chromium	Cr ⁺⁶ ($\mu\text{g/L}$)	<6		6.091	-
Total Manganese	Mn (mg/L)	0.039		0.026	0.119
Total Mercury	Hg ($\mu\text{g/L}$)	<0.2		<0.2	-
Low Level Mercury	Hg- (ng/L)	0.000		<0.5	-
Total Selenium	Se (mg/L)	0.024		0.027	0.609
Soluble Silver	Sol. Ag (mg/L)	<0.001		<0.001	-
Soluble Arsenic	Sol. As (mg/L)	0.025		0.029	0.335
Soluble Cadmium	Sol. Cd (mg/L)	<0.001		<0.001	-
Soluble Copper	Sol. Cu (mg/L)	<0.005		<0.005	1.000
Soluble Chromium	Sol. Cr (mg/L)	<0.005		<0.005	-
Soluble Iron	Sol. Fe (mg/L)	0.110		<0.1	-
Soluble Lead	Sol. Pb (mg/L)	<0.02		<0.02	-
Soluble Nickel	Sol. Ni (mg/L)	0.006		<0.005	-
Soluble Zinc	Sol. Zn (mg/L)	0.015		0.025	0.025

¹Upstream (U), value following < sign is the average detection limit.

²Downstream (D), value following < sign is the average detection limit.

³Significance Probability ≤ 0.05 indicates that upstream and downstream population means are not equal.

⁴Some tests may be based on Wilcoxon rank-sum statistics that apply to population medians only in the absence of population symmetry. Please see Appendix AIII-1 for details.

*Test applies to population means if variances of log values are equal, otherwise applies to geometric means (see Appendix AIII-1) for details.

- = No test was done since standard deviations are below the detection limit or equal to 0.

TABLE 7: COMPARISON OF LEVELS OF 52 WATER QUALITY PARAMETERS ASSAYED AT UPSTREAM AND DOWNSTREAM LOCATIONS FOR THE STICKNEY WATER RECLAMATION PLANT IN 2013

Parameter	Abbreviation (Units)	U ¹	vs.	D ²	Sig. Prob. ^{3,4}
Dissolved Oxygen	DO (mg/L)	5.7		7.0	0.107
Temperature	Temp (°C)	14		15	0.882
pH	pH	7.0		7.1	0.502
Total Alkalinity	Alk (mg/L)	137		135	0.746
Chloride	Cl (mg/L)	162		162	0.997
Total Kjeldahl Nitrogen	TKN (mg/L)	1.5		1.7	0.512
Ammonia Nitrogen	NH ₄ -N (mg/L)	0.84		1.01	0.654
Un-ionized Ammonia	NH ₃ -N (mg/L)	0.004		0.005	0.634
Organic Nitrogen	ORG-N (mg/L)	0.67		0.66	0.970
Nitrite Plus Nitrate Nitrogen	NO ₂ + NO ₃ (mg/L)	4.9		7.1	0.006
Total Solids	TS (mg/L)	541		569	0.731
Total Suspended Solids	TSS (mg/L)	13		9	0.116
Volatile Suspended Solids	VSS (mg/L)	4.7		4.3	0.232
Total Dissolved Solids	TDS (mg/L)	528		560	0.703
Phenols	Phenol (µg/L)	<5		<5	-
Sulfate	SO ₄ (mg/L)	43		60	0.001
Fats, Oils, and Greases	FOG (mg/L)	<5		<5	-
Total Phosphorus	TP (mg/L)	0.64		0.73	0.550
Total Cyanide	CN (mg/L)	<0.005		<0.005	-
WAD Cyanide	WAD-CN (mg/L)	<0.003		<0.003	0.810
Total Fluoride	F (mg/L)	0.49		0.63	0.005
Total Organic Carbon	TOC (mg/L)	4.2		4.6	0.116
Fecal Coliform*	FC (#/100ml)	344		2153	0.023
Total Calcium	Ca (mg/L)	53		54	0.702
Total Magnesium	Mg (mg/L)	20		20	0.938
Hardness	Hard (mg/L)	212		217	0.794
Gross Alpha Radioactivity	G. Alpha (pCi/L)	1.7		1.6	0.758
Gross Beta Radioactivity	G. Beta (pCi/L)	2.7		3.2	0.119

TABLE 7 (Continued): COMPARISON OF LEVELS OF 52 WATER QUALITY PARAMETERS ASSAYED AT UPSTREAM AND DOWNSTREAM LOCATIONS FOR THE STICKNEY WATER RECLAMATION PLANT IN 2013

Parameter	Abbreviation (Units)	U ¹	vs.	D ²	Sig. Prob. ^{3,4}
Chlorophyll <i>a</i>	Chlrphl ($\mu\text{g/L}$)	7.4		5.6	0.592
Benzene	Bznz ($\mu\text{g/L}$)	<2		<2	-
Ethylbenzene	Ebnzn ($\mu\text{g/L}$)	<2		<2	-
Toluene	Toln ($\mu\text{g/L}$)	<2		6.2	-
Xylene	Xyln ($\mu\text{g/L}$)	<3		<3	-
Meta and/or Para Xylenes	xylnmp ($\mu\text{g/L}$)	<3		<3	-
Ortho Xylene	xylno ($\mu\text{g/L}$)	<3		<3	-
Total Silver	Ag (mg/L)	<0.001		<0.001	-
Total Barium	Ba (mg/L)	0.025		0.020	0.010
Total Boron	B (mg/L)	0.104		0.147	0.000
Total Hexavalent Chromium	Cr ⁺⁶ ($\mu\text{g/L}$)	<6		<6	-
Total Manganese	Mn (mg/L)	0.035		0.028	0.080
Total Mercury	Hg ($\mu\text{g/L}$)	<0.2		<0.2	-
Low Level Mercury	Hg- (ng/L)	<0.5		<0.5	-
Total Selenium	Se (mg/L)	0.016		0.019	0.269
Soluble Silver	Sol. Ag (mg/L)	<0.001		<0.001	-
Soluble Arsenic	Sol. As (mg/L)	0.031		0.033	0.616
Soluble Cadmium	Sol. Cd (mg/L)	<0.001		<0.001	-
Soluble Copper	Sol. Cu (mg/L)	<0.005		<0.005	1.000
Soluble Chromium	Sol. Cr (mg/L)	<0.005		<0.005	-
Soluble Iron	Sol. Fe (mg/L)	<0.1		<0.1	-
Soluble Lead	Sol. Pb (mg/L)	<0.02		<0.02	-
Soluble Nickel	Sol. Ni (mg/L)	<0.005		0.006	-
Soluble Zinc	Sol. Zn (mg/L)	0.016		0.018	0.427

¹Upstream (U), value following < sign is the average detection limit.

²Downstream (D), value following < sign is the average detection limit.

³Significance Probability ≤ 0.05 indicates that upstream and downstream population means are not equal.

⁴Some tests may be based on Wilcoxon rank-sum statistics that apply to population medians only in the absence of population symmetry. Please see [Appendix AIII-2](#) for details.

*Test applies to population means if variances of log values are equal, otherwise applies to geometric means (see [Appendix AIII-2](#)) for details.

- = No test was done since standard deviations are below the detection limit or equal to 0.

TABLE 8: COMPARISON OF LEVELS OF 52 WATER QUALITY
PARAMETERS ASSAYED AT UPSTREAM AND DOWNSTREAM LOCATIONS
FOR THE CALUMET WATER RECLAMATION PLANT IN 2013

Parameter	Abbreviation (Units)	U ¹	vs.	D ²	Sig. Prob. ^{3,4}
Dissolved Oxygen	DO (mg/L)	7.7		7.1	0.497
Temperature	Temp (°C)	15		15	0.983
pH	pH	7.7		7.2	0.023
Total Alkalinity	Alk (mg/L)	139		160	0.294
Chloride	Cl (mg/L)	89		144	0.113
Total Kjeldahl Nitrogen	TKN (mg/L)	<1		1.7	-
Ammonia Nitrogen	NH ₄ -N (mg/L)	0.31		0.58	0.073
Un-ionized Ammonia	NH ₃ -N (mg/L)	0.006		0.005	0.896
Organic Nitrogen	ORG-N (mg/L)	0.69		1.15	0.332
Nitrite Plus Nitrate Nitrogen	NO ₂ + NO ₃ (mg/L)	1.6		5.6	0.003
Total Solids	TS (mg/L)	381		600	0.013
Total Suspended Solids	TSS (mg/L)	16		11	0.235
Volatile Suspended Solids	VSS (mg/L)	4.0		4.0	-
Total Dissolved Solids	TDS (mg/L)	365		589	0.012
Phenols	Phenol (μg/L)	<5		<5	-
Sulfate	SO ₄ (mg/L)	50		83	0.008
Fats, Oils, and Greases	FOG (mg/L)	5.1		5.2	0.938
Total Phosphorus	TP (mg/L)	0.58		2.18	0.004
Total Cyanide	CN (mg/L)	<0.005		<0.005	-
WAD Cyanide	WAD-CN (mg/L)	<0.003		<0.003	0.842
Total Fluoride	F (mg/L)	0.29		0.59	0.003
Total Organic Carbon	TOC (mg/L)	3.1		5.0	0.003
Fecal Coliform*	FC (#/100ml)	67		1402	0.000
Total Calcium	Ca (mg/L)	45		62	0.010
Total Magnesium	Mg (mg/L)	16		22	0.010
Hardness	Hard (mg/L)	177		244	0.010
Gross Alpha Radioactivity	G. Alpha (pCi/L)	1.5		1.8	0.047
Gross Beta Radioactivity	G. Beta (pCi/L)	2.2		3.6	0.020

TABLE 8 (Continued): COMPARISON OF LEVELS OF 52 WATER QUALITY PARAMETERS ASSAYED AT UPSTREAM AND DOWNSTREAM LOCATIONS FOR THE CALUMET WATER RECLAMATION PLANT IN 2013

Parameter	Abbreviation (Units)	U ¹	vs.	D ²	Sig. Prob. ^{3,4}
Chlorophyll <i>a</i>	Chlrphl ($\mu\text{g/L}$)	7.3		4.7	0.258
Benzene	Bznz ($\mu\text{g/L}$)	<2		<2	-
Ethylbenzene	Ebnzn ($\mu\text{g/L}$)	<2		<2	-
Toluene	Toln ($\mu\text{g/L}$)	<2		2.2	-
Xylene	Xyln ($\mu\text{g/L}$)	<3		<3	-
Meta and/or Para Xylenes	xylnmp ($\mu\text{g/L}$)	<3		<3	-
Ortho Xylene	xylno ($\mu\text{g/L}$)	<3		<3	-
Total Silver	Ag (mg/L)	<0.001		<0.001	-
Total Barium	Ba (mg/L)	0.027		0.022	0.021
Total Boron	B (mg/L)	0.091		0.175	0.004
Total Hexavalent Chromium	Cr ⁺⁶ ($\mu\text{g/L}$)	<6		<6	-
Total Manganese	Mn (mg/L)	0.031		0.043	0.237
Total Mercury	Hg ($\mu\text{g/L}$)	<0.2		<0.2	-
Low Level Mercury	Hg- (ng/L)	<0.5		<0.5	-
Total Selenium	Se (mg/L)	0.023		0.023	0.917
Soluble Silver	Sol. Ag (mg/L)	<0.001		<0.001	-
Soluble Arsenic	Sol. As (mg/L)	0.030		0.035	0.274
Soluble Cadmium	Sol. Cd (mg/L)	<0.001		<0.001	-
Soluble Copper	Sol. Cu (mg/L)	0.006		<0.005	0.649
Soluble Chromium	Sol. Cr (mg/L)	<0.005		<0.005	-
Soluble Iron	Sol. Fe (mg/L)	<0.1		<0.1	-
Soluble Lead	Sol. Pb (mg/L)	<0.02		<0.02	-
Soluble Nickel	Sol. Ni (mg/L)	<0.005		<0.005	-
Soluble Zinc	Sol. Zn (mg/L)	0.014		0.018	0.262

¹Upstream (U), value following < sign is the average detection limit.

²Downstream (D), value following < sign is the average detection limit.

³Significance Probability ≤ 0.05 indicates that upstream and downstream population means are not equal.

⁴Some tests may be based on Wilcoxon rank-sum statistics that apply to population medians only in the absence of population symmetry. Please see Appendix AIII-3 for details.

*Test applies to population means if variances of log values are equal, otherwise applies to geometric means (see Appendix AIII-3) for details.

- = No test was done since standard deviations are below the detection limit or equal to 0.

TABLE 9: COMPARISON OF LEVELS OF 52 WATER QUALITY
PARAMETERS ASSAYED AT UPSTREAM AND DOWNSTREAM LOCATIONS
FOR THE JOHN E. EGAN WATER RECLAMATION PLANT IN 2013

Parameter	Abbreviation (Units)	U ¹	vs.	D ²	Sig. Prob. ^{3,4}
Dissolved Oxygen	DO (mg/L)	6.8		7.9	0.395
Temperature	Temp (°C)	18		14	0.289
pH	pH	7.1		7.0	0.764
Total Alkalinity	Alk (mg/L)	144		129	0.146
Chloride	Cl (mg/L)	248		245	0.967
Total Kjeldahl Nitrogen	TKN (mg/L)	<1		1.1	-
Ammonia Nitrogen	NH ₄ -N (mg/L)	0.13		0.17	0.136
Un-ionized Ammonia	NH ₃ -N (mg/L)	0.001		0.001	1.000
Organic Nitrogen	ORG-N (mg/L)	0.88		0.92	0.455
Nitrite Plus Nitrate Nitrogen	NO ₂ + NO ₃ (mg/L)	0.20		8.41	0.000
Total Solids	TS (mg/L)	717		737	0.865
Total Suspended Solids	TSS (mg/L)	21		15	0.251
Volatile Suspended Solids	VSS (mg/L)	6.5		5.3	0.274
Total Dissolved Solids	TDS (mg/L)	695		722	0.825
Phenols	Phenol (µg/L)	<5		<5	-
Sulfate	SO ₄ (mg/L)	62		68	0.639
Fats, Oils, and Greases	FOG (mg/L)	<5		<5	-
Total Phosphorus	TP (mg/L)	<0.2		1.52	-
Total Cyanide	CN (mg/L)	<0.005		<0.005	-
WAD Cyanide	WAD-CN (mg/L)	<0.003		0.0031	0.926
Total Fluoride	F (mg/L)	0.19		0.51	0.000
Total Organic Carbon	TOC (mg/L)	5.8		5.4	0.480
Fecal Coliform*	FC (#/100ml)	95		622	0.023
Total Calcium	Ca (mg/L)	56		58	0.702
Total Magnesium	Mg (mg/L)	23		23	0.985
Hardness	Hard (mg/L)	234		240	0.854
Gross Alpha Radioactivity	G. Alpha (pCi/L)	1.9		1.9	0.860
Gross Beta Radioactivity	G. Beta (pCi/L)	2.0		3.1	0.019

TABLE 9 (Continued): COMPARISON OF LEVELS OF 52 WATER QUALITY PARAMETERS ASSAYED AT UPSTREAM AND DOWNSTREAM LOCATIONS FOR THE JOHN E. EGAN WATER RECLAMATION PLANT IN 2013

Parameter	Abbreviation (Units)	U ¹	vs.	D ²	Sig. Prob. ^{3,4}
Chlorophyll <i>a</i>	Chlrphl ($\mu\text{g/L}$)	32		12	0.003
Benzene	Bznz ($\mu\text{g/L}$)	<2		<2	-
Ethylbenzene	Ebnzn ($\mu\text{g/L}$)	<2		<2	-
Toluene	Toln ($\mu\text{g/L}$)	<2		<2	-
Xylene	Xyln ($\mu\text{g/L}$)	<3		<3	-
Meta and/or Para Xylenes	xylnmp ($\mu\text{g/L}$)	<3		<3	-
Ortho Xylene	xylno ($\mu\text{g/L}$)	<3		<3	-
Total Silver	Ag (mg/L)	<0.001		<0.001	-
Total Barium	Ba (mg/L)	0.039		0.029	0.016
Total Boron	B (mg/L)	0.084		0.162	0.001
Total Hexavalent Chromium	Cr ⁺⁶ ($\mu\text{g/L}$)	<6		<6	-
Total Manganese	Mn (mg/L)	0.109		0.054	0.003
Total Mercury	Hg ($\mu\text{g/L}$)	0.213		<0.2	-
Low Level Mercury	Hg- (ng/L)	0.000		9.833	-
Total Selenium	Se (mg/L)	0.023		0.022	0.831
Soluble Silver	Sol. Ag (mg/L)	<0.001		<0.001	-
Soluble Arsenic	Sol. As (mg/L)	0.034		0.031	0.594
Soluble Cadmium	Sol. Cd (mg/L)	<0.001		<0.001	-
Soluble Copper	Sol. Cu (mg/L)	<0.005		<0.005	-
Soluble Chromium	Sol. Cr (mg/L)	<0.005		<0.005	-
Soluble Iron	Sol. Fe (mg/L)	<0.1		<0.1	-
Soluble Lead	Sol. Pb (mg/L)	<0.02		<0.02	-
Soluble Nickel	Sol. Ni (mg/L)	<0.005		0.006	-
Soluble Zinc	Sol. Zn (mg/L)	<0.01		0.018	0.003

¹Upstream (U), value following < sign is the average detection limit.

²Downstream (D), value following < sign is the average detection limit.

³Significance Probability ≤ 0.05 indicates that upstream and downstream population means are not equal.

⁴Some tests may be based on Wilcoxon rank-sum statistics that apply to population medians only in the absence of population symmetry. Please see Appendix AIII-4 for details.

*Test applies to population means if variances of log values are equal, otherwise applies to geometric means (see Appendix AIII-4) for details.

- = No test was done since standard deviations are below the detection limit or equal to 0.

TABLE 10: COMPARISON OF LEVELS OF 52 WATER QUALITY PARAMETERS ASSAYED AT UPSTREAM AND DOWNSTREAM LOCATIONS FOR THE JAMES C. KIRIE WATER RECLAMATION PLANT IN 2013

Parameter	Abbreviation (Units)	U ¹	vs.	D ²	Sig. Prob. ^{3,4}
Dissolved Oxygen	DO (mg/L)	9.4		8.2	0.344
Temperature	Temp (°C)	16		15	0.860
pH	pH	8.0		7.3	0.003
Total Alkalinity	Alk (mg/L)	128		162	0.155
Chloride	Cl (mg/L)	376		204	0.372
Total Kjeldahl Nitrogen	TKN (mg/L)	<1		1.5	-
Ammonia Nitrogen	NH ₄ -N (mg/L)	0.15		0.38	0.070
Un-ionized Ammonia	NH ₃ -N (mg/L)	0.004		0.003	0.622
Organic Nitrogen	ORG-N (mg/L)	0.85		1.13	0.079
Nitrite Plus Nitrate Nitrogen	NO ₂ + NO ₃ (mg/L)	0.30		9.08	0.000
Total Solids	TS (mg/L)	879		725	0.626
Total Suspended Solids	TSS (mg/L)	42		8	0.004
Volatile Suspended Solids	VSS (mg/L)	10		5	0.091
Total Dissolved Solids	TDS (mg/L)	837		717	0.717
Phenols	Phenol (µg/L)	<5		<5	-
Sulfate	SO ₄ (mg/L)	44		80	0.015
Fats, Oils, and Greases	FOG (mg/L)	<5		<5	-
Total Phosphorus	TP (mg/L)	<0.2		1.13	-
Total Cyanide	CN (mg/L)	<0.005		<0.005	-
WAD Cyanide	WAD-CN (mg/L)	<0.003		<0.003	0.550
Total Fluoride	F (mg/L)	0.18		0.69	0.000
Total Organic Carbon	TOC (mg/L)	5.3		5.3	0.967
Fecal Coliform*	FC (#/100ml)	957		438	0.572
Total Calcium	Ca (mg/L)	56		68	0.303
Total Magnesium	Mg (mg/L)	23		26	0.665
Hardness	Hard (mg/L)	234		278	0.385
Gross Alpha Radioactivity	G. Alpha (pCi/L)	2.4		1.9	0.292
Gross Beta Radioactivity	G. Beta (pCi/L)	2.3		3.8	0.056

TABLE 10 (Continued): COMPARISON OF LEVELS OF 52 WATER QUALITY PARAMETERS ASSAYED AT UPSTREAM AND DOWNSTREAM LOCATIONS FOR THE JAMES C. KIRIE WATER RECLAMATION PLANT IN 2013

Parameter	Abbreviation (Units)	U ¹	vs.	D ²	Sig. Prob. ^{3,4}
Chlorophyll <i>a</i>	Chlrphl ($\mu\text{g/L}$)	13		3	0.040
Benzene	Bnzn ($\mu\text{g/L}$)	<2		<2	-
Ethylbenzene	Ebnzn ($\mu\text{g/L}$)	<2		<2	-
Toluene	Toln ($\mu\text{g/L}$)	<2		<2	-
Xylene	Xyln ($\mu\text{g/L}$)	<3		<3	-
Meta and/or Para Xylenes	xylnmp ($\mu\text{g/L}$)	<3		<3	-
Ortho Xylene	xylno ($\mu\text{g/L}$)	<3		<3	-
Total Silver	Ag (mg/L)	<0.001		<0.001	-
Total Barium	Ba (mg/L)	0.053		0.025	0.000
Total Boron	B (mg/L)	0.078		0.204	0.000
Total Hexavalent Chromium	Cr ⁺⁶ ($\mu\text{g/L}$)	<6		6.083	-
Total Manganese	Mn (mg/L)	0.103		0.040	0.002
Total Mercury	Hg ($\mu\text{g/L}$)	<0.2		<0.2	-
Low Level Mercury	Hg- (ng/L)	0.000		0.000	-
Total Selenium	Se (mg/L)	0.021		0.023	0.624
Soluble Silver	Sol. Ag (mg/L)	<0.001		<0.001	-
Soluble Arsenic	Sol. As (mg/L)	0.025		0.036	0.020
Soluble Cadmium	Sol. Cd (mg/L)	<0.001		<0.001	-
Soluble Copper	Sol. Cu (mg/L)	<0.005		<0.005	-
Soluble Chromium	Sol. Cr (mg/L)	<0.005		<0.005	-
Soluble Iron	Sol. Fe (mg/L)	<0.1		<0.1	-
Soluble Lead	Sol. Pb (mg/L)	<0.02		<0.02	-
Soluble Nickel	Sol. Ni (mg/L)	<0.005		0.006	-
Soluble Zinc	Sol. Zn (mg/L)	<0.01		0.033	-

¹Upstream (U), value following < sign is the average detection limit.

²Downstream (D), value following < sign is the average detection limit.

³Significance Probability ≤ 0.05 indicates that upstream and downstream population means are not equal.

⁴Some tests may be based on Wilcoxon rank-sum statistics that apply to population medians only in the absence of population symmetry. Please see Appendix AIII-5 for details.

*Test applies to population means if variances of log values are equal, otherwise applies to geometric means (see Appendix AIII-5) for details.

- = No test was done since standard deviations are below the detection limit or equal to 0.

TABLE 11: COMPARISON OF LEVELS OF 52 WATER QUALITY
PARAMETERS ASSAYED AT UPSTREAM AND DOWNSTREAM LOCATIONS
FOR THE HANOVER PARK WATER RECLAMATION PLANT IN 2013

Parameter	Abbreviation (Units)	U ¹	vs.	D ²	Sig. Prob. ^{3,4}
Dissolved Oxygen	DO (mg/L)	6.0		7.9	0.153
Temperature	Temp (°C)	16		13	0.468
pH	pH	7.4		7.4	0.755
Total Alkalinity	Alk (mg/L)	180		132	0.011
Chloride	Cl (mg/L)	238		191	0.442
Total Kjeldahl Nitrogen	TKN (mg/L)	2.6		1.8	0.437
Ammonia Nitrogen	NH ₄ -N (mg/L)	0.79		0.38	0.257
Un-ionized Ammonia	NH ₃ -N (mg/L)	0.007		0.003	0.335
Organic Nitrogen	ORG-N (mg/L)	1.8		1.4	0.295
Nitrite Plus Nitrate Nitrogen	NO ₂ + NO ₃ (mg/L)	0.49		12.23	0.000
Total Solids	TS (mg/L)	781		673	0.342
Total Suspended Solids	TSS (mg/L)	37		28	0.727
Volatile Suspended Solids	VSS (mg/L)	12		7	0.362
Total Dissolved Solids	TDS (mg/L)	744		645	0.409
Phenols	Phenol (µg/L)	<5		<5	-
Sulfate	SO ₄ (mg/L)	67		67	0.981
Fats, Oils, and Greases	FOG (mg/L)	<5		<5	-
Total Phosphorus	TP (mg/L)	0.26		1.96	0.000
Total Cyanide	CN (mg/L)	0.006		<0.005	0.950
WAD Cyanide	WAD-CN (mg/L)	<0.003		0.0031	0.926
Total Fluoride	F (mg/L)	0.23		0.55	0.000
Total Organic Carbon	TOC (mg/L)	11		6	0.000
Fecal Coliform*	FC (#/100ml)	12357		918	0.005
Total Calcium	Ca (mg/L)	69		62	0.521
Total Magnesium	Mg (mg/L)	26		24	0.662
Hardness	Hard (mg/L)	278		251	0.576
Gross Alpha Radioactivity	G. Alpha (pCi/L)	2.4		1.9	0.084
Gross Beta Radioactivity	G. Beta (pCi/L)	3.2		4.4	0.199

TABLE 11 (Continued): COMPARISON OF LEVELS OF 52 WATER QUALITY PARAMETERS ASSAYED AT UPSTREAM AND DOWNSTREAM LOCATIONS FOR THE HANOVER PARK WATER RECLAMATION PLANT IN 2013

Parameter	Abbreviation (Units)	U ¹	vs.	D ²	Sig. Prob. ^{3,4}
Chlorophyll <i>a</i>	Chlrphl ($\mu\text{g/L}$)	26		18	0.356
Benzene	Bznz ($\mu\text{g/L}$)	<2		<2	-
Ethylbenzene	Ebnzn ($\mu\text{g/L}$)	<2		<2	-
Toluene	Toln ($\mu\text{g/L}$)	<2		<2	-
Xylene	Xyln ($\mu\text{g/L}$)	<3		<3	-
Meta and/or Para Xylenes	xylnmp ($\mu\text{g/L}$)	<3		<3	-
Ortho Xylene	xylno ($\mu\text{g/L}$)	<3		<3	-
Total Silver	Ag (mg/L)	<0.001		<0.001	-
Total Barium	Ba (mg/L)	0.048		0.036	0.003
Total Boron	B (mg/L)	0.081		0.139	0.006
Total Hexavalent Chromium	Cr ⁺⁶ ($\mu\text{g/L}$)	<6		<6	-
Total Manganese	Mn (mg/L)	0.134		0.054	0.002
Total Mercury	Hg ($\mu\text{g/L}$)	<0.2		<0.2	-
Low Level Mercury	Hg- (ng/L)	0.000		0.000	-
Total Selenium	Se (mg/L)	0.022		0.022	0.902
Soluble Silver	Sol. Ag (mg/L)	<0.001		<0.001	-
Soluble Arsenic	Sol. As (mg/L)	0.036		0.035	0.830
Soluble Cadmium	Sol. Cd (mg/L)	<0.001		<0.001	-
Soluble Copper	Sol. Cu (mg/L)	<0.005		<0.005	-
Soluble Chromium	Sol. Cr (mg/L)	<0.005		<0.005	-
Soluble Iron	Sol. Fe (mg/L)	0.213		<0.1	-
Soluble Lead	Sol. Pb (mg/L)	<0.02		<0.02	-
Soluble Nickel	Sol. Ni (mg/L)	<0.005		<0.005	-
Soluble Zinc	Sol. Zn (mg/L)	<0.01		0.027	-

¹Upstream (U), value following < sign is the average detection limit.

²Downstream (D), value following < sign is the average detection limit.

³Significance Probability ≤ 0.05 indicates that upstream and downstream population means are not equal.

⁴Some tests may be based on Wilcoxon rank-sum statistics that apply to population medians only in the absence of population symmetry. Please see Appendix AIII-6 for details.

*Test applies to population means if variances of log values are equal, otherwise applies to geometric means (see Appendix AIII-6) for details.

- = No test was done since standard deviations are below the detection limit or equal to 0.

A study of the concentrations of the water quality parameters presented in Tables 6 through 8 and the tables in Appendix AII revealed that the quality of effluents from the District's WRPs was high with respect to most parameters. This conclusion was based on the interpretation of the statistical inferences. In general, statistically significant differences existed between upstream and downstream locations for those parameters that were affected by WRP effluents. Parameters which are significantly different in the downstream location from the upstream location and were subject to water quality limits are identified for each WRP. A discussion of the results from each WRP follows.

Terrence J. O'Brien Water Reclamation Plant. Locations 112 and 36, upstream and downstream, respectively, of the Terrence J. O'Brien WRP, are classified as General Use and Secondary Contact waters. Forty-seven water quality parameters were considered for comparison of mean concentrations between upstream and downstream locations. The mean concentrations of 10 water quality parameters were significantly different between upstream and downstream locations. These were un-ionized ammonia, nitrite plus nitrate nitrogen, total phosphorus, total fluoride, total organic carbon, fecal coliform, gross beta radioactivity, total barium, total boron, and soluble zinc. All parameters had significantly higher means downstream than upstream except total barium, which had a higher mean upstream than downstream.

Stickney Water Reclamation Plant. Both the upstream and downstream sampling locations (75 and 41, respectively) of the Stickney WRP are located in the Secondary Contact Waters of the Chicago River System. Forty-eight water quality parameters were considered for comparison of mean concentrations between upstream and downstream locations. The mean concentrations of six water quality parameters were significantly different between upstream and downstream locations. These were nitrite plus nitrate nitrogen, sulfate, total fluoride, fecal coliform, total barium, and total boron. All parameters had significantly higher means downstream than upstream except total barium, which had a higher mean upstream than downstream.

Calumet Water Reclamation Plant. Both the upstream and downstream sampling locations (56 and 76, respectively) of the Calumet WRP are located in the Secondary Contact Waters of the Calumet River System. Forty-eight water quality parameters were considered for comparison of mean concentrations between upstream and downstream locations. The mean concentration of 16 water quality parameters were significantly different between upstream and downstream locations. These were pH, nitrite plus nitrate nitrogen, total solids, total dissolved solids, sulfate, total phosphorus, total fluoride, total organic carbon, fecal coliform, total calcium, total magnesium, hardness, gross alpha radioactivity, gross beta radioactivity, total barium, and total boron. All parameters had significantly higher means downstream than upstream except pH and total barium, which had higher means upstream than downstream.

John E. Egan Water Reclamation Plant. Both the upstream and downstream sampling locations (79 and 18, respectively) of the John E. Egan WRP are located in the General Use Waters of the Des Plaines River System. Forty-four water quality parameters were considered for comparison

of mean concentrations between upstream and downstream locations.

The mean concentrations of nine water quality parameters were significantly different between upstream and downstream locations. These were nitrite plus nitrate nitrogen, total fluoride, fecal coliform, gross beta radioactivity, chlorophyll *a*, total barium, total boron, total manganese, and soluble zinc. Six parameters (nitrite plus nitrate nitrogen, total fluoride, fecal coliform, gross beta radioactivity, total boron, and soluble zinc) had significantly higher means downstream than upstream. The remaining three parameters (chlorophyll *a*, total barium, and total manganese) had significantly higher means upstream than downstream.

James C. Kirie Water Reclamation Plant. Both the upstream and downstream sampling locations (77 and 78, respectively) of the James C. Kirie WRP are located in the General Use Waters of the Des Plaines River System. Forty-five water quality parameters were considered for comparison of mean concentrations between upstream and downstream locations. The mean concentrations of 10 water quality parameters were significantly different between upstream and downstream locations. These were pH, nitrite plus nitrate nitrogen, total suspended solids, sulfate, total fluoride, chlorophyll *a*, total barium, total boron, total manganese, and soluble arsenic.

Five parameters had significantly higher mean concentrations upstream than downstream. These parameters were pH, total suspended solids, chlorophyll *a*, total barium, and total manganese.

The remaining five parameters had significantly higher mean concentrations downstream than upstream. These parameters were nitrite plus nitrate nitrogen, sulfate, total fluoride, total boron, and soluble arsenic.

Hanover Park Water Reclamation Plant. Both the upstream and downstream sampling locations (110 and 111, respectively) of the Hanover Park WRP are located in the General Use Waters of the Des Plaines River System. Forty-five water quality parameters were considered for comparison of mean concentrations between upstream and downstream locations.

The mean concentrations of nine water quality parameters were significantly different between upstream and downstream locations. These were total alkalinity, nitrite plus nitrate nitrogen, total phosphorus, total fluoride, total organic carbon, fecal coliform, total barium, total boron, and total manganese. Five parameters (total alkalinity, total organic carbon, fecal coliform, total barium, and total manganese) had significantly higher means upstream than downstream. The remaining four parameters (nitrite plus nitrate nitrogen, total phosphorus, total fluoride, and total boron) had significantly higher means downstream than upstream.

REFERENCES

1. Deshpande, J. V., A. P. Gore, and A. Shanubhogue, *Statistical Analysis of Nonnormal Data*, Wiley Eastern Limited, John Wiley & Sons, New Delhi, 1995.
2. Gibbons, J. D. and S. Chakraborti, *Nonparametric Statistical Inference*, 3rd Edition, Marcel Dekker Inc., New York, 1992.
3. Illinois Pollution Control Board - Amendments to Title 35, Subtitle C (Toxic Control) R88-21, District A, January 25, 1990.
4. Illinois Pollution Control Board - Amendments to Water Quality and Effluent Standards Applicable to the Chicago River System and Calumet River System, R87-27, May 19, 1988.
5. State of Illinois Rules and Regulations, Title 35: Environmental Protection, Subtitle C: Water Pollution, Chapter I: Pollution Control Board, January 1, 2013.
6. Walpole, R. E. and R. H. Myers, *Probability and Statistics for Engineers and Scientists*, Fourth Edition, Macmillan Publishing Company, New York, 1989.
7. Wichura, Michael J., *The Table Manual and the PiCTex Manual*, Personal TeX, Inc. \LaTeX , Version 6, 725 Greenwich Street, San Francisco, California.
8. Personal TeX, Inc. \LaTeX , Version 5, 725 Greenwich Street, San Francisco, California.
9. SAS Institute, *SAS Software*, Version 9.1, Cary, North Carolina.

APPENDIX AI
WATERWAYS DATA MANAGEMENT SYSTEM DESCRIPTION

TABLE AI-1: ANALYTICAL LABORATORY DIVISION QUALITY CONTROL
MANAGEMENT AND CITATION IN 2013

1. Beginning January 1, 2008, the Limit of Quantitation (LOQ) replaces the Minimum Detection Limit (MDL) as the reporting limit.
2. Organic analytes (benzenes, toluene, xylenes) show reporting limits (RLs) instead of MDLs. These are listed at the bottom of each column of the monthly data tables.
3. Sometimes the soluble metal concentration may exceed the total metal concentration for the following reasons.
 - (a) When the measured total concentrations are less than the LOQ, and thus are reported as < LOQ, and the soluble analytes have reportable concentrations above the soluble metal LOQ. (In most instances the total LOQ is higher than the soluble LOQ.
 - (b) When both the total and soluble metal concentrations are near the LOQ and are within the uncertainty of the analytical measurement system, the reported soluble result may exceed the reported total metal result.
4. Where total mercury is below 2 times the LOQ of 0.2 $\mu\text{g/L}$, the soluble mercury analysis is not performed.
5. Canceled tests are reported as NA. A reason for the cancellation or other qualification of the data is denoted by bold face type of the entry within that cell and by comment code in the adjoining column.
6. Cells where an analyte is not scheduled for analysis are left blank.
7. BOD₅ and CBOD₅ analyses were discontinued in March 2005.
8. Beginning January 1, 2006, Low Level Mercury analysis is being done on General Use waterways samples.
9. Results for low level mercury that are greater than the human health standard of 12 $\eta\text{g/L}$ have been reviewed. All associated Quality Assurance (QA) for those results have also been checked and are within acceptable ranges.
10. The E. coli analysis was discontinued in October 2011.
11. The turbidity analysis was discontinued in April 2012.
12. Starting May 1, 2012 soluble metals will be analyzed for Fe, As, Cd, Cr, Cu, Pb, Ni, Zn and Ag. Total Metals will be analyzed for Ba, B, Mn, Se, Ag, Ca and Mg.
13. In August 2012, the number of sampling stations was reduced from 59 to 28.
14. In August 2013, WAD_CN was replaced with CN_AM_A.

TABLE AI-2: DIRECTORY OF WATER QUALITY PARAMETERS
ASSAYED IN 2013

Symbol	Parameter	Unit	MDL ²	Water Quality Standard ¹	
				General Use	Secondary Contact
DO	Dissolved Oxygen	mg/L	-	(3.5, 5.0) ³	(3.0, 4.0) ⁴
Temp	Temperature	°C	-	58.9 (32 Apr - Nov)	90.3
pH	pH		-	6.5 - 9.0	6.0 - 9.0
Alk	Total Alkalinity	mg/L	10	None	None
Cl	Chloride	mg/L	10	500	None
TKN	Total Kjeldahl Nitrogen	mg/L	1	None	None
NH ₄ -N	Ammonia Nitrogen	mg/L	0.1	15 ⁵	None
NH ₃ -N	Un-ionized Ammonia	mg/L	-	None	0.1
ORG-N	Organic Nitrogen	mg/L	-	None	None
NO ₂ + NO ₃	Nitrite Plus Nitrate Nitrogen	mg/L	0.15	None	None
TS	Total Solids	mg/L	-	None	None
TSS	Total Suspended Solids	mg/L	4	None	None
VSS	Volatile Suspended Solids	mg/L	-	None	None
TDS	Total Dissolved Solids	mg/L	60	None	1,500
Phenol	Phenols	μg/L	5	100	300
SO ₄	Sulfate	mg/L	5	1,523 ⁶	None
FOG	Fats, Oils, and Greases	mg/L	5	None	15
TP	Total Phosphorus	mg/L	0.2	None	None
CN	Total Cyanide	mg/L	0.005	None	0.1
WAD-CN	Weak Acid Dissociable Cyanide	mg/L	0.003	0.022	None
F	Total Fluoride	mg/L	0.1	16.14	15
TOC	Total Organic Carbon	mg/L	1	None	None
FC	Fecal Coliform	cfu/100mL	10	400	None
Ca	Total Calcium	mg/L	1	None	None
Mg	Total Magnesium	mg/L	1	None	None
Hard	Hardness	mg/L	-	None	None
Alpha	Gross Alpha Radioactivity	pCi/L	-	None	None
Beta	Gross Beta Radioactivity	pCi/L	-	100	None

TABLE AI-2 (Continued): DIRECTORY OF WATER QUALITY PARAMETERS ASSAYED IN 2013

Symbol	Parameter	Unit	MDL ²	Water Quality Standard ¹	
				General Use	Secondary Contact
Chlrphl	Chlorophyll <i>a</i>	µg/L	1	None	None
Bnzn	Benzene*	µg/L	2	310	None
Bnzn	Benzene	µg/L	2	4,200	None
Ebnzn	Ethylbenzene	µg/L	2	150	None
Toln	Toluene	µg/L	2	2,000	None
Xyln	Xylene	µg/L	3	920	None
xylnmp	Meta and/or Para Xylenes	µg/L	3	None	None
xylno	Ortho Xylene	µg/L	3	None	None
Ag	Total Silver	mg/L	0.001	0.005	1.1
Ba	Total Barium	mg/L	0.004	5	5
B	Total Boron	mg/L	0.05	40.1	None
Cr ⁺⁶	Total Hexavalent Chromium	µg/L	6	16	300
Mn	Total Manganese	mg/L	0.001	None	1
Hg	Total Mercury*	µg/L	0.2	310	None
Hg	Total Mercury	µg/L	0.2	None	0.5
Hg—	Low Level Mercury	ηg/L	0.5	None	None
Se	Total Selenium	mg/L	0.005	1	1
Sol. Ag	Soluble Silver	mg/L	0.001	None	None
Sol. As	Soluble Arsenic	mg/L	0.02	0.36	None
Sol. Cd	Soluble Cadmium	mg/L	0.001	0.024 ⁷	None
Sol. Cu	Soluble Copper	mg/L	0.005	0.039 ⁸	None
Sol. Cr	Soluble Chromium	mg/L	0.005	1.126 ⁹	None
Sol. Fe	Soluble Iron	mg/L	0.1	1	0.5
Sol. Pb	Soluble Lead	mg/L	0.02	0.194 ¹⁰	None
Sol. Ni	Soluble Nickel	mg/L	0.005	0.173 ¹¹	None
Sol. Zn	Soluble Zinc	mg/L	0.01	0.251 ¹²	None

¹As per Illinois Pollution Control Board, except as modified (see text).

²MDL=Minimum detection limit. Average MDL value is used where referenced in this report.

³Standard is 5.0 mg/L in March through July and 3.5 mg/L in other months.

⁴Standard is 3.0 mg/L for locations (43,58, and 59) and 4.0 mg/L for other Secondary Contact locations .

⁵Based on $\text{Min} \left(\frac{0.411}{1+10^{7.204+\text{pH}}} + \frac{58.4}{1+10^{\text{pH}-7.204}}, 15 \right)$.

⁶Based on hardness and chloride concentration in certain range.

⁷Based on $\text{Min} \left(e^{-2.98+1.128 \times (\text{Hard})} * (1.138672 - 0.041838 \times \ln(\text{Hard}))/1000, 0.005 \right)$.

⁸Based on $0.00090 e^{-1.464+0.9422 \times \ln(\text{Hard})}$.

⁹Based on $0.000316 e^{3.688+0.819 \times \ln(\text{Hard})}$.

¹⁰Based on $e^{-1.301+1.1.273 \times \ln(\text{Hard})} * (1.46203 - 0.145712 \times \ln(\text{Hard}))/1000$.

¹¹Based on $0.000998 e^{0.5173+0.846 \times \ln(\text{Hard})}$.

¹²Based on $0.000978 e^{0.9035+0.8473 \times \ln(\text{Hard})}$.

- No minimum detection limit reported.

*As Human Health Standard.

TABLE AI-3: DIRECTORY OF SAMPLING STATIONS
IN WATER QUALITY MONITORING NETWORK

Sampling Station (No. Name)	Sample Type	Water Use	River System
1 Wilmette Harbor*	Auto	GEN	Chicago
2 Outer Drive Bridge*	Auto	GEN	Chicago
3 South District Water Filtration Plant*	Auto	GEN	Chicago
4 O'Brien Locks*	Auto	SEC	Chicago
5 Ohio Street*	Auto	SEC	Chicago
6 Willow Springs Road*	Auto	SEC	Chicago
7 Highway 83 and Archer*	Auto	SEC	Chicago
9 North Side WRP, Outfall*	Auto	EFF	Chicago
10 Southwest WRP, Outfall*	Auto	EFF	Chicago
11 Calumet WRP, Outfall*	Auto	EFF	Calumet
12 Lake-Cook Road, Buffalo Creek*	Grab	GEN	Des Plaines
13 Lake-Cook Road, Des Plaines River*	Grab	GEN	Des Plaines
14 Hintz Road, Wheeling Drain Ditch*	Grab	GEN	Des Plaines
15 Palatine Road, Des Plaines River*	Grab	GEN	Des Plaines
16 Central Road, Des Plaines River*	Grab	GEN	Des Plaines
17 Oakton Street, Des Plaines River*	Grab	GEN	Des Plaines
18 Devon Avenue, Salt Creek	Grab	GEN	Des Plaines
19 Belmont Avenue, Des Plaines River	Grab	GEN	Des Plaines
20 Roosevelt Road, Des Plaines River*	Grab	GEN	Des Plaines
21 First Avenue, Salt Creek*	Grab	GEN	Des Plaines
22 Ogden Avenue, Des Plaines River	Grab	GEN	Des Plaines
23 Willow Springs Road, Des Plaines River	Grab	GEN	Des Plaines
24 Wolf Road, Salt Creek*	Grab	GEN	Des Plaines
25 Grand Avenue, Des Plaines River*	Grab	GEN	Des Plaines
26 Lawrence Avenue, Des Plaines River*	Grab	GEN	Des Plaines
27 York Road, Salt Creek*	Grab	GEN	Des Plaines
28 Highway 83 and Des Plaines River*	Grab	GEN	Des Plaines
29 Stephen Street, Des Plaines River*	Grab	GEN	Des Plaines

TABLE AI-3 (Continued): DIRECTORY OF SAMPLING STATIONS
IN WATER QUALITY MONITORING NETWORK

Sampling Station (No. Name)	Sample Type	Water Use	River System
30 Lake-Cook Road, West Fork North Branch*	Grab	GEN	Chicago
31 Lake-Cook Road, Middle Fork North Branch*	Grab	GEN	Chicago
32 Lake-Cook Road, Skokie River*	Grab	GEN	Chicago
33 East Lake Avenue, Middle Fork North Branch Chicago River*	Grab	GEN	Chicago
34 Dempster Street, North Branch Chicago River*	Grab	GEN	Chicago
35 Central Street, North Shore Channel*	Grab	GEN	Chicago
36 Touhy Avenue, North Shore Channel	Grab	SEC	Chicago
37 Wilson Avenue, North Branch Chicago River*	Grab	SEC	Chicago
38 Ohio Street, North Branch Chicago River*	Grab	SEC	Chicago
39 Madison Street, South Branch Chicago River*	Grab	SEC	Chicago
40 Damen Avenue, Chicago Sanitary & Ship Canal*	Grab	SEC	Chicago
41 Harlem Avenue, Chicago Sanitary & Ship Canal	Grab	SEC	Chicago
42 Route 83, Chicago Sanitary & Ship Canal*	Grab	SEC	Chicago
43 Route 83, Calumet-Sag Channel	Grab	SEC	Calumet
44 Howard Street, North Shore Channel*	Grab	SEC	Chicago
45 Lawrence Avenue, North Branch Chicago River*	Grab	SEC	Chicago
46 Grand Avenue, North Branch Chicago River*	Grab	SEC	Chicago
47 Randolph Street, South Branch Chicago River*	Grab	SEC	Chicago
48 Stephen Street, Chicago Sanitary & Ship Canal	Grab	SEC	Chicago
49 Ewing Avenue, Calumet River*	Grab	GEN	Calumet
50 Burnham Avenue, Wolf Lake*	Grab	GEN	Calumet
51 IHB Railroad Bridge, Grand Calumet River*	Grab	SEC	Calumet
52 Wentworth Avenue, Little Calumet River*	Grab	GEN	Calumet
53 Wentworth Avenue, North Creek*	Grab	GEN	Calumet
54 Joe Orr Road, Thorn Creek*	Grab	GEN	Calumet
55 130th Street, Calumet River*	Grab	GEN	Calumet
56 Indiana Avenue, Little Calumet River	Grab	SEC	Calumet
57 Ashland Avenue, Little Calumet River	Grab	GEN	Calumet

TABLE AI-3 (Continued): DIRECTORY OF SAMPLING STATIONS
IN WATER QUALITY MONITORING NETWORK

Sampling Station (No. Name)	Sample Type	Water Use	River System
58 Ashland Avenue, Calumet-Sag Channel*	Grab	SEC	Calumet
59 Cicero Avenue, Calumet-Sag Channel	Grab	SEC	Calumet
60 Crawford Avenue, Calumet-Sag Channel*	Grab	SEC	Calumet
61 Ashland Avenue, South Branch Chicago River*	Grab	SEC	Chicago
62 Stephen Street, Chicago Sanitary & Ship Canal*	Grab	SEC	Chicago
63 Longmeadow Lane, West Branch DuPage River*	Grab	GEN	Des Plaines
64 Lake Street, West Branch DuPage River*	Grab	GEN	Des Plaines
65 Oltendorf Road, Poplar Creek*	Grab	GEN	Des Plaines
66 Bartlett Road, Poplar Creek*	Grab	GEN	Des Plaines
67 171st Street, Union Drainage Ditch*	Grab	GEN	Calumet
68 Park Street, Union Drainage Ditch*	Grab	GEN	Calumet
69 Lincoln Highway, Deer Creek*	Grab	GEN	Calumet
70 Joe Orr Road, Deer Creek*	Grab	GEN	Calumet
71 Route 83, Chicago Sanitary & Ship Canal*	Grab	SEC	Chicago
72 Stephen Street, Chicago Sanitary & Ship Canal*	Grab	SEC	Chicago
73 Diversey Parkway, North Branch Chicago River	Grab	SEC	Chicago
74 Lake Shore Drive, Chicago River*	Grab	GEN	Chicago
75 Cicero Avenue, Chicago Sanitary & Ship Canal	Grab	SEC	Chicago
76 Halsted Street, Little Calumet River	Grab	SEC	Calumet
77 Elmhurst Road, Higgins Creek	Grab	GEN	Des Plaines
78 Wille Road, Higgins Creek	Grab	GEN	Des Plaines
79 Higgins Road, Salt Creek	Grab	GEN	Des Plaines
80 Arlington Heights Road, Salt Creek*	Grab	GEN	Des Plaines
81 Lockport Forebay*	Auto	SEC	Chicago
82 Lockport Trebler, Chicago Sanitary & Ship Canal*	Auto	SEC	Chicago
83 Lockport Solenoid*	Auto	SEC	Chicago
84 Lockport 16th Street Bridge*	Grab	SEC	Chicago
86 Burnham Avenue, Grand Calumet River	Grab	SEC	Calumet

TABLE AI-3 (Continued): DIRECTORY OF SAMPLING STATIONS
IN WATER QUALITY MONITORING NETWORK

Sampling Station (No. Name)	Sample Type	Water Use	River System
89 Walnut Lane, West Branch DuPage River*	Grab	GEN	Des Plaines
90 Route 19, Poplar Creek*	Grab	GEN	Des Plaines
91 Material Service Road, Des Plaines River	Grab	GEN	Des Plaines
92 Lockport Forebay, Chicago Sanitary & Ship Canal	Grab	SEC	Chicago
93 Jefferson Street, Joliet, Des Plaines River*	Grab	SEC	Des Plaines
94 Empress Casino, Des Plaines River*	Grab	SEC	Des Plaines
95 I-55, Des Plaines River*	Grab	SEC	Des Plaines
96 Albany Avenue, North Branch Chicago River	Grab	GEN	Chicago
97 170th Street, Thorn Creek*	Grab	GEN	Calumet
98 Halsted Street, South Branch Chicago River*	Grab	SEC	Chicago
99 Archer Avenue, South Fork South Branch Chicago River	Grab	SEC	Chicago
100 Wells Street, Chicago River	Grab	GEN	Chicago
101 Foster Avenue, North Shore Channel*	Grab	SEC	Chicago
102 Oakton Street, North Shore Channel*	Grab	GEN	Chicago
103 Golf Road, West Fork North Branch Chicago River*	Grab	GEN	Chicago
104 Glenview Road, North Branch Chicago River*	Grab	GEN	Chicago
105 Frontage Road, Skokie River*	Grab	GEN	Chicago
106 Dundee Road, West Fork North Branch Chicago River*	Grab	GEN	Chicago
107 Western Avenue, Chicago Sanitary & Ship Canal*	Grab	SEC	Chicago
108 Loomis Street, South Branch Chicago River	Grab	SEC	Chicago
109 Brookfield Avenue, Salt Creek	Grab	GEN	Des Plaines
110 Springinsguth Road, West Branch DuPage River	Grab	GEN	Des Plaines
111 Arlington Drive, West Branch DuPage River	Grab	GEN	Des Plaines
112 Dempster Street, North Shore Channel	Grab	GEN	Chicago

¹GEN = General Use, SEC = Secondary Contact, EFF = Effluent.

*Excluded in 2013 Sampling.

APPENDIX AII

WATER QUALITY RESULTS: ANNUAL MEAN AND MEAN HISTORY

TABLE AII-1: WATERWAYS SAMPLE MEANS IN 2013

Sampling Station (No. Name)	DO mg/L	Temp °C	pH	Alk mg/L
<u>Chicago River System</u>				
96 Albany Avenue, North Branch Chicago River	8.51	11.8	7.42	151
112 Dempster Street, North Shore Channel	7.63	15.3	6.97	123
36 Touhy Avenue, North Shore Channel	7.58	14.7	7.11	131
73 Diversey Parkway, North Branch Chicago River	6.85	13.9	7.38	132
100 Wells Street, Chicago River	7.68	13.6	6.90	131
108 Loomis Street, South Branch Chicago River	7.42	13.8	7.16	137
99 Archer Avenue, South Fork South Branch Chicago River	4.49	15.9	7.14	140
75 Cicero Avenue, Chicago Sanitary & Ship Canal	5.70	14.3	6.99	137
41 Harlem Avenue, Chicago Sanitary & Ship Canal	7.03	14.8	7.09	135
48 Stephen Street, Chicago Sanitary & Ship Canal	6.96	14.4	7.01	178
92 Lockport Forebay, Chicago Sanitary & Ship Canal	6.11	16.5	7.21	142
<u>Calumet River System</u>				
86 Burnham Avenue, Grand Calumet River	4.44	14.7	7.26	267
56 Indiana Avenue, Little Calumet River	7.66	14.9	7.73	139
76 Halsted Street, Little Calumet River	7.15	15.0	7.22	160
57 Ashland Avenue, Little Calumet River	7.97	13.8	7.61	173
59 Cicero Avenue, Calumet-Sag Channel	6.10	13.9	7.29	158
43 Route 83, Calumet-Sag Channel	6.55	14.1	7.02	161
<u>Des Plaines River System</u>				
110 Springinsguth Road, West Branch DuPage River	6.04	15.5	7.36	180
111 Arlington Drive, West Branch DuPage River	7.94	13.4	7.41	132
79 Higgins Road, Salt Creek	6.84	17.5	7.10	144
18 Devon Avenue, Salt Creek	7.86	14.5	7.03	129
109 Brookfield Avenue, Salt Creek	7.97	13.7	7.13	143
77 Elmhurst Road, Higgins Creek	9.43	16.0	7.95	128
78 Wille Road, Higgins Creek	8.16	15.3	7.26	162
12 Lake-Cook Road, Buffalo Creek	6.83	19.2	7.61	166
19 Belmont Avenue, Des Plaines River	8.08	13.9	7.49	164
22 Ogden Avenue, Des Plaines River	8.73	12.0	7.43	157
23 Willow Springs Road, Des Plaines River	7.74	14.1	7.74	156
91 Material Service Road, Des Plaines River	9.32	12.7	7.75	154

TABLE AII-1 (Continued): WATERWAYS SAMPLE MEANS IN 2013

Sampling Station (No. Name)	Cl mg/L	TKN mg/L	NH ₄ -N mg/L	NH ₃ -N ¹ mg/L
<u>Chicago River System</u>				
96 Albany Avenue, North Branch Chicago River	246	1.00	0.183	0.002
112 Dempster Street, North Shore Channel	133	1.40	0.460	0.001
36 Touhy Avenue, North Shore Channel	130	2.09	1.082	0.004
73 Diversey Parkway, North Branch Chicago River	172	2.00	0.817	0.006
100 Wells Street, Chicago River	134	1.67	0.850	0.002
108 Loomis Street, South Branch Chicago River	160	1.33	0.792	0.003
99 Archer Avenue, South Fork South Branch Chicago River	165	2.50	1.500	0.007
75 Cicero Avenue, Chicago Sanitary & Ship Canal	162	1.50	0.842	0.004
41 Harlem Avenue, Chicago Sanitary & Ship Canal	162	1.67	1.008	0.005
48 Stephen Street, Chicago Sanitary & Ship Canal	162	1.42	0.650	0.002
92 Lockport Forebay, Chicago Sanitary & Ship Canal	177	1.35	0.618	0.004
<u>Calumet River System</u>				
86 Burnham Avenue, Grand Calumet River	115	3.11	1.933	0.017
56 Indiana Avenue, Little Calumet River	89	1.00	0.313	0.006
76 Halsted Street, Little Calumet River	144	1.73	0.582	0.005
57 Ashland Avenue, Little Calumet River	172	1.10	0.300	0.004
59 Cicero Avenue, Calumet-Sag Channel	137	1.73	0.591	0.003
43 Route 83, Calumet-Sag Channel	139	1.36	0.500	0.002
<u>Des Plaines River System</u>				
110 Springinsguth Road, West Branch DuPage River	238	2.63	0.788	0.007
111 Arlington Drive, West Branch DuPage River	191	1.75	0.383	0.003
79 Higgins Road, Salt Creek	248	1.00	0.125	0.001
18 Devon Avenue, Salt Creek	245	1.08	0.167	0.001
109 Brookfield Avenue, Salt Creek	251	1.00	0.173	0.001
77 Elmhurst Road, Higgins Creek	376	1.00	0.150	0.004
78 Wille Road, Higgins Creek	204	1.50	0.375	0.003
12 Lake-Cook Road, Buffalo Creek	195	1.00	0.100	0.000
19 Belmont Avenue, Des Plaines River	203	1.00	0.142	0.002
22 Ogden Avenue, Des Plaines River	217	1.00	0.142	0.001
23 Willow Springs Road, Des Plaines River	220	1.00	0.118	0.002
91 Material Service Road, Des Plaines River	218	1.00	0.108	0.002

TABLE AII-1 (Continued): WATERWAYS SAMPLE MEANS IN 2013

Sampling Station (No. Name)	ORG-N mg/L	NO ₂ + NO ₃ mg/L	TS mg/L	TSS mg/L
<u>Chicago River System</u>				
96 Albany Avenue, North Branch Chicago River	0.82	3.50	785	28.8
112 Dempster Street, North Shore Channel	0.94	1.46	446	21.4
36 Touhy Avenue, North Shore Channel	1.01	6.20	486	10.3
73 Diversey Parkway, North Branch Chicago River	1.18	6.19	576	21.5
100 Wells Street, Chicago River	0.82	4.46	461	10.2
108 Loomis Street, South Branch Chicago River	0.58	5.63	536	11.0
99 Archer Avenue, South Fork South Branch Chicago River	1.01	2.87	535	12.8
75 Cicero Avenue, Chicago Sanitary & Ship Canal	0.67	4.95	541	12.5
41 Harlem Avenue, Chicago Sanitary & Ship Canal	0.66	7.14	569	9.3
48 Stephen Street, Chicago Sanitary & Ship Canal	0.77	6.24	611	13.3
92 Lockport Forebay, Chicago Sanitary & Ship Canal	0.74	5.97	635	9.9
<u>Calumet River System</u>				
86 Burnham Avenue, Grand Calumet River	1.18	0.49	788	13.6
56 Indiana Avenue, Little Calumet River	0.69	1.60	381	16.4
76 Halsted Street, Little Calumet River	1.15	5.59	600	11.2
57 Ashland Avenue, Little Calumet River	0.80	4.47	938	31.2
59 Cicero Avenue, Calumet-Sag Channel	1.14	4.75	645	21.1
43 Route 83, Calumet-Sag Channel	0.86	4.39	641	17.6
<u>Des Plaines River System</u>				
110 Springinsguth Road, West Branch DuPage River	1.84	0.49	781	36.8
111 Arlington Drive, West Branch DuPage River	1.37	12.23	673	28.3
79 Higgins Road, Salt Creek	0.88	0.20	717	21.3
18 Devon Avenue, Salt Creek	0.92	8.41	737	15.3
109 Brookfield Avenue, Salt Creek	0.83	5.99	764	20.4
77 Elmhurst Road, Higgins Creek	0.85	0.30	879	42.3
78 Wille Road, Higgins Creek	1.13	9.08	725	8.4
12 Lake-Cook Road, Buffalo Creek	0.90	0.22	669	15.3
19 Belmont Avenue, Des Plaines River	0.86	5.99	698	16.3
22 Ogden Avenue, Des Plaines River	0.86	5.86	719	17.8
23 Willow Springs Road, Des Plaines River	0.88	4.79	716	15.5
91 Material Service Road, Des Plaines River	0.89	4.91	704	18.8

TABLE AII-1 (Continued): WATERWAYS SAMPLE MEANS IN 2013

Sampling Station (No. Name)	VSS mg/L	TDS mg/L	Phenol μg/L	SO ₄ mg/L
<u>Chicago River System</u>				
96 Albany Avenue, North Branch Chicago River	6.25	756	5.0	50.4
112 Dempster Street, North Shore Channel	6.20	425	5.0	31.6
36 Touhy Avenue, North Shore Channel	5.45	476	5.0	40.5
73 Diversey Parkway, North Branch Chicago River	6.42	554	5.0	44.0
100 Wells Street, Chicago River	4.42	451	5.0	38.8
108 Loomis Street, South Branch Chicago River	4.00	525	5.0	43.6
99 Archer Avenue, South Fork South Branch Chicago River	6.30	522	5.0	41.9
75 Cicero Avenue, Chicago Sanitary & Ship Canal	4.67	528	5.0	43.3
41 Harlem Avenue, Chicago Sanitary & Ship Canal	4.25	560	5.0	60.3
48 Stephen Street, Chicago Sanitary & Ship Canal	4.08	598	5.0	81.8
92 Lockport Forebay, Chicago Sanitary & Ship Canal	4.30	625	5.0	86.3
<u>Calumet River System</u>				
86 Burnham Avenue, Grand Calumet River	6.89	774	5.1	161.1
56 Indiana Avenue, Little Calumet River	4.00	365	5.0	49.6
76 Halsted Street, Little Calumet River	4.00	589	5.0	83.3
57 Ashland Avenue, Little Calumet River	6.20	907	5.0	259.8
59 Cicero Avenue, Calumet-Sag Channel	4.27	624	5.0	118.5
43 Route 83, Calumet-Sag Channel	4.36	623	5.0	113.8
<u>Des Plaines River System</u>				
110 Springinsguth Road, West Branch DuPage River	11.75	744	5.0	66.8
111 Arlington Drive, West Branch DuPage River	6.67	645	5.0	67.2
79 Higgins Road, Salt Creek	6.50	695	5.0	62.1
18 Devon Avenue, Salt Creek	5.25	722	5.0	68.2
109 Brookfield Avenue, Salt Creek	5.36	744	5.0	73.7
77 Elmhurst Road, Higgins Creek	10.25	837	5.0	43.5
78 Wille Road, Higgins Creek	5.08	717	5.0	79.8
12 Lake-Cook Road, Buffalo Creek	4.71	653	ND	ND
19 Belmont Avenue, Des Plaines River	4.75	681	5.0	69.5
22 Ogden Avenue, Des Plaines River	4.83	701	5.0	71.0
23 Willow Springs Road, Des Plaines River	4.27	701	5.0	69.7
91 Material Service Road, Des Plaines River	5.33	685	5.0	69.4

TABLE AII-1 (Continued): WATERWAYS SAMPLE MEANS IN 2013

Sampling Station (No. Name)	FOG mg/L	TP mg/L	CN mg/L	WAD-CN mg/L
<u>Chicago River System</u>				
96 Albany Avenue, North Branch Chicago River	ND	0.475	0.006	0.003
112 Dempster Street, North Shore Channel	5.00	0.290	0.006	0.003
36 Touhy Avenue, North Shore Channel	5.00	1.182	0.005	0.003
73 Diversey Parkway, North Branch Chicago River	5.00	1.070	0.006	0.003
100 Wells Street, Chicago River	ND	0.575	0.005	0.003
108 Loomis Street, South Branch Chicago River	5.00	0.692	0.005	0.003
99 Archer Avenue, South Fork South Branch Chicago River	5.00	0.370	0.005	0.003
75 Cicero Avenue, Chicago Sanitary & Ship Canal	5.00	0.642	0.005	0.003
41 Harlem Avenue, Chicago Sanitary & Ship Canal	5.00	0.725	0.005	0.003
48 Stephen Street, Chicago Sanitary & Ship Canal	5.00	1.034	0.005	0.003
92 Lockport Forebay, Chicago Sanitary & Ship Canal	5.00	0.892	0.005	0.003
<u>Calumet River System</u>				
86 Burnham Avenue, Grand Calumet River	5.11	0.622	0.005	0.003
56 Indiana Avenue, Little Calumet River	5.13	0.575	0.005	0.003
76 Halsted Street, Little Calumet River	5.18	2.182	0.005	0.003
57 Ashland Avenue, Little Calumet River	ND	1.040	0.006	0.003
59 Cicero Avenue, Calumet-Sag Channel	5.27	1.691	0.005	0.003
43 Route 83, Calumet-Sag Channel	5.00	1.518	0.005	0.003
<u>Des Plaines River System</u>				
110 Springinsguth Road, West Branch DuPage River	ND	0.263	0.006	0.003
111 Arlington Drive, West Branch DuPage River	ND	1.958	0.005	0.003
79 Higgins Road, Salt Creek	ND	0.200	0.005	0.003
18 Devon Avenue, Salt Creek	ND	1.517	0.005	0.003
109 Brookfield Avenue, Salt Creek	ND	0.918	0.005	0.003
77 Elmhurst Road, Higgins Creek	ND	0.200	0.005	0.002
78 Wille Road, Higgins Creek	ND	1.125	0.005	0.003
12 Lake-Cook Road, Buffalo Creek	ND	0.200	ND	ND
19 Belmont Avenue, Des Plaines River	ND	0.750	0.005	0.003
22 Ogden Avenue, Des Plaines River	ND	0.833	0.005	0.003
23 Willow Springs Road, Des Plaines River	ND	0.691	0.005	0.003
91 Material Service Road, Des Plaines River	ND	0.658	0.005	0.003

TABLE AII-1 (Continued): WATERWAYS SAMPLE MEANS IN 2013

Sampling Station (No. Name)	F mg/L	TOC mg/L	FC ² cfu/100mL	Ca mg/L
<u>Chicago River System</u>				
96 Albany Avenue, North Branch Chicago River	0.367	4.50	966	58.6
112 Dempster Street, North Shore Channel	0.230	2.90	373	45.0
36 Touhy Avenue, North Shore Channel	0.627	4.55	11,161	50.5
73 Diversey Parkway, North Branch Chicago River	0.600	4.83	4,117	52.0
100 Wells Street, Chicago River	0.425	3.83	675	50.1
108 Loomis Street, South Branch Chicago River	0.533	3.92	333	53.3
99 Archer Avenue, South Fork South Branch Chicago River	0.460	4.70	624	51.2
75 Cicero Avenue, Chicago Sanitary & Ship Canal	0.489	4.17	344	52.7
41 Harlem Avenue, Chicago Sanitary & Ship Canal	0.625	4.58	2,153	54.2
48 Stephen Street, Chicago Sanitary & Ship Canal	0.642	4.92	640	57.7
92 Lockport Forebay, Chicago Sanitary & Ship Canal	0.590	4.63	122	56.5
<u>Calumet River System</u>				
86 Burnham Avenue, Grand Calumet River	0.656	9.67	1,332	94.6
56 Indiana Avenue, Little Calumet River	0.288	3.13	67	44.5
76 Halsted Street, Little Calumet River	0.591	5.01	1,402	61.6
57 Ashland Avenue, Little Calumet River	0.700	5.10	582	71.1
59 Cicero Avenue, Calumet-Sag Channel	0.591	5.00	2,389	63.0
43 Route 83, Calumet-Sag Channel	0.536	5.00	56	63.1
<u>Des Plaines River System</u>				
110 Springinsguth Road, West Branch DuPage River	0.225	11.25	12,357	69.0
111 Arlington Drive, West Branch DuPage River	0.550	6.33	918	61.7
79 Higgins Road, Salt Creek	0.188	5.75	95	55.6
18 Devon Avenue, Salt Creek	0.508	5.42	622	58.3
109 Brookfield Avenue, Salt Creek	0.391	7.82	980	62.4
77 Elmhurst Road, Higgins Creek	0.175	5.25	957	56.3
78 Wille Road, Higgins Creek	0.692	5.33	438	68.4
12 Lake-Cook Road, Buffalo Creek	ND	ND	213	59.5
19 Belmont Avenue, Des Plaines River	0.417	5.75	588	63.4
22 Ogden Avenue, Des Plaines River	0.392	5.33	394	63.1
23 Willow Springs Road, Des Plaines River	0.364	5.36	184	61.5
91 Material Service Road, Des Plaines River	0.358	5.25	109	61.1

TABLE AII-1 (Continued): WATERWAYS SAMPLE MEANS IN 2013

Sampling Station (No. Name)	Mg mg/L	Hard mg/L	Alpha pCi/L	Beta pCi/L
<u>Chicago River System</u>				
96 Albany Avenue, North Branch Chicago River	24.1	246	2.14	3.20
112 Dempster Street, North Shore Channel	15.9	178	1.52	1.90
36 Touhy Avenue, North Shore Channel	18.3	201	1.61	3.23
73 Diversey Parkway, North Branch Chicago River	19.1	209	ND	ND
100 Wells Street, Chicago River	18.6	202	1.50	2.23
108 Loomis Street, South Branch Chicago River	19.9	215	ND	ND
99 Archer Avenue, South Fork South Branch Chicago River	18.5	204	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	19.6	212	1.67	2.66
41 Harlem Avenue, Chicago Sanitary & Ship Canal	19.7	217	1.64	3.19
48 Stephen Street, Chicago Sanitary & Ship Canal	21.3	232	ND	ND
92 Lockport Forebay, Chicago Sanitary & Ship Canal	20.7	226	1.85	3.95
<u>Calumet River System</u>				
86 Burnham Avenue, Grand Calumet River	42.7	412	ND	ND
56 Indiana Avenue, Little Calumet River	15.9	177	1.45	2.24
76 Halsted Street, Little Calumet River	21.9	244	1.85	3.65
57 Ashland Avenue, Little Calumet River	28.4	295	2.47	3.65
59 Cicero Avenue, Calumet-Sag Channel	23.2	253	ND	ND
43 Route 83, Calumet-Sag Channel	23.7	255	ND	ND
<u>Des Plaines River System</u>				
110 Springinsguth Road, West Branch DuPage River	25.8	278	2.41	3.24
111 Arlington Drive, West Branch DuPage River	23.6	251	1.89	4.37
79 Higgins Road, Salt Creek	23.1	234	1.89	2.01
18 Devon Avenue, Salt Creek	23.0	240	1.85	3.12
109 Brookfield Avenue, Salt Creek	25.7	262	2.04	3.12
77 Elmhurst Road, Higgins Creek	22.6	234	2.38	2.25
78 Wille Road, Higgins Creek	25.9	278	1.87	3.83
12 Lake-Cook Road, Buffalo Creek	27.0	260	ND	ND
19 Belmont Avenue, Des Plaines River	27.4	271	1.88	3.21
22 Ogden Avenue, Des Plaines River	27.0	269	2.05	3.40
23 Willow Springs Road, Des Plaines River	26.7	263	2.01	3.35
91 Material Service Road, Des Plaines River	26.2	261	2.07	3.14

TABLE AII-1 (Continued): WATERWAYS SAMPLE MEANS IN 2013

Sampling Station (No. Name)	Chlrphl $\mu\text{g/L}$	Bznz $\mu\text{g/L}$	Ebnzn $\mu\text{g/L}$	ToIn $\mu\text{g/L}$
<u>Chicago River System</u>				
96 Albany Avenue, North Branch Chicago River	10.9	2.000	2.000	2.000
112 Dempster Street, North Shore Channel	12.4	2.000	2.000	2.000
36 Touhy Avenue, North Shore Channel	6.1	2.000	2.000	2.000
73 Diversey Parkway, North Branch Chicago River	3.7	2.000	2.000	2.000
100 Wells Street, Chicago River	3.4	2.000	2.000	2.000
108 Loomis Street, South Branch Chicago River	4.1	2.000	2.000	2.000
99 Archer Avenue, South Fork South Branch Chicago River	18.2	2.000	2.000	2.000
75 Cicero Avenue, Chicago Sanitary & Ship Canal	7.4	2.000	2.000	2.000
41 Harlem Avenue, Chicago Sanitary & Ship Canal	5.6	2.000	2.000	6.167
48 Stephen Street, Chicago Sanitary & Ship Canal	5.9	2.000	2.000	2.000
92 Lockport Forebay, Chicago Sanitary & Ship Canal	5.0	2.000	2.000	2.000
<u>Calumet River System</u>				
86 Burnham Avenue, Grand Calumet River	30.3	2.000	3.200	2.000
56 Indiana Avenue, Little Calumet River	7.3	2.000	2.000	2.000
76 Halsted Street, Little Calumet River	4.7	2.000	2.000	2.167
57 Ashland Avenue, Little Calumet River	17.3	2.000	2.000	2.000
59 Cicero Avenue, Calumet-Sag Channel	4.8	2.000	2.000	2.000
43 Route 83, Calumet-Sag Channel	4.3	2.000	2.000	2.000
<u>Des Plaines River System</u>				
110 Springinsguth Road, West Branch DuPage River	25.7	ND	ND	ND
111 Arlington Drive, West Branch DuPage River	18.1	ND	ND	ND
79 Higgins Road, Salt Creek	32.2	2.000	2.000	2.000
18 Devon Avenue, Salt Creek	12.1	2.000	2.000	2.000
109 Brookfield Avenue, Salt Creek	4.7	2.000	2.000	2.000
77 Elmhurst Road, Higgins Creek	13.3	2.000	2.000	2.000
78 Wille Road, Higgins Creek	2.7	2.000	2.000	2.000
12 Lake-Cook Road, Buffalo Creek	ND	ND	ND	ND
19 Belmont Avenue, Des Plaines River	10.1	2.000	2.000	2.000
22 Ogden Avenue, Des Plaines River	9.1	2.000	2.000	2.000
23 Willow Springs Road, Des Plaines River	9.8	2.000	2.000	2.000
91 Material Service Road, Des Plaines River	18.4	2.000	2.000	2.000

TABLE AII-1 (Continued): WATERWAYS SAMPLE MEANS IN 2013

Sampling Station (No. Name)	Xyln μg/L	xylmp μg/L	xylno μg/L	Ag mg/L
<u>Chicago River System</u>				
96 Albany Avenue, North Branch Chicago River	3.000	3.000	3.000	0.001
112 Dempster Street, North Shore Channel	3.000	3.000	3.000	0.001
36 Touhy Avenue, North Shore Channel	3.000	3.000	3.000	0.001
73 Diversey Parkway, North Branch Chicago River	3.000	3.000	3.000	0.001
100 Wells Street, Chicago River	3.000	3.000	3.000	0.001
108 Loomis Street, South Branch Chicago River	3.000	3.000	3.000	0.001
99 Archer Avenue, South Fork South Branch Chicago River	3.000	3.000	3.000	0.001
75 Cicero Avenue, Chicago Sanitary & Ship Canal	3.000	3.000	3.000	0.001
41 Harlem Avenue, Chicago Sanitary & Ship Canal	3.000	3.000	3.000	0.001
48 Stephen Street, Chicago Sanitary & Ship Canal	3.000	3.000	3.000	0.001
92 Lockport Forebay, Chicago Sanitary & Ship Canal	3.000	3.000	3.000	0.001
<u>Calumet River System</u>				
86 Burnham Avenue, Grand Calumet River	3.000	3.000	3.000	0.001
56 Indiana Avenue, Little Calumet River	3.000	3.000	3.000	0.001
76 Halsted Street, Little Calumet River	3.000	3.000	3.000	0.001
57 Ashland Avenue, Little Calumet River	3.000	3.000	3.000	0.001
59 Cicero Avenue, Calumet-Sag Channel	3.000	3.000	3.000	0.001
43 Route 83, Calumet-Sag Channel	3.000	3.000	3.000	0.001
<u>Des Plaines River System</u>				
110 Springinsguth Road, West Branch DuPage River	ND	ND	ND	0.001
111 Arlington Drive, West Branch DuPage River	ND	ND	ND	0.001
79 Higgins Road, Salt Creek	3.000	3.000	3.000	0.001
18 Devon Avenue, Salt Creek	3.000	3.000	3.000	0.001
109 Brookfield Avenue, Salt Creek	3.000	3.000	3.000	0.001
77 Elmhurst Road, Higgins Creek	3.000	3.000	3.000	0.001
78 Wille Road, Higgins Creek	3.000	3.000	3.000	0.001
12 Lake-Cook Road, Buffalo Creek	ND	ND	ND	ND
19 Belmont Avenue, Des Plaines River	3.000	3.000	3.000	0.001
22 Ogden Avenue, Des Plaines River	3.000	3.000	3.000	0.001
23 Willow Springs Road, Des Plaines River	3.000	3.000	3.000	0.001
91 Material Service Road, Des Plaines River	3.000	3.000	3.000	0.001

TABLE AII-1 (Continued): WATERWAYS SAMPLE MEANS IN 2013

Sampling Station (No. Name)	Ba mg/L	B mg/L	Cr ⁺⁶ μg/L	Mn mg/L
<u>Chicago River System</u>				
96 Albany Avenue, North Branch Chicago River	0.038	0.098	6.000	0.068
112 Dempster Street, North Shore Channel	0.027	0.067	6.000	0.039
36 Touhy Avenue, North Shore Channel	0.022	0.127	6.091	0.026
73 Diversey Parkway, North Branch Chicago River	0.025	0.118	6.000	0.056
100 Wells Street, Chicago River	0.026	0.083	6.000	0.037
108 Loomis Street, South Branch Chicago River	0.026	0.101	6.000	0.032
99 Archer Avenue, South Fork South Branch Chicago River	0.027	0.101	6.000	0.052
75 Cicero Avenue, Chicago Sanitary & Ship Canal	0.025	0.104	6.000	0.035
41 Harlem Avenue, Chicago Sanitary & Ship Canal	0.020	0.147	6.000	0.028
48 Stephen Street, Chicago Sanitary & Ship Canal	0.021	0.208	6.083	0.039
92 Lockport Forebay, Chicago Sanitary & Ship Canal	0.022	0.191	6.059	0.048
<u>Calumet River System</u>				
86 Burnham Avenue, Grand Calumet River	0.036	0.687	6.000	0.345
56 Indiana Avenue, Little Calumet River	0.027	0.091	6.000	0.031
76 Halsted Street, Little Calumet River	0.022	0.175	6.000	0.043
57 Ashland Avenue, Little Calumet River	0.035	0.212	6.000	0.072
59 Cicero Avenue, Calumet-Sag Channel	0.026	0.172	6.000	0.054
43 Route 83, Calumet-Sag Channel	0.025	0.161	6.000	0.045
<u>Des Plaines River System</u>				
110 Springinsguth Road, West Branch DuPage River	0.048	0.081	6.000	0.134
111 Arlington Drive, West Branch DuPage River	0.036	0.139	6.000	0.054
79 Higgins Road, Salt Creek	0.039	0.084	6.000	0.109
18 Devon Avenue, Salt Creek	0.029	0.162	6.000	0.054
109 Brookfield Avenue, Salt Creek	0.033	0.153	6.000	0.076
77 Elmhurst Road, Higgins Creek	0.053	0.078	6.000	0.103
78 Wille Road, Higgins Creek	0.025	0.204	6.083	0.040
12 Lake-Cook Road, Buffalo Creek	ND	ND	ND	ND
19 Belmont Avenue, Des Plaines River	0.038	0.128	6.000	0.057
22 Ogden Avenue, Des Plaines River	0.037	0.136	9.500	0.090
23 Willow Springs Road, Des Plaines River	0.036	0.134	8.545	0.053
91 Material Service Road, Des Plaines River	0.034	0.133	6.000	0.058

TABLE AII-1 (Continued): WATERWAYS SAMPLE MEANS IN 2013

Sampling Station (No. Name)	Hg μg/L	Hg– ng/L	Se mg/L	Sol. Ag mg/L
<u>Chicago River System</u>				
96 Albany Avenue, North Branch Chicago River	0.200	11.0	0.024	0.001
112 Dempster Street, North Shore Channel	0.200	10.0	0.024	0.001
36 Touhy Avenue, North Shore Channel	0.200	ND	0.027	0.001
73 Diversey Parkway, North Branch Chicago River	0.200	ND	0.025	0.001
100 Wells Street, Chicago River	0.200	12.5	0.018	0.001
108 Loomis Street, South Branch Chicago River	0.200	ND	0.017	0.001
99 Archer Avenue, South Fork South Branch Chicago River	0.200	ND	0.019	0.001
75 Cicero Avenue, Chicago Sanitary & Ship Canal	0.200	ND	0.016	0.001
41 Harlem Avenue, Chicago Sanitary & Ship Canal	0.200	ND	0.019	0.001
48 Stephen Street, Chicago Sanitary & Ship Canal	0.200	ND	0.020	0.001
92 Lockport Forebay, Chicago Sanitary & Ship Canal	0.200	ND	0.024	0.001
<u>Calumet River System</u>				
86 Burnham Avenue, Grand Calumet River	0.200	ND	0.025	0.001
56 Indiana Avenue, Little Calumet River	0.200	ND	0.023	0.001
76 Halsted Street, Little Calumet River	0.200	ND	0.023	0.001
57 Ashland Avenue, Little Calumet River	0.200	10.0	0.025	0.001
59 Cicero Avenue, Calumet-Sag Channel	0.200	ND	0.024	0.001
43 Route 83, Calumet-Sag Channel	0.200	ND	0.026	0.001
<u>Des Plaines River System</u>				
110 Springinsguth Road, West Branch DuPage River	0.200	10.0	0.022	0.001
111 Arlington Drive, West Branch DuPage River	0.200	10.0	0.022	0.001
79 Higgins Road, Salt Creek	0.213	10.0	0.023	0.001
18 Devon Avenue, Salt Creek	0.200	9.8	0.022	0.001
109 Brookfield Avenue, Salt Creek	0.200	10.0	0.022	0.001
77 Elmhurst Road, Higgins Creek	0.200	10.0	0.021	0.001
78 Wille Road, Higgins Creek	0.200	10.0	0.023	0.001
12 Lake-Cook Road, Buffalo Creek	ND	ND	ND	ND
19 Belmont Avenue, Des Plaines River	0.200	9.8	0.023	0.001
22 Ogden Avenue, Des Plaines River	0.200	9.8	0.023	0.001
23 Willow Springs Road, Des Plaines River	0.200	10.2	0.025	0.001
91 Material Service Road, Des Plaines River	0.200	9.8	0.023	0.001

TABLE AII-1 (Continued): WATERWAYS SAMPLE MEANS IN 2013

Sampling Station (No. Name)	Sol. As mg/L	Sol. Cd mg/L	Sol. Cu mg/L	Sol. Cr mg/L
<u>Chicago River System</u>				
96 Albany Avenue, North Branch Chicago River	0.029	0.001	0.005	0.005
112 Dempster Street, North Shore Channel	0.025	0.001	0.005	0.005
36 Touhy Avenue, North Shore Channel	0.028	0.001	0.005	0.005
73 Diversey Parkway, North Branch Chicago River	0.028	0.001	0.005	0.005
100 Wells Street, Chicago River	0.028	0.001	0.005	0.005
108 Loomis Street, South Branch Chicago River	0.030	0.001	0.005	0.005
99 Archer Avenue, South Fork South Branch Chicago River	0.032	0.001	0.005	0.005
75 Cicero Avenue, Chicago Sanitary & Ship Canal	0.031	0.001	0.005	0.005
41 Harlem Avenue, Chicago Sanitary & Ship Canal	0.033	0.001	0.005	0.005
48 Stephen Street, Chicago Sanitary & Ship Canal	0.033	0.001	0.005	0.006
92 Lockport Forebay, Chicago Sanitary & Ship Canal	0.033	0.001	0.005	0.005
<u>Calumet River System</u>				
86 Burnham Avenue, Grand Calumet River	0.041	0.001	0.005	0.005
56 Indiana Avenue, Little Calumet River	0.030	0.001	0.006	0.005
76 Halsted Street, Little Calumet River	0.035	0.001	0.005	0.005
57 Ashland Avenue, Little Calumet River	0.037	0.001	0.005	0.005
59 Cicero Avenue, Calumet-Sag Channel	0.035	0.001	0.005	0.005
43 Route 83, Calumet-Sag Channel	0.037	0.001	0.005	0.005
<u>Des Plaines River System</u>				
110 Springinsguth Road, West Branch DuPage River	0.036	0.001	0.005	0.005
111 Arlington Drive, West Branch DuPage River	0.035	0.001	0.005	0.005
79 Higgins Road, Salt Creek	0.034	0.001	0.005	0.005
18 Devon Avenue, Salt Creek	0.031	0.001	0.005	0.005
109 Brookfield Avenue, Salt Creek	0.035	0.001	0.005	0.005
77 Elmhurst Road, Higgins Creek	0.025	0.001	0.005	0.005
78 Wille Road, Higgins Creek	0.036	0.001	0.005	0.005
12 Lake-Cook Road, Buffalo Creek	ND	ND	ND	ND
19 Belmont Avenue, Des Plaines River	0.032	0.001	0.005	0.005
22 Ogden Avenue, Des Plaines River	0.034	0.001	0.005	0.009
23 Willow Springs Road, Des Plaines River	0.033	0.001	0.005	0.007
91 Material Service Road, Des Plaines River	0.032	0.001	0.005	0.005

TABLE AII-1 (Continued): WATERWAYS SAMPLE MEANS IN 2013

Sampling Station (No. Name)	Sol. Fe mg/L	Sol. Pb mg/L	Sol. Ni mg/L	Sol. Zn mg/L
<u>Chicago River System</u>				
96 Albany Avenue, North Branch Chicago River	0.100	0.020	0.005	0.012
112 Dempster Street, North Shore Channel	0.110	0.020	0.006	0.015
36 Touhy Avenue, North Shore Channel	0.100	0.020	0.005	0.025
73 Diversey Parkway, North Branch Chicago River	0.100	0.020	0.005	0.023
100 Wells Street, Chicago River	0.100	0.020	0.005	0.023
108 Loomis Street, South Branch Chicago River	0.100	0.020	0.005	0.021
99 Archer Avenue, South Fork South Branch Chicago River	0.110	0.020	0.005	0.014
75 Cicero Avenue, Chicago Sanitary & Ship Canal	0.100	0.020	0.005	0.016
41 Harlem Avenue, Chicago Sanitary & Ship Canal	0.100	0.020	0.006	0.018
48 Stephen Street, Chicago Sanitary & Ship Canal	0.100	0.020	0.013	0.025
92 Lockport Forebay, Chicago Sanitary & Ship Canal	0.100	0.020	0.007	0.020
<u>Calumet River System</u>				
86 Burnham Avenue, Grand Calumet River	0.182	0.020	0.005	0.012
56 Indiana Avenue, Little Calumet River	0.100	0.020	0.005	0.014
76 Halsted Street, Little Calumet River	0.100	0.020	0.005	0.018
57 Ashland Avenue, Little Calumet River	0.100	0.020	0.005	0.012
59 Cicero Avenue, Calumet-Sag Channel	0.100	0.020	0.006	0.016
43 Route 83, Calumet-Sag Channel	0.100	0.020	0.005	0.016
<u>Des Plaines River System</u>				
110 Springinsguth Road, West Branch DuPage River	0.213	0.020	0.005	0.010
111 Arlington Drive, West Branch DuPage River	0.100	0.020	0.005	0.027
79 Higgins Road, Salt Creek	0.100	0.020	0.005	0.009
18 Devon Avenue, Salt Creek	0.100	0.020	0.006	0.018
109 Brookfield Avenue, Salt Creek	0.100	0.020	0.005	0.016
77 Elmhurst Road, Higgins Creek	0.100	0.020	0.005	0.010
78 Wille Road, Higgins Creek	0.100	0.020	0.006	0.033
12 Lake-Cook Road, Buffalo Creek	ND	ND	ND	ND
19 Belmont Avenue, Des Plaines River	0.100	0.020	0.005	0.016
22 Ogden Avenue, Des Plaines River	0.100	0.020	0.006	0.019
23 Willow Springs Road, Des Plaines River	0.100	0.020	0.005	0.014
91 Material Service Road, Des Plaines River	0.100	0.020	0.006	0.016

ND = No Data.

¹Un-ionized Ammonia.

²Geometric Mean.

**TABLE AII-2: BIOCHEMICAL OXYGEN DEMAND MEAN HISTORY
2003 THROUGH 2013**

Sampling Station (No. Name)	Annual Means (mg/L)											
	13	12	11	10	09	08	07	06	05	04	03	
Chicago River System												
106 Dundee Road, West Fork North Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
103 Golf Road, West Fork North Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
31 Lake-Cook Road, Middle Fork North Branch	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
104 Glenview Road, North Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
32 Lake-Cook Road, Skokie River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
105 Frontage Road, Skokie River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
34 Dempster Street, North Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
96 Albany Avenue, North Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	4.00	2.00	2.89	
35 Central Street, North Shore Channel	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.00	2.00	
112 Dempster Street, North Shore Channel	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	ND	ND	ND	ND	ND	ND	ND	8.00	3.33	3.30	
36 Touhy Avenue, North Shore Channel	ND	ND	ND	ND	ND	ND	ND	ND	11.00	6.42	7.58	
101 Foster Avenue, North Shore Channel	ND	ND	ND	ND	ND	ND	ND	ND	8.00	5.92	5.42	
37 Wilson Avenue, North Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	10.00	5.67	5.25	
73 Diversey Parkway, North Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	6.00	3.25	3.25	
46 Grand Avenue, North Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	2.00	3.17	2.67	
74 Lake Shore Drive, Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.33	2.70	
100 Wells Street, Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	3.00	2.17	3.25	
39 Madison Street, South Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	4.00	2.92	3.91	
108 Loomis Street, South Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	3.00	2.92	4.25	
99 Archer Avenue, South Fork South Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.08	3.73	
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	4.00	2.42	ND	
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	4.00	3.75	4.67	
41 Harlem Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	5.00	3.17	3.33	
42 Route 83, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	0.00	2.83	2.75	
48 Stephen Street, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	3.00	1.83	2.50	
92 Lockport Forebay, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	3.14	1.50	1.65	
Calumet River System												
49 Ewing Avenue, Calumet River	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.10	0.92	
50 Burnham Avenue, Wolf Lake	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
55 130th Street, Calumet River	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.27	1.90	
86 Burnham Avenue, Grand Calumet River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
56 Indiana Avenue, Little Calumet River	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.78	2.36	
76 Halsted Street, Little Calumet River	ND	ND	ND	ND	ND	ND	ND	ND	4.00	1.75	2.64	
52 Wentworth Avenue, Little Calumet River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
54 Joe Orr Road, Thorn Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
97 170th Street, Thorn Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
57 Ashland Avenue, Little Calumet River	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.40	4.50	
58 Ashland Avenue, Calumet-Sag Channel	ND	ND	ND	ND	ND	ND	ND	ND	3.00	0.83	3.00	
59 Cicero Avenue, Calumet-Sag Channel	ND	ND	ND	ND	ND	ND	ND	ND	3.00	1.55	2.00	
43 Route 83, Calumet-Sag Channel	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.89	2.00	
Des Plaines River System												
90 Route 19, Poplar Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
110 Springinguth Road, West Branch DuPage River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
64 Lake Street, West Branch DuPage River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
111 Arlington Drive, West Branch DuPage River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
80 Arlington Heights Road, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
18 Devon Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
24 Wolf Road, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
109 Brookfield Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
78 Wille Road, Higgins Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12 Lake-Cook Road, Buffalo Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
17 Oakton Street, Des Plaines River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
19 Belmont Avenue, Des Plaines River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
20 Roosevelt Road, Des Plaines River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
22 Ogden Avenue, Des Plaines River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
23 Willow Springs Road, Des Plaines River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29 Stephen Street, Des Plaines River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
91 Material Service Road, Des Plaines River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = No Data.

TABLE AII-3: CARBONACEOUS BIOCHEMICAL OXYGEN DEMAND MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means (mg/L)											
	13	12	11	10	09	08	07	06	05	04	03	
Chicago River System												
106 Dundee Road, West Fork North Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
103 Golf Road, West Fork North Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
31 Lake-Cook Road, Middle Fork North Branch	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
104 Glenview Road, North Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
32 Lake-Cook Road, Skokie River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
105 Frontage Road, Skokie River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
34 Dempster Street, North Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
96 Albany Avenue, North Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	3.00	1.86	1.78	
35 Central Street, North Shore Channel	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.00	1.67	
112 Dempster Street, North Shore Channel	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	ND	ND	ND	ND	ND	ND	ND	0.00	2.08	1.44	
36 Touhy Avenue, North Shore Channel	ND	ND	ND	ND	ND	ND	ND	ND	4.00	2.50	2.25	
101 Foster Avenue, North Shore Channel	ND	ND	ND	ND	ND	ND	ND	ND	2.00	1.92	1.75	
37 Wilson Avenue, North Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	4.00	1.67	2.50	
73 Diversey Parkway, North Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	2.00	1.33	1.17	
46 Grand Avenue, North Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	1.50	1.50	0.92	
74 Lake Shore Drive, Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.11	2.80	
100 Wells Street, Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	3.00	1.58	1.67	
39 Madison Street, South Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	2.00	1.42	2.00	
108 Loomis Street, South Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	0.00	1.25	2.58	
99 Archer Avenue, South Fork South Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.08	1.58	
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	2.00	1.42	ND	
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	3.00	1.67	0.83	
41 Harlem Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	3.00	1.50	1.33	
42 Route 83, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	2.00	0.50	1.25	
48 Stephen Street, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	0.00	0.58	1.17	
92 Lockport Forebay, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	0.71	0.61	0.52	
Calumet River System												
49 Ewing Avenue, Calumet River	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.50	1.33	
50 Burnham Avenue, Wolf Lake	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
55 130th Street, Calumet River	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.27	1.40	
86 Burnham Avenue, Grand Calumet River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
56 Indiana Avenue, Little Calumet River	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00	1.36	
76 Halsted Street, Little Calumet River	ND	ND	ND	ND	ND	ND	ND	ND	4.00	1.08	1.00	
52 Wentworth Avenue, Little Calumet River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
54 Joe Orr Road, Thorn Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
97 170th Street, Thorn Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
57 Ashland Avenue, Little Calumet River	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.40	2.10	
58 Ashland Avenue, Calumet-Sag Channel	ND	ND	ND	ND	ND	ND	ND	ND	3.00	1.08	1.50	
59 Cicero Avenue, Calumet-Sag Channel	ND	ND	ND	ND	ND	ND	ND	ND	4.00	0.83	1.27	
43 Route 83, Calumet-Sag Channel	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.60	1.18	
Des Plaines River System												
90 Route 19, Poplar Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
110 Springinguth Road, West Branch DuPage River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
64 Lake Street, West Branch DuPage River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
111 Arlington Drive, West Branch DuPage River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
80 Arlington Heights Road, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
18 Devon Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
24 Wolf Road, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
109 Brookfield Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
78 Wille Road, Higgins Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12 Lake-Cook Road, Buffalo Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
17 Oakton Street, Des Plaines River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
19 Belmont Avenue, Des Plaines River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
20 Roosevelt Road, Des Plaines River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
22 Ogden Avenue, Des Plaines River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
23 Willow Springs Road, Des Plaines River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29 Stephen Street, Des Plaines River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
91 Material Service Road, Des Plaines River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = No Data.

TABLE AII-4: DISSOLVED OXYGEN MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means (mg/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	7.32	7.83	8.03	7.78	6.93	8.75	8.10	10.30	8.02	7.00
103 Golf Road, West Fork North Branch Chicago River	ND	7.99	7.75	7.70	7.27	7.21	7.31	8.58	7.38	7.64	6.86
31 Lake-Cook Road, Middle Fork North Branch	ND	6.45	7.13	6.18	7.88	6.55	6.16	7.15	5.42	6.46	6.22
104 Glenview Road, North Branch Chicago River	ND	7.60	7.68	8.20	7.53	7.39	6.90	7.98	8.12	8.03	7.47
32 Lake-Cook Road, Skokie River	ND	6.88	7.29	7.23	7.75	7.35	7.21	7.75	7.75	7.73	6.67
105 Frontage Road, Skokie River	ND	8.41	7.40	7.63	7.77	7.61	7.76	9.27	8.79	8.33	7.95
34 Dempster Street, North Branch Chicago River	ND	8.30	7.28	8.25	7.88	7.01	6.52	8.23	7.16	8.21	7.45
96 Albany Avenue, North Branch Chicago River	8.51	8.02	8.68	8.47	8.64	8.22	8.19	9.18	8.63	9.12	7.77
35 Central Street, North Shore Channel	ND	8.52	7.91	8.39	9.23	7.30	8.23	8.63	7.50	7.53	8.08
112 Dempster Street, North Shore Channel	7.63	8.04	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	7.09	7.39	7.02	8.19	7.57	7.76	8.73	7.95	7.26	6.32
36 Touhy Avenue, North Shore Channel	7.58	6.96	7.29	7.15	8.29	7.83	7.65	7.93	7.98	8.10	7.54
101 Foster Avenue, North Shore Channel	ND	6.53	6.99	7.18	7.67	7.21	7.13	7.20	7.30	7.58	7.42
37 Wilson Avenue, North Branch Chicago River	ND	7.13	7.23	7.51	8.43	7.43	7.58	7.83	7.03	7.55	7.14
73 Diversey Parkway, North Branch Chicago River	6.85	6.73	6.63	6.91	7.91	6.94	6.75	7.25	6.44	6.71	6.25
46 Grand Avenue, North Branch Chicago River	ND	6.94	6.28	6.57	7.25	6.73	6.67	6.85	6.30	6.47	6.12
74 Lake Shore Drive, Chicago River	ND	7.80	8.17	9.05	9.27	8.76	9.00	9.19	9.08	8.50	7.62
100 Wells Street, Chicago River	7.68	6.74	7.36	8.11	8.57	8.03	8.39	8.68	8.96	8.56	7.54
39 Madison Street, South Branch Chicago River	ND	6.53	7.23	7.36	7.27	7.53	7.45	7.79	7.85	6.86	5.73
108 Loomis Street, South Branch Chicago River	7.42	6.18	6.77	7.51	6.84	6.89	7.21	7.81	7.78	7.23	5.97
99 Archer Avenue, South Fork South Branch Chicago River	4.49	5.47	5.11	5.60	4.76	5.33	6.19	6.00	6.65	5.63	5.29
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	5.29	6.18	7.02	6.97	6.49	7.25	7.44	7.59	6.71	5.68
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	5.70	5.97	5.89	6.02	6.43	5.32	6.22	6.04	6.11	5.77	5.18
41 Harlem Avenue, Chicago Sanitary & Ship Canal	7.03	6.78	6.38	7.56	6.68	7.13	6.59	7.30	7.29	6.92	6.81
42 Route 83, Chicago Sanitary & Ship Canal	ND	5.71	5.87	5.93	6.31	6.23	6.00	5.46	5.90	6.06	5.85
48 Stephen Street, Chicago Sanitary & Ship Canal	6.96	6.03	5.89	6.48	7.00	6.78	5.98	5.43	6.25	6.25	5.78
92 Lockport Forebay, Chicago Sanitary & Ship Canal	6.11	5.75	5.54	5.69	6.28	6.19	6.07	5.68	5.86	5.67	5.57
Calumet River System											
49 Ewing Avenue, Calumet River	ND	9.22	9.43	8.90	9.07	8.84	9.66	9.50	9.99	9.24	9.73
50 Burnham Avenue, Wolf Lake	ND	8.00	8.67	8.12	8.45	8.58	8.79	9.63	9.25	9.79	8.91
55 130th Street, Calumet River	ND	8.83	8.86	9.16	8.43	8.22	8.91	8.45	9.26	9.13	8.27
86 Burnham Avenue, Grand Calumet River	4.44	4.23	4.57	4.89	4.66	6.51	4.21	6.20	4.80	4.93	3.94
56 Indiana Avenue, Little Calumet River	7.66	7.72	7.71	8.71	8.45	7.89	7.49	9.61	8.83	7.71	8.40
76 Halsted Street, Little Calumet River	7.15	6.64	6.78	6.89	7.14	6.30	6.35	6.27	6.98	7.13	7.00
52 Wentworth Avenue, Little Calumet River	ND	7.10	7.21	7.08	7.10	6.22	6.43	7.49	6.45	6.40	6.53
54 Joe Orr Road, Thorn Creek	ND	7.80	8.08	7.72	8.04	8.21	8.19	7.72	7.65	8.57	8.40
97 170th Street, Thorn Creek	ND	7.18	7.43	7.87	7.24	7.01	7.34	7.15	7.85	8.37	7.80
57 Ashland Avenue, Little Calumet River	7.97	6.82	7.27	7.46	6.79	6.54	6.50	7.27	6.35	6.99	5.42
58 Ashland Avenue, Calumet-Sag Channel	ND	6.19	7.19	7.44	7.52	6.63	6.54	7.15	7.23	7.25	6.98
59 Cicero Avenue, Calumet-Sag Channel	6.10	6.54	6.66	6.20	7.02	6.92	6.79	6.24	6.56	6.80	7.23
43 Route 83, Calumet-Sag Channel	6.55	6.58	6.98	6.49	6.72	7.22	6.51	6.70	7.38	6.39	7.88
Des Plaines River System											
90 Route 19, Poplar Creek	ND	9.17	8.45	8.80	8.58	8.61	9.64	9.78	8.47	10.16	9.16
110 Springinguth Road, West Branch DuPage River	6.04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	7.99	7.78	8.53	8.75	8.35	8.68	8.28	7.78	8.03	7.48
64 Lake Street, West Branch DuPage River	ND	ND	ND	8.42	9.03	8.65	8.91	8.68	8.61	7.41	8.05
111 Arlington Drive, West Branch DuPage River	7.94	8.33	8.08	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	6.84	7.76	7.09	6.88	7.41	7.18	7.80	8.78	6.24	8.97	7.37
80 Arlington Heights Road, Salt Creek	ND	8.40	7.94	8.43	8.11	7.83	8.78	8.77	8.48	8.01	7.79
18 Devon Avenue, Salt Creek	7.86	7.82	8.06	8.25	8.09	8.48	8.94	8.89	9.04	8.33	7.59
24 Wolf Road, Salt Creek	ND	8.17	8.64	7.41	8.82	8.27	8.23	8.51	8.61	8.19	8.64
109 Brookfield Avenue, Salt Creek	7.97	7.98	8.07	7.37	8.39	7.35	7.59	7.58	7.81	8.02	8.13
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	9.43	8.71	8.94	8.70	8.55	8.82	8.66	8.43	9.15	8.80	7.48
78 Wille Road, Higgins Creek	8.16	8.88	8.65	8.98	8.81	8.46	8.76	9.04	8.88	9.15	8.16
12 Lake-Cook Road, Buffalo Creek	6.83	9.28	9.44	7.31	9.26	8.84	8.83	8.69	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	8.79	8.35	8.11	8.43	8.00	8.55	8.76	8.59	8.83	8.30
17 Oakton Street, Des Plaines River	ND	8.24	8.83	8.58	9.38	8.34	8.39	8.35	8.39	8.83	7.57
19 Belmont Avenue, Des Plaines River	8.08	7.82	8.44	8.41	8.34	7.50	7.67	8.43	7.55	7.91	7.64
20 Roosevelt Road, Des Plaines River	ND	8.66	8.26	7.91	8.60	7.55	7.62	8.16	7.57	8.13	7.16
22 Ogden Avenue, Des Plaines River	8.73	8.40	9.19	7.89	9.14	8.24	8.94	9.00	9.13	9.27	12.06
23 Willow Springs Road, Des Plaines River	7.74	8.73	9.05	8.07	8.80	8.00	8.65	8.24	9.08	9.19	8.66
29 Stephen Street, Des Plaines River	ND	9.80	9.18	8.37	9.97	8.94	8.56	8.90	9.91	9.62	9.95
91 Material Service Road, Des Plaines River	9.32	9.68	9.05	9.04	9.33	8.78	9.38	9.68	10.31	10.65	9.65

ND = No Data.

TABLE AII-5: TEMPERATURE MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means (°C)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	11.9	12.7	13.1	11.3	13.6	9.8	13.2	12.4	12.1	19.4
103 Golf Road, West Fork North Branch Chicago River	ND	14.6	14.8	15.7	13.4	13.8	15.4	13.4	15.2	16.7	15.2
31 Lake-Cook Road, Middle Fork North Branch	ND	16.9	14.2	14.8	12.4	12.7	15.7	12.6	16.1	15.3	16.7
104 Glenview Road, North Branch Chicago River	ND	14.2	13.4	12.7	12.5	11.5	14.8	12.9	15.1	13.9	16.5
32 Lake-Cook Road, Skokie River	ND	14.1	15.2	15.2	13.4	12.3	16.2	12.9	17.1	15.2	16.1
105 Frontage Road, Skokie River	ND	15.2	13.8	13.5	12.3	12.3	14.9	13.1	14.4	13.9	15.1
34 Dempster Street, North Branch Chicago River	ND	13.3	13.7	12.7	11.9	13.5	14.7	12.8	16.7	15.3	14.3
96 Albany Avenue, North Branch Chicago River	11.8	14.7	14.1	14.5	12.1	12.6	15.1	13.0	15.5	14.3	15.2
35 Central Street, North Shore Channel	ND	19.5	17.2	16.9	14.9	15.9	15.5	18.6	17.9	17.4	17.9
112 Dempster Street, North Shore Channel	15.3	12.5	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	16.5	15.0	15.4	13.2	14.7	14.3	15.0	16.1	12.8	16.2
36 Touhy Avenue, North Shore Channel	14.7	16.9	15.1	16.2	13.9	14.8	17.0	15.6	16.4	14.7	17.0
101 Foster Avenue, North Shore Channel	ND	16.0	15.3	15.3	14.8	14.7	16.7	15.8	16.8	15.8	17.9
37 Wilson Avenue, North Branch Chicago River	ND	15.4	14.7	15.7	13.7	14.2	15.7	15.2	17.5	17.3	17.1
73 Diversey Parkway, North Branch Chicago River	13.9	15.7	15.3	15.0	13.8	13.5	15.5	15.0	17.4	16.9	16.0
46 Grand Avenue, North Branch Chicago River	ND	16.5	14.8	14.6	13.4	13.6	16.5	14.9	17.5	16.7	14.5
74 Lake Shore Drive, Chicago River	ND	15.0	13.9	13.5	13.7	14.6	14.5	14.0	15.2	17.5	15.5
100 Wells Street, Chicago River	13.6	16.4	14.2	13.9	13.7	12.8	14.5	13.9	13.4	14.4	14.1
39 Madison Street, South Branch Chicago River	ND	15.9	10.7	13.9	13.7	12.4	14.1	14.0	13.3	14.3	12.7
108 Loomis Street, South Branch Chicago River	13.8	17.8	15.4	15.7	16.4	15.3	16.3	16.7	15.5	18.4	17.1
99 Archer Avenue, South Fork South Branch Chicago River	15.9	16.8	14.9	12.8	15.4	14.6	16.6	18.9	15.8	16.5	16.1
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	18.1	15.1	16.1	15.4	14.4	16.3	16.6	15.5	16.9	16.8
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	14.3	17.8	18.4	19.3	17.3	17.9	20.2	17.7	20.0	18.1	20.8
41 Harlem Avenue, Chicago Sanitary & Ship Canal	14.8	18.4	16.6	17.2	16.4	16.8	16.3	16.4	17.3	17.6	17.5
42 Route 83, Chicago Sanitary & Ship Canal	ND	18.7	17.2	16.1	16.5	17.7	18.7	18.4	17.7	15.3	17.5
48 Stephen Street, Chicago Sanitary & Ship Canal	14.4	17.3	15.8	16.5	15.8	16.8	17.4	16.3	16.1	15.8	15.6
92 Lockport Forebay, Chicago Sanitary & Ship Canal	16.5	18.4	17.0	18.0	17.4	17.9	19.8	19.4	19.3	18.1	17.9
Calumet River System											
49 Ewing Avenue, Calumet River	ND	14.8	12.1	17.3	14.0	15.0	16.3	14.0	16.2	14.2	12.4
50 Burnham Avenue, Wolf Lake	ND	15.0	13.7	15.6	17.0	11.5	16.3	13.9	14.5	13.0	14.2
55 130th Street, Calumet River	ND	14.5	14.2	16.0	16.6	14.6	17.6	13.5	15.8	15.6	14.4
86 Burnham Avenue, Grand Calumet River	14.7	13.7	14.2	18.0	17.8	11.9	16.8	13.7	16.2	15.4	15.6
56 Indiana Avenue, Little Calumet River	14.9	15.1	15.4	17.6	17.1	16.2	18.6	14.6	16.0	16.7	16.2
76 Halsted Street, Little Calumet River	15.0	16.3	14.6	16.6	14.4	14.1	17.2	15.3	16.4	13.5	15.7
52 Wentworth Avenue, Little Calumet River	ND	13.7	14.4	15.2	15.9	13.2	14.9	14.1	14.5	14.3	16.2
54 Joe Orr Road, Thorn Creek	ND	15.2	15.0	15.0	16.7	13.9	16.3	15.1	15.0	15.3	14.9
97 170th Street, Thorn Creek	ND	14.2	14.5	15.0	16.4	12.1	15.4	14.7	13.4	14.7	15.3
57 Ashland Avenue, Little Calumet River	13.8	14.8	14.5	14.4	16.5	15.4	15.3	15.7	15.7	16.2	17.1
58 Ashland Avenue, Calumet-Sag Channel	ND	15.9	14.4	15.5	14.3	13.8	16.3	14.3	15.8	14.2	15.1
59 Cicero Avenue, Calumet-Sag Channel	13.9	15.2	15.0	16.0	15.9	14.2	16.5	16.6	15.0	16.6	16.9
43 Route 83, Calumet-Sag Channel	14.1	17.2	15.6	15.8	16.2	15.4	17.3	15.1	16.7	20.0	16.8
Des Plaines River System											
90 Route 19, Poplar Creek	ND	11.8	14.0	15.4	13.6	14.5	14.3	13.2	15.1	15.0	13.8
110 Springinguth Road, West Branch DuPage River	15.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	14.3	15.6	16.3	15.7	16.3	15.7	13.8	16.9	16.1	16.6
64 Lake Street, West Branch DuPage River	ND	ND	ND	12.1	13.5	15.3	14.8	14.5	16.5	15.9	14.4
111 Arlington Drive, West Branch DuPage River	13.4	15.5	15.9	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	17.5	15.7	16.0	18.9	16.7	18.2	15.8	18.6	19.2	15.0	15.1
80 Arlington Heights Road, Salt Creek	ND	13.8	15.3	15.0	13.6	15.0	15.0	14.6	16.4	15.9	14.9
18 Devon Avenue, Salt Creek	14.5	15.2	14.9	13.4	14.0	14.6	14.3	14.0	15.3	15.4	16.0
24 Wolf Road, Salt Creek	ND	13.4	14.5	11.3	12.1	14.6	14.6	13.5	14.8	16.2	12.9
109 Brookfield Avenue, Salt Creek	13.7	14.9	14.7	13.8	12.3	15.2	14.5	12.8	14.9	15.1	14.1
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	16.0	13.2	14.6	14.8	12.2	10.5	14.0	13.3	12.3	12.7	15.4
78 Wille Road, Higgins Creek	15.3	15.4	16.3	17.7	13.8	17.6	16.2	16.1	17.1	15.6	15.4
12 Lake-Cook Road, Buffalo Creek	19.2	11.0	12.9	14.9	10.5	13.9	14.2	11.1	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	11.8	14.0	14.1	11.1	14.7	13.1	12.9	15.8	14.1	12.4
17 Oakton Street, Des Plaines River	ND	13.5	14.5	15.1	12.8	15.8	14.4	13.6	15.9	15.2	15.5
19 Belmont Avenue, Des Plaines River	13.9	15.5	14.3	15.0	11.8	15.3	14.8	14.2	15.3	16.2	13.6
20 Roosevelt Road, Des Plaines River	ND	14.4	15.1	15.3	13.4	15.7	15.2	13.8	15.4	15.7	15.3
22 Ogden Avenue, Des Plaines River	12.0	14.5	14.5	13.0	11.8	14.9	14.4	13.0	15.1	16.5	6.0
23 Willow Springs Road, Des Plaines River	14.1	15.5	14.5	14.1	12.1	15.2	15.7	12.7	14.7	16.1	15.0
29 Stephen Street, Des Plaines River	ND	13.5	15.1	13.5	12.6	14.3	15.5	13.4	15.1	17.2	13.8
91 Material Service Road, Des Plaines River	12.7	15.7	15.2	14.0	11.7	14.7	15.8	13.8	15.0	17.1	13.2

ND = No Data.

TABLE AII-6: pH MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	6.95	7.14	7.25	7.18	7.52	7.64	7.22	7.53	7.33	7.57
103 Golf Road, West Fork North Branch Chicago River	ND	7.40	7.59	7.63	7.49	7.44	7.50	7.47	7.42	7.72	7.65
31 Lake-Cook Road, Middle Fork North Branch	ND	7.40	7.54	7.61	7.60	7.64	7.67	7.47	7.26	7.32	7.59
104 Glenview Road, North Branch Chicago River	ND	7.89	7.73	7.71	7.76	7.86	7.85	7.71	7.22	7.45	7.97
32 Lake-Cook Road, Skokie River	ND	7.59	7.69	7.70	7.66	7.74	7.85	7.66	7.19	7.34	7.59
105 Frontage Road, Skokie River	ND	7.73	7.66	7.56	7.64	7.77	7.88	7.68	7.19	7.47	7.65
34 Dempster Street, North Branch Chicago River	ND	7.77	7.72	7.70	7.78	7.61	7.67	7.74	7.45	7.72	7.72
96 Albany Avenue, North Branch Chicago River	7.42	7.64	7.67	7.94	7.88	7.80	7.77	7.59	7.30	7.53	7.69
35 Central Street, North Shore Channel	ND	7.71	7.73	7.62	7.83	7.80	7.78	7.70	7.65	7.89	7.31
112 Dempster Street, North Shore Channel	6.97	6.71	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	7.34	7.49	7.57	7.67	7.69	7.58	7.56	7.35	7.73	7.13
36 Touhy Avenue, North Shore Channel	7.11	7.09	7.21	7.30	7.33	7.40	7.40	7.23	7.14	7.41	7.25
101 Foster Avenue, North Shore Channel	ND	7.12	7.14	7.11	7.33	7.31	7.25	7.13	7.18	7.27	7.13
37 Wilson Avenue, North Branch Chicago River	ND	7.43	7.38	7.35	7.54	7.40	7.44	7.39	7.32	7.59	7.50
73 Diversey Parkway, North Branch Chicago River	7.38	7.30	7.26	7.31	7.30	7.42	7.21	7.36	7.23	7.37	7.26
46 Grand Avenue, North Branch Chicago River	ND	7.38	7.42	7.39	7.49	7.43	7.45	7.37	7.21	7.47	7.41
74 Lake Shore Drive, Chicago River	ND	6.96	7.10	7.39	7.49	7.64	7.60	7.75	7.52	7.73	7.33
100 Wells Street, Chicago River	6.90	6.98	7.13	7.38	7.68	7.62	7.68	7.72	7.44	7.49	7.30
39 Madison Street, South Branch Chicago River	ND	7.32	7.10	7.23	7.45	7.42	7.65	7.49	7.41	7.31	7.25
108 Loomis Street, South Branch Chicago River	7.16	7.34	7.40	7.33	7.42	7.59	7.50	7.46	7.44	7.30	7.36
99 Archer Avenue, South Fork South Branch Chicago River	7.14	7.25	7.28	7.34	7.25	7.42	7.45	7.38	7.27	7.27	7.35
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	7.38	7.40	7.40	7.46	7.54	7.49	7.46	7.39	7.40	7.38
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	6.99	6.93	7.13	7.04	7.14	7.19	7.29	7.22	7.23	7.47	7.27
41 Harlem Avenue, Chicago Sanitary & Ship Canal	7.09	7.10	7.15	7.23	7.24	7.41	7.27	7.20	7.11	7.47	7.23
42 Route 83, Chicago Sanitary & Ship Canal	ND	7.01	6.81	7.02	6.96	7.10	7.13	6.92	7.08	7.40	7.12
48 Stephen Street, Chicago Sanitary & Ship Canal	7.01	7.12	7.01	7.24	7.28	7.57	7.32	7.08	7.03	7.34	7.25
92 Lockport Forebay, Chicago Sanitary & Ship Canal	7.21	7.22	7.27	7.33	7.39	7.40	7.31	7.29	7.20	7.38	7.33
Calumet River System											
49 Ewing Avenue, Calumet River	ND	7.28	7.08	7.57	7.45	7.45	7.77	7.72	7.48	8.01	7.65
50 Burnham Avenue, Wolf Lake	ND	7.91	7.65	7.74	7.81	8.04	8.29	8.26	7.65	7.82	8.18
55 130th Street, Calumet River	ND	7.76	7.77	7.86	7.84	7.92	7.85	7.94	7.64	7.78	7.86
86 Burnham Avenue, Grand Calumet River	7.26	7.19	7.34	7.27	7.35	7.69	7.64	7.43	7.30	7.51	7.58
56 Indiana Avenue, Little Calumet River	7.73	7.28	7.22	7.57	7.49	7.49	7.65	7.81	7.06	7.67	7.73
76 Halsted Street, Little Calumet River	7.22	7.22	7.09	7.30	7.31	7.34	7.40	7.51	7.11	7.40	7.36
52 Wentworth Avenue, Little Calumet River	ND	7.67	7.42	7.63	7.77	7.86	7.77	7.75	7.16	7.43	7.63
54 Joe Orr Road, Thorn Creek	ND	7.03	7.05	7.27	7.03	7.32	7.17	7.32	7.10	7.38	7.37
97 170th Street, Thorn Creek	ND	7.59	7.45	7.66	7.76	7.83	7.71	7.70	6.96	7.44	7.61
57 Ashland Avenue, Little Calumet River	7.61	7.75	7.58	7.60	7.78	7.79	7.71	7.74	7.07	7.42	7.39
58 Ashland Avenue, Calumet-Sag Channel	ND	7.40	7.28	7.38	7.48	7.44	7.42	7.40	6.91	7.33	7.47
59 Cicero Avenue, Calumet-Sag Channel	7.29	7.04	7.32	7.48	7.42	7.46	7.39	7.38	7.04	7.40	7.54
43 Route 83, Calumet-Sag Channel	7.02	7.19	7.41	7.47	7.55	7.70	7.51	7.55	7.25	7.46	7.66
Des Plaines River System											
90 Route 19, Poplar Creek	ND	7.76	7.95	7.83	7.91	7.88	7.95	7.80	7.70	7.65	7.58
110 Springinguth Road, West Branch DuPage River	7.36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	7.54	7.54	7.51	7.48	7.58	7.59	7.43	7.40	7.44	7.37
64 Lake Street, West Branch DuPage River	ND	ND	ND	7.71	7.77	7.74	7.81	7.64	7.57	7.48	7.48
111 Arlington Drive, West Branch DuPage River	7.41	7.69	7.73	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	7.10	7.38	7.42	7.51	7.77	7.57	7.80	7.94	7.39	7.54	7.54
80 Arlington Heights Road, Salt Creek	ND	7.44	7.54	7.52	7.46	7.39	7.59	7.50	7.45	7.42	7.34
18 Devon Avenue, Salt Creek	7.03	7.34	7.62	7.60	7.55	7.51	7.63	7.55	7.44	7.35	7.39
24 Wolf Road, Salt Creek	ND	7.00	7.28	7.48	7.30	7.41	7.52	7.31	7.30	7.67	7.31
109 Brookfield Avenue, Salt Creek	7.13	7.28	7.68	7.58	7.69	7.54	7.72	7.40	7.32	7.56	7.44
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	7.95	7.70	7.51	7.68	7.76	7.88	7.80	7.40	7.39	7.80	7.54
78 Wille Road, Higgins Creek	7.26	7.58	7.65	7.61	7.58	7.63	7.67	7.54	7.37	7.66	7.58
12 Lake-Cook Road, Buffalo Creek	7.61	7.49	7.56	7.47	7.37	7.80	7.70	7.73	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	7.91	7.73	7.58	7.72	7.89	7.69	7.68	7.44	7.77	7.62
17 Oakton Street, Des Plaines River	ND	7.81	7.85	7.74	7.78	8.01	7.79	7.57	7.44	7.63	7.67
19 Belmont Avenue, Des Plaines River	7.49	7.70	7.88	7.82	7.82	7.98	7.83	7.67	7.45	7.62	7.68
20 Roosevelt Road, Des Plaines River	ND	7.91	7.86	7.85	7.91	8.02	7.84	7.89	7.49	7.67	7.71
22 Ogden Avenue, Des Plaines River	7.43	7.66	7.88	7.81	7.72	7.62	7.96	7.50	7.49	7.63	7.46
23 Willow Springs Road, Des Plaines River	7.74	7.75	7.93	7.86	7.91	7.86	7.79	7.62	7.62	7.63	7.59
29 Stephen Street, Des Plaines River	ND	8.03	7.78	7.86	7.90	7.92	7.72	7.64	7.55	7.51	7.67
91 Material Service Road, Des Plaines River	7.75	8.12	7.89	7.97	8.13	8.04	7.98	7.87	7.74	7.65	7.80

ND = No Data.

TABLE AII-7: TOTAL ALKALINITY MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means (mg/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	181	178	158	173	171	163	147	152	178	138
103 Golf Road, West Fork North Branch Chicago River	ND	204	192	181	180	165	186	178	172	179	168
31 Lake-Cook Road, Middle Fork North Branch	ND	215	191	192	196	177	205	185	199	196	194
104 Glenview Road, North Branch Chicago River	ND	195	169	171	184	168	173	165	156	182	170
32 Lake-Cook Road, Skokie River	ND	218	204	196	203	188	215	184	183	209	191
105 Frontage Road, Skokie River	ND	196	166	170	187	170	168	164	154	178	160
34 Dempster Street, North Branch Chicago River	ND	207	179	183	180	165	175	170	164	175	159
96 Albany Avenue, North Branch Chicago River	151	177	187	172	186	164	174	173	167	169	170
35 Central Street, North Shore Channel	ND	141	121	118	119	113	121	117	115	116	117
112 Dempster Street, North Shore Channel	123	139	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	144	133	131	136	120	133	134	126	137	128
36 Touhy Avenue, North Shore Channel	131	135	149	136	156	145	142	144	136	151	140
101 Foster Avenue, North Shore Channel	ND	143	146	139	149	145	142	145	135	144	137
37 Wilson Avenue, North Branch Chicago River	ND	145	152	139	149	146	145	146	138	159	139
73 Diversey Parkway, North Branch Chicago River	132	139	153	149	152	147	147	146	135	156	139
46 Grand Avenue, North Branch Chicago River	ND	157	155	145	150	141	147	147	144	156	145
74 Lake Shore Drive, Chicago River	ND	113	123	110	118	111	124	120	120	119	116
100 Wells Street, Chicago River	131	133	136	119	130	125	125	127	123	125	130
39 Madison Street, South Branch Chicago River	ND	149	149	134	150	134	135	142	137	137	140
108 Loomis Street, South Branch Chicago River	137	138	144	135	149	134	136	143	142	136	138
99 Archer Avenue, South Fork South Branch Chicago River	140	134	152	146	149	143	135	147	138	142	133
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	149	146	136	152	136	136	142	138	138	136
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	137	135	147	140	145	141	137	158	140	142	132
41 Harlem Avenue, Chicago Sanitary & Ship Canal	135	126	144	138	144	134	131	130	126	132	117
42 Route 83, Chicago Sanitary & Ship Canal	ND	141	151	143	149	132	138	139	138	137	126
48 Stephen Street, Chicago Sanitary & Ship Canal	178	147	156	145	146	137	142	146	142	143	138
92 Lockport Forebay, Chicago Sanitary & Ship Canal	142	143	150	146	149	137	146	143	138	140	133
Calumet River System											
49 Ewing Avenue, Calumet River	ND	109	110	107	113	104	113	113	109	111	110
50 Burnham Avenue, Wolf Lake	ND	106	99	103	102	98	104	100	109	111	104
55 130th Street, Calumet River	ND	117	112	108	117	105	114	112	112	116	111
86 Burnham Avenue, Grand Calumet River	267	260	232	250	225	243	262	248	170	203	196
56 Indiana Avenue, Little Calumet River	139	130	131	120	136	125	137	127	125	129	127
76 Halsted Street, Little Calumet River	160	157	159	147	162	155	162	162	153	159	146
52 Wentworth Avenue, Little Calumet River	ND	229	171	184	204	216	208	222	175	206	208
54 Joe Orr Road, Thorn Creek	ND	193	163	178	190	185	177	189	152	183	158
97 170th Street, Thorn Creek	ND	214	167	163	204	195	176	205	172	186	172
57 Ashland Avenue, Little Calumet River	173	181	166	166	193	192	174	208	168	180	182
58 Ashland Avenue, Calumet-Sag Channel	ND	172	159	159	163	158	156	167	154	158	155
59 Cicero Avenue, Calumet-Sag Channel	158	160	163	153	165	154	154	171	150	150	151
43 Route 83, Calumet-Sag Channel	161	151	155	158	160	154	151	168	151	153	150
Des Plaines River System											
90 Route 19, Poplar Creek	ND	240	218	222	227	211	210	190	188	216	185
110 Springinguth Road, West Branch DuPage River	180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	168	175	154	179	147	152	160	150	148	135
64 Lake Street, West Branch DuPage River	ND	ND	ND	180	170	145	150	184	133	147	129
111 Arlington Drive, West Branch DuPage River	132	137	162	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	144	158	180	135	183	176	159	155	142	197	127
80 Arlington Heights Road, Salt Creek	ND	165	144	148	152	126	133	142	136	149	133
18 Devon Avenue, Salt Creek	129	139	146	154	149	125	132	142	135	149	132
24 Wolf Road, Salt Creek	ND	170	157	154	172	141	140	145	134	156	126
109 Brookfield Avenue, Salt Creek	143	148	159	150	169	142	139	144	133	160	125
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	128	159	142	114	149	128	118	121	120	158	102
78 Wille Road, Higgins Creek	162	164	195	176	204	165	175	179	150	192	159
12 Lake-Cook Road, Buffalo Creek	166	230	200	204	211	197	188	181	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	210	189	192	201	199	201	189	179	196	168
17 Oakton Street, Des Plaines River	ND	205	188	180	194	192	187	179	171	192	167
19 Belmont Avenue, Des Plaines River	164	174	186	171	196	180	179	177	167	189	155
20 Roosevelt Road, Des Plaines River	ND	198	184	170	189	185	182	172	166	190	153
22 Ogden Avenue, Des Plaines River	157	168	176	169	182	170	164	163	151	176	155
23 Willow Springs Road, Des Plaines River	156	173	175	165	184	171	168	162	154	180	141
29 Stephen Street, Des Plaines River	ND	193	173	170	180	173	172	169	159	180	149
91 Material Service Road, Des Plaines River	154	175	173	175	184	170	175	173	163	184	146

ND = No Data.

TABLE AII-8: CHLORIDE MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means (mg/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	589	555	470	403	388	297	339	456	552	181
103 Golf Road, West Fork North Branch Chicago River	ND	440	402	400	321	330	329	344	501	298	270
31 Lake-Cook Road, Middle Fork North Branch	ND	324	266	304	219	293	286	258	318	205	217
104 Glenview Road, North Branch Chicago River	ND	305	231	257	222	287	258	222	258	265	215
32 Lake-Cook Road, Skokie River	ND	295	215	251	196	265	290	214	310	239	220
105 Frontage Road, Skokie River	ND	243	207	217	208	275	228	207	236	203	177
34 Dempster Street, North Branch Chicago River	ND	400	247	316	246	265	277	254	337	322	205
96 Albany Avenue, North Branch Chicago River	246	294	273	319	274	345	283	256	346	236	230
35 Central Street, North Shore Channel	ND	128	63	30	44	90	51	37	35	31	47
112 Dempster Street, North Shore Channel	133	148	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	152	150	106	107	138	133	90	135	104	80
36 Touhy Avenue, North Shore Channel	130	146	221	155	210	168	212	116	150	172	143
101 Foster Avenue, North Shore Channel	ND	199	214	170	199	175	231	134	165	143	123
37 Wilson Avenue, North Branch Chicago River	ND	227	223	222	218	216	249	145	209	183	159
73 Diversey Parkway, North Branch Chicago River	172	148	182	199	248	235	190	140	196	193	168
46 Grand Avenue, North Branch Chicago River	ND	217	182	175	195	248	204	154	186	219	174
74 Lake Shore Drive, Chicago River	ND	167	150	78	48	60	106	64	62	62	73
100 Wells Street, Chicago River	134	129	155	122	84	148	127	89	109	103	108
39 Madison Street, South Branch Chicago River	ND	187	247	168	152	191	174	125	156	129	136
108 Loomis Street, South Branch Chicago River	160	151	182	188	152	193	207	143	158	141	137
99 Archer Avenue, South Fork South Branch Chicago River	165	169	177	171	146	194	190	110	150	148	134
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	218	179	185	154	190	218	137	153	142	137
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	162	167	180	161	155	211	228	136	156	161	150
41 Harlem Avenue, Chicago Sanitary & Ship Canal	162	162	187	188	187	195	267	146	162	167	149
42 Route 83, Chicago Sanitary & Ship Canal	ND	210	202	196	174	214	187	151	170	221	156
48 Stephen Street, Chicago Sanitary & Ship Canal	162	168	194	202	163	199	165	152	164	179	160
92 Lockport Forebay, Chicago Sanitary & Ship Canal	177	151	200	181	170	230	194	158	181	195	166
Calumet River System											
49 Ewing Avenue, Calumet River	ND	39	52	35	38	33	46	44	38	31	35
50 Burnham Avenue, Wolf Lake	ND	103	90	86	79	66	68	47	59	55	42
55 130th Street, Calumet River	ND	133	107	83	98	104	88	83	75	69	64
86 Burnham Avenue, Grand Calumet River	115	118	59	80	148	134	144	155	137	138	176
56 Indiana Avenue, Little Calumet River	89	110	120	104	100	116	109	98	82	82	88
76 Halsted Street, Little Calumet River	144	150	175	159	150	202	181	153	174	154	133
52 Wentworth Avenue, Little Calumet River	ND	154	101	122	110	150	132	122	140	160	179
54 Joe Orr Road, Thorn Creek	ND	195	144	210	145	171	176	183	212	235	94
97 170th Street, Thorn Creek	ND	234	147	192	163	183	158	182	228	222	217
57 Ashland Avenue, Little Calumet River	172	179	161	182	135	176	171	174	205	200	193
58 Ashland Avenue, Calumet-Sag Channel	ND	189	173	159	147	207	161	161	180	167	155
59 Cicero Avenue, Calumet-Sag Channel	137	171	190	160	136	170	167	155	171	167	150
43 Route 83, Calumet-Sag Channel	139	153	169	178	139	164	164	150	144	156	142
Des Plaines River System											
90 Route 19, Poplar Creek	ND	279	251	273	215	282	277	279	278	241	201
110 Springinguth Road, West Branch DuPage River	238	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	171	204	171	170	196	187	193	181	207	205
64 Lake Street, West Branch DuPage River	ND	ND	ND	340	188	232	235	201	211	198	186
111 Arlington Drive, West Branch DuPage River	191	175	216	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	248	346	319	266	258	385	353	287	409	363	235
80 Arlington Heights Road, Salt Creek	ND	272	298	289	248	389	268	280	323	225	241
18 Devon Avenue, Salt Creek	245	199	293	327	231	384	287	283	320	236	250
24 Wolf Road, Salt Creek	ND	251	279	313	244	346	275	241	261	250	241
109 Brookfield Avenue, Salt Creek	251	239	279	293	231	321	271	257	258	264	208
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	376	276	285	583	305	548	259	571	478	514	424
78 Wille Road, Higgins Creek	204	181	235	220	233	274	247	217	220	190	213
12 Lake-Cook Road, Buffalo Creek	195	297	258	310	218	357	272	259	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	181	175	185	148	220	184	210	221	176	202
17 Oakton Street, Des Plaines River	ND	200	196	221	154	238	195	245	251	197	202
19 Belmont Avenue, Des Plaines River	203	187	207	231	173	279	208	250	230	225	255
20 Roosevelt Road, Des Plaines River	ND	200	214	232	164	285	214	249	260	211	173
22 Ogden Avenue, Des Plaines River	217	202	227	250	173	270	228	244	255	218	261
23 Willow Springs Road, Des Plaines River	220	209	231	239	177	275	238	234	268	222	197
29 Stephen Street, Des Plaines River	ND	232	225	235	172	290	242	236	255	212	210
91 Material Service Road, Des Plaines River	218	212	226	242	185	284	225	242	249	212	200

ND = No Data.

**TABLE AII-9: TURBIDITY MEAN HISTORY
2003 THROUGH 2013**

Sampling Station (No. Name)	Annual Means (NTU)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	27.3	25.4	18.0	26.9	31.4	29.0	66.6	30.1	49.5	32.2
103 Golf Road, West Fork North Branch Chicago River	ND	18.3	14.2	12.4	24.1	18.4	14.1	32.2	25.6	20.1	16.9
31 Lake-Cook Road, Middle Fork North Branch	ND	5.0	9.9	10.6	18.3	18.3	14.9	46.2	16.7	22.8	13.1
104 Glenview Road, North Branch Chicago River	ND	14.7	14.8	7.6	15.0	16.9	13.7	32.9	15.2	18.2	14.7
32 Lake-Cook Road, Skokie River	ND	16.3	12.9	9.2	16.2	18.5	14.6	37.0	16.8	19.8	12.6
105 Frontage Road, Skokie River	ND	8.3	11.9	9.5	14.8	13.1	15.6	16.5	13.4	16.7	12.0
34 Dempster Street, North Branch Chicago River	ND	13.0	12.5	9.4	17.0	17.8	15.3	28.9	18.9	19.1	14.5
96 Albany Avenue, North Branch Chicago River	ND	8.0	10.6	13.1	17.4	20.2	14.6	23.5	16.0	18.3	14.1
35 Central Street, North Shore Channel	ND	11.0	6.3	5.5	8.1	9.7	5.1	9.3	5.9	7.3	8.2
112 Dempster Street, North Shore Channel	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	4.3	10.0	14.3	7.9	15.0	10.3	13.2	12.2	11.3	11.6
36 Touhy Avenue, North Shore Channel	ND	5.0	4.2	4.0	5.1	4.8	4.2	5.8	6.5	7.6	7.1
101 Foster Avenue, North Shore Channel	ND	4.3	5.5	4.6	4.4	5.4	5.1	5.9	7.0	7.5	8.0
37 Wilson Avenue, North Branch Chicago River	ND	3.5	6.7	6.6	11.4	8.2	8.2	9.3	9.5	10.5	9.2
73 Diversey Parkway, North Branch Chicago River	ND	5.7	8.8	6.5	10.6	10.3	8.8	10.4	10.0	11.4	9.5
46 Grand Avenue, North Branch Chicago River	ND	9.0	8.4	8.0	12.6	10.0	13.2	13.4	11.3	14.9	10.2
74 Lake Shore Drive, Chicago River	ND	2.7	2.0	2.2	3.8	4.6	3.5	2.8	3.3	3.4	5.5
100 Wells Street, Chicago River	ND	4.0	6.3	3.8	4.1	7.4	4.0	3.5	4.7	4.7	7.0
39 Madison Street, South Branch Chicago River	ND	7.3	9.3	8.4	9.7	10.8	10.7	8.0	9.1	11.1	9.8
108 Loomis Street, South Branch Chicago River	ND	7.3	10.2	8.5	9.7	11.6	10.1	11.3	9.6	10.7	9.1
99 Archer Avenue, South Fork South Branch Chicago River	ND	18.3	9.9	7.6	8.4	10.8	7.4	8.8	8.7	9.9	9.3
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	8.0	10.2	8.9	11.1	10.3	11.8	11.4	10.4	11.5	10.3
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	ND	8.0	12.6	8.9	11.5	10.7	8.6	13.1	11.6	13.7	10.5
41 Harlem Avenue, Chicago Sanitary & Ship Canal	ND	5.0	7.8	5.0	6.1	6.0	6.0	6.9	6.4	6.9	7.2
42 Route 83, Chicago Sanitary & Ship Canal	ND	4.7	5.6	4.2	5.5	8.3	6.9	5.4	5.8	6.6	8.0
48 Stephen Street, Chicago Sanitary & Ship Canal	ND	13.3	9.6	6.9	11.0	13.9	10.2	11.6	11.5	11.4	9.9
92 Lockport Forebay, Chicago Sanitary & Ship Canal	ND	8.8	8.9	6.0	11.1	14.4	9.0	11.2	10.6	10.6	9.5
Calumet River System											
49 Ewing Avenue, Calumet River	ND	8.0	7.7	2.9	3.6	4.2	4.0	7.2	5.6	7.7	6.9
50 Burnham Avenue, Wolf Lake	ND	3.0	3.5	3.5	3.5	4.2	3.8	2.9	5.3	3.8	5.3
55 130th Street, Calumet River	ND	2.7	5.4	2.7	4.3	6.0	6.3	6.3	5.9	6.4	7.8
86 Burnham Avenue, Grand Calumet River	ND	10.0	9.1	13.0	6.0	11.9	10.3	12.8	25.3	11.5	9.4
56 Indiana Avenue, Little Calumet River	ND	9.5	10.2	8.9	18.2	25.2	20.3	19.6	24.8	19.6	16.8
76 Halsted Street, Little Calumet River	ND	4.0	8.9	4.9	8.9	11.5	8.4	9.3	10.2	11.1	8.4
52 Wentworth Avenue, Little Calumet River	ND	30.7	71.6	61.2	38.2	17.7	31.2	33.6	32.2	30.9	16.1
54 Joe Orr Road, Thorn Creek	ND	16.3	36.9	24.1	15.8	5.8	9.8	5.8	63.6	17.8	29.4
97 170th Street, Thorn Creek	ND	23.0	64.3	51.5	21.5	16.3	25.4	26.5	46.2	29.2	19.8
57 Ashland Avenue, Little Calumet River	ND	13.0	47.5	42.1	25.9	16.0	28.2	24.3	42.5	27.5	20.1
58 Ashland Avenue, Calumet-Sag Channel	ND	9.0	26.2	19.7	12.9	13.6	16.6	11.5	13.4	14.7	14.5
59 Cicero Avenue, Calumet-Sag Channel	ND	13.3	18.5	14.1	12.9	14.9	18.8	14.3	14.2	17.8	14.3
43 Route 83, Calumet-Sag Channel	ND	9.3	17.9	9.2	13.6	12.8	14.5	18.6	14.2	15.7	20.7
Des Plaines River System											
90 Route 19, Poplar Creek	ND	5.3	9.2	12.0	10.4	14.1	7.9	20.3	14.7	10.0	17.1
110 Springinguth Road, West Branch DuPage River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	16.3	6.1	7.0	5.5	13.5	7.5	7.4	7.6	8.3	10.2
64 Lake Street, West Branch DuPage River	ND	ND	ND	18.5	17.7	22.9	19.2	25.4	26.3	22.5	19.0
111 Arlington Drive, West Branch DuPage River	ND	8.0	13.7	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	ND	12.0	18.2	25.4	21.1	23.8	25.1	30.4	42.9	23.2	30.3
80 Arlington Heights Road, Salt Creek	ND	5.5	7.7	6.0	12.5	5.8	9.1	9.8	6.5	5.7	8.1
18 Devon Avenue, Salt Creek	ND	5.9	6.8	6.9	12.4	7.5	10.1	11.1	10.1	11.6	9.6
24 Wolf Road, Salt Creek	ND	7.3	11.1	14.2	17.0	19.4	24.0	28.7	20.1	16.2	22.6
109 Brookfield Avenue, Salt Creek	ND	6.3	10.8	19.4	18.9	18.9	21.1	32.5	23.3	17.0	27.8
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	ND	9.0	21.4	19.3	18.9	44.3	23.9	32.5	29.3	29.5	23.0
78 Wille Road, Higgins Creek	ND	3.7	1.9	3.1	4.0	7.1	4.5	4.8	3.9	5.1	7.1
12 Lake-Cook Road, Buffalo Creek	ND	7.3	14.8	23.9	21.4	20.4	26.7	25.6	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	11.0	10.2	12.9	20.9	17.0	16.5	20.7	19.4	18.5	18.7
17 Oakton Street, Des Plaines River	ND	9.7	12.1	13.5	21.5	20.0	16.9	19.5	15.1	18.4	21.7
19 Belmont Avenue, Des Plaines River	ND	8.7	10.6	12.7	21.6	25.6	18.6	20.7	17.6	17.1	20.8
20 Roosevelt Road, Des Plaines River	ND	7.3	11.6	16.6	22.7	22.0	19.0	21.3	17.5	16.8	21.3
22 Ogden Avenue, Des Plaines River	ND	8.7	11.7	15.3	23.8	20.6	21.7	28.3	23.8	16.3	24.2
23 Willow Springs Road, Des Plaines River	ND	7.7	12.8	13.1	23.7	21.5	21.2	26.3	20.9	19.1	19.6
29 Stephen Street, Des Plaines River	ND	7.7	12.4	16.6	24.8	18.5	18.0	26.2	23.0	20.2	20.9
91 Material Service Road, Des Plaines River	ND	6.3	12.8	15.0	22.0	17.6	21.7	22.1	25.8	20.5	22.4

ND = No Data.

TABLE AII-10: TOTAL KJELDAHL NITROGEN MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means (mg/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	1.40	2.06	1.24	1.40	1.59	1.30	1.90	1.31	1.58	1.88
103 Golf Road, West Fork North Branch Chicago River	ND	1.14	1.26	1.15	1.10	1.05	1.34	1.36	1.41	1.04	1.25
31 Lake-Cook Road, Middle Fork North Branch	ND	1.00	0.87	0.95	0.94	1.16	1.20	1.09	1.36	1.05	1.24
104 Glenview Road, North Branch Chicago River	ND	1.29	1.38	0.88	0.99	1.14	1.27	1.54	1.22	0.99	1.33
32 Lake-Cook Road, Skokie River	ND	1.06	1.21	0.81	0.88	0.86	1.08	1.29	1.67	1.08	0.97
105 Frontage Road, Skokie River	ND	1.00	0.94	1.01	1.01	1.06	1.31	1.32	1.25	0.96	1.16
34 Dempster Street, North Branch Chicago River	ND	1.14	1.05	1.53	1.08	1.14	1.23	1.43	1.22	1.04	1.12
96 Albany Avenue, North Branch Chicago River	1.00	1.00	0.97	0.94	0.86	1.03	1.16	1.27	1.31	0.94	1.17
35 Central Street, North Shore Channel	ND	1.20	0.56	0.32	0.45	0.43	0.58	0.57	0.39	0.54	0.84
112 Dempster Street, North Shore Channel	1.40	1.00	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	2.14	1.32	1.46	0.85	1.08	1.27	1.41	1.54	1.45	1.91
36 Touhy Avenue, North Shore Channel	2.09	2.17	2.35	2.06	1.38	1.59	2.07	1.99	3.08	2.35	2.75
101 Foster Avenue, North Shore Channel	ND	2.43	2.42	2.10	1.37	1.82	2.39	2.07	3.53	3.31	3.02
37 Wilson Avenue, North Branch Chicago River	ND	2.17	2.10	1.84	1.32	1.60	1.92	1.97	3.19	3.07	2.63
73 Diversey Parkway, North Branch Chicago River	2.00	1.92	2.20	1.77	1.19	1.36	1.79	1.71	2.25	2.20	2.39
46 Grand Avenue, North Branch Chicago River	ND	2.14	2.03	1.96	1.49	1.56	1.94	1.85	2.82	2.26	2.16
74 Lake Shore Drive, Chicago River	ND	1.00	0.84	0.29	0.26	0.43	0.55	0.48	0.73	0.66	0.73
100 Wells Street, Chicago River	1.67	1.36	1.31	0.65	0.54	0.88	0.85	0.87	1.15	1.25	1.59
39 Madison Street, South Branch Chicago River	ND	1.67	2.24	1.29	1.12	1.33	1.44	1.46	2.32	1.93	2.35
108 Loomis Street, South Branch Chicago River	1.33	1.50	1.46	1.29	1.11	1.36	1.47	1.71	2.33	2.00	1.69
99 Archer Avenue, South Fork South Branch Chicago River	2.50	2.50	2.19	1.98	1.66	1.97	1.57	1.49	2.46	2.07	2.07
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	1.86	1.61	1.57	1.27	1.41	1.45	1.64	2.31	1.99	1.97
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	1.50	1.75	1.63	1.40	1.12	1.55	1.47	1.70	2.10	1.80	1.96
41 Harlem Avenue, Chicago Sanitary & Ship Canal	1.67	1.50	1.74	1.51	1.41	1.49	1.75	1.55	1.93	1.20	1.51
42 Route 83, Chicago Sanitary & Ship Canal	ND	1.86	1.91	1.83	1.33	1.48	1.79	1.61	1.81	1.45	1.62
48 Stephen Street, Chicago Sanitary & Ship Canal	1.42	1.58	1.65	1.54	1.27	1.33	1.56	1.74	1.76	1.32	1.57
92 Lockport Forebay, Chicago Sanitary & Ship Canal	1.35	1.37	1.61	1.49	1.29	1.40	1.55	1.61	1.67	1.38	1.58
Calumet River System											
49 Ewing Avenue, Calumet River	ND	1.00	0.48	0.07	0.18	0.19	0.34	0.38	0.25	0.18	0.23
50 Burnham Avenue, Wolf Lake	ND	1.43	0.62	0.52	0.77	0.71	0.85	0.74	0.73	0.57	0.52
55 130th Street, Calumet River	ND	1.00	0.60	0.25	0.53	0.63	0.77	0.76	0.70	0.45	0.58
86 Burnham Avenue, Grand Calumet River	3.11	4.91	3.11	4.57	2.31	5.15	4.57	3.19	4.31	2.65	3.85
56 Indiana Avenue, Little Calumet River	1.00	1.00	0.74	0.64	0.99	1.00	1.13	1.09	0.84	0.88	1.02
76 Halsted Street, Little Calumet River	1.73	1.18	1.35	1.30	1.22	1.42	1.34	1.35	1.26	1.00	1.16
52 Wentworth Avenue, Little Calumet River	ND	1.00	1.16	1.39	1.34	1.28	1.51	1.64	1.61	1.45	1.58
54 Joe Orr Road, Thorn Creek	ND	1.29	1.45	1.24	1.39	1.39	1.50	1.42	1.55	1.27	1.19
97 170th Street, Thorn Creek	ND	1.00	0.97	1.21	1.18	1.11	1.43	1.28	1.34	1.11	1.28
57 Ashland Avenue, Little Calumet River	1.10	1.00	1.01	1.11	1.03	1.10	1.39	1.43	1.58	1.15	1.23
58 Ashland Avenue, Calumet-Sag Channel	ND	1.14	1.18	1.28	1.09	1.32	1.40	1.47	1.30	1.03	1.22
59 Cicero Avenue, Calumet-Sag Channel	1.73	1.60	1.26	1.33	1.17	1.31	1.28	1.50	1.41	1.19	1.26
43 Route 83, Calumet-Sag Channel	1.36	1.55	1.28	1.29	1.20	1.24	1.41	1.37	1.25	1.15	1.32
Des Plaines River System											
90 Route 19, Poplar Creek	ND	1.00	0.81	0.86	0.81	0.86	0.99	1.13	0.94	0.68	1.03
110 Springinguth Road, West Branch DuPage River	2.63	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	1.71	1.60	1.68	1.53	1.60	1.85	1.72	1.93	1.56	2.28
64 Lake Street, West Branch DuPage River	ND	ND	ND	1.97	1.55	1.68	2.01	1.84	2.09	1.93	2.37
111 Arlington Drive, West Branch DuPage River	1.75	1.54	1.58	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	1.00	1.00	1.20	1.30	1.22	1.19	1.51	1.45	1.41	1.07	1.47
80 Arlington Heights Road, Salt Creek	ND	1.28	1.21	1.30	1.19	1.04	1.24	1.37	1.16	1.27	1.84
18 Devon Avenue, Salt Creek	1.08	1.21	1.17	1.46	1.11	0.96	1.12	1.38	1.42	1.35	1.86
24 Wolf Road, Salt Creek	ND	1.00	1.01	2.00	1.09	1.07	1.19	1.38	1.25	0.91	1.48
109 Brookfield Avenue, Salt Creek	1.00	1.00	0.89	1.02	1.11	1.08	1.18	1.53	1.23	0.88	1.48
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	1.00	1.13	0.95	0.72	0.93	0.96	0.96	1.38	1.29	0.74	1.40
78 Wille Road, Higgins Creek	1.50	1.27	1.15	1.28	1.22	1.59	1.60	1.84	1.51	1.45	1.49
12 Lake-Cook Road, Buffalo Creek	1.00	1.17	0.98	1.11	1.12	1.10	1.37	1.21	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	1.00	1.00	1.07	1.10	1.09	1.38	1.40	1.34	0.98	1.51
17 Oakton Street, Des Plaines River	ND	1.14	1.11	1.04	1.16	1.19	1.27	1.39	1.31	1.02	1.54
19 Belmont Avenue, Des Plaines River	1.00	1.17	1.10	1.09	1.07	1.27	1.45	1.46	1.28	0.96	1.66
20 Roosevelt Road, Des Plaines River	ND	1.29	1.08	1.05	1.11	1.17	1.28	1.37	1.20	1.03	1.65
22 Ogden Avenue, Des Plaines River	1.00	1.17	0.95	1.04	1.11	1.23	1.27	1.45	1.25	0.92	2.00
23 Willow Springs Road, Des Plaines River	1.00	1.00	0.93	0.92	1.19	1.10	1.22	1.50	1.23	0.99	1.26
29 Stephen Street, Des Plaines River	ND	1.29	1.00	1.15	1.01	1.06	1.26	1.42	1.29	1.02	1.52
91 Material Service Road, Des Plaines River	1.00	1.00	0.96	0.99	1.08	1.11	1.20	1.49	1.29	1.02	1.62

ND = No Data.

TABLE AII-15: TOTAL SOLIDS MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means (mg/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	1471	1292	1160	988	1027	1603	900	1050	1300	645
103 Golf Road, West Fork North Branch Chicago River	ND	1176	1057	1052	861	863	1146	919	1232	776	790
31 Lake-Cook Road, Middle Fork North Branch	ND	890	759	845	659	809	797	794	888	646	687
104 Glenview Road, North Branch Chicago River	ND	814	711	781	695	799	761	704	756	711	733
32 Lake-Cook Road, Skokie River	ND	926	708	780	637	726	823	709	858	712	682
105 Frontage Road, Skokie River	ND	771	670	713	664	775	696	654	696	622	637
34 Dempster Street, North Branch Chicago River	ND	1015	734	897	720	763	850	752	885	808	880
96 Albany Avenue, North Branch Chicago River	785	797	785	883	773	913	854	802	934	684	651
35 Central Street, North Shore Channel	ND	570	315	255	269	328	260	229	244	250	292
112 Dempster Street, North Shore Channel	446	519	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	513	497	423	407	441	443	381	423	344	359
36 Touhy Avenue, North Shore Channel	486	509	645	534	628	556	646	475	511	511	491
101 Foster Avenue, North Shore Channel	ND	572	627	567	600	584	704	491	546	493	469
37 Wilson Avenue, North Branch Chicago River	ND	660	658	686	630	661	750	527	613	565	561
73 Diversey Parkway, North Branch Chicago River	576	529	589	638	691	703	613	522	570	543	565
46 Grand Avenue, North Branch Chicago River	ND	658	596	595	592	706	674	555	597	591	610
74 Lake Shore Drive, Chicago River	ND	514	463	310	244	273	365	256	274	300	312
100 Wells Street, Chicago River	461	462	508	411	330	437	409	337	369	382	409
39 Madison Street, South Branch Chicago River	ND	595	696	532	496	561	548	456	483	464	500
108 Loomis Street, South Branch Chicago River	536	449	579	591	505	549	592	497	476	459	495
99 Archer Avenue, South Fork South Branch Chicago River	535	531	578	565	491	591	560	425	474	471	484
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	644	560	572	501	556	616	481	477	487	485
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	541	549	577	546	502	604	647	481	495	514	502
41 Harlem Avenue, Chicago Sanitary & Ship Canal	569	580	627	621	579	619	764	529	530	550	531
42 Route 83, Chicago Sanitary & Ship Canal	ND	676	656	635	568	628	616	548	578	597	568
48 Stephen Street, Chicago Sanitary & Ship Canal	611	629	664	665	545	640	606	584	591	607	602
92 Lockport Forebay, Chicago Sanitary & Ship Canal	635	598	665	669	604	729	647	584	618	622	610
Calumet River System											
49 Ewing Avenue, Calumet River	ND	262	280	229	234	227	242	245	223	234	241
50 Burnham Avenue, Wolf Lake	ND	385	348	327	304	301	295	241	279	275	245
55 130th Street, Calumet River	ND	472	406	363	396	405	395	354	300	340	334
86 Burnham Avenue, Grand Calumet River	788	608	532	570	782	794	747	865	665	787	911
56 Indiana Avenue, Little Calumet River	381	540	465	420	440	488	478	428	370	410	405
76 Halsted Street, Little Calumet River	600	620	626	586	579	714	648	590	559	579	547
52 Wentworth Avenue, Little Calumet River	ND	806	594	646	611	761	679	700	612	745	828
54 Joe Orr Road, Thorn Creek	ND	1590	1089	1383	1267	1600	1417	1490	1293	1530	979
97 170th Street, Thorn Creek	ND	1152	980	1073	983	1187	1009	1099	1252	1165	1308
57 Ashland Avenue, Little Calumet River	938	948	788	829	743	853	830	877	925	885	951
58 Ashland Avenue, Calumet-Sag Channel	ND	759	680	682	574	730	605	638	632	626	609
59 Cicero Avenue, Calumet-Sag Channel	645	686	705	617	577	695	622	683	625	666	633
43 Route 83, Calumet-Sag Channel	641	626	643	679	583	668	628	642	626	630	625
Des Plaines River System											
90 Route 19, Poplar Creek	ND	795	738	817	666	829	784	804	766	756	662
110 Springinguth Road, West Branch DuPage River	781	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	648	685	653	606	649	647	656	619	650	608
64 Lake Street, West Branch DuPage River	ND	ND	ND	939	664	757	670	683	701	697	632
111 Arlington Drive, West Branch DuPage River	673	663	719	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	717	936	860	757	725	1012	974	804	1075	960	701
80 Arlington Heights Road, Salt Creek	ND	846	787	828	721	965	789	788	733	679	668
18 Devon Avenue, Salt Creek	737	750	800	891	674	983	782	806	866	751	714
24 Wolf Road, Salt Creek	ND	840	817	877	752	926	814	737	823	762	739
109 Brookfield Avenue, Salt Creek	764	733	805	845	715	887	786	765	809	812	707
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	879	825	737	1183	721	1212	650	1163	1110	1213	908
78 Wille Road, Higgins Creek	725	694	801	760	788	833	786	712	716	707	672
12 Lake-Cook Road, Buffalo Creek	669	862	784	919	717	952	816	819	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	686	641	687	569	746	664	736	742	699	713
17 Oakton Street, Des Plaines River	ND	697	682	738	571	763	657	777	779	689	663
19 Belmont Avenue, Des Plaines River	698	671	688	744	617	844	688	779	783	749	749
20 Roosevelt Road, Des Plaines River	ND	686	703	747	608	834	704	771	775	732	648
22 Ogden Avenue, Des Plaines River	719	697	724	771	617	813	720	759	778	732	712
23 Willow Springs Road, Des Plaines River	716	712	730	757	621	828	743	744	773	724	670
29 Stephen Street, Des Plaines River	ND	764	714	750	623	851	728	758	772	702	667
91 Material Service Road, Des Plaines River	704	713	709	762	636	827	720	771	805	731	708

ND = No Data.

TABLE AII-16: TOTAL SUSPENDED SOLIDS MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means (mg/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	25.4	33.9	25.1	33.3	61.5	25.5	93.4	31.5	56.1	50.7
103 Golf Road, West Fork North Branch Chicago River	ND	22.7	18.1	16.6	28.1	23.3	12.2	34.0	29.7	23.6	25.6
31 Lake-Cook Road, Middle Fork North Branch	ND	4.5	11.4	11.4	21.9	33.0	16.4	69.3	24.2	22.0	21.2
104 Glenview Road, North Branch Chicago River	ND	12.0	30.8	11.3	19.4	28.2	14.2	50.1	18.8	22.8	30.3
32 Lake-Cook Road, Skokie River	ND	12.0	18.3	12.7	21.4	26.7	16.4	47.9	21.6	21.0	18.7
105 Frontage Road, Skokie River	ND	14.6	18.9	13.8	20.9	24.3	18.5	23.8	18.4	25.2	19.4
34 Dempster Street, North Branch Chicago River	ND	16.3	16.2	13.4	21.4	27.5	17.2	39.8	25.3	21.8	20.9
96 Albany Avenue, North Branch Chicago River	28.8	11.1	18.3	14.3	22.3	29.7	16.8	28.3	16.8	22.5	20.3
35 Central Street, North Shore Channel	ND	11.4	9.6	7.1	10.3	12.6	5.3	9.4	8.5	11.3	9.9
112 Dempster Street, North Shore Channel	21.4	13.4	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	17.1	13.8	20.8	13.8	16.5	11.8	16.5	11.6	15.2	19.7
36 Touhy Avenue, North Shore Channel	10.3	7.2	9.2	7.0	8.4	10.4	5.0	11.7	10.9	15.4	9.4
101 Foster Avenue, North Shore Channel	ND	10.0	8.8	7.7	9.3	14.8	5.7	12.3	12.2	12.7	9.6
37 Wilson Avenue, North Branch Chicago River	ND	9.0	13.3	9.9	15.9	19.0	8.3	14.3	15.0	13.9	12.3
73 Diversey Parkway, North Branch Chicago River	21.5	13.7	12.6	9.5	14.4	15.7	10.6	15.3	13.2	15.1	14.1
46 Grand Avenue, North Branch Chicago River	ND	12.4	12.9	10.8	16.9	16.0	16.3	17.3	14.5	21.3	13.5
74 Lake Shore Drive, Chicago River	ND	4.3	3.6	1.2	4.7	5.8	5.6	7.1	5.3	4.9	2.5
100 Wells Street, Chicago River	10.2	7.2	7.2	4.1	5.7	9.0	4.7	9.0	4.5	6.3	6.4
39 Madison Street, South Branch Chicago River	ND	11.3	10.7	9.5	12.6	13.8	18.3	14.5	8.7	14.0	11.6
108 Loomis Street, South Branch Chicago River	11.0	11.2	13.1	11.4	13.1	17.7	18.5	16.2	12.6	11.8	12.5
99 Archer Avenue, South Fork South Branch Chicago River	12.8	17.1	15.3	11.7	12.0	14.8	10.1	12.4	12.5	13.2	11.8
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	12.9	12.8	12.0	15.4	15.6	17.9	17.8	12.7	14.6	13.7
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	12.5	13.4	23.3	12.8	16.8	16.6	16.6	19.2	13.0	17.8	13.9
41 Harlem Avenue, Chicago Sanitary & Ship Canal	9.3	9.0	12.1	7.7	9.7	10.3	15.3	12.3	9.6	8.5	8.1
42 Route 83, Chicago Sanitary & Ship Canal	ND	8.3	8.4	6.8	10.7	13.3	21.8	11.7	7.5	9.0	10.6
48 Stephen Street, Chicago Sanitary & Ship Canal	13.3	10.9	13.4	9.3	14.0	19.7	23.8	18.2	15.0	15.8	16.2
92 Lockport Forebay, Chicago Sanitary & Ship Canal	9.9	8.7	11.2	10.4	15.8	22.6	12.9	15.8	14.5	14.6	14.7
Calumet River System											
49 Ewing Avenue, Calumet River	ND	9.8	9.2	4.8	5.0	5.7	5.8	7.3	6.7	9.7	8.7
50 Burnham Avenue, Wolf Lake	ND	9.0	5.8	4.3	6.6	5.3	5.2	6.1	5.3	5.4	5.8
55 130th Street, Calumet River	ND	4.3	6.0	5.1	8.4	7.7	6.8	8.5	6.5	7.7	9.3
86 Burnham Avenue, Grand Calumet River	13.6	12.7	16.5	14.4	13.8	23.9	18.5	21.0	49.9	18.9	17.0
56 Indiana Avenue, Little Calumet River	16.4	10.3	11.9	12.9	19.3	33.7	21.6	24.4	25.0	22.0	29.9
76 Halsted Street, Little Calumet River	11.2	8.6	15.1	7.6	12.5	18.8	10.6	12.9	11.3	14.8	10.5
52 Wentworth Avenue, Little Calumet River	ND	25.4	89.0	74.3	51.0	30.5	44.7	44.1	37.9	32.4	28.7
54 Joe Orr Road, Thorn Creek	ND	12.4	34.7	27.4	20.1	8.0	7.1	9.9	115.4	17.6	42.0
97 170th Street, Thorn Creek	ND	25.2	81.1	53.4	40.3	23.8	35.5	32.4	55.4	40.5	30.2
57 Ashland Avenue, Little Calumet River	31.2	25.9	65.2	55.1	35.3	19.9	34.6	26.5	45.7	30.5	33.0
58 Ashland Avenue, Calumet-Sag Channel	ND	11.7	34.5	25.3	17.4	17.7	17.5	16.6	15.0	18.8	24.4
59 Cicero Avenue, Calumet-Sag Channel	21.1	13.3	26.2	18.5	22.0	22.8	20.3	24.9	14.3	20.3	24.0
43 Route 83, Calumet-Sag Channel	17.6	15.9	20.5	14.0	23.5	17.4	16.6	20.1	15.5	20.1	35.9
Des Plaines River System											
90 Route 19, Poplar Creek	ND	18.3	12.5	17.6	14.1	21.9	13.9	25.2	15.9	15.3	30.4
110 Springinguth Road, West Branch DuPage River	36.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	15.6	10.8	20.1	11.8	21.6	15.3	10.8	12.3	15.4	18.3
64 Lake Street, West Branch DuPage River	ND	ND	ND	26.7	26.3	34.5	27.5	34.0	38.5	32.5	40.3
111 Arlington Drive, West Branch DuPage River	28.3	33.1	24.8	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	21.3	13.2	21.9	31.4	24.4	32.1	33.0	31.2	41.4	25.5	44.6
80 Arlington Heights Road, Salt Creek	ND	7.6	9.5	8.5	13.8	8.4	10.2	10.2	9.8	9.0	8.8
18 Devon Avenue, Salt Creek	15.3	8.8	9.7	11.1	16.7	12.4	16.3	14.1	14.2	19.0	19.9
24 Wolf Road, Salt Creek	ND	27.3	17.5	23.5	24.1	31.6	30.6	39.4	28.9	23.1	43.3
109 Brookfield Avenue, Salt Creek	20.4	17.4	16.3	18.3	25.5	30.1	25.1	42.7	25.1	19.9	56.1
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	42.3	28.5	25.2	21.0	18.8	50.8	26.4	45.3	29.3	29.2	34.8
78 Wille Road, Higgins Creek	8.4	7.0	4.2	2.4	7.0	8.8	6.5	5.4	3.4	7.6	5.9
12 Lake-Cook Road, Buffalo Creek	15.3	18.5	19.7	27.7	27.1	29.3	41.1	29.4	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	15.6	16.2	17.4	20.1	23.3	21.8	27.3	24.0	23.2	36.8
17 Oakton Street, Des Plaines River	ND	11.7	17.4	16.8	22.3	26.1	22.9	26.1	17.9	23.0	42.1
19 Belmont Avenue, Des Plaines River	16.3	16.8	15.8	18.5	23.0	31.6	26.5	29.4	23.2	22.3	41.8
20 Roosevelt Road, Des Plaines River	ND	16.1	15.9	22.0	24.3	27.6	26.5	26.9	23.8	21.7	43.4
22 Ogden Avenue, Des Plaines River	17.8	25.8	17.5	20.5	27.6	29.5	29.7	36.3	30.6	21.3	52.6
23 Willow Springs Road, Des Plaines River	15.5	21.1	18.5	17.4	26.2	27.5	23.9	27.8	22.3	24.0	33.4
29 Stephen Street, Des Plaines River	ND	28.4	18.5	23.6	29.5	28.6	22.8	29.3	29.8	26.5	41.6
91 Material Service Road, Des Plaines River	18.8	18.7	20.8	23.1	26.3	26.4	25.9	27.7	35.0	28.2	46.1

ND = No Data.

TABLE AII-18: TOTAL DISSOLVED SOLIDS MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means (mg/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	1446	1258	1135	955	965	1577	807	1018	1244	595
103 Golf Road, West Fork North Branch Chicago River	ND	1154	1039	1036	833	840	1134	885	1202	753	764
31 Lake-Cook Road, Middle Fork North Branch	ND	885	747	834	637	776	780	724	864	624	666
104 Glenview Road, North Branch Chicago River	ND	802	680	770	676	771	747	654	737	689	703
32 Lake-Cook Road, Skokie River	ND	914	690	767	615	699	806	661	836	691	664
105 Frontage Road, Skokie River	ND	757	651	699	643	750	677	630	677	596	617
34 Dempster Street, North Branch Chicago River	ND	999	718	883	699	735	832	712	860	786	859
96 Albany Avenue, North Branch Chicago River	756	786	766	868	751	883	837	773	917	662	630
35 Central Street, North Shore Channel	ND	559	305	248	258	316	254	219	236	239	282
112 Dempster Street, North Shore Channel	425	506	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	495	483	403	394	425	432	364	412	329	339
36 Touhy Avenue, North Shore Channel	476	502	636	527	614	545	641	464	500	496	481
101 Foster Avenue, North Shore Channel	ND	562	618	559	591	569	698	479	534	480	460
37 Wilson Avenue, North Branch Chicago River	ND	651	645	676	614	642	741	513	598	551	548
73 Diversey Parkway, North Branch Chicago River	554	515	576	628	676	687	603	507	557	528	551
46 Grand Avenue, North Branch Chicago River	ND	645	583	584	575	690	658	538	582	570	597
74 Lake Shore Drive, Chicago River	ND	509	459	309	240	267	359	249	269	295	309
100 Wells Street, Chicago River	451	455	501	407	324	428	404	328	364	376	403
39 Madison Street, South Branch Chicago River	ND	584	685	522	483	547	530	441	474	450	488
108 Loomis Street, South Branch Chicago River	525	438	566	580	492	531	573	481	463	448	482
99 Archer Avenue, South Fork South Branch Chicago River	522	514	563	553	479	576	549	413	461	458	473
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	631	548	560	485	541	599	463	464	472	471
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	528	536	554	533	485	587	630	462	482	496	488
41 Harlem Avenue, Chicago Sanitary & Ship Canal	560	571	615	614	570	608	749	517	520	541	523
42 Route 83, Chicago Sanitary & Ship Canal	ND	668	648	629	557	615	594	536	571	588	558
48 Stephen Street, Chicago Sanitary & Ship Canal	598	618	651	656	531	620	583	565	576	591	586
92 Lockport Forebay, Chicago Sanitary & Ship Canal	625	589	650	658	588	706	634	568	604	602	595
Calumet River System											
49 Ewing Avenue, Calumet River	ND	252	270	224	229	221	236	237	217	225	232
50 Burnham Avenue, Wolf Lake	ND	376	342	323	297	295	289	235	273	269	239
55 130th Street, Calumet River	ND	468	400	357	387	397	388	345	293	332	325
86 Burnham Avenue, Grand Calumet River	774	595	516	556	768	770	728	844	615	768	894
56 Indiana Avenue, Little Calumet River	365	530	453	407	421	454	457	404	345	388	375
76 Halsted Street, Little Calumet River	589	611	611	579	566	695	637	577	548	564	536
52 Wentworth Avenue, Little Calumet River	ND	780	505	572	560	731	634	656	574	712	800
54 Joe Orr Road, Thorn Creek	ND	1577	1055	1356	1247	1592	1409	1480	1178	1512	937
97 170th Street, Thorn Creek	ND	1127	899	1020	943	1163	974	1066	1196	1124	1277
57 Ashland Avenue, Little Calumet River	907	923	723	774	708	833	795	851	879	854	918
58 Ashland Avenue, Calumet-Sag Channel	ND	747	645	657	557	712	588	621	617	608	585
59 Cicero Avenue, Calumet-Sag Channel	624	673	679	598	555	672	602	658	611	646	609
43 Route 83, Calumet-Sag Channel	623	610	623	665	559	651	612	622	610	610	589
Des Plaines River System											
90 Route 19, Poplar Creek	ND	777	726	799	652	807	770	779	750	740	631
110 Springinguth Road, West Branch DuPage River	744	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	633	674	633	594	627	631	645	607	635	590
64 Lake Street, West Branch DuPage River	ND	ND	ND	912	638	723	643	649	663	654	592
111 Arlington Drive, West Branch DuPage River	645	630	694	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	695	923	838	726	701	980	941	773	1034	903	656
80 Arlington Heights Road, Salt Creek	ND	838	777	820	708	957	779	778	723	663	659
18 Devon Avenue, Salt Creek	722	741	790	880	657	970	766	792	851	721	694
24 Wolf Road, Salt Creek	ND	813	799	853	728	895	783	698	794	723	696
109 Brookfield Avenue, Salt Creek	744	715	789	827	690	857	761	722	784	772	650
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	837	797	712	1162	703	1161	623	1118	1081	1040	873
78 Wille Road, Higgins Creek	717	687	797	758	781	824	780	706	713	688	666
12 Lake-Cook Road, Buffalo Creek	653	844	764	891	690	923	775	790	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	670	624	670	549	723	642	709	718	664	677
17 Oakton Street, Des Plaines River	ND	685	665	721	549	737	634	751	761	651	620
19 Belmont Avenue, Des Plaines River	681	654	672	726	594	812	662	749	760	707	708
20 Roosevelt Road, Des Plaines River	ND	670	687	725	584	807	677	744	752	691	605
22 Ogden Avenue, Des Plaines River	701	671	707	750	590	783	690	723	747	691	660
23 Willow Springs Road, Des Plaines River	701	691	712	739	595	801	719	716	751	675	637
29 Stephen Street, Des Plaines River	ND	735	696	727	593	822	705	729	743	648	625
91 Material Service Road, Des Plaines River	685	694	688	739	610	801	694	743	770	679	662

ND = No Data.

TABLE AII-19: PHENOLS MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means ($\mu\text{g/L}$)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	5.0	5.0	0.5	0.5	0.0	1.0	0.8	6.8	8.9	9.0
103 Golf Road, West Fork North Branch Chicago River	ND	5.0	5.0	0.6	0.5	0.0	1.7	1.1	9.9	8.7	5.6
31 Lake-Cook Road, Middle Fork North Branch	ND	5.0	5.0	0.0	0.0	0.0	1.5	0.3	11.4	11.5	9.4
104 Glenview Road, North Branch Chicago River	ND	5.0	5.4	0.0	0.0	0.0	0.0	0.3	6.3	7.6	4.3
32 Lake-Cook Road, Skokie River	ND	5.0	5.1	0.6	0.0	0.0	0.3	0.3	8.0	11.6	7.9
105 Frontage Road, Skokie River	ND	5.0	5.0	0.6	0.4	0.0	1.1	1.2	5.6	5.7	3.2
34 Dempster Street, North Branch Chicago River	ND	5.0	5.0	0.0	0.0	0.0	0.9	0.3	8.4	6.8	5.5
96 Albany Avenue, North Branch Chicago River	5.0	5.0	5.0	0.0	0.0	0.0	0.0	0.3	8.3	8.9	6.4
35 Central Street, North Shore Channel	ND	5.0	5.0	0.0	0.0	0.0	0.3	0.3	4.3	6.6	2.8
112 Dempster Street, North Shore Channel	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	5.0	5.0	0.0	0.0	0.0	1.5	1.0	7.1	7.8	6.5
36 Touhy Avenue, North Shore Channel	5.0	5.0	5.0	0.0	0.0	0.0	1.0	0.5	9.1	9.4	7.3
101 Foster Avenue, North Shore Channel	ND	5.0	5.0	0.0	0.0	0.0	0.5	1.0	9.8	9.8	6.2
37 Wilson Avenue, North Branch Chicago River	ND	5.0	5.0	0.0	0.0	0.0	1.2	1.0	8.5	8.9	6.5
73 Diversey Parkway, North Branch Chicago River	5.0	5.0	5.0	0.0	0.0	0.0	1.1	1.0	10.8	8.4	6.8
46 Grand Avenue, North Branch Chicago River	ND	5.0	5.0	0.0	0.0	0.0	0.8	1.3	9.8	10.3	5.3
74 Lake Shore Drive, Chicago River	ND	5.0	5.1	0.0	0.0	0.0	0.4	0.0	4.3	4.4	3.0
100 Wells Street, Chicago River	5.0	5.0	5.0	0.0	0.0	0.0	0.6	0.3	4.8	7.6	3.8
39 Madison Street, South Branch Chicago River	ND	5.0	5.0	0.0	0.0	0.0	0.5	0.0	7.6	9.1	7.6
108 Loomis Street, South Branch Chicago River	5.0	5.0	5.0	0.0	0.0	0.0	1.0	0.5	7.7	8.6	5.5
99 Archer Avenue, South Fork South Branch Chicago River	5.0	5.7	5.6	0.7	0.5	0.0	0.3	0.7	8.7	9.5	5.8
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	5.0	5.0	0.5	0.0	0.0	0.6	0.7	8.3	8.3	5.6
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	5.0	5.0	5.1	0.0	0.0	0.0	1.5	0.9	6.8	7.9	5.0
41 Harlem Avenue, Chicago Sanitary & Ship Canal	5.0	5.0	5.0	0.7	0.0	0.0	0.8	0.5	6.6	8.5	5.6
42 Route 83, Chicago Sanitary & Ship Canal	ND	5.0	5.0	0.5	0.0	0.0	0.5	0.3	9.5	9.7	6.2
48 Stephen Street, Chicago Sanitary & Ship Canal	5.0	5.0	5.3	0.5	0.0	0.0	0.0	0.0	9.2	9.0	6.6
92 Lockport Forebay, Chicago Sanitary & Ship Canal	5.0	4.9	5.0	0.2	0.0	0.0	1.2	0.8	8.8	8.6	5.7
Calumet River System											
49 Ewing Avenue, Calumet River	ND	5.0	5.0	0.0	0.0	0.0	0.4	0.9	2.0	2.7	1.6
50 Burnham Avenue, Wolf Lake	ND	5.0	5.0	0.0	0.0	0.0	0.0	0.0	5.8	7.4	3.2
55 130th Street, Calumet River	ND	5.0	5.0	0.0	0.0	0.0	0.0	0.4	4.9	3.6	1.1
86 Burnham Avenue, Grand Calumet River	5.1	8.7	5.5	0.7	1.4	1.1	2.3	1.9	16.1	11.9	7.6
56 Indiana Avenue, Little Calumet River	5.0	5.0	5.0	0.0	0.0	0.0	1.0	0.3	5.0	5.6	2.5
76 Halsted Street, Little Calumet River	5.0	5.0	5.0	0.0	0.0	0.0	1.6	0.9	9.9	8.9	7.2
52 Wentworth Avenue, Little Calumet River	ND	5.0	5.0	0.0	0.0	0.0	1.3	0.8	14.4	22.4	12.6
54 Joe Orr Road, Thorn Creek	ND	5.0	5.0	0.0	0.0	0.0	1.2	0.0	13.3	9.3	6.0
97 170th Street, Thorn Creek	ND	5.0	5.0	0.0	0.0	0.0	1.0	0.0	9.0	9.7	6.2
57 Ashland Avenue, Little Calumet River	5.0	5.0	5.0	0.6	0.0	0.0	0.4	0.3	10.2	10.9	7.5
58 Ashland Avenue, Calumet-Sag Channel	ND	5.0	5.0	0.5	0.0	0.0	1.1	0.3	9.1	9.3	7.8
59 Cicero Avenue, Calumet-Sag Channel	5.0	5.0	5.0	5.9	0.0	0.0	0.3	0.5	10.5	10.3	7.9
43 Route 83, Calumet-Sag Channel	5.0	5.0	5.0	0.0	0.0	0.0	0.0	0.4	10.0	9.7	5.5
Des Plaines River System											
90 Route 19, Poplar Creek	ND	5.0	5.0	0.6	0.0	0.0	1.0	0.0	10.4	8.6	6.5
110 Springinguth Road, West Branch DuPage River	5.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	5.0	5.0	0.0	0.0	0.0	1.0	0.0	9.5	13.3	8.8
64 Lake Street, West Branch DuPage River	ND	ND	ND	0.0	0.0	0.0	0.6	0.3	8.2	9.1	7.9
111 Arlington Drive, West Branch DuPage River	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	5.0	5.0	5.0	0.0	0.0	0.0	1.5	0.4	10.6	8.4	7.9
80 Arlington Heights Road, Salt Creek	ND	5.0	5.0	0.0	0.0	0.0	0.6	0.5	6.0	9.3	5.0
18 Devon Avenue, Salt Creek	5.0	5.0	5.0	0.0	0.0	0.0	1.2	0.0	5.5	10.4	6.3
24 Wolf Road, Salt Creek	ND	5.0	5.0	0.6	0.4	0.4	0.6	1.2	5.8	6.7	6.0
109 Brookfield Avenue, Salt Creek	5.0	5.0	5.0	0.0	0.0	0.0	0.5	0.9	8.6	7.6	5.4
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	5.0	5.0	5.0	0.0	0.0	0.0	0.0	1.9	11.3	13.0	12.2
78 Wille Road, Higgins Creek	5.0	5.0	5.0	0.6	0.0	0.4	1.6	1.0	8.1	15.5	8.8
12 Lake-Cook Road, Buffalo Creek	ND	5.0	5.0	0.0	0.0	0.0	0.3	0.9	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	5.1	5.0	0.5	0.0	0.5	0.7	0.0	6.2	7.6	4.4
17 Oakton Street, Des Plaines River	ND	5.0	5.0	0.0	0.0	0.0	1.1	0.3	6.8	7.9	5.0
19 Belmont Avenue, Des Plaines River	5.0	5.0	5.0	0.0	0.0	0.0	0.6	1.3	6.5	9.5	5.8
20 Roosevelt Road, Des Plaines River	ND	5.0	5.0	0.0	0.0	0.5	0.5	0.6	8.4	9.7	6.0
22 Ogden Avenue, Des Plaines River	5.0	5.0	5.0	0.0	0.0	0.0	0.6	0.7	7.6	8.8	7.6
23 Willow Springs Road, Des Plaines River	5.0	5.0	5.0	0.0	0.0	0.6	0.7	2.1	7.6	8.7	4.5
29 Stephen Street, Des Plaines River	ND	5.0	5.0	0.4	0.0	0.4	0.3	0.9	6.1	8.4	5.3
91 Material Service Road, Des Plaines River	5.0	5.0	5.0	0.0	0.0	0.0	0.3	1.3	10.5	7.5	5.5

ND = No Data.

TABLE AII-20: SULFATE MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means (mg/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	55.4	56.8	49.2	47.4	52.9	46.6	53.3	63.0	76.5	64.3
103 Golf Road, West Fork North Branch Chicago River	ND	64.4	62.0	58.0	56.2	63.1	68.9	77.9	75.4	75.3	76.4
31 Lake-Cook Road, Middle Fork North Branch	ND	71.0	48.6	46.7	45.1	52.7	57.1	68.0	86.3	76.3	76.4
104 Glenview Road, North Branch Chicago River	ND	63.0	52.8	54.4	53.0	62.7	60.3	66.8	65.1	69.8	67.8
32 Lake-Cook Road, Skokie River	ND	60.9	52.6	50.9	51.0	60.0	53.3	61.6	65.4	76.6	80.4
105 Frontage Road, Skokie River	ND	63.3	54.3	54.2	55.0	62.0	52.7	67.8	63.4	67.4	64.9
34 Dempster Street, North Branch Chicago River	ND	65.1	56.0	54.6	51.9	60.6	60.3	71.5	68.6	72.4	71.6
96 Albany Avenue, North Branch Chicago River	50.4	56.0	56.4	53.0	54.3	63.6	59.7	73.1	68.3	72.3	74.0
35 Central Street, North Shore Channel	ND	49.8	30.0	25.3	27.2	34.6	30.4	28.7	26.8	33.8	36.6
112 Dempster Street, North Shore Channel	31.6	46.2	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	46.0	40.3	36.7	38.0	44.1	39.9	43.8	40.9	41.7	43.0
36 Touhy Avenue, North Shore Channel	40.5	44.4	45.5	41.9	47.9	52.1	49.1	50.8	46.6	51.7	53.4
101 Foster Avenue, North Shore Channel	ND	48.4	45.4	43.2	46.8	52.9	50.6	51.3	59.6	56.8	53.2
37 Wilson Avenue, North Branch Chicago River	ND	49.0	46.5	47.3	46.7	54.8	54.1	58.0	50.8	59.9	57.3
73 Diversey Parkway, North Branch Chicago River	44.0	46.7	46.9	47.3	47.9	56.1	52.3	55.8	50.9	62.2	59.0
46 Grand Avenue, North Branch Chicago River	ND	53.1	47.5	44.2	45.8	54.9	53.6	57.4	54.1	60.6	58.9
74 Lake Shore Drive, Chicago River	ND	37.5	33.5	25.8	26.3	30.0	31.7	36.6	29.7	36.8	35.6
100 Wells Street, Chicago River	38.8	40.9	40.7	31.2	32.0	40.9	36.8	39.1	35.4	40.5	44.3
39 Madison Street, South Branch Chicago River	ND	47.7	48.1	39.8	42.1	47.8	44.9	49.6	47.6	51.8	54.8
108 Loomis Street, South Branch Chicago River	43.6	45.0	44.4	41.4	43.9	52.2	47.2	52.2	49.8	55.2	53.2
99 Archer Avenue, South Fork South Branch Chicago River	41.9	41.4	44.8	44.0	41.8	55.1	46.1	51.1	56.0	52.8	55.1
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	48.6	45.1	41.2	43.1	49.2	46.3	52.0	49.5	53.0	53.1
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	43.3	46.8	45.7	43.0	41.9	53.6	48.5	51.9	50.1	55.4	52.5
41 Harlem Avenue, Chicago Sanitary & Ship Canal	60.3	59.3	62.5	61.0	56.2	69.4	67.3	72.1	70.7	76.4	72.9
42 Route 83, Chicago Sanitary & Ship Canal	ND	71.1	69.6	65.0	60.9	67.5	72.8	75.1	74.2	80.8	82.5
48 Stephen Street, Chicago Sanitary & Ship Canal	81.8	84.8	75.8	75.5	65.8	78.7	83.8	89.6	85.6	91.7	94.6
92 Lockport Forebay, Chicago Sanitary & Ship Canal	86.3	87.8	80.9	82.5	76.2	86.0	85.7	86.9	88.1	89.8	96.7
Calumet River System											
49 Ewing Avenue, Calumet River	ND	27.7	25.5	24.5	26.6	30.2	32.1	29.9	27.0	28.3	29.2
50 Burnham Avenue, Wolf Lake	ND	47.6	46.1	41.4	47.5	47.8	42.6	39.4	41.0	43.5	35.2
55 130th Street, Calumet River	ND	64.3	53.1	52.7	61.9	63.2	82.7	60.7	55.2	57.2	54.2
86 Burnham Avenue, Grand Calumet River	161.1	70.6	93.0	96.1	145.6	162.3	196.1	262.4	176.9	204.9	260.1
56 Indiana Avenue, Little Calumet River	49.6	60.5	60.3	61.2	64.4	72.4	90.1	74.7	64.1	70.4	74.3
76 Halsted Street, Little Calumet River	83.3	81.4	82.7	75.2	76.4	97.7	87.7	91.0	91.3	91.6	100.7
52 Wentworth Avenue, Little Calumet River	ND	123.9	77.7	96.3	98.1	134.9	118.4	130.0	116.2	143.9	180.2
54 Joe Orr Road, Thorn Creek	ND	723.7	450.9	509.8	506.7	716.6	596.3	620.0	494.6	620.8	460.4
97 170th Street, Thorn Creek	ND	437.7	267.2	318.3	298.3	422.5	352.0	419.3	465.3	403.1	498.3
57 Ashland Avenue, Little Calumet River	259.8	269.0	171.3	182.2	166.0	270.8	223.0	241.5	289.4	235.0	293.1
58 Ashland Avenue, Calumet-Sag Channel	ND	111.6	104.2	138.1	88.7	107.4	91.4	107.7	118.2	116.5	142.4
59 Cicero Avenue, Calumet-Sag Channel	118.5	120.0	103.0	96.1	99.3	134.4	94.2	123.1	120.4	128.6	136.4
43 Route 83, Calumet-Sag Channel	113.8	99.7	94.4	103.5	93.7	113.0	104.5	117.1	130.0	122.7	128.4
Des Plaines River System											
90 Route 19, Poplar Creek	ND	48.3	44.3	41.6	42.0	52.7	53.9	71.5	54.6	66.7	46.9
110 Springinguth Road, West Branch DuPage River	66.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	61.1	60.9	57.7	60.0	70.8	65.7	81.8	68.1	77.2	68.1
64 Lake Street, West Branch DuPage River	ND	ND	ND	59.1	61.0	68.0	65.3	81.9	71.4	78.0	68.1
111 Arlington Drive, West Branch DuPage River	67.2	63.1	60.7	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	62.1	59.9	65.2	46.3	62.4	71.1	62.5	81.7	79.4	93.3	72.8
80 Arlington Heights Road, Salt Creek	ND	75.6	61.9	68.0	62.5	75.1	76.8	85.0	82.9	84.9	77.7
18 Devon Avenue, Salt Creek	68.2	72.0	65.9	72.1	61.6	75.0	75.7	84.5	83.2	84.6	76.4
24 Wolf Road, Salt Creek	ND	81.1	73.5	75.7	77.3	82.8	84.6	87.0	92.2	96.7	84.1
109 Brookfield Avenue, Salt Creek	73.7	76.8	71.8	72.5	71.7	79.2	79.9	85.2	88.4	97.9	82.4
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	43.5	46.9	38.7	39.4	36.3	48.7	37.5	47.1	46.7	66.3	44.8
78 Wille Road, Higgins Creek	79.8	76.7	85.7	77.7	81.7	90.0	91.0	91.7	103.6	100.2	90.4
12 Lake-Cook Road, Buffalo Creek	ND	84.0	73.4	76.8	69.5	87.6	70.8	111.5	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	64.6	57.7	58.7	49.4	72.3	75.7	97.0	84.7	88.9	91.6
17 Oakton Street, Des Plaines River	ND	64.3	59.0	59.7	52.0	69.8	69.8	92.5	112.2	89.9	88.4
19 Belmont Avenue, Des Plaines River	69.5	69.3	61.3	61.5	57.5	75.3	70.6	90.7	88.0	91.2	85.4
20 Roosevelt Road, Des Plaines River	ND	65.3	60.9	61.3	54.4	75.5	70.5	89.7	100.1	90.6	85.7
22 Ogden Avenue, Des Plaines River	71.0	71.7	63.0	63.6	56.9	74.7	68.8	90.9	85.1	87.9	89.1
23 Willow Springs Road, Des Plaines River	69.7	74.6	64.2	65.2	58.0	77.7	73.1	88.2	89.3	92.8	92.2
29 Stephen Street, Des Plaines River	ND	68.7	63.6	65.0	57.3	76.7	76.9	91.1	90.5	91.4	95.6
91 Material Service Road, Des Plaines River	69.4	73.3	62.7	66.8	61.0	75.8	74.9	93.7	105.3	94.3	97.5

ND = No Data.

TABLE AII-21: FATS, OILS, AND GREASES MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means (mg/L)											
	13	12	11	10	09	08	07	06	05	04	03	
Chicago River System												
106 Dundee Road, West Fork North Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
103 Golf Road, West Fork North Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
31 Lake-Cook Road, Middle Fork North Branch	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
104 Glenview Road, North Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
32 Lake-Cook Road, Skokie River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
105 Frontage Road, Skokie River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
34 Dempster Street, North Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
96 Albany Avenue, North Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
35 Central Street, North Shore Channel	ND	ND	ND	ND	ND	ND	ND	ND	0.00	ND	ND	ND
112 Dempster Street, North Shore Channel	5.00	5.00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	5.00	5.00	0.00	0.00	0.00	0.42	0.42	0.73	2.48	ND	ND
36 Touhy Avenue, North Shore Channel	5.00	5.00	5.00	0.00	0.00	0.00	0.30	0.27	2.14	2.37	4.47	ND
101 Foster Avenue, North Shore Channel	ND	5.00	5.00	0.00	0.00	0.00	0.33	0.67	2.02	1.94	2.73	ND
37 Wilson Avenue, North Branch Chicago River	ND	5.00	5.00	0.00	0.00	0.00	0.67	0.42	2.45	1.85	3.38	ND
73 Diversey Parkway, North Branch Chicago River	5.00	5.00	5.00	0.00	0.00	0.00	0.00	0.83	0.86	2.33	3.38	ND
46 Grand Avenue, North Branch Chicago River	ND	5.00	5.00	0.00	0.00	0.00	0.27	0.42	1.85	2.97	2.59	ND
74 Lake Shore Drive, Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
100 Wells Street, Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
39 Madison Street, South Branch Chicago River	ND	5.00	5.00	0.00	0.00	0.00	0.27	0.00	0.68	1.93	3.56	ND
108 Loomis Street, South Branch Chicago River	5.00	5.00	5.00	0.00	0.00	0.00	0.00	0.00	0.80	1.64	2.87	ND
99 Archer Avenue, South Fork South Branch Chicago River	5.00	5.11	5.19	0.00	0.00	0.00	0.00	0.00	0.55	2.77	2.96	ND
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	11.71	5.00	0.00	0.00	0.00	0.67	0.00	0.73	3.03	3.16	ND
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	5.00	5.00	5.00	0.00	0.00	0.00	0.25	0.00	1.24	1.59	2.89	ND
41 Harlem Avenue, Chicago Sanitary & Ship Canal	5.00	5.00	5.00	0.00	0.00	1.17	0.00	0.00	0.65	2.03	2.73	ND
42 Route 83, Chicago Sanitary & Ship Canal	ND	5.00	5.00	0.00	0.00	0.00	0.55	0.00	0.93	2.64	2.06	ND
48 Stephen Street, Chicago Sanitary & Ship Canal	5.00	5.00	6.00	0.00	0.00	0.00	0.00	0.00	1.18	4.29	2.74	ND
92 Lockport Forebay, Chicago Sanitary & Ship Canal	5.00	4.90	5.00	0.00	0.22	0.10	0.14	0.37	1.52	1.95	3.85	ND
Calumet River System												
49 Ewing Avenue, Calumet River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
50 Burnham Avenue, Wolf Lake	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
55 130th Street, Calumet River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
86 Burnham Avenue, Grand Calumet River	5.11	5.00	5.00	0.00	0.00	0.50	0.60	1.00	1.77	1.46	6.40	ND
56 Indiana Avenue, Little Calumet River	5.13	5.00	5.00	0.00	0.00	0.56	0.00	1.18	0.00	1.41	3.66	ND
76 Halsted Street, Little Calumet River	5.18	5.00	5.00	0.00	0.00	0.42	0.00	1.18	0.43	1.28	2.91	ND
52 Wentworth Avenue, Little Calumet River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
54 Joe Orr Road, Thorn Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
97 170th Street, Thorn Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
57 Ashland Avenue, Little Calumet River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
58 Ashland Avenue, Calumet-Sag Channel	ND	5.00	5.00	0.00	0.00	0.42	0.00	0.73	0.58	1.98	3.36	ND
59 Cicero Avenue, Calumet-Sag Channel	5.27	5.00	5.00	0.00	0.00	0.45	0.00	0.55	0.78	1.78	2.58	ND
43 Route 83, Calumet-Sag Channel	5.00	5.00	5.00	0.00	9.80	0.50	0.00	0.73	0.79	2.29	3.41	ND
Des Plaines River System												
90 Route 19, Poplar Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
110 Springinguth Road, West Branch DuPage River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
64 Lake Street, West Branch DuPage River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
111 Arlington Drive, West Branch DuPage River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
80 Arlington Heights Road, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
18 Devon Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
24 Wolf Road, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
109 Brookfield Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
78 Wille Road, Higgins Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12 Lake-Cook Road, Buffalo Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
17 Oakton Street, Des Plaines River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
19 Belmont Avenue, Des Plaines River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
20 Roosevelt Road, Des Plaines River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
22 Ogden Avenue, Des Plaines River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
23 Willow Springs Road, Des Plaines River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29 Stephen Street, Des Plaines River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
91 Material Service Road, Des Plaines River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = No Data.

**TABLE AII-22: TOTAL PHOSPHORUS MEAN HISTORY
2003 THROUGH 2013**

Sampling Station (No. Name)	Annual Means (mg/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	1.160	1.232	1.366	1.260	1.198	1.038	0.964	1.508	2.120	1.620
103 Golf Road, West Fork North Branch Chicago River	ND	0.586	0.515	0.523	0.397	0.422	0.669	0.572	0.834	0.550	0.614
31 Lake-Cook Road, Middle Fork North Branch	ND	0.125	0.139	0.128	0.016	0.136	0.183	0.158	0.210	0.145	0.112
104 Glenview Road, North Branch Chicago River	ND	0.757	0.712	0.866	0.659	0.643	1.028	0.936	1.413	1.014	1.033
32 Lake-Cook Road, Skokie River	ND	0.168	0.248	0.126	0.019	0.058	0.175	0.599	0.863	0.237	0.331
105 Frontage Road, Skokie River	ND	0.943	0.936	1.053	0.883	0.815	1.246	1.174	1.538	1.223	1.708
34 Dempster Street, North Branch Chicago River	ND	0.614	0.616	0.494	0.550	0.602	0.879	0.840	1.199	0.925	1.269
96 Albany Avenue, North Branch Chicago River	0.475	0.608	0.494	0.695	0.538	0.507	0.808	0.760	1.155	0.795	1.002
35 Central Street, North Shore Channel	ND	0.140	0.135	0.078	0.077	0.000	0.062	0.056	0.016	0.088	0.213
112 Dempster Street, North Shore Channel	0.290	0.760	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	0.857	0.618	0.530	0.442	0.432	0.538	0.632	0.444	0.489	0.548
36 Touhy Avenue, North Shore Channel	1.182	1.308	1.251	1.154	1.054	1.040	1.388	1.033	1.241	1.170	1.377
101 Foster Avenue, North Shore Channel	ND	1.286	1.118	1.207	1.113	1.082	1.450	1.384	1.248	1.328	1.287
37 Wilson Avenue, North Branch Chicago River	ND	1.167	0.974	1.024	1.031	0.961	1.287	1.191	1.130	1.227	1.143
73 Diversey Parkway, North Branch Chicago River	1.070	1.192	0.954	1.048	0.931	0.897	1.112	0.986	0.870	1.065	1.055
46 Grand Avenue, North Branch Chicago River	ND	1.029	0.847	0.950	0.836	0.788	1.115	1.004	1.121	0.923	0.982
74 Lake Shore Drive, Chicago River	ND	0.333	0.335	0.153	0.003	0.053	0.152	0.125	0.158	0.228	0.226
100 Wells Street, Chicago River	0.575	0.691	0.568	0.336	0.150	0.320	0.308	0.309	0.355	0.443	0.639
39 Madison Street, South Branch Chicago River	ND	0.867	0.825	0.649	0.669	0.658	0.709	0.661	0.830	0.908	1.089
108 Loomis Street, South Branch Chicago River	0.692	0.850	0.728	0.657	0.574	0.591	0.678	0.723	0.722	0.860	0.775
99 Archer Avenue, South Fork South Branch Chicago River	0.370	0.658	0.671	0.682	0.485	0.580	0.609	0.590	0.767	0.804	0.857
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	0.814	0.697	0.670	0.611	0.630	0.686	0.702	0.755	0.843	0.884
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	0.642	0.942	0.598	0.681	0.493	0.637	0.763	0.661	0.746	0.803	0.867
41 Harlem Avenue, Chicago Sanitary & Ship Canal	0.725	1.083	0.479	0.791	0.673	0.829	1.008	0.825	0.988	0.953	1.100
42 Route 83, Chicago Sanitary & Ship Canal	ND	0.771	0.546	0.837	0.609	0.862	0.830	0.602	0.725	0.978	0.836
48 Stephen Street, Chicago Sanitary & Ship Canal	1.034	1.350	0.833	1.008	0.823	0.928	0.964	0.901	1.168	1.103	1.083
92 Lockport Forebay, Chicago Sanitary & Ship Canal	0.892	1.263	0.925	1.121	0.864	0.952	0.852	0.935	1.166	1.014	1.138
Calumet River System											
49 Ewing Avenue, Calumet River	ND	0.183	0.070	0.018	0.000	0.000	0.011	0.044	0.025	0.060	0.032
50 Burnham Avenue, Wolf Lake	ND	0.100	0.083	0.043	0.004	0.000	0.037	0.045	0.023	0.053	0.029
55 130th Street, Calumet River	ND	0.100	0.072	0.000	0.004	0.000	0.031	0.038	0.025	0.049	0.035
86 Burnham Avenue, Grand Calumet River	0.622	1.309	0.750	0.919	0.290	0.835	1.209	0.699	0.878	0.584	0.607
56 Indiana Avenue, Little Calumet River	0.575	0.770	0.364	0.369	0.010	0.340	0.189	0.359	0.372	0.538	0.504
76 Halsted Street, Little Calumet River	2.182	2.845	1.660	2.010	1.493	2.035	1.037	1.835	2.083	1.638	2.126
52 Wentworth Avenue, Little Calumet River	ND	0.700	0.391	0.568	0.493	0.587	0.585	0.645	0.609	0.543	0.561
54 Joe Orr Road, Thorn Creek	ND	1.429	1.186	1.267	1.743	2.664	2.329	2.038	2.113	2.054	1.650
97 170th Street, Thorn Creek	ND	1.083	0.757	0.920	1.144	1.383	1.479	1.170	1.574	1.502	2.101
57 Ashland Avenue, Little Calumet River	1.040	1.091	0.494	0.758	0.519	0.993	0.834	0.764	1.061	0.812	1.223
58 Ashland Avenue, Calumet-Sag Channel	ND	2.529	1.395	1.578	1.412	1.957	0.963	1.755	2.077	1.562	1.898
59 Cicero Avenue, Calumet-Sag Channel	1.691	2.870	1.582	1.917	1.258	1.803	0.989	1.802	2.214	1.646	2.048
43 Route 83, Calumet-Sag Channel	1.518	1.764	1.426	1.824	1.329	1.378	1.037	1.318	2.266	1.483	1.686
Des Plaines River System											
90 Route 19, Poplar Creek	ND	0.114	0.093	0.097	0.012	0.000	0.100	0.116	0.087	0.075	0.108
110 Springinguth Road, West Branch DuPage River	0.263	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	2.157	1.797	2.310	2.340	2.426	2.460	2.270	2.670	2.745	2.440
64 Lake Street, West Branch DuPage River	ND	ND	ND	1.148	1.747	2.119	2.062	1.911	2.432	2.400	2.338
111 Arlington Drive, West Branch DuPage River	1.958	2.364	1.666	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	0.200	0.127	0.399	0.120	0.253	0.000	0.132	0.149	0.108	0.097	0.106
80 Arlington Heights Road, Salt Creek	ND	1.401	1.010	1.533	1.588	0.142	0.513	1.791	2.022	1.850	1.980
18 Devon Avenue, Salt Creek	1.517	2.065	1.286	1.643	1.563	0.133	0.548	1.882	1.981	1.899	2.007
24 Wolf Road, Salt Creek	ND	1.100	1.015	1.172	1.122	0.761	0.839	1.471	1.896	1.595	1.584
109 Brookfield Avenue, Salt Creek	0.918	1.358	0.915	1.041	0.944	0.733	0.765	1.355	1.603	1.317	1.328
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	0.200	0.163	0.082	0.000	0.035	0.000	0.112	0.123	0.098	0.108	0.290
78 Wille Road, Higgins Creek	1.125	1.400	0.975	1.018	0.936	1.176	0.813	0.663	1.577	0.662	0.478
12 Lake-Cook Road, Buffalo Creek	0.200	0.150	0.113	0.086	0.012	0.000	0.167	0.122	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	0.700	0.603	0.773	0.566	0.915	0.934	1.075	1.498	0.985	1.333
17 Oakton Street, Des Plaines River	ND	0.657	0.553	0.802	0.502	0.765	0.772	0.873	1.256	0.889	0.958
19 Belmont Avenue, Des Plaines River	0.750	1.058	0.575	0.801	0.532	0.745	0.738	0.816	1.107	0.688	0.852
20 Roosevelt Road, Des Plaines River	ND	0.586	0.580	0.734	0.475	0.682	0.700	0.700	1.069	0.631	0.891
22 Ogden Avenue, Des Plaines River	0.833	1.133	0.621	0.787	0.631	0.656	0.697	0.923	1.224	0.811	1.272
23 Willow Springs Road, Des Plaines River	0.691	1.025	0.587	0.733	0.535	0.641	0.647	0.882	1.173	0.796	0.919
29 Stephen Street, Des Plaines River	ND	0.643	0.575	0.708	0.535	0.699	0.715	0.930	1.201	0.834	1.077
91 Material Service Road, Des Plaines River	0.658	0.842	0.554	0.678	0.552	0.680	0.733	0.915	1.263	0.778	1.104

ND = No Data.

TABLE AII-23: TOTAL CYANIDE MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means (mg/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	0.007	0.006	0.003	0.002	0.000	0.005	0.001	0.005	0.005	0.002
103 Golf Road, West Fork North Branch Chicago River	ND	0.007	0.006	0.001	0.001	0.000	0.002	0.001	0.003	0.002	0.002
31 Lake-Cook Road, Middle Fork North Branch	ND	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.002	0.002	0.001
104 Glenview Road, North Branch Chicago River	ND	0.007	0.006	0.001	0.000	0.000	0.001	0.000	0.002	0.003	0.002
32 Lake-Cook Road, Skokie River	ND	0.007	0.005	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.002
105 Frontage Road, Skokie River	ND	0.005	0.005	0.001	0.000	0.000	0.001	0.000	0.002	0.002	0.002
34 Dempster Street, North Branch Chicago River	ND	0.006	0.005	0.001	0.000	0.000	0.001	0.000	0.002	0.003	0.003
96 Albany Avenue, North Branch Chicago River	0.006	0.006	0.005	0.001	0.000	0.000	0.001	0.001	0.002	0.003	0.002
35 Central Street, North Shore Channel	ND	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001
112 Dempster Street, North Shore Channel	0.006	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	0.006	0.005	0.000	0.000	0.000	0.001	0.000	0.002	0.002	0.002
36 Touhy Avenue, North Shore Channel	0.005	0.005	0.005	0.001	0.001	0.000	0.002	0.001	0.002	0.004	0.003
101 Foster Avenue, North Shore Channel	ND	0.005	0.005	0.001	0.001	0.000	0.003	0.001	0.003	0.003	0.003
37 Wilson Avenue, North Branch Chicago River	ND	0.005	0.005	0.001	0.001	0.000	0.002	0.001	0.003	0.003	0.003
73 Diversey Parkway, North Branch Chicago River	0.006	0.005	0.005	0.001	0.001	0.000	0.002	0.001	0.003	0.003	0.003
46 Grand Avenue, North Branch Chicago River	ND	0.005	0.005	0.001	0.000	0.000	0.002	0.001	0.003	0.004	0.003
74 Lake Shore Drive, Chicago River	ND	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.000
100 Wells Street, Chicago River	0.005	0.005	0.005	0.001	0.000	0.000	0.000	0.000	0.000	0.002	0.002
39 Madison Street, South Branch Chicago River	ND	0.005	0.005	0.001	0.000	0.000	0.001	0.000	0.002	0.003	0.004
108 Loomis Street, South Branch Chicago River	0.005	0.005	0.005	0.001	0.000	0.000	0.001	0.001	0.002	0.003	0.003
99 Archer Avenue, South Fork South Branch Chicago River	0.005	0.005	0.005	0.001	0.000	0.000	0.001	0.001	0.002	0.002	0.003
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	0.005	0.005	0.001	0.000	0.000	0.001	0.001	0.002	0.003	0.003
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	0.005	0.005	0.005	0.000	0.001	0.000	0.001	0.001	0.002	0.003	0.003
41 Harlem Avenue, Chicago Sanitary & Ship Canal	0.005	0.005	0.005	0.001	0.001	0.000	0.004	0.003	0.003	0.003	0.003
42 Route 83, Chicago Sanitary & Ship Canal	ND	0.005	0.005	0.001	0.000	0.000	0.002	0.002	0.004	0.003	0.004
48 Stephen Street, Chicago Sanitary & Ship Canal	0.005	0.005	0.005	0.002	0.001	0.000	0.002	0.003	0.004	0.004	0.003
92 Lockport Forebay, Chicago Sanitary & Ship Canal	0.005	0.006	0.005	0.001	0.000	0.000	0.002	0.003	0.003	0.004	0.003
Calumet River System											
49 Ewing Avenue, Calumet River	ND	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
50 Burnham Avenue, Wolf Lake	ND	0.005	0.006	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.000
55 130th Street, Calumet River	ND	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001
86 Burnham Avenue, Grand Calumet River	0.005	0.006	0.005	0.002	0.000	0.002	0.004	0.003	0.005	0.005	0.005
56 Indiana Avenue, Little Calumet River	0.005	0.005	0.005	0.000	0.000	0.000	0.001	0.000	0.001	0.001	0.001
76 Halsted Street, Little Calumet River	0.005	0.005	0.005	0.001	0.000	0.000	0.002	0.002	0.003	0.003	0.003
52 Wentworth Avenue, Little Calumet River	ND	0.006	0.005	0.001	0.000	0.001	0.006	0.004	0.006	0.016	0.005
54 Joe Orr Road, Thorn Creek	ND	0.005	0.005	0.002	0.001	0.000	0.002	0.002	0.003	0.004	0.003
97 170th Street, Thorn Creek	ND	0.005	0.005	0.001	0.000	0.000	0.001	0.000	0.002	0.002	0.002
57 Ashland Avenue, Little Calumet River	0.006	0.005	0.006	0.002	0.000	0.000	0.003	0.002	0.003	0.005	0.004
58 Ashland Avenue, Calumet-Sag Channel	ND	0.005	0.005	0.002	0.001	0.000	0.002	0.002	0.003	0.004	0.003
59 Cicero Avenue, Calumet-Sag Channel	0.005	0.005	0.005	0.001	0.000	0.000	0.002	0.002	0.003	0.003	0.003
43 Route 83, Calumet-Sag Channel	0.005	0.005	0.005	0.002	0.000	0.000	0.001	0.001	0.002	0.003	0.002
Des Plaines River System											
90 Route 19, Poplar Creek	ND	0.005	0.005	0.001	0.000	0.000	0.001	0.000	0.001	0.001	0.001
110 Springinguth Road, West Branch DuPage River	0.006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	0.005	0.006	0.003	0.001	0.001	0.005	0.004	0.004	0.006	0.005
64 Lake Street, West Branch DuPage River	ND	ND	ND	0.003	0.000	0.000	0.003	0.002	0.004	0.004	0.004
111 Arlington Drive, West Branch DuPage River	0.005	0.005	0.005	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	0.005	0.005	0.006	0.001	0.000	0.000	0.002	0.000	0.001	0.002	0.002
80 Arlington Heights Road, Salt Creek	ND	0.006	0.005	0.003	0.001	0.000	0.002	0.001	0.003	0.004	0.003
18 Devon Avenue, Salt Creek	0.005	0.005	0.006	0.003	0.001	0.000	0.002	0.001	0.003	0.004	0.003
24 Wolf Road, Salt Creek	ND	0.005	0.005	0.002	0.000	0.000	0.001	0.000	0.002	0.003	0.003
109 Brookfield Avenue, Salt Creek	0.005	0.005	0.005	0.001	0.000	0.000	0.001	0.001	0.002	0.002	0.003
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	0.005	0.005	0.006	0.000	0.000	0.000	0.000	0.003	0.003	0.004	0.003
78 Wille Road, Higgins Creek	0.005	0.005	0.006	0.003	0.000	0.001	0.004	0.002	0.003	0.004	0.004
12 Lake-Cook Road, Buffalo Creek	ND	0.005	0.005	0.001	0.000	0.000	0.000	0.000	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	0.005	0.005	0.001	0.000	0.000	0.000	0.000	0.002	0.001	0.002
17 Oakton Street, Des Plaines River	ND	0.005	0.005	0.000	0.000	0.002	0.001	0.001	0.005	0.002	0.002
19 Belmont Avenue, Des Plaines River	0.005	0.005	0.005	0.002	0.000	0.003	0.002	0.001	0.009	0.002	0.003
20 Roosevelt Road, Des Plaines River	ND	0.005	0.005	0.001	0.000	0.002	0.002	0.001	0.009	0.002	0.002
22 Ogden Avenue, Des Plaines River	0.005	0.006	0.005	0.001	0.000	0.002	0.002	0.001	0.003	0.002	0.003
23 Willow Springs Road, Des Plaines River	0.005	0.005	0.005	0.000	0.000	0.001	0.002	0.000	0.002	0.002	0.002
29 Stephen Street, Des Plaines River	ND	0.006	0.005	0.000	0.000	0.000	0.001	0.000	0.002	0.002	0.002
91 Material Service Road, Des Plaines River	0.005	0.006	0.005	0.000	0.000	0.000	0.001	0.000	0.001	0.002	0.002

ND = No Data.

**TABLE AII-24: WEAK ACID DISSOCIABLE CYANIDE MEAN HISTORY
2003 THROUGH 2013**

Sampling Station (No. Name)	Annual Means (mg/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	0.002	0.001	0.000	0.000	0.000	0.001	0.001	0.002	0.001	0.001
103 Golf Road, West Fork North Branch Chicago River	ND	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001
31 Lake-Cook Road, Middle Fork North Branch	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.001
104 Glenview Road, North Branch Chicago River	ND	0.001	0.002	0.000	0.000	0.000	0.000	0.001	0.001	0.001	0.001
32 Lake-Cook Road, Skokie River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.001
105 Frontage Road, Skokie River	ND	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001
34 Dempster Street, North Branch Chicago River	ND	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001
96 Albany Avenue, North Branch Chicago River	0.003	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001
35 Central Street, North Shore Channel	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
112 Dempster Street, North Shore Channel	0.003	0.001	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001
36 Touhy Avenue, North Shore Channel	0.003	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001
101 Foster Avenue, North Shore Channel	ND	0.001	0.001	0.001	0.000	0.000	0.001	0.001	0.001	0.001	0.001
37 Wilson Avenue, North Branch Chicago River	ND	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001
73 Diversey Parkway, North Branch Chicago River	0.003	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001
46 Grand Avenue, North Branch Chicago River	ND	0.002	0.001	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001
74 Lake Shore Drive, Chicago River	ND	0.001	0.001	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.000
100 Wells Street, Chicago River	0.003	0.001	0.001	0.000	0.000	0.000	0.001	0.000	0.001	0.001	0.001
39 Madison Street, South Branch Chicago River	ND	0.002	0.001	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001
108 Loomis Street, South Branch Chicago River	0.003	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001
99 Archer Avenue, South Fork South Branch Chicago River	0.003	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	0.003	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001
41 Harlem Avenue, Chicago Sanitary & Ship Canal	0.003	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001
42 Route 83, Chicago Sanitary & Ship Canal	ND	0.002	0.001	0.001	0.000	0.000	0.001	0.001	0.001	0.001	0.001
48 Stephen Street, Chicago Sanitary & Ship Canal	0.003	0.002	0.001	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001
92 Lockport Forebay, Chicago Sanitary & Ship Canal	0.003	0.001	0.001	0.001	0.000	0.000	0.001	0.001	0.001	0.001	0.001
Calumet River System											
49 Ewing Avenue, Calumet River	ND	0.001	0.001	0.001	0.000	0.000	0.001	0.000	0.000	0.000	0.001
50 Burnham Avenue, Wolf Lake	ND	0.001	0.001	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000
55 130th Street, Calumet River	ND	0.001	0.001	0.000	0.000	0.000	0.001	0.000	0.001	0.001	0.000
86 Burnham Avenue, Grand Calumet River	0.003	0.002	0.001	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001
56 Indiana Avenue, Little Calumet River	0.003	0.001	0.001	0.000	0.000	0.000	0.001	0.000	0.001	0.000	0.001
76 Halsted Street, Little Calumet River	0.003	0.002	0.001	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001
52 Wentworth Avenue, Little Calumet River	ND	0.002	0.001	0.000	0.000	0.000	0.002	0.001	0.002	0.004	0.001
54 Joe Orr Road, Thorn Creek	ND	0.001	0.001	0.001	0.000	0.000	0.001	0.001	0.001	0.001	0.001
97 170th Street, Thorn Creek	ND	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001
57 Ashland Avenue, Little Calumet River	0.003	0.002	0.001	0.000	0.000	0.000	0.001	0.001	0.001	0.002	0.001
58 Ashland Avenue, Calumet-Sag Channel	ND	0.002	0.001	0.000	0.000	0.000	0.001	0.001	0.002	0.001	0.001
59 Cicero Avenue, Calumet-Sag Channel	0.003	0.002	0.001	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001
43 Route 83, Calumet-Sag Channel	0.003	0.002	0.001	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001
Des Plaines River System											
90 Route 19, Poplar Creek	ND	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001
110 Springinguth Road, West Branch DuPage River	0.003	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	0.002	0.002	0.002	0.000	0.001	0.003	0.002	0.002	0.002	0.002
64 Lake Street, West Branch DuPage River	ND	ND	ND	0.001	0.000	0.000	0.002	0.001	0.001	0.002	0.002
111 Arlington Drive, West Branch DuPage River	0.003	0.001	0.001	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	0.003	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.000	0.001	0.001
80 Arlington Heights Road, Salt Creek	ND	0.002	0.002	0.001	0.000	0.000	0.002	0.001	0.002	0.002	0.001
18 Devon Avenue, Salt Creek	0.003	0.002	0.002	0.001	0.000	0.000	0.001	0.001	0.001	0.002	0.001
24 Wolf Road, Salt Creek	ND	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001
109 Brookfield Avenue, Salt Creek	0.003	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	0.002	0.001	0.001	0.001	0.000	0.001	0.001	0.001	0.001	0.001	0.001
78 Wille Road, Higgins Creek	0.003	0.001	0.001	0.001	0.000	0.001	0.002	0.001	0.001	0.001	0.001
12 Lake-Cook Road, Buffalo Creek	ND	0.001	0.001	0.000	0.000	0.000	0.001	0.000	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001
17 Oakton Street, Des Plaines River	ND	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001
19 Belmont Avenue, Des Plaines River	0.003	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001
20 Roosevelt Road, Des Plaines River	ND	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001
22 Ogden Avenue, Des Plaines River	0.003	0.001	0.001	0.001	0.000	0.000	0.001	0.001	0.001	0.001	0.001
23 Willow Springs Road, Des Plaines River	0.003	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001
29 Stephen Street, Des Plaines River	ND	0.001	0.001	0.001	0.000	0.000	0.001	0.001	0.001	0.001	0.001
91 Material Service Road, Des Plaines River	0.003	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001

ND = No Data.

TABLE AII-26: TOTAL ORGANIC CARBON MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means (mg/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	4.60	5.24	4.89	4.75	3.97	3.90	4.58	6.43	8.88	10.67
103 Golf Road, West Fork North Branch Chicago River	ND	4.29	4.79	4.70	4.53	3.53	4.05	4.08	6.88	8.40	8.88
31 Lake-Cook Road, Middle Fork North Branch	ND	5.75	6.64	6.79	6.01	5.13	6.75	6.17	9.02	10.10	11.00
104 Glenview Road, North Branch Chicago River	ND	4.43	7.39	4.66	4.65	4.08	4.40	4.63	5.98	8.33	9.00
32 Lake-Cook Road, Skokie River	ND	4.70	7.34	5.60	5.09	4.36	4.96	5.43	7.62	9.30	9.89
105 Frontage Road, Skokie River	ND	4.29	4.69	4.58	4.37	3.73	4.29	4.43	5.64	7.17	7.75
34 Dempster Street, North Branch Chicago River	ND	4.14	5.32	4.33	4.63	3.96	4.25	4.50	6.97	9.67	8.82
96 Albany Avenue, North Branch Chicago River	4.50	4.58	5.60	5.35	4.51	3.72	4.32	4.51	6.70	8.18	9.30
35 Central Street, North Shore Channel	ND	3.00	3.24	3.65	2.71	1.67	1.78	1.92	2.49	4.22	4.89
112 Dempster Street, North Shore Channel	2.90	5.00	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	4.29	4.27	4.09	3.26	2.36	2.92	3.38	4.42	5.92	7.44
36 Touhy Avenue, North Shore Channel	4.55	4.63	5.18	4.95	4.16	3.39	4.03	4.12	6.41	8.08	8.92
101 Foster Avenue, North Shore Channel	ND	4.57	5.21	6.04	3.98	3.37	4.07	4.26	6.48	8.25	8.42
37 Wilson Avenue, North Branch Chicago River	ND	4.67	4.27	4.48	4.02	3.40	3.88	4.32	6.68	8.08	8.67
73 Diversey Parkway, North Branch Chicago River	4.83	4.92	4.57	4.68	3.89	3.32	4.10	4.08	6.26	7.83	8.92
46 Grand Avenue, North Branch Chicago River	ND	4.86	4.95	4.53	4.13	3.43	4.01	4.25	6.49	7.92	8.92
74 Lake Shore Drive, Chicago River	ND	2.67	2.78	2.55	2.23	1.77	1.87	1.75	2.54	4.22	4.30
100 Wells Street, Chicago River	3.83	3.55	4.01	2.93	2.53	2.39	2.25	2.27	3.55	5.17	6.25
39 Madison Street, South Branch Chicago River	ND	4.17	4.97	4.04	3.60	3.09	3.03	3.29	5.03	7.00	7.91
108 Loomis Street, South Branch Chicago River	3.92	4.25	4.21	4.02	3.43	2.96	3.17	3.35	5.52	6.83	8.00
99 Archer Avenue, South Fork South Branch Chicago River	4.70	5.83	4.88	4.44	3.76	3.81	3.34	3.27	5.44	7.08	7.83
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	4.57	4.08	3.84	3.68	2.93	3.15	3.37	5.52	6.67	7.67
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	4.17	4.00	4.28	3.93	3.51	3.13	3.24	3.75	5.08	7.00	7.33
41 Harlem Avenue, Chicago Sanitary & Ship Canal	4.58	4.58	5.09	4.63	4.32	3.56	3.80	4.16	5.92	7.50	8.25
42 Route 83, Chicago Sanitary & Ship Canal	ND	5.01	5.22	4.91	4.27	3.56	4.19	4.39	6.05	8.17	8.00
48 Stephen Street, Chicago Sanitary & Ship Canal	4.92	4.83	5.06	4.93	4.37	3.68	4.20	4.54	6.32	7.75	7.92
92 Lockport Forebay, Chicago Sanitary & Ship Canal	4.63	4.88	5.17	4.83	4.44	3.60	4.34	4.40	6.01	8.00	8.29
Calumet River System											
49 Ewing Avenue, Calumet River	ND	2.17	2.28	4.50	1.74	1.29	1.48	1.43	1.77	3.40	3.17
50 Burnham Avenue, Wolf Lake	ND	6.14	5.31	6.28	4.35	3.83	4.00	3.81	5.37	6.42	6.17
55 130th Street, Calumet River	ND	3.14	2.91	2.84	3.00	2.31	2.75	2.62	3.39	4.55	4.70
86 Burnham Avenue, Grand Calumet River	9.67	10.64	8.58	10.66	6.76	8.99	17.54	7.45	9.27	12.33	12.90
56 Indiana Avenue, Little Calumet River	3.13	3.50	3.84	3.64	3.70	3.08	3.47	3.39	3.77	5.11	5.64
76 Halsted Street, Little Calumet River	5.01	5.18	4.95	4.96	4.44	4.07	4.19	4.40	5.90	7.67	8.45
52 Wentworth Avenue, Little Calumet River	ND	6.43	6.87	7.69	6.61	5.54	6.22	9.02	8.54	12.22	11.60
54 Joe Orr Road, Thorn Creek	ND	5.43	6.24	5.96	6.41	5.09	5.04	5.33	8.00	10.43	9.67
97 170th Street, Thorn Creek	ND	5.00	5.57	6.19	5.59	4.53	5.22	6.26	6.72	9.27	9.60
57 Ashland Avenue, Little Calumet River	5.10	5.18	5.98	5.60	5.99	4.89	6.68	5.67	7.46	9.60	9.60
58 Ashland Avenue, Calumet-Sag Channel	ND	5.29	4.99	5.53	4.70	4.19	4.60	4.65	6.04	8.00	8.50
59 Cicero Avenue, Calumet-Sag Channel	5.00	5.20	5.06	5.55	4.71	4.21	4.55	4.77	6.41	8.17	8.64
43 Route 83, Calumet-Sag Channel	5.00	4.73	4.85	4.92	4.70	4.03	4.64	4.77	6.54	8.00	8.55
Des Plaines River System											
90 Route 19, Poplar Creek	ND	5.36	5.82	5.67	5.14	4.43	5.13	5.75	7.28	8.64	9.90
110 Springinguth Road, West Branch DuPage River	11.25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	6.43	7.10	6.54	6.53	6.23	6.73	6.83	9.55	12.45	11.91
64 Lake Street, West Branch DuPage River	ND	ND	ND	5.80	6.18	5.26	6.05	6.23	8.65	10.09	10.83
111 Arlington Drive, West Branch DuPage River	6.33	6.43	6.19	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	5.75	6.18	6.41	6.64	6.03	4.72	5.27	5.60	8.42	9.45	9.56
80 Arlington Heights Road, Salt Creek	ND	5.09	5.80	5.58	5.47	3.74	4.45	5.00	7.13	9.42	9.92
18 Devon Avenue, Salt Creek	5.42	5.43	5.47	5.59	5.33	3.67	4.49	4.90	6.86	9.58	10.08
24 Wolf Road, Salt Creek	ND	4.86	5.02	4.95	4.77	3.58	4.07	4.68	6.73	8.27	8.67
109 Brookfield Avenue, Salt Creek	7.82	4.92	5.07	4.87	4.83	3.72	4.29	4.65	7.30	10.82	8.70
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	5.25	4.75	4.88	3.80	5.28	3.62	4.66	5.13	7.75	11.00	10.40
78 Wille Road, Higgins Creek	5.33	5.00	4.73	5.02	5.12	4.83	5.03	5.59	7.94	10.55	10.25
12 Lake-Cook Road, Buffalo Creek	ND	5.33	6.21	5.97	6.41	5.79	6.10	5.94	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	5.57	6.13	5.98	6.04	4.81	7.90	7.21	7.48	9.27	9.67
17 Oakton Street, Des Plaines River	ND	5.29	6.10	5.94	6.06	4.75	5.98	5.40	7.38	8.73	9.40
19 Belmont Avenue, Des Plaines River	5.75	5.17	5.80	5.48	5.77	4.57	5.75	5.56	7.53	9.27	9.50
20 Roosevelt Road, Des Plaines River	ND	5.00	5.80	5.68	5.85	4.82	5.74	5.52	7.28	9.36	9.00
22 Ogden Avenue, Des Plaines River	5.33	5.33	5.63	5.28	5.58	4.41	5.36	5.14	7.00	9.27	9.20
23 Willow Springs Road, Des Plaines River	5.36	5.25	5.59	5.23	5.55	4.29	6.02	5.20	7.11	8.82	9.10
29 Stephen Street, Des Plaines River	ND	5.71	5.40	5.45	5.51	3.98	5.20	5.12	7.08	8.45	9.36
91 Material Service Road, Des Plaines River	5.25	5.08	5.28	5.19	5.41	3.99	5.45	5.09	7.19	8.45	8.92

ND = No Data.

TABLE AII-27: FECAL COLIFORM MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means (fcu/100mL)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	6260	4663	2364	1818	1453	2476	3196	1130	2494	3740
103 Golf Road, West Fork North Branch Chicago River	ND	546	797	466	1083	1133	660	893	727	622	839
31 Lake-Cook Road, Middle Fork North Branch	ND	511	488	646	586	1836	633	943	536	760	773
104 Glenview Road, North Branch Chicago River	ND	301	723	188	372	563	827	855	649	1326	777
32 Lake-Cook Road, Skokie River	ND	2400	2687	775	655	596	736	657	649	1042	546
105 Frontage Road, Skokie River	ND	96	72	112	169	151	199	119	160	159	225
34 Dempster Street, North Branch Chicago River	ND	441	987	1472	695	1069	600	1026	1121	996	1333
96 Albany Avenue, North Branch Chicago River	966	380	375	507	420	653	520	860	1119	1029	1498
35 Central Street, North Shore Channel	ND	35	124	54	80	168	66	90	144	330	291
112 Dempster Street, North Shore Channel	373	939	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	1663	915	615	343	1627	638	1181	866	963	1487
36 Touhy Avenue, North Shore Channel	11161	5642	7494	5393	8040	6892	8875	8550	11481	5518	7588
101 Foster Avenue, North Shore Channel	ND	6443	5857	5484	5021	7878	9612	7628	10290	6872	7917
37 Wilson Avenue, North Branch Chicago River	ND	5257	5823	4091	5461	5723	7479	6033	9748	5896	5940
73 Diversey Parkway, North Branch Chicago River	4117	3446	2991	3538	3818	4373	3608	4237	5799	3426	4228
46 Grand Avenue, North Branch Chicago River	ND	939	1618	971	1706	3414	1226	2054	1853	1583	2402
74 Lake Shore Drive, Chicago River	ND	81	44	28	241	90	86	31	81	46	53
100 Wells Street, Chicago River	675	320	792	182	189	947	183	190	150	65	301
39 Madison Street, South Branch Chicago River	ND	1351	2467	415	904	2921	922	892	921	680	799
108 Loomis Street, South Branch Chicago River	333	369	589	257	334	1427	371	445	297	179	181
99 Archer Avenue, South Fork South Branch Chicago River	624	620	429	230	384	1625	294	493	156	202	294
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	484	378	258	283	940	349	523	223	164	173
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	344	174	314	137	202	649	347	469	129	104	153
41 Harlem Avenue, Chicago Sanitary & Ship Canal	2153	3721	3218	1391	3321	4642	4908	3906	2668	2637	4314
42 Route 83, Chicago Sanitary & Ship Canal	ND	1217	1163	537	573	1238	1289	1303	1011	935	866
48 Stephen Street, Chicago Sanitary & Ship Canal	640	668	977	199	448	992	645	894	469	386	345
92 Lockport Forebay, Chicago Sanitary & Ship Canal	122	112	239	101	216	255	227	308	205	186	179
Calumet River System											
49 Ewing Avenue, Calumet River	ND	21	10	15	11	13	12	11	12	11	12
50 Burnham Avenue, Wolf Lake	ND	16	43	21	26	36	70	21	77	53	37
55 130th Street, Calumet River	ND	11	32	35	9	25	19	24	37	26	32
86 Burnham Avenue, Grand Calumet River	1332	533	3416	4613	1158	642	2448	420	2377	1104	1695
56 Indiana Avenue, Little Calumet River	67	109	120	74	74	111	49	89	73	103	75
76 Halsted Street, Little Calumet River	1402	985	1441	1926	2262	2891	3259	2159	2759	2775	2990
52 Wentworth Avenue, Little Calumet River	ND	811	5240	2585	2935	1811	1477	956	1934	1284	2247
54 Joe Orr Road, Thorn Creek	ND	1587	3859	1131	2335	1407	2411	3309	14257	1588	2922
97 170th Street, Thorn Creek	ND	1250	2497	1086	756	780	698	642	2119	1292	1347
57 Ashland Avenue, Little Calumet River	582	511	1905	1346	563	783	816	431	3181	4103	2329
58 Ashland Avenue, Calumet-Sag Channel	ND	752	1975	1280	1407	2174	2122	1580	2365	2616	2135
59 Cicero Avenue, Calumet-Sag Channel	2389	1978	1650	1060	377	945	1178	539	857	1041	1105
43 Route 83, Calumet-Sag Channel	56	269	272	127	106	108	188	97	57	147	103
Des Plaines River System											
90 Route 19, Poplar Creek	ND	63	148	87	138	163	181	264	417	92	387
110 Springinguth Road, West Branch DuPage River	12357	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	1195	972	549	451	1103	2013	857	2026	1121	2181
64 Lake Street, West Branch DuPage River	ND	ND	ND	814	538	684	2406	949	2144	967	1731
111 Arlington Drive, West Branch DuPage River	918	725	463	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	95	46	85	154	97	47	250	153	499	84	568
80 Arlington Heights Road, Salt Creek	ND	466	222	273	184	377	312	417	389	529	678
18 Devon Avenue, Salt Creek	622	383	358	472	328	734	930	946	1014	1214	1668
24 Wolf Road, Salt Creek	ND	338	229	358	398	298	688	1303	1034	337	2012
109 Brookfield Avenue, Salt Creek	980	567	499	560	615	663	1425	1618	1480	1499	3461
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	957	361	474	210	1296	857	2370	1915	1932	488	7317
78 Wille Road, Higgins Creek	438	283	173	142	475	266	514	275	382	162	559
12 Lake-Cook Road, Buffalo Creek	213	86	77	140	99	248	823	236	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	229	212	245	193	247	310	362	650	240	566
17 Oakton Street, Des Plaines River	ND	343	298	224	208	452	313	616	639	342	1128
19 Belmont Avenue, Des Plaines River	588	335	378	423	301	365	516	525	523	410	1021
20 Roosevelt Road, Des Plaines River	ND	401	353	296	511	523	634	897	950	662	1309
22 Ogden Avenue, Des Plaines River	394	501	325	363	356	503	767	1509	1247	792	1023
23 Willow Springs Road, Des Plaines River	184	203	261	280	217	187	302	1092	480	303	1664
29 Stephen Street, Des Plaines River	ND	226	157	162	129	129	184	617	248	202	568
91 Material Service Road, Des Plaines River	109	66	112	63	83	78	192	327	260	135	564

ND = No Data.

TABLE AII-28: ESCHERICHIA COLI MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means (fcu/100mL)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	ND	1133	1195	2068	1008	1800	2068	ND	2140	5099
103 Golf Road, West Fork North Branch Chicago River	ND	ND	665	411	968	507	347	374	943	451	380
31 Lake-Cook Road, Middle Fork North Branch	ND	ND	348	348	466	1005	921	799	243	956	319
104 Glenview Road, North Branch Chicago River	ND	ND	6813	174	240	353	266	291	443	432	180
32 Lake-Cook Road, Skokie River	ND	ND	4555	697	344	312	527	147	515	579	418
105 Frontage Road, Skokie River	ND	ND	126	129	247	121	118	71	276	142	134
34 Dempster Street, North Branch Chicago River	ND	ND	2970	2277	343	446	386	840	734	604	1110
96 Albany Avenue, North Branch Chicago River	ND	ND	549	1244	148	559	400	470	791	337	934
35 Central Street, North Shore Channel	ND	ND	47	81	53	231	44	222	78	267	271
112 Dempster Street, North Shore Channel	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	ND	1595	3345	362	2052	562	782	974	835	4035
36 Touhy Avenue, North Shore Channel	ND	ND	8437	5491	6119	6748	8540	5772	10341	3302	7271
101 Foster Avenue, North Shore Channel	ND	ND	8728	4095	4701	7533	12046	6040	10236	5652	8204
37 Wilson Avenue, North Branch Chicago River	ND	ND	9398	3511	5609	5922	9093	5411	9844	6376	7083
73 Diversey Parkway, North Branch Chicago River	ND	ND	6808	2336	4607	3816	3900	3231	7280	2569	4688
46 Grand Avenue, North Branch Chicago River	ND	ND	2378	573	1599	3263	1197	1245	2667	1272	2882
74 Lake Shore Drive, Chicago River	ND	ND	25	17	38	55	81	16	24	49	44
100 Wells Street, Chicago River	ND	ND	573	33	93	411	169	184	119	49	231
39 Madison Street, South Branch Chicago River	ND	ND	1124	180	973	1683	584	1253	461	463	427
108 Loomis Street, South Branch Chicago River	ND	ND	199	68	201	621	336	599	61	72	70
99 Archer Avenue, South Fork South Branch Chicago River	ND	ND	108	201	164	907	115	448	102	78	251
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	ND	1113	230	260	632	ND	ND	156	ND	ND
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	ND	ND	617	58	161	488	932	403	78	177	94
41 Harlem Avenue, Chicago Sanitary & Ship Canal	ND	ND	5172	1106	1669	2877	5416	3330	2267	2567	2488
42 Route 83, Chicago Sanitary & Ship Canal	ND	ND	3446	667	399	1007	867	1365	1340	553	787
48 Stephen Street, Chicago Sanitary & Ship Canal	ND	ND	4432	202	379	724	645	1049	796	407	322
92 Lockport Forebay, Chicago Sanitary & Ship Canal	ND	ND	357	81	175	457	251	316	148	128	81
Calumet River System											
49 Ewing Avenue, Calumet River	ND	ND	10	23	10	10	10	10	12	10	14
50 Burnham Avenue, Wolf Lake	ND	ND	98	26	23	29	89	19	183	37	58
55 130th Street, Calumet River	ND	ND	20	43	14	23	12	16	57	15	90
86 Burnham Avenue, Grand Calumet River	ND	ND	10775	204450	1302	2342	682	262	11506	6199	6709
56 Indiana Avenue, Little Calumet River	ND	ND	1549	126	257	77	29	181	63	48	142
76 Halsted Street, Little Calumet River	ND	ND	785	3724	2486	2012	1929	2372	2838	2420	2787
52 Wentworth Avenue, Little Calumet River	ND	ND	2504	2785	1724	1090	2677	829	2278	3794	1169
54 Joe Orr Road, Thorn Creek	ND	ND	1650	1368	1428	699	2611	2124	16399	1508	22000
97 170th Street, Thorn Creek	ND	ND	1754	435	815	697	1138	364	2442	1631	2984
57 Ashland Avenue, Little Calumet River	ND	ND	1322	552	285	1027	1530	288	5565	5967	2705
58 Ashland Avenue, Calumet-Sag Channel	ND	ND	512	436	943	1738	3512	1259	2253	2454	1264
59 Cicero Avenue, Calumet-Sag Channel	ND	ND	1065	360	193	471	1793	396	797	1139	418
43 Route 83, Calumet-Sag Channel	ND	ND	150	26	46	86	822	24	60	218	39
Des Plaines River System											
90 Route 19, Poplar Creek	ND	ND	195	144	118	149	148	514	775	42	103
110 Springinguth Road, West Branch DuPage River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	ND	1793	588	399	1836	720	675	2202	727	2139
64 Lake Street, West Branch DuPage River	ND	ND	ND	1509	399	1472	1714	1451	2216	908	1357
111 Arlington Drive, West Branch DuPage River	ND	ND	1270	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	ND	ND	14	209	63	109	114	22	158	89	423
80 Arlington Heights Road, Salt Creek	ND	ND	19	280	76	443	221	427	487	370	552
18 Devon Avenue, Salt Creek	ND	ND	9	552	134	1239	483	530	1202	1164	2722
24 Wolf Road, Salt Creek	ND	ND	85	218	232	278	286	711	1077	165	7589
109 Brookfield Avenue, Salt Creek	ND	ND	420	442	367	450	492	723	1289	2994	ND
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	ND	ND	550	200	660	220	1897	1217	890	268	5717
78 Wille Road, Higgins Creek	ND	ND	295	179	315	186	221	207	1077	127	539
12 Lake-Cook Road, Buffalo Creek	ND	ND	147	280	117	109	287	216	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	ND	136	333	320	218	274	398	684	77	223
17 Oakton Street, Des Plaines River	ND	ND	243	185	352	503	232	555	295	161	147
19 Belmont Avenue, Des Plaines River	ND	ND	264	477	399	323	271	839	439	458	277
20 Roosevelt Road, Des Plaines River	ND	ND	285	335	953	391	457	1165	480	524	773
22 Ogden Avenue, Des Plaines River	ND	ND	370	364	579	681	667	1618	606	724	88
23 Willow Springs Road, Des Plaines River	ND	ND	319	154	295	110	268	855	169	202	1220
29 Stephen Street, Des Plaines River	ND	ND	206	179	197	118	165	431	186	122	117
91 Material Service Road, Des Plaines River	ND	ND	62	59	103	69	263	381	114	248	363

ND = No Data.

**TABLE AII-29: TOTAL CALCIUM MEAN HISTORY
2003 THROUGH 2013**

Sampling Station (No. Name)	Annual Means (mg/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	81.4	79.4	72.1	68.2	71.1	73.6	62.0	70.3	85.3	54.9
103 Golf Road, West Fork North Branch Chicago River	ND	84.9	79.1	75.7	66.4	68.2	75.5	73.9	80.8	71.5	70.9
31 Lake-Cook Road, Middle Fork North Branch	ND	72.0	62.3	61.3	57.6	62.1	64.2	62.9	65.6	64.3	64.1
104 Glenview Road, North Branch Chicago River	ND	71.6	62.1	64.3	61.5	65.1	62.8	62.3	61.5	64.4	65.5
32 Lake-Cook Road, Skokie River	ND	77.7	69.4	67.5	62.7	66.3	75.8	68.5	70.5	74.2	69.8
105 Frontage Road, Skokie River	ND	72.4	62.5	63.5	62.2	64.3	62.8	62.1	62.0	63.2	59.9
34 Dempster Street, North Branch Chicago River	ND	80.3	66.2	69.8	61.2	63.0	64.2	65.9	70.6	68.7	65.7
96 Albany Avenue, North Branch Chicago River	58.6	64.8	69.2	65.4	65.4	67.6	65.5	67.9	69.4	65.1	64.6
35 Central Street, North Shore Channel	ND	51.6	41.0	38.2	37.1	39.6	39.4	37.5	39.1	38.8	41.0
112 Dempster Street, North Shore Channel	45.0	48.0	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	55.4	50.9	48.9	47.2	47.6	49.3	47.7	47.8	45.8	50.4
36 Touhy Avenue, North Shore Channel	50.5	52.5	57.9	52.3	60.2	60.0	56.0	53.3	51.9	57.1	53.4
101 Foster Avenue, North Shore Channel	ND	57.9	57.2	55.0	58.0	60.3	58.0	54.2	52.9	57.7	54.3
37 Wilson Avenue, North Branch Chicago River	ND	59.2	58.9	59.9	57.9	61.0	59.1	56.4	55.7	59.8	56.4
73 Diversey Parkway, North Branch Chicago River	52.0	53.7	60.2	58.5	58.4	61.7	57.3	56.2	54.7	60.8	55.4
46 Grand Avenue, North Branch Chicago River	ND	62.3	60.1	57.0	56.4	60.8	57.9	56.9	57.3	62.1	56.6
74 Lake Shore Drive, Chicago River	ND	48.3	46.0	38.2	36.8	37.3	42.0	38.4	40.6	44.2	40.9
100 Wells Street, Chicago River	50.1	50.1	52.2	43.5	43.8	47.4	44.8	44.1	44.1	46.0	48.0
39 Madison Street, South Branch Chicago River	ND	58.8	61.1	51.3	53.5	53.6	51.8	51.3	52.0	52.8	55.2
108 Loomis Street, South Branch Chicago River	53.3	53.1	56.2	52.7	55.1	53.9	52.7	53.6	54.3	52.0	52.8
99 Archer Avenue, South Fork South Branch Chicago River	51.2	49.3	56.6	54.9	52.1	56.8	50.3	51.2	51.9	53.3	52.5
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	58.4	56.6	53.4	53.5	53.9	52.3	53.8	52.9	53.1	53.4
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	52.7	52.1	57.4	53.8	52.9	56.8	53.3	51.2	54.5	55.1	52.1
41 Harlem Avenue, Chicago Sanitary & Ship Canal	54.2	54.0	59.1	59.2	56.9	58.5	56.2	54.8	54.2	54.6	53.8
42 Route 83, Chicago Sanitary & Ship Canal	ND	61.1	61.4	58.5	57.0	57.5	56.0	56.3	56.4	56.5	56.6
48 Stephen Street, Chicago Sanitary & Ship Canal	57.7	59.7	62.8	60.5	56.4	60.1	58.3	59.0	60.1	59.8	58.7
92 Lockport Forebay, Chicago Sanitary & Ship Canal	56.5	58.6	61.2	60.7	57.8	60.8	59.1	58.4	59.5	59.9	59.0
Calumet River System											
49 Ewing Avenue, Calumet River	ND	36.5	37.9	35.2	35.9	34.9	37.3	35.9	36.5	37.1	38.6
50 Burnham Avenue, Wolf Lake	ND	38.6	36.7	35.5	36.1	35.8	36.2	30.9	37.3	36.6	35.3
55 130th Street, Calumet River	ND	46.4	43.9	41.8	43.3	42.6	46.3	42.6	43.4	43.2	43.4
86 Burnham Avenue, Grand Calumet River	94.6	81.4	81.2	85.3	82.4	96.3	92.0	98.0	68.3	82.5	86.9
56 Indiana Avenue, Little Calumet River	44.5	48.2	51.9	47.6	50.2	50.8	55.0	49.6	47.8	49.2	52.0
76 Halsted Street, Little Calumet River	61.6	61.9	66.5	60.8	62.5	68.1	66.3	65.8	63.1	62.1	62.2
52 Wentworth Avenue, Little Calumet River	ND	88.4	68.0	72.2	75.1	89.9	79.9	88.1	74.4	86.4	96.3
54 Joe Orr Road, Thorn Creek	ND	87.9	70.7	79.2	75.7	83.8	78.7	85.4	76.0	80.8	64.1
97 170th Street, Thorn Creek	ND	95.3	74.0	73.9	75.8	87.0	71.6	87.7	83.0	84.0	80.6
57 Ashland Avenue, Little Calumet River	71.1	73.5	69.7	69.4	70.9	82.3	69.8	86.4	75.4	78.9	84.3
58 Ashland Avenue, Calumet-Sag Channel	ND	69.6	66.7	65.3	61.8	68.3	61.8	68.3	65.3	65.4	66.2
59 Cicero Avenue, Calumet-Sag Channel	63.0	63.1	67.7	63.9	61.8	67.9	61.8	71.3	65.4	66.4	64.8
43 Route 83, Calumet-Sag Channel	63.1	60.5	63.3	66.9	61.0	66.5	61.8	69.4	64.7	63.1	65.3
Des Plaines River System											
90 Route 19, Poplar Creek	ND	77.3	70.3	75.9	67.3	73.1	68.5	70.9	65.6	76.3	61.3
110 Springinguth Road, West Branch DuPage River	69.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	69.0	71.0	65.3	66.1	63.6	61.6	65.8	58.5	64.5	55.8
64 Lake Street, West Branch DuPage River	ND	ND	ND	79.2	65.0	67.3	58.8	63.7	59.7	70.4	55.6
111 Arlington Drive, West Branch DuPage River	61.7	62.4	68.7	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	55.6	61.1	70.0	50.6	62.2	70.2	63.5	63.3	65.9	75.8	58.1
80 Arlington Heights Road, Salt Creek	ND	75.0	61.9	65.8	61.5	69.9	62.7	64.5	66.4	64.1	60.9
18 Devon Avenue, Salt Creek	58.3	64.2	64.2	68.3	60.7	69.4	63.0	65.4	66.4	64.4	58.9
24 Wolf Road, Salt Creek	ND	75.0	68.4	70.8	68.5	70.9	65.1	64.0	66.1	69.7	59.2
109 Brookfield Avenue, Salt Creek	62.4	65.2	68.9	67.8	66.0	68.2	62.6	63.1	64.2	69.9	58.5
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	56.3	64.4	53.4	63.6	51.0	62.4	44.5	54.3	60.1	73.7	48.3
78 Wille Road, Higgins Creek	68.4	69.0	83.8	75.2	79.1	76.6	71.0	69.4	69.2	70.9	63.4
12 Lake-Cook Road, Buffalo Creek	59.5	83.0	71.5	76.8	69.5	78.3	69.2	75.3	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	72.9	65.5	67.8	62.1	72.5	67.9	73.3	66.8	71.1	65.2
17 Oakton Street, Des Plaines River	ND	73.0	66.4	66.3	61.2	70.7	64.2	69.1	66.6	72.2	64.1
19 Belmont Avenue, Des Plaines River	63.4	64.5	67.6	65.1	63.3	72.5	64.2	69.2	67.1	72.7	62.4
20 Roosevelt Road, Des Plaines River	ND	71.0	67.4	65.1	61.6	72.4	63.9	68.6	65.8	71.0	60.9
22 Ogden Avenue, Des Plaines River	63.1	66.2	66.4	65.3	61.5	68.4	62.6	65.2	63.7	69.9	68.7
23 Willow Springs Road, Des Plaines River	61.5	66.7	67.3	63.3	61.8	69.7	62.7	64.5	66.1	69.7	61.7
29 Stephen Street, Des Plaines River	ND	72.6	65.9	67.1	61.8	71.1	65.1	69.8	67.4	70.0	65.9
91 Material Service Road, Des Plaines River	61.1	67.3	66.2	67.8	63.6	69.8	66.3	71.0	68.3	71.1	65.6

ND = No Data.

TABLE AII-30: TOTAL MAGNESIUM MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means (mg/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	33.8	32.6	28.5	28.2	29.7	28.1	25.7	29.0	35.4	23.6
103 Golf Road, West Fork North Branch Chicago River	ND	35.0	31.0	29.1	26.4	26.3	29.7	29.7	32.2	27.6	28.3
31 Lake-Cook Road, Middle Fork North Branch	ND	33.8	26.3	26.4	24.6	25.7	28.7	28.9	33.1	29.2	29.2
104 Glenview Road, North Branch Chicago River	ND	32.6	25.7	27.0	25.8	27.0	26.9	27.1	27.7	27.3	28.3
32 Lake-Cook Road, Skokie River	ND	33.8	28.6	28.1	25.4	26.9	31.3	30.3	32.4	31.6	29.8
105 Frontage Road, Skokie River	ND	33.3	26.2	27.0	26.1	26.5	26.3	26.5	27.2	26.9	25.3
34 Dempster Street, North Branch Chicago River	ND	35.0	27.6	28.3	25.1	25.9	27.2	27.9	30.7	28.4	27.0
96 Albany Avenue, North Branch Chicago River	24.1	27.9	28.6	26.3	26.3	27.0	27.6	28.3	29.7	26.8	26.6
35 Central Street, North Shore Channel	ND	19.2	14.1	12.8	12.5	13.3	13.3	12.5	13.3	13.1	14.1
112 Dempster Street, North Shore Channel	15.9	18.6	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	20.1	17.7	16.9	16.4	16.2	16.9	16.7	16.9	15.8	17.5
36 Touhy Avenue, North Shore Channel	18.3	18.8	20.2	18.0	21.0	21.2	19.5	19.0	18.2	20.3	19.1
101 Foster Avenue, North Shore Channel	ND	20.9	20.1	19.1	20.1	21.4	20.2	19.4	18.6	20.8	19.4
37 Wilson Avenue, North Branch Chicago River	ND	21.8	21.4	22.0	20.8	22.4	21.3	20.9	20.1	22.2	20.5
73 Diversey Parkway, North Branch Chicago River	19.1	19.9	22.0	21.1	20.8	22.5	20.7	20.7	19.5	22.4	20.0
46 Grand Avenue, North Branch Chicago River	ND	23.4	22.0	20.3	20.0	21.8	20.9	21.0	20.8	22.3	20.4
74 Lake Shore Drive, Chicago River	ND	17.5	15.7	12.7	12.4	12.6	14.5	12.9	14.2	15.5	13.7
100 Wells Street, Chicago River	18.6	18.2	18.6	15.0	15.1	16.5	15.9	15.3	15.3	16.3	16.7
39 Madison Street, South Branch Chicago River	ND	22.2	22.1	18.2	19.1	19.1	18.4	18.6	18.6	19.0	19.9
108 Loomis Street, South Branch Chicago River	19.9	19.3	20.3	18.7	19.8	19.4	18.7	19.6	19.8	19.0	18.8
99 Archer Avenue, South Fork South Branch Chicago River	18.5	17.1	20.2	19.4	18.1	20.1	17.7	18.4	18.5	19.2	18.7
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	21.7	20.4	19.0	19.5	19.4	18.6	19.6	19.2	19.3	19.1
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	19.6	18.9	20.9	19.4	18.7	20.7	18.9	18.3	19.7	19.9	18.5
41 Harlem Avenue, Chicago Sanitary & Ship Canal	19.7	19.1	20.8	20.9	20.0	21.0	19.8	19.9	19.6	19.9	19.2
42 Route 83, Chicago Sanitary & Ship Canal	ND	21.4	21.3	20.1	20.1	20.5	20.2	20.4	20.5	20.6	20.2
48 Stephen Street, Chicago Sanitary & Ship Canal	21.3	21.6	22.3	21.1	19.9	21.4	21.2	21.5	22.2	21.9	21.3
92 Lockport Forebay, Chicago Sanitary & Ship Canal	20.7	21.2	21.6	21.2	20.6	21.6	21.3	21.3	21.8	22.0	21.4
Calumet River System											
49 Ewing Avenue, Calumet River	ND	12.3	12.5	11.8	11.7	11.2	12.1	11.5	12.1	12.3	12.8
50 Burnham Avenue, Wolf Lake	ND	11.1	12.6	12.4	11.8	11.9	12.1	11.9	13.7	13.4	13.2
55 130th Street, Calumet River	ND	15.9	14.8	14.2	14.4	14.0	15.8	14.2	15.0	14.8	14.8
86 Burnham Avenue, Grand Calumet River	42.7	26.4	28.5	28.2	36.9	39.0	39.3	48.7	44.4	53.9	65.6
56 Indiana Avenue, Little Calumet River	15.9	17.3	18.0	16.2	17.2	17.3	19.8	17.6	17.8	18.5	19.2
76 Halsted Street, Little Calumet River	21.9	21.5	22.7	20.6	21.5	23.2	22.8	22.6	22.3	22.0	21.5
52 Wentworth Avenue, Little Calumet River	ND	36.1	26.5	28.6	28.4	34.3	31.4	33.9	29.7	34.3	37.2
54 Joe Orr Road, Thorn Creek	ND	32.9	26.5	28.3	28.2	30.4	30.1	36.3	33.8	33.9	26.5
97 170th Street, Thorn Creek	ND	40.8	31.2	29.7	29.9	33.9	28.4	37.7	36.6	36.7	34.6
57 Ashland Avenue, Little Calumet River	28.4	29.0	27.5	26.5	27.0	31.2	27.0	35.3	31.6	32.5	35.0
58 Ashland Avenue, Calumet-Sag Channel	ND	25.0	23.9	23.4	21.6	23.6	21.8	24.2	23.8	23.8	24.2
59 Cicero Avenue, Calumet-Sag Channel	23.2	22.9	24.0	22.4	22.1	23.8	21.8	25.8	23.8	24.7	23.7
43 Route 83, Calumet-Sag Channel	23.7	22.2	22.8	23.7	21.9	23.6	22.4	25.4	23.7	23.6	24.1
Des Plaines River System											
90 Route 19, Poplar Creek	ND	36.9	30.6	32.3	28.7	31.8	30.3	30.6	29.8	34.4	27.5
110 Springinguth Road, West Branch DuPage River	25.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	27.0	27.1	24.2	25.1	24.0	23.0	24.3	22.0	23.9	20.2
64 Lake Street, West Branch DuPage River	ND	ND	ND	28.3	24.4	25.1	22.3	23.6	22.3	26.2	20.3
111 Arlington Drive, West Branch DuPage River	23.6	23.8	25.8	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	23.1	27.2	28.3	20.7	26.3	28.5	26.2	26.4	29.5	31.4	23.2
80 Arlington Heights Road, Salt Creek	ND	29.3	23.3	24.5	23.3	26.2	24.3	24.9	25.9	24.4	23.4
18 Devon Avenue, Salt Creek	23.0	25.1	23.9	25.6	23.0	26.0	24.5	25.2	25.7	24.5	22.7
24 Wolf Road, Salt Creek	ND	31.0	26.9	27.1	26.6	27.6	26.0	25.6	27.3	28.2	23.3
109 Brookfield Avenue, Salt Creek	25.7	26.9	26.9	26.2	25.8	26.7	25.1	25.3	26.7	28.3	23.2
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	22.6	23.1	18.9	20.6	18.2	20.3	14.5	18.5	20.1	26.3	15.6
78 Wille Road, Higgins Creek	25.9	25.9	30.9	27.2	28.9	27.9	25.6	25.1	25.6	26.2	22.8
12 Lake-Cook Road, Buffalo Creek	27.0	37.5	30.4	32.6	29.5	33.4	30.4	33.1	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	33.6	29.2	29.5	27.3	31.3	30.0	32.7	29.6	31.8	28.7
17 Oakton Street, Des Plaines River	ND	33.1	29.1	28.2	26.4	30.0	28.5	30.7	29.9	32.5	27.9
19 Belmont Avenue, Des Plaines River	27.4	27.6	28.8	26.8	26.8	30.1	27.7	29.7	29.1	31.1	25.9
20 Roosevelt Road, Des Plaines River	ND	31.4	28.7	26.7	26.2	30.1	27.7	29.3	28.7	31.4	25.5
22 Ogden Avenue, Des Plaines River	27.0	28.3	27.7	26.5	25.7	28.1	26.6	27.3	27.5	30.1	27.8
23 Willow Springs Road, Des Plaines River	26.7	28.8	28.2	25.7	26.0	29.0	26.9	27.4	28.8	30.3	25.9
29 Stephen Street, Des Plaines River	ND	31.7	27.3	27.3	25.8	29.1	28.2	29.5	29.2	30.2	27.4
91 Material Service Road, Des Plaines River	26.2	29.2	27.5	27.8	26.3	28.9	28.2	30.3	29.9	30.9	27.5

ND = No Data.

TABLE AII-31: HARDNESS MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means (mg/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	342	332	297	286	300	300	261	295	359	234
103 Golf Road, West Fork North Branch Chicago River	ND	356	325	309	274	278	311	307	335	292	294
31 Lake-Cook Road, Middle Fork North Branch	ND	319	264	262	245	261	278	276	300	281	280
104 Glenview Road, North Branch Chicago River	ND	313	261	272	260	274	268	267	268	273	280
32 Lake-Cook Road, Skokie River	ND	333	291	284	261	276	318	296	310	316	297
105 Frontage Road, Skokie River	ND	318	264	270	263	270	265	264	267	269	254
34 Dempster Street, North Branch Chicago River	ND	345	279	291	256	264	272	279	303	289	275
96 Albany Avenue, North Branch Chicago River	246	277	291	272	272	280	277	286	296	273	271
35 Central Street, North Shore Channel	ND	208	161	148	144	154	153	145	153	151	160
112 Dempster Street, North Shore Channel	178	196	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	221	200	192	185	186	193	188	189	179	198
36 Touhy Avenue, North Shore Channel	201	208	228	205	237	237	220	211	205	226	212
101 Foster Avenue, North Shore Channel	ND	230	226	216	228	239	228	215	209	229	215
37 Wilson Avenue, North Branch Chicago River	ND	238	235	240	230	244	235	227	222	241	225
73 Diversey Parkway, North Branch Chicago River	209	216	241	233	231	247	228	226	217	244	221
46 Grand Avenue, North Branch Chicago River	ND	252	241	226	223	242	231	229	229	247	226
74 Lake Shore Drive, Chicago River	ND	193	179	148	143	145	165	149	160	174	159
100 Wells Street, Chicago River	202	200	207	171	172	187	177	173	173	182	189
39 Madison Street, South Branch Chicago River	ND	238	243	203	212	212	205	205	207	210	219
108 Loomis Street, South Branch Chicago River	215	212	224	209	219	214	209	214	217	208	209
99 Archer Avenue, South Fork South Branch Chicago River	204	193	224	217	205	225	198	204	206	212	208
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	235	225	211	214	214	207	215	211	212	212
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	212	208	229	214	209	227	211	203	217	219	206
41 Harlem Avenue, Chicago Sanitary & Ship Canal	217	213	233	234	224	233	222	219	216	218	213
42 Route 83, Chicago Sanitary & Ship Canal	ND	241	241	229	225	228	223	225	225	226	225
48 Stephen Street, Chicago Sanitary & Ship Canal	232	238	249	238	223	238	233	236	241	240	234
92 Lockport Forebay, Chicago Sanitary & Ship Canal	226	233	242	239	229	241	236	234	238	240	235
Calumet River System											
49 Ewing Avenue, Calumet River	ND	142	146	136	138	133	143	137	141	143	149
50 Burnham Avenue, Wolf Lake	ND	142	143	140	139	138	140	126	149	146	143
55 130th Street, Calumet River	ND	181	171	163	167	164	181	165	170	169	169
86 Burnham Avenue, Grand Calumet River	412	312	320	329	358	401	391	445	354	428	487
56 Indiana Avenue, Little Calumet River	177	192	204	185	196	198	219	196	193	199	209
76 Halsted Street, Little Calumet River	244	243	260	237	245	266	259	258	249	246	244
52 Wentworth Avenue, Little Calumet River	ND	370	279	298	304	366	329	360	308	357	393
54 Joe Orr Road, Thorn Creek	ND	355	285	314	305	335	321	363	329	341	269
97 170th Street, Thorn Creek	ND	406	314	307	312	357	296	374	358	361	344
57 Ashland Avenue, Little Calumet River	295	303	287	283	288	334	285	361	318	331	355
58 Ashland Avenue, Calumet-Sag Channel	ND	277	265	259	243	268	244	270	261	261	265
59 Cicero Avenue, Calumet-Sag Channel	253	252	268	252	245	268	244	284	261	268	260
43 Route 83, Calumet-Sag Channel	255	243	252	265	243	263	247	278	259	255	262
Des Plaines River System											
90 Route 19, Poplar Creek	ND	345	302	323	286	314	296	303	287	332	266
110 Springinguth Road, West Branch DuPage River	278	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	283	289	263	268	258	249	265	237	260	222
64 Lake Street, West Branch DuPage River	ND	ND	ND	314	263	271	239	256	241	283	222
111 Arlington Drive, West Branch DuPage River	251	254	278	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	234	264	291	212	264	292	266	267	286	319	241
80 Arlington Heights Road, Salt Creek	ND	308	251	265	249	282	257	263	273	261	248
18 Devon Avenue, Salt Creek	240	264	259	276	246	280	258	267	272	262	241
24 Wolf Road, Salt Creek	ND	315	282	289	280	291	269	265	277	290	244
109 Brookfield Avenue, Salt Creek	262	274	283	277	271	280	260	262	270	291	242
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	234	256	211	244	203	239	171	212	233	292	185
78 Wille Road, Higgins Creek	278	279	336	300	317	306	283	277	278	285	252
12 Lake-Cook Road, Buffalo Creek	260	362	304	326	295	333	298	324	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	320	284	291	267	310	293	318	289	308	281
17 Oakton Street, Des Plaines River	ND	319	286	282	261	300	278	299	289	314	275
19 Belmont Avenue, Des Plaines River	271	275	288	273	268	305	274	295	287	310	263
20 Roosevelt Road, Des Plaines River	ND	307	287	272	262	305	273	292	283	307	257
22 Ogden Avenue, Des Plaines River	269	282	280	272	259	287	266	275	272	298	286
23 Willow Springs Road, Des Plaines River	263	285	284	264	261	293	268	274	284	299	260
29 Stephen Street, Des Plaines River	ND	312	277	280	261	297	279	295	288	299	278
91 Material Service Road, Des Plaines River	261	288	278	284	267	293	282	302	293	305	277

ND = No Data.

TABLE AII-32: GROSS ALPHA RADIOACTIVITY MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means (pCi/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	3.48	2.91	2.75	4.53	2.95	11.71	6.01	6.20	6.38	3.79
103 Golf Road, West Fork North Branch Chicago River	ND	2.87	2.63	3.38	4.20	2.59	7.08	5.73	7.14	4.36	4.80
31 Lake-Cook Road, Middle Fork North Branch	ND	2.48	2.24	3.42	2.76	2.78	5.25	4.94	5.34	4.74	4.53
104 Glenview Road, North Branch Chicago River	ND	2.37	2.11	3.56	3.62	2.35	5.37	5.40	5.50	4.19	4.47
32 Lake-Cook Road, Skokie River	ND	2.55	2.20	3.10	2.71	2.65	5.29	5.04	5.50	4.51	4.34
105 Frontage Road, Skokie River	ND	2.23	2.30	3.48	3.32	2.28	5.13	4.82	5.03	4.26	3.87
34 Dempster Street, North Branch Chicago River	ND	2.53	2.08	3.68	3.61	2.38	6.56	5.01	5.91	4.84	4.92
96 Albany Avenue, North Branch Chicago River	2.14	2.32	2.23	3.67	3.93	2.71	6.03	5.04	5.43	4.01	4.25
35 Central Street, North Shore Channel	ND	1.94	1.36	2.05	1.62	1.36	3.85	3.07	3.30	3.00	3.43
112 Dempster Street, North Shore Channel	1.52	1.64	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	1.69	1.72	2.67	2.57	1.60	4.29	3.56	4.07	3.23	3.67
36 Touhy Avenue, North Shore Channel	1.61	1.75	2.13	2.85	3.25	2.03	5.27	3.73	4.27	3.62	3.54
101 Foster Avenue, North Shore Channel	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
37 Wilson Avenue, North Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
73 Diversey Parkway, North Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
46 Grand Avenue, North Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
74 Lake Shore Drive, Chicago River	ND	1.72	1.79	2.37	1.64	1.27	4.29	3.09	3.23	3.43	3.14
100 Wells Street, Chicago River	1.50	1.64	1.95	2.23	2.57	1.73	4.27	3.41	3.61	3.44	3.41
39 Madison Street, South Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
108 Loomis Street, South Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
99 Archer Avenue, South Fork South Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	1.67	1.74	2.33	3.08	4.73	2.08	5.40	3.84	4.17	3.87	3.67
41 Harlem Avenue, Chicago Sanitary & Ship Canal	1.64	1.89	2.17	3.41	2.96	2.26	6.13	3.88	4.27	3.93	3.49
42 Route 83, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
48 Stephen Street, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
92 Lockport Forebay, Chicago Sanitary & Ship Canal	1.85	1.86	1.95	3.43	3.79	2.44	4.89	4.08	4.53	4.00	3.62
Calumet River System											
49 Ewing Avenue, Calumet River	ND	1.35	1.35	1.84	1.94	1.37	4.14	3.66	3.03	2.90	3.22
50 Burnham Avenue, Wolf Lake	ND	1.46	1.55	1.95	1.81	1.41	4.16	3.44	3.33	2.94	3.12
55 130th Street, Calumet River	ND	1.66	1.57	2.15	2.58	1.72	4.70	3.49	3.50	3.17	3.50
86 Burnham Avenue, Grand Calumet River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
56 Indiana Avenue, Little Calumet River	1.45	1.63	1.52	2.28	2.82	1.93	5.08	3.65	3.56	3.43	3.76
76 Halsted Street, Little Calumet River	1.85	1.79	1.88	3.07	2.77	2.35	5.28	4.08	4.66	3.68	3.99
52 Wentworth Avenue, Little Calumet River	ND	2.13	1.99	2.91	2.84	2.62	5.63	4.24	4.88	3.80	4.59
54 Joe Orr Road, Thorn Creek	ND	3.13	2.49	3.91	4.56	3.98	7.27	6.25	8.99	6.72	4.00
97 170th Street, Thorn Creek	ND	2.95	2.35	3.98	4.30	3.13	6.27	5.38	7.46	6.43	6.15
57 Ashland Avenue, Little Calumet River	2.47	2.48	2.50	3.64	3.88	2.69	5.46	5.09	6.19	4.35	4.73
58 Ashland Avenue, Calumet-Sag Channel	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
59 Cicero Avenue, Calumet-Sag Channel	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
43 Route 83, Calumet-Sag Channel	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Des Plaines River System											
90 Route 19, Poplar Creek	ND	2.40	2.04	3.01	3.04	2.49	5.25	5.66	5.19	4.76	3.92
110 Springinguth Road, West Branch DuPage River	2.41	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	1.94	2.18	2.97	3.29	2.38	4.82	4.98	4.77	4.32	3.78
64 Lake Street, West Branch DuPage River	ND	ND	ND	4.93	3.05	2.44	4.85	5.10	5.06	4.51	3.69
111 Arlington Drive, West Branch DuPage River	1.89	2.01	2.35	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	1.89	2.35	2.77	3.23	3.34	2.90	5.39	5.27	6.27	5.20	4.65
80 Arlington Heights Road, Salt Creek	ND	2.27	2.08	3.16	2.84	2.46	5.18	5.59	5.71	4.59	4.28
18 Devon Avenue, Salt Creek	1.85	2.06	2.10	3.37	2.75	2.44	5.17	5.51	5.85	4.59	4.28
24 Wolf Road, Salt Creek	ND	2.39	2.30	3.50	3.41	2.66	5.45	5.00	4.81	4.52	4.32
109 Brookfield Avenue, Salt Creek	2.04	2.08	2.48	3.30	4.66	2.77	5.46	5.20	4.76	4.55	4.26
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	2.38	2.44	2.54	2.64	2.37	2.76	5.20	6.74	7.77	5.90	4.54
78 Wille Road, Higgins Creek	1.87	2.26	2.18	2.59	3.50	2.38	5.28	4.78	4.79	4.19	3.98
12 Lake-Cook Road, Buffalo Creek	ND	2.45	2.58	3.27	3.11	2.75	5.67	5.13	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	2.03	1.96	3.24	2.88	2.41	5.22	4.86	5.27	4.08	4.04
17 Oakton Street, Des Plaines River	ND	2.14	2.17	2.71	2.50	2.49	5.35	4.97	5.30	4.27	4.08
19 Belmont Avenue, Des Plaines River	1.88	2.00	1.95	2.84	3.08	2.64	5.33	5.06	5.46	4.09	4.15
20 Roosevelt Road, Des Plaines River	ND	2.11	2.10	4.18	2.30	2.43	5.36	5.29	5.02	4.43	4.15
22 Ogden Avenue, Des Plaines River	2.05	2.08	2.15	3.46	3.23	2.91	5.54	4.95	5.07	4.10	4.25
23 Willow Springs Road, Des Plaines River	2.01	2.11	2.44	3.65	3.10	2.47	5.25	5.06	4.93	4.21	4.19
29 Stephen Street, Des Plaines River	ND	2.29	2.49	3.27	3.22	2.85	5.24	5.40	4.93	4.19	4.29
91 Material Service Road, Des Plaines River	2.07	1.98	2.42	3.48	3.43	3.50	5.11	4.84	5.70	4.72	4.19

ND = No Data.

TABLE AII-33: GROSS BETA RADIOACTIVITY MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means (pCi/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	5.08	5.64	8.10	7.18	7.85	11.96	11.59	11.58	16.75	8.90
103 Golf Road, West Fork North Branch Chicago River	ND	3.73	3.69	7.99	6.97	4.53	9.70	9.95	11.05	11.05	10.27
31 Lake-Cook Road, Middle Fork North Branch	ND	2.30	2.62	5.51	5.56	6.34	6.66	7.40	7.15	7.41	7.37
104 Glenview Road, North Branch Chicago River	ND	3.26	3.56	6.34	6.32	4.70	7.18	9.08	11.27	9.48	8.90
32 Lake-Cook Road, Skokie River	ND	2.65	2.62	6.18	5.40	4.65	5.94	8.19	8.83	7.13	7.35
105 Frontage Road, Skokie River	ND	3.66	4.24	7.12	6.50	4.67	8.18	9.65	10.79	9.60	9.93
34 Dempster Street, North Branch Chicago River	ND	3.14	3.52	5.94	5.74	4.61	9.02	9.39	11.51	8.93	10.17
96 Albany Avenue, North Branch Chicago River	3.20	3.12	3.66	7.06	6.02	4.47	8.16	7.91	10.61	9.09	9.53
35 Central Street, North Shore Channel	ND	1.74	1.71	4.87	5.08	1.92	4.89	4.50	4.28	4.48	4.82
112 Dempster Street, North Shore Channel	1.90	3.22	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	3.36	3.33	5.19	5.40	3.79	5.91	6.97	6.88	5.78	6.45
36 Touhy Avenue, North Shore Channel	3.23	3.25	4.39	6.36	6.29	4.64	7.70	7.91	7.88	8.29	7.70
101 Foster Avenue, North Shore Channel	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
37 Wilson Avenue, North Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
73 Diversey Parkway, North Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
46 Grand Avenue, North Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
74 Lake Shore Drive, Chicago River	ND	2.18	3.31	4.55	4.94	2.06	4.73	4.54	4.29	5.52	4.80
100 Wells Street, Chicago River	2.23	2.29	3.75	5.25	5.04	3.51	5.22	5.22	5.60	6.57	6.36
39 Madison Street, South Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
108 Loomis Street, South Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
99 Archer Avenue, South Fork South Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	2.66	3.21	4.53	5.97	5.64	5.86	7.36	6.87	7.38	8.91	8.13
41 Harlem Avenue, Chicago Sanitary & Ship Canal	3.19	4.26	4.74	7.47	6.32	6.55	9.43	8.29	7.98	8.92	8.38
42 Route 83, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
48 Stephen Street, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
92 Lockport Forebay, Chicago Sanitary & Ship Canal	3.95	3.86	4.23	6.85	6.81	6.23	8.06	8.21	8.70	9.03	9.22
Calumet River System											
49 Ewing Avenue, Calumet River	ND	1.57	1.62	4.38	4.72	2.69	5.42	5.39	4.99	4.77	3.99
50 Burnham Avenue, Wolf Lake	ND	4.19	3.64	6.05	5.49	4.30	7.02	6.10	4.94	7.01	4.81
55 130th Street, Calumet River	ND	2.69	2.97	4.79	5.66	4.14	7.24	6.50	6.14	6.79	6.10
86 Burnham Avenue, Grand Calumet River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
56 Indiana Avenue, Little Calumet River	2.24	2.49	2.71	5.82	5.59	5.31	7.77	7.82	6.63	6.99	7.48
76 Halsted Street, Little Calumet River	3.65	3.15	3.66	6.34	6.66	6.83	8.74	8.96	9.11	8.41	9.54
52 Wentworth Avenue, Little Calumet River	ND	4.11	3.55	7.19	5.99	6.96	10.56	10.37	10.90	12.00	12.91
54 Joe Orr Road, Thorn Creek	ND	4.49	4.05	6.83	8.36	7.63	8.90	10.91	14.81	12.20	10.77
97 170th Street, Thorn Creek	ND	4.68	4.71	7.91	8.02	7.64	10.69	10.72	13.04	11.68	12.14
57 Ashland Avenue, Little Calumet River	3.65	3.85	4.04	6.80	6.86	7.82	9.52	10.20	11.25	10.88	10.93
58 Ashland Avenue, Calumet-Sag Channel	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
59 Cicero Avenue, Calumet-Sag Channel	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
43 Route 83, Calumet-Sag Channel	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Des Plaines River System											
90 Route 19, Poplar Creek	ND	2.23	2.26	5.93	5.83	3.48	6.26	7.25	6.75	5.59	6.76
110 Springinguth Road, West Branch DuPage River	3.24	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	4.77	5.46	9.15	9.31	7.04	9.37	9.90	10.62	9.17	10.50
64 Lake Street, West Branch DuPage River	ND	ND	ND	9.39	8.23	7.51	9.31	10.36	10.94	10.71	10.56
111 Arlington Drive, West Branch DuPage River	4.37	5.88	5.16	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	2.01	1.94	3.06	4.79	5.91	4.27	7.55	7.71	8.35	8.15	8.41
80 Arlington Heights Road, Salt Creek	ND	3.81	3.02	6.94	6.24	5.33	9.10	10.09	10.26	9.43	9.54
18 Devon Avenue, Salt Creek	3.12	4.21	3.54	6.89	6.61	5.24	9.40	9.35	11.03	9.86	10.54
24 Wolf Road, Salt Creek	ND	3.99	4.30	6.63	7.12	6.85	9.29	11.12	11.39	9.45	10.43
109 Brookfield Avenue, Salt Creek	3.12	3.97	3.76	8.37	7.30	7.67	8.92	10.50	10.71	8.96	9.41
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	2.25	2.58	3.00	4.78	4.99	3.74	6.99	8.79	11.23	8.33	9.76
78 Wille Road, Higgins Creek	3.83	5.42	4.44	6.42	7.56	7.43	11.79	12.65	15.45	13.34	13.15
12 Lake-Cook Road, Buffalo Creek	ND	2.23	3.40	5.54	5.44	3.78	8.20	7.37	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	3.29	3.50	7.23	7.12	6.05	8.94	10.05	11.41	9.53	10.71
17 Oakton Street, Des Plaines River	ND	2.97	3.41	5.94	6.18	5.05	8.40	9.12	10.16	9.23	10.61
19 Belmont Avenue, Des Plaines River	3.21	4.16	3.35	6.60	5.57	5.54	9.81	10.24	11.57	9.77	10.62
20 Roosevelt Road, Des Plaines River	ND	3.41	3.55	6.24	6.23	6.16	9.70	9.69	10.91	8.99	10.23
22 Ogden Avenue, Des Plaines River	3.40	4.13	4.23	7.06	7.07	8.05	9.27	9.32	11.04	9.51	9.44
23 Willow Springs Road, Des Plaines River	3.35	4.13	3.97	6.11	6.19	7.96	8.01	9.51	10.68	9.37	9.32
29 Stephen Street, Des Plaines River	ND	3.21	4.50	7.00	6.25	7.55	9.48	10.39	10.87	9.16	10.23
91 Material Service Road, Des Plaines River	3.14	4.15	3.65	8.06	7.02	6.48	9.94	9.65	12.34	9.48	10.75

ND = No Data.

TABLE AII-34: CHLOROPHYLL *a* MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means ($\mu\text{g/L}$)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	19.5	14.7	8.1	7.2	14.4	6.3	10.6	14.6	29.1	47.9
103 Golf Road, West Fork North Branch Chicago River	ND	12.4	14.5	14.0	7.5	9.1	12.4	13.4	29.3	21.1	19.0
31 Lake-Cook Road, Middle Fork North Branch	ND	3.0	8.2	5.0	5.1	10.6	7.7	12.0	8.0	6.7	11.1
104 Glenview Road, North Branch Chicago River	ND	11.2	8.0	7.0	5.9	10.6	12.2	19.7	10.1	12.1	32.9
32 Lake-Cook Road, Skokie River	ND	8.2	7.9	7.0	6.2	8.3	8.9	7.6	12.0	22.5	10.3
105 Frontage Road, Skokie River	ND	16.5	10.5	10.1	9.7	18.4	18.1	32.9	15.6	20.4	21.5
34 Dempster Street, North Branch Chicago River	ND	16.3	12.2	7.7	5.6	8.7	9.7	16.7	24.2	15.8	16.7
96 Albany Avenue, North Branch Chicago River	10.9	9.1	9.5	8.8	7.1	7.8	9.0	14.0	35.6	21.5	18.1
35 Central Street, North Shore Channel	ND	29.6	15.3	17.7	9.9	6.3	6.2	4.5	3.6	2.9	8.1
112 Dempster Street, North Shore Channel	12.4	12.4	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	18.7	4.6	16.8	11.3	12.6	16.2	22.6	8.1	12.5	4.8
36 Touhy Avenue, North Shore Channel	6.1	3.0	1.5	2.1	2.0	2.1	1.3	2.0	1.6	1.4	1.2
101 Foster Avenue, North Shore Channel	ND	1.8	5.1	1.5	1.9	1.4	1.1	1.6	2.2	1.9	4.3
37 Wilson Avenue, North Branch Chicago River	ND	2.9	2.8	2.5	2.8	3.2	2.9	4.7	2.8	4.0	4.9
73 Diversey Parkway, North Branch Chicago River	3.7	4.0	3.5	2.8	2.2	3.6	2.4	4.3	2.6	3.8	4.7
46 Grand Avenue, North Branch Chicago River	ND	7.7	4.3	2.6	2.7	3.5	4.9	6.1	4.3	5.8	5.7
74 Lake Shore Drive, Chicago River	ND	1.5	1.5	1.3	1.3	1.6	2.2	1.4	3.3	4.7	3.2
100 Wells Street, Chicago River	3.4	4.2	2.2	1.9	1.6	2.5	2.2	2.5	2.8	3.0	3.7
39 Madison Street, South Branch Chicago River	ND	4.9	3.4	3.8	1.9	3.5	4.0	4.4	4.2	4.1	5.2
108 Loomis Street, South Branch Chicago River	4.1	4.5	3.7	2.3	2.0	3.0	3.7	6.0	5.4	7.2	6.1
99 Archer Avenue, South Fork South Branch Chicago River	18.2	13.8	28.6	13.3	8.9	10.5	7.4	5.7	21.5	27.4	9.5
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	6.6	3.8	5.8	7.7	3.4	4.5	5.4	14.1	7.9	ND
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	7.4	6.9	4.4	4.7	3.0	4.1	5.4	4.7	6.5	6.0	6.3
41 Harlem Avenue, Chicago Sanitary & Ship Canal	5.6	5.7	2.7	4.0	1.9	2.3	2.6	2.8	3.6	3.4	2.7
42 Route 83, Chicago Sanitary & Ship Canal	ND	9.8	3.4	5.5	2.9	4.1	5.2	4.1	6.4	4.2	4.4
48 Stephen Street, Chicago Sanitary & Ship Canal	5.9	6.4	3.9	4.7	5.2	5.6	6.1	3.7	5.3	3.5	7.2
92 Lockport Forebay, Chicago Sanitary & Ship Canal	5.0	4.4	4.3	4.7	5.6	5.4	5.5	4.0	5.2	3.9	7.2
Calumet River System											
49 Ewing Avenue, Calumet River	ND	4.9	1.1	0.9	2.1	1.7	1.1	1.4	0.9	1.4	1.6
50 Burnham Avenue, Wolf Lake	ND	6.9	6.4	4.5	5.4	6.7	6.2	4.7	6.8	4.8	8.7
55 130th Street, Calumet River	ND	2.6	3.0	3.7	6.3	4.6	4.0	3.3	2.9	4.0	7.1
86 Burnham Avenue, Grand Calumet River	30.3	33.3	17.4	75.6	30.8	142.5	101.0	27.4	57.7	61.9	38.1
56 Indiana Avenue, Little Calumet River	7.3	10.9	4.0	14.1	27.0	20.6	14.0	25.8	16.4	7.2	24.4
76 Halsted Street, Little Calumet River	4.7	9.0	3.1	4.1	12.6	7.8	6.6	8.1	7.1	3.8	10.3
52 Wentworth Avenue, Little Calumet River	ND	4.4	8.3	8.2	7.7	5.5	13.0	4.3	6.0	5.5	9.0
54 Joe Orr Road, Thorn Creek	ND	3.4	3.7	4.7	4.8	4.1	3.0	3.7	12.4	6.7	8.5
97 170th Street, Thorn Creek	ND	6.7	8.3	11.2	9.4	8.5	9.2	5.3	8.2	8.8	11.5
57 Ashland Avenue, Little Calumet River	17.3	10.8	7.9	8.0	10.5	8.2	7.1	4.7	9.2	7.5	10.0
58 Ashland Avenue, Calumet-Sag Channel	ND	9.4	5.4	7.0	11.3	8.0	7.2	9.5	10.4	4.8	15.3
59 Cicero Avenue, Calumet-Sag Channel	4.8	4.6	3.5	4.0	12.4	7.9	7.8	9.0	7.5	5.2	20.3
43 Route 83, Calumet-Sag Channel	4.3	6.9	4.5	5.2	9.0	10.0	6.5	6.3	8.8	4.4	24.5
Des Plaines River System											
90 Route 19, Poplar Creek	ND	8.8	7.8	10.0	9.0	8.9	10.9	13.9	12.5	8.1	14.6
110 Springinguth Road, West Branch DuPage River	25.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	6.4	7.0	4.8	5.9	6.6	7.3	5.4	9.1	3.7	9.0
64 Lake Street, West Branch DuPage River	ND	ND	ND	15.9	18.8	19.4	23.2	20.2	24.6	15.4	29.5
111 Arlington Drive, West Branch DuPage River	18.1	15.5	13.7	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	32.2	20.2	22.5	26.3	21.3	33.9	39.0	33.9	31.0	36.4	37.4
80 Arlington Heights Road, Salt Creek	ND	9.2	15.2	15.6	13.6	11.7	13.8	16.5	12.4	11.2	18.6
18 Devon Avenue, Salt Creek	12.1	8.3	11.7	13.6	15.0	13.6	14.3	17.6	14.8	15.7	19.5
24 Wolf Road, Salt Creek	ND	6.9	5.5	8.6	8.0	8.9	7.4	12.0	11.0	6.4	12.9
109 Brookfield Avenue, Salt Creek	4.7	4.5	6.9	8.2	9.5	6.1	7.3	16.1	11.3	9.9	17.9
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	13.3	12.5	8.8	28.3	8.4	25.7	14.7	11.9	14.1	8.5	11.4
78 Wille Road, Higgins Creek	2.7	2.2	2.3	2.6	2.2	2.4	3.8	3.0	2.5	2.6	4.3
12 Lake-Cook Road, Buffalo Creek	ND	11.1	16.8	14.1	18.6	19.7	23.2	20.2	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	7.6	14.4	12.3	10.7	18.8	13.7	16.9	27.5	21.0	34.1
17 Oakton Street, Des Plaines River	ND	6.7	26.9	14.2	19.2	35.1	12.3	13.0	34.3	18.3	42.2
19 Belmont Avenue, Des Plaines River	10.1	4.4	20.1	13.7	13.7	22.0	6.1	12.3	23.2	13.0	35.3
20 Roosevelt Road, Des Plaines River	ND	6.3	23.8	12.6	20.1	23.3	6.7	11.4	23.4	14.2	28.7
22 Ogden Avenue, Des Plaines River	9.1	19.1	20.0	11.5	19.7	20.7	6.1	15.8	19.1	14.1	45.5
23 Willow Springs Road, Des Plaines River	9.8	6.0	15.8	12.6	27.5	22.5	5.1	13.5	29.0	15.9	33.0
29 Stephen Street, Des Plaines River	ND	26.0	14.7	16.9	29.9	22.4	9.5	17.5	49.0	25.5	49.1
91 Material Service Road, Des Plaines River	18.4	10.6	16.3	26.3	24.1	26.3	11.9	23.8	34.6	40.4	56.2

ND = No Data.

TABLE AII-37: TOLUENE MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means ($\mu\text{g/L}$)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
103 Golf Road, West Fork North Branch Chicago River	ND	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
31 Lake-Cook Road, Middle Fork North Branch	ND	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
104 Glenview Road, North Branch Chicago River	ND	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
32 Lake-Cook Road, Skokie River	ND	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
105 Frontage Road, Skokie River	ND	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
34 Dempster Street, North Branch Chicago River	ND	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
96 Albany Avenue, North Branch Chicago River	2.000	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
35 Central Street, North Shore Channel	ND	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
112 Dempster Street, North Shore Channel	2.000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	2.000	2.000	0.000	0.000	0.000	1.267	0.000	0.000	0.500	0.000
36 Touhy Avenue, North Shore Channel	2.000	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
101 Foster Avenue, North Shore Channel	ND	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.333	0.667	0.000
37 Wilson Avenue, North Branch Chicago River	ND	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.400	0.000	0.000
73 Diversey Parkway, North Branch Chicago River	2.000	2.000	2.183	0.000	0.333	0.000	1.067	0.000	2.200	1.000	ND
46 Grand Avenue, North Branch Chicago River	ND	2.000	2.000	0.000	0.000	0.967	0.640	0.000	0.400	0.000	0.000
74 Lake Shore Drive, Chicago River	ND	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100 Wells Street, Chicago River	2.000	2.000	2.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
39 Madison Street, South Branch Chicago River	ND	2.000	3.033	0.000	0.000	0.383	0.625	0.000	0.333	0.000	0.000
108 Loomis Street, South Branch Chicago River	2.000	2.000	2.000	0.000	0.000	0.383	0.000	0.000	0.000	0.000	0.000
99 Archer Avenue, South Fork South Branch Chicago River	2.000	5.500	2.000	1.200	0.000	0.000	0.000	0.000	0.800	0.000	0.000
Damen Avenue, Chicago Sanitary & Ship Canal	ND	7.250	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	2.000	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
41 Harlem Avenue, Chicago Sanitary & Ship Canal	6.167	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
42 Route 83, Chicago Sanitary & Ship Canal	ND	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
48 Stephen Street, Chicago Sanitary & Ship Canal	2.000	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
92 Lockport Forebay, Chicago Sanitary & Ship Canal	2.000	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Calumet River System											
49 Ewing Avenue, Calumet River	ND	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50 Burnham Avenue, Wolf Lake	ND	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
55 130th Street, Calumet River	ND	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
86 Burnham Avenue, Grand Calumet River	2.000	2.333	2.460	0.000	1.033	0.000	0.000	0.000	0.400	0.000	0.000
56 Indiana Avenue, Little Calumet River	2.000	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
76 Halsted Street, Little Calumet River	2.167	2.000	2.000	0.000	0.483	0.433	0.000	0.000	0.667	0.000	0.000
52 Wentworth Avenue, Little Calumet River	ND	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
54 Joe Orr Road, Thorn Creek	ND	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	ND
97 170th Street, Thorn Creek	ND	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
57 Ashland Avenue, Little Calumet River	2.000	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.400	0.000	0.000
58 Ashland Avenue, Calumet-Sag Channel	ND	2.000	2.000	0.000	0.467	0.000	0.000	0.000	0.857	0.000	0.000
59 Cicero Avenue, Calumet-Sag Channel	2.000	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
43 Route 83, Calumet-Sag Channel	2.000	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Des Plaines River System											
90 Route 19, Poplar Creek	ND	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
110 Springinguth Road, West Branch DuPage River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
64 Lake Street, West Branch DuPage River	ND	ND	ND	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
111 Arlington Drive, West Branch DuPage River	ND	ND	2.000	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	2.000	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
80 Arlington Heights Road, Salt Creek	ND	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
18 Devon Avenue, Salt Creek	2.000	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
24 Wolf Road, Salt Creek	ND	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
109 Brookfield Avenue, Salt Creek	2.000	2.000	2.000	0.000	0.000	0.000	0.000	0.000	ND	ND	ND
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	2.000	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
78 Wille Road, Higgins Creek	2.000	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
12 Lake-Cook Road, Buffalo Creek	ND	2.000	2.000	0.000	0.000	0.000	0.000	0.000	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
17 Oakton Street, Des Plaines River	ND	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
19 Belmont Avenue, Des Plaines River	2.000	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20 Roosevelt Road, Des Plaines River	ND	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
22 Ogden Avenue, Des Plaines River	2.000	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
23 Willow Springs Road, Des Plaines River	2.000	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
29 Stephen Street, Des Plaines River	ND	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
91 Material Service Road, Des Plaines River	2.000	2.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

ND = No Data.

TABLE AII-39: META AND/OR PARA XYLENES MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means ($\mu\text{g/L}$)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
103 Golf Road, West Fork North Branch Chicago River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
31 Lake-Cook Road, Middle Fork North Branch	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
104 Glenview Road, North Branch Chicago River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
32 Lake-Cook Road, Skokie River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
105 Frontage Road, Skokie River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
34 Dempster Street, North Branch Chicago River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
96 Albany Avenue, North Branch Chicago River	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
35 Central Street, North Shore Channel	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
112 Dempster Street, North Shore Channel	3.000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
36 Touhy Avenue, North Shore Channel	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
101 Foster Avenue, North Shore Channel	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
37 Wilson Avenue, North Branch Chicago River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
73 Diversey Parkway, North Branch Chicago River	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
46 Grand Avenue, North Branch Chicago River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
74 Lake Shore Drive, Chicago River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
100 Wells Street, Chicago River	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
39 Madison Street, South Branch Chicago River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
108 Loomis Street, South Branch Chicago River	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
99 Archer Avenue, South Fork South Branch Chicago River	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
41 Harlem Avenue, Chicago Sanitary & Ship Canal	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
42 Route 83, Chicago Sanitary & Ship Canal	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
48 Stephen Street, Chicago Sanitary & Ship Canal	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
92 Lockport Forebay, Chicago Sanitary & Ship Canal	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
Calumet River System											
49 Ewing Avenue, Calumet River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
50 Burnham Avenue, Wolf Lake	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
55 130th Street, Calumet River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
86 Burnham Avenue, Grand Calumet River	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
56 Indiana Avenue, Little Calumet River	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
76 Halsted Street, Little Calumet River	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
52 Wentworth Avenue, Little Calumet River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
54 Joe Orr Road, Thorn Creek	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
97 170th Street, Thorn Creek	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
57 Ashland Avenue, Little Calumet River	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
58 Ashland Avenue, Calumet-Sag Channel	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
59 Cicero Avenue, Calumet-Sag Channel	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
43 Route 83, Calumet-Sag Channel	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
Des Plaines River System											
90 Route 19, Poplar Creek	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
110 Springinguth Road, West Branch DuPage River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
64 Lake Street, West Branch DuPage River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
111 Arlington Drive, West Branch DuPage River	ND	ND	3.000	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
80 Arlington Heights Road, Salt Creek	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
18 Devon Avenue, Salt Creek	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
24 Wolf Road, Salt Creek	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
109 Brookfield Avenue, Salt Creek	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
78 Wille Road, Higgins Creek	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
12 Lake-Cook Road, Buffalo Creek	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
17 Oakton Street, Des Plaines River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
19 Belmont Avenue, Des Plaines River	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
20 Roosevelt Road, Des Plaines River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
22 Ogden Avenue, Des Plaines River	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
23 Willow Springs Road, Des Plaines River	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
29 Stephen Street, Des Plaines River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
91 Material Service Road, Des Plaines River	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND

ND = No Data.

TABLE AII-40: ORTHO XYLENE MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means ($\mu\text{g/L}$)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
103 Golf Road, West Fork North Branch Chicago River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
31 Lake-Cook Road, Middle Fork North Branch	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
104 Glenview Road, North Branch Chicago River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
32 Lake-Cook Road, Skokie River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
105 Frontage Road, Skokie River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
34 Dempster Street, North Branch Chicago River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
96 Albany Avenue, North Branch Chicago River	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
35 Central Street, North Shore Channel	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
112 Dempster Street, North Shore Channel	3.000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
36 Touhy Avenue, North Shore Channel	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
101 Foster Avenue, North Shore Channel	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
37 Wilson Avenue, North Branch Chicago River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
73 Diversey Parkway, North Branch Chicago River	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
46 Grand Avenue, North Branch Chicago River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
74 Lake Shore Drive, Chicago River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
100 Wells Street, Chicago River	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
39 Madison Street, North Branch Chicago River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
108 Loomis Street, South Branch Chicago River	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
99 Archer Avenue, South Fork South Branch Chicago River	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
41 Harlem Avenue, Chicago Sanitary & Ship Canal	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
42 Route 83, Chicago Sanitary & Ship Canal	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
48 Stephen Street, Chicago Sanitary & Ship Canal	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
92 Lockport Forebay, Chicago Sanitary & Ship Canal	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
Calumet River System											
49 Ewing Avenue, Calumet River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
50 Burnham Avenue, Wolf Lake	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
55 130th Street, Calumet River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
86 Burnham Avenue, Grand Calumet River	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
56 Indiana Avenue, Little Calumet River	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
76 Halsted Street, Little Calumet River	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
52 Wentworth Avenue, Little Calumet River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
54 Joe Orr Road, Thorn Creek	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
97 170th Street, Thorn Creek	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
57 Ashland Avenue, Little Calumet River	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
58 Ashland Avenue, Calumet-Sag Channel	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
59 Cicero Avenue, Calumet-Sag Channel	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
43 Route 83, Calumet-Sag Channel	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
Des Plaines River System											
90 Route 19, Poplar Creek	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
110 Springinguth Road, West Branch DuPage River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
64 Lake Street, West Branch DuPage River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
111 Arlington Drive, West Branch DuPage River	ND	ND	3.000	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
80 Arlington Heights Road, Salt Creek	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
18 Devon Avenue, Salt Creek	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
24 Wolf Road, Salt Creek	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
109 Brookfield Avenue, Salt Creek	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
78 Wille Road, Higgins Creek	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
12 Lake-Cook Road, Buffalo Creek	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
17 Oakton Street, Des Plaines River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
19 Belmont Avenue, Des Plaines River	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
20 Roosevelt Road, Des Plaines River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
22 Ogden Avenue, Des Plaines River	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
23 Willow Springs Road, Des Plaines River	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
29 Stephen Street, Des Plaines River	ND	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND
91 Material Service Road, Des Plaines River	3.000	3.000	3.000	ND	ND	ND	ND	ND	ND	ND	ND

ND = No Data.

**TABLE AII-41: TOTAL SILVER MEAN HISTORY
2003 THROUGH 2013**

Sampling Station (No. Name)	Annual Means (mg/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	0.002	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001
103 Golf Road, West Fork North Branch Chicago River	ND	0.002	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
31 Lake-Cook Road, Middle Fork North Branch	ND	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
104 Glenview Road, North Branch Chicago River	ND	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001
32 Lake-Cook Road, Skokie River	ND	0.002	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
105 Frontage Road, Skokie River	ND	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
34 Dempster Street, North Branch Chicago River	ND	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
96 Albany Avenue, North Branch Chicago River	0.001	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
35 Central Street, North Shore Channel	ND	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
112 Dempster Street, North Shore Channel	0.001	0.001	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
36 Touhy Avenue, North Shore Channel	0.001	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
101 Foster Avenue, North Shore Channel	ND	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
37 Wilson Avenue, North Branch Chicago River	ND	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
73 Diversey Parkway, North Branch Chicago River	0.001	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
46 Grand Avenue, North Branch Chicago River	ND	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002
74 Lake Shore Drive, Chicago River	ND	0.001	0.004	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000
100 Wells Street, Chicago River	0.001	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
39 Madison Street, South Branch Chicago River	ND	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
108 Loomis Street, South Branch Chicago River	0.001	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
99 Archer Avenue, South Fork South Branch Chicago River	0.001	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	0.001	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
41 Harlem Avenue, Chicago Sanitary & Ship Canal	0.001	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
42 Route 83, Chicago Sanitary & Ship Canal	ND	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
48 Stephen Street, Chicago Sanitary & Ship Canal	0.001	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
92 Lockport Forebay, Chicago Sanitary & Ship Canal	0.001	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Calumet River System											
49 Ewing Avenue, Calumet River	ND	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
50 Burnham Avenue, Wolf Lake	ND	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
55 130th Street, Calumet River	ND	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
86 Burnham Avenue, Grand Calumet River	0.001	0.002	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
56 Indiana Avenue, Little Calumet River	0.001	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
76 Halsted Street, Little Calumet River	0.001	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
52 Wentworth Avenue, Little Calumet River	ND	0.002	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
54 Joe Orr Road, Thorn Creek	ND	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
97 170th Street, Thorn Creek	ND	0.002	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
57 Ashland Avenue, Little Calumet River	0.001	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
58 Ashland Avenue, Calumet-Sag Channel	ND	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
59 Cicero Avenue, Calumet-Sag Channel	0.001	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
43 Route 83, Calumet-Sag Channel	0.001	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
Des Plaines River System											
90 Route 19, Poplar Creek	ND	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
110 Springinguth Road, West Branch DuPage River	0.001	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
64 Lake Street, West Branch DuPage River	ND	ND	ND	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
111 Arlington Drive, West Branch DuPage River	0.001	0.001	0.004	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	0.001	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
80 Arlington Heights Road, Salt Creek	ND	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
18 Devon Avenue, Salt Creek	0.001	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
24 Wolf Road, Salt Creek	ND	0.002	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
109 Brookfield Avenue, Salt Creek	0.001	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	0.001	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
78 Wille Road, Higgins Creek	0.001	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
12 Lake-Cook Road, Buffalo Creek	ND	0.002	0.004	0.000	0.000	0.000	0.000	0.000	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
17 Oakton Street, Des Plaines River	ND	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
19 Belmont Avenue, Des Plaines River	0.001	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
20 Roosevelt Road, Des Plaines River	ND	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
22 Ogden Avenue, Des Plaines River	0.001	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
23 Willow Springs Road, Des Plaines River	0.001	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
29 Stephen Street, Des Plaines River	ND	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
91 Material Service Road, Des Plaines River	0.001	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001

ND = No Data.

**TABLE AII-42: TOTAL ARSENIC MEAN HISTORY
2003 THROUGH 2013**

Sampling Station (No. Name)	Annual Means (mg/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
103 Golf Road, West Fork North Branch Chicago River	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
31 Lake-Cook Road, Middle Fork North Branch	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
104 Glenview Road, North Branch Chicago River	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.000
32 Lake-Cook Road, Skokie River	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.001
105 Frontage Road, Skokie River	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
34 Dempster Street, North Branch Chicago River	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
96 Albany Avenue, North Branch Chicago River	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
35 Central Street, North Shore Channel	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.001
112 Dempster Street, North Shore Channel	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
36 Touhy Avenue, North Shore Channel	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
101 Foster Avenue, North Shore Channel	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
37 Wilson Avenue, North Branch Chicago River	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
73 Diversey Parkway, North Branch Chicago River	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
46 Grand Avenue, North Branch Chicago River	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.001
74 Lake Shore Drive, Chicago River	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100 Wells Street, Chicago River	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
39 Madison Street, South Branch Chicago River	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
108 Loomis Street, South Branch Chicago River	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
99 Archer Avenue, South Fork South Branch Chicago River	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
41 Harlem Avenue, Chicago Sanitary & Ship Canal	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
42 Route 83, Chicago Sanitary & Ship Canal	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
48 Stephen Street, Chicago Sanitary & Ship Canal	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
92 Lockport Forebay, Chicago Sanitary & Ship Canal	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Calumet River System											
49 Ewing Avenue, Calumet River	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50 Burnham Avenue, Wolf Lake	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000
55 130th Street, Calumet River	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
86 Burnham Avenue, Grand Calumet River	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
56 Indiana Avenue, Little Calumet River	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
76 Halsted Street, Little Calumet River	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
52 Wentworth Avenue, Little Calumet River	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
54 Joe Orr Road, Thorn Creek	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
97 170th Street, Thorn Creek	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
57 Ashland Avenue, Little Calumet River	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
58 Ashland Avenue, Calumet-Sag Channel	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
59 Cicero Avenue, Calumet-Sag Channel	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
43 Route 83, Calumet-Sag Channel	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Des Plaines River System											
90 Route 19, Poplar Creek	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000
110 Springinguth Road, West Branch DuPage River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
64 Lake Street, West Branch DuPage River	ND	ND	ND	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.000
111 Arlington Drive, West Branch DuPage River	ND	0.050	0.050	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
80 Arlington Heights Road, Salt Creek	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
18 Devon Avenue, Salt Creek	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
24 Wolf Road, Salt Creek	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
109 Brookfield Avenue, Salt Creek	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
78 Wille Road, Higgins Creek	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
12 Lake-Cook Road, Buffalo Creek	ND	0.050	0.050	0.000	0.000	0.545	0.000	0.001	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.001
17 Oakton Street, Des Plaines River	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.001
19 Belmont Avenue, Des Plaines River	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.001	0.001	0.000	0.000
20 Roosevelt Road, Des Plaines River	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.001	0.001	0.000	0.000
22 Ogden Avenue, Des Plaines River	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000
23 Willow Springs Road, Des Plaines River	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.001	0.001	0.000	0.000
29 Stephen Street, Des Plaines River	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.000
91 Material Service Road, Des Plaines River	ND	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.002	0.001	0.000

ND = No Data.

**TABLE AII-44: TOTAL BORON MEAN HISTORY
2003 THROUGH 2013**

Sampling Station (No. Name)	Annual Means (mg/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	0.138	0.145	0.138	0.160	0.150	0.135	0.129	0.178	0.203	0.147
103 Golf Road, West Fork North Branch Chicago River	ND	0.121	0.125	0.124	0.113	0.104	0.149	0.145	0.191	0.139	0.137
31 Lake-Cook Road, Middle Fork North Branch	ND	0.090	0.073	0.067	0.074	0.085	0.121	0.118	0.176	0.170	0.113
104 Glenview Road, North Branch Chicago River	ND	0.113	0.103	0.126	0.107	0.115	0.142	0.142	0.182	0.155	0.138
32 Lake-Cook Road, Skokie River	ND	0.095	0.093	0.092	0.093	0.097	0.120	0.135	0.161	0.129	0.137
105 Frontage Road, Skokie River	ND	0.126	0.121	0.137	0.124	0.121	0.149	0.161	0.188	0.172	0.193
34 Dempster Street, North Branch Chicago River	ND	0.116	0.114	0.107	0.103	0.113	0.139	0.143	0.192	0.153	0.176
96 Albany Avenue, North Branch Chicago River	0.098	0.117	0.114	0.118	0.112	0.109	0.138	0.151	0.185	0.150	0.164
35 Central Street, North Shore Channel	ND	0.052	0.060	0.000	0.011	0.012	0.036	0.037	0.039	0.037	0.050
112 Dempster Street, North Shore Channel	0.067	0.115	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	0.129	0.100	0.060	0.070	0.060	0.087	0.117	0.093	0.076	0.091
36 Touhy Avenue, North Shore Channel	0.127	0.158	0.150	0.160	0.151	0.173	0.185	0.193	0.180	0.172	0.190
101 Foster Avenue, North Shore Channel	ND	0.150	0.132	0.151	0.147	0.167	0.182	0.192	0.177	0.174	0.176
37 Wilson Avenue, North Branch Chicago River	ND	0.138	0.125	0.138	0.128	0.146	0.160	0.173	0.168	0.161	0.166
73 Diversey Parkway, North Branch Chicago River	0.118	0.148	0.128	0.143	0.123	0.142	0.166	0.166	0.160	0.162	0.175
46 Grand Avenue, North Branch Chicago River	ND	0.141	0.121	0.132	0.116	0.132	0.154	0.163	0.172	0.160	0.162
74 Lake Shore Drive, Chicago River	ND	0.077	0.077	0.024	0.023	0.040	0.092	0.067	0.061	0.073	0.057
100 Wells Street, Chicago River	0.083	0.104	0.093	0.044	0.045	0.069	0.079	0.081	0.082	0.092	0.103
39 Madison Street, South Branch Chicago River	ND	0.117	0.117	0.103	0.102	0.109	0.107	0.128	0.132	0.144	0.149
108 Loomis Street, South Branch Chicago River	0.101	0.125	0.108	0.107	0.103	0.109	0.109	0.131	0.135	0.143	0.144
99 Archer Avenue, South Fork South Branch Chicago River	0.101	0.111	0.110	0.118	0.099	0.125	0.111	0.117	0.134	0.139	0.143
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	0.120	0.108	0.108	0.101	0.111	0.106	0.130	0.133	0.141	0.145
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	0.104	0.124	0.109	0.114	0.095	0.125	0.117	0.124	0.133	0.144	0.145
41 Harlem Avenue, Chicago Sanitary & Ship Canal	0.147	0.163	0.154	0.152	0.145	0.166	0.168	0.183	0.176	0.207	0.192
42 Route 83, Chicago Sanitary & Ship Canal	ND	0.256	0.213	0.221	0.164	0.168	0.208	0.223	0.219	0.261	0.226
48 Stephen Street, Chicago Sanitary & Ship Canal	0.208	0.235	0.195	0.204	0.153	0.175	0.192	0.208	0.216	0.221	0.217
92 Lockport Forebay, Chicago Sanitary & Ship Canal	0.191	0.215	0.191	0.203	0.162	0.185	0.196	0.218	0.223	0.206	0.203
Calumet River System											
49 Ewing Avenue, Calumet River	ND	0.050	0.060	0.000	0.017	0.017	0.046	0.049	0.042	0.046	0.035
50 Burnham Avenue, Wolf Lake	ND	0.217	0.244	0.242	0.238	0.181	0.171	0.115	0.147	0.144	0.105
55 130th Street, Calumet River	ND	0.151	0.114	0.089	0.111	0.119	0.146	0.107	0.113	0.111	0.084
86 Burnham Avenue, Grand Calumet River	0.687	0.615	0.805	0.774	0.345	0.682	0.583	0.601	0.287	0.429	0.430
56 Indiana Avenue, Little Calumet River	0.091	0.133	0.132	0.111	0.122	0.145	0.165	0.137	0.116	0.127	0.128
76 Halsted Street, Little Calumet River	0.175	0.189	0.187	0.173	0.171	0.205	0.194	0.224	0.205	0.189	0.187
52 Wentworth Avenue, Little Calumet River	ND	0.254	0.140	0.179	0.169	0.262	0.231	0.240	0.224	0.242	0.267
54 Joe Orr Road, Thorn Creek	ND	0.293	0.203	0.221	0.256	0.324	0.313	0.404	0.269	0.320	0.252
97 170th Street, Thorn Creek	ND	0.238	0.182	0.194	0.207	0.246	0.222	0.297	0.251	0.269	0.279
57 Ashland Avenue, Little Calumet River	0.212	0.223	0.171	0.180	0.191	0.241	0.202	0.258	0.232	0.223	0.265
58 Ashland Avenue, Calumet-Sag Channel	ND	0.193	0.171	0.176	0.163	0.202	0.173	0.230	0.206	0.194	0.210
59 Cicero Avenue, Calumet-Sag Channel	0.172	0.189	0.174	0.172	0.154	0.201	0.165	0.224	0.199	0.193	0.192
43 Route 83, Calumet-Sag Channel	0.161	0.190	0.157	0.181	0.148	0.187	0.168	0.204	0.207	0.187	0.182
Des Plaines River System											
90 Route 19, Poplar Creek	ND	0.054	0.060	0.025	0.024	0.047	0.058	0.061	0.071	0.056	0.056
110 Springinguth Road, West Branch DuPage River	0.081	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	0.181	0.169	0.216	0.203	0.218	0.248	0.247	0.278	0.274	0.264
64 Lake Street, West Branch DuPage River	ND	ND	ND	0.102	0.149	0.183	0.187	0.190	0.238	0.225	0.228
111 Arlington Drive, West Branch DuPage River	0.139	0.169	0.146	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	0.084	0.081	0.099	0.051	0.079	0.082	0.085	0.091	0.098	0.089	0.073
80 Arlington Heights Road, Salt Creek	ND	0.170	0.134	0.190	0.145	0.176	0.198	0.191	0.205	0.197	0.191
18 Devon Avenue, Salt Creek	0.162	0.218	0.150	0.189	0.135	0.172	0.196	0.196	0.207	0.189	0.187
24 Wolf Road, Salt Creek	ND	0.166	0.163	0.162	0.145	0.178	0.182	0.188	0.233	0.193	0.177
109 Brookfield Avenue, Salt Creek	0.153	0.196	0.155	0.181	0.150	0.188	0.183	0.210	0.262	0.195	0.198
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	0.078	0.106	0.080	0.000	0.055	0.110	0.089	0.083	0.081	0.084	0.063
78 Wille Road, Higgins Creek	0.204	0.245	0.224	0.202	0.193	0.245	0.260	0.289	0.366	0.303	0.282
12 Lake-Cook Road, Buffalo Creek	ND	0.073	0.081	0.073	0.091	0.100	0.088	0.107	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	0.121	0.114	0.141	0.117	0.157	0.155	0.181	0.221	0.191	0.192
17 Oakton Street, Des Plaines River	ND	0.124	0.113	0.141	0.101	0.144	0.137	0.155	0.215	0.167	0.186
19 Belmont Avenue, Des Plaines River	0.128	0.177	0.125	0.149	0.112	0.154	0.154	0.170	0.236	0.181	0.209
20 Roosevelt Road, Des Plaines River	ND	0.133	0.126	0.155	0.107	0.168	0.151	0.172	0.237	0.182	0.207
22 Ogden Avenue, Des Plaines River	0.136	0.188	0.130	0.151	0.121	0.169	0.155	0.183	0.236	0.194	0.211
23 Willow Springs Road, Des Plaines River	0.134	0.183	0.129	0.155	0.116	0.170	0.161	0.185	0.243	0.182	0.176
29 Stephen Street, Des Plaines River	ND	0.134	0.120	0.145	0.110	0.160	0.167	0.192	0.243	0.177	0.195
91 Material Service Road, Des Plaines River	0.133	0.173	0.124	0.148	0.116	0.162	0.173	0.198	0.249	0.179	0.217

ND = No Data.

TABLE AII-45: TOTAL CADMIUM MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means (mg/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.001
103 Golf Road, West Fork North Branch Chicago River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.000
31 Lake-Cook Road, Middle Fork North Branch	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.001	0.001	0.000	0.000
104 Glenview Road, North Branch Chicago River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
32 Lake-Cook Road, Skokie River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
105 Frontage Road, Skokie River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
34 Dempster Street, North Branch Chicago River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
96 Albany Avenue, North Branch Chicago River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
35 Central Street, North Shore Channel	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
112 Dempster Street, North Shore Channel	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
36 Touhy Avenue, North Shore Channel	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
101 Foster Avenue, North Shore Channel	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
37 Wilson Avenue, North Branch Chicago River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
73 Diversey Parkway, North Branch Chicago River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
46 Grand Avenue, North Branch Chicago River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
74 Lake Shore Drive, Chicago River	ND	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.000	0.000	0.000
100 Wells Street, Chicago River	ND	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.000	0.000	0.000
39 Madison Street, North Branch Chicago River	ND	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.000	0.000	0.000
108 Loomis Street, South Branch Chicago River	ND	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.000	0.000	0.000
99 Archer Avenue, South Fork South Branch Chicago River	ND	0.001	0.001	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	ND	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.000	0.000	0.000
41 Harlem Avenue, Chicago Sanitary & Ship Canal	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000
42 Route 83, Chicago Sanitary & Ship Canal	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000
48 Stephen Street, Chicago Sanitary & Ship Canal	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000
92 Lockport Forebay, Chicago Sanitary & Ship Canal	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Calumet River System											
49 Ewing Avenue, Calumet River	ND	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.000	0.000	0.000
50 Burnham Avenue, Wolf Lake	ND	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.000	0.000	0.000
55 130th Street, Calumet River	ND	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.000	0.000	0.000
86 Burnham Avenue, Grand Calumet River	ND	0.001	0.001	0.000	0.000	0.001	0.001	0.001	0.001	0.001	0.000
56 Indiana Avenue, Little Calumet River	ND	0.001	0.001	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000
76 Halsted Street, Little Calumet River	ND	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.000	0.000	0.000
52 Wentworth Avenue, Little Calumet River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
54 Joe Orr Road, Thorn Creek	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.001	0.001	0.001	0.000
97 170th Street, Thorn Creek	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.001	0.000	0.001	0.000
57 Ashland Avenue, Little Calumet River	ND	0.001	0.001	0.000	0.000	0.001	0.001	0.001	0.000	0.001	0.000
58 Ashland Avenue, Calumet-Sag Channel	ND	0.001	0.001	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.000
59 Cicero Avenue, Calumet-Sag Channel	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
43 Route 83, Calumet-Sag Channel	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
Des Plaines River System											
90 Route 19, Poplar Creek	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.000
110 Springinguth Road, West Branch DuPage River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
64 Lake Street, West Branch DuPage River	ND	ND	ND	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
111 Arlington Drive, West Branch DuPage River	ND	0.001	0.001	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.000
80 Arlington Heights Road, Salt Creek	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
18 Devon Avenue, Salt Creek	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
24 Wolf Road, Salt Creek	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
109 Brookfield Avenue, Salt Creek	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000
78 Wille Road, Higgins Creek	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
12 Lake-Cook Road, Buffalo Creek	ND	0.001	0.001	0.002	0.000	0.000	0.000	0.000	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
17 Oakton Street, Des Plaines River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
19 Belmont Avenue, Des Plaines River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20 Roosevelt Road, Des Plaines River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
22 Ogden Avenue, Des Plaines River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
23 Willow Springs Road, Des Plaines River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
29 Stephen Street, Des Plaines River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
91 Material Service Road, Des Plaines River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.000

ND = No Data.

TABLE AII-46: TOTAL COPPER MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means (mg/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	0.014	0.020	0.004	0.003	0.005	0.006	0.012	0.028	0.025	0.020
103 Golf Road, West Fork North Branch Chicago River	ND	0.007	0.020	0.000	0.001	0.000	0.002	0.004	0.017	0.013	0.015
31 Lake-Cook Road, Middle Fork North Branch	ND	0.007	0.020	0.000	0.000	0.000	0.001	0.005	0.021	0.012	0.013
104 Glenview Road, North Branch Chicago River	ND	0.007	0.021	0.000	0.001	0.000	0.002	0.005	0.016	0.013	0.013
32 Lake-Cook Road, Skokie River	ND	0.006	0.021	0.000	0.001	0.000	0.001	0.006	0.017	0.012	0.011
105 Frontage Road, Skokie River	ND	0.005	0.020	0.000	0.000	0.000	0.002	0.003	0.018	0.014	0.018
34 Dempster Street, North Branch Chicago River	ND	0.006	0.020	0.000	0.000	0.000	0.002	0.004	0.018	0.013	0.015
96 Albany Avenue, North Branch Chicago River	ND	0.006	0.020	0.001	0.000	0.000	0.002	0.004	0.017	0.016	0.016
35 Central Street, North Shore Channel	ND	0.005	0.020	0.000	0.000	0.000	0.000	0.001	0.014	0.011	0.012
112 Dempster Street, North Shore Channel	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	0.006	0.020	0.001	0.000	0.000	0.001	0.003	0.013	0.012	0.014
36 Touhy Avenue, North Shore Channel	ND	0.006	0.020	0.000	0.000	0.000	0.002	0.004	0.017	0.012	0.015
101 Foster Avenue, North Shore Channel	ND	0.006	0.020	0.000	0.000	0.000	0.003	0.003	0.016	0.014	0.013
37 Wilson Avenue, North Branch Chicago River	ND	0.006	0.020	0.000	0.000	0.000	0.002	0.003	0.016	0.013	0.015
73 Diversey Parkway, North Branch Chicago River	ND	0.006	0.020	0.000	0.001	0.000	0.002	0.003	0.017	0.011	0.015
46 Grand Avenue, North Branch Chicago River	ND	0.007	0.020	0.003	0.000	0.000	0.003	0.004	0.017	0.015	0.017
74 Lake Shore Drive, Chicago River	ND	0.006	0.020	0.000	0.000	0.000	0.003	0.002	0.015	0.013	0.014
100 Wells Street, Chicago River	ND	0.009	0.020	0.001	0.000	0.000	0.004	0.004	0.016	0.015	0.015
39 Madison Street, North Branch Chicago River	ND	0.007	0.020	0.000	0.000	0.000	0.005	0.004	0.017	0.015	0.015
108 Loomis Street, South Branch Chicago River	ND	0.007	0.020	0.000	0.000	0.001	0.007	0.005	0.018	0.018	0.016
99 Archer Avenue, South Fork South Branch Chicago River	ND	0.008	0.020	0.000	0.000	0.000	0.003	0.004	0.015	0.014	0.016
Damen Avenue, Chicago Sanitary & Ship Canal	ND	0.008	0.020	0.000	0.000	0.001	0.005	0.006	0.018	0.015	0.017
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	ND	0.009	0.020	0.000	0.000	0.000	0.005	0.005	0.019	0.015	0.015
41 Harlem Avenue, Chicago Sanitary & Ship Canal	ND	0.007	0.020	0.000	0.000	0.000	0.003	0.003	0.013	0.012	0.013
42 Route 83, Chicago Sanitary & Ship Canal	ND	0.005	0.020	0.000	0.000	0.001	0.005	0.002	0.015	0.016	0.014
48 Stephen Street, Chicago Sanitary & Ship Canal	ND	0.008	0.020	0.000	0.000	0.001	0.004	0.002	0.015	0.020	0.015
92 Lockport Forebay, Chicago Sanitary & Ship Canal	ND	0.005	0.020	0.000	0.000	0.001	0.002	0.003	0.016	0.013	0.014
Calumet River System											
49 Ewing Avenue, Calumet River	ND	0.005	0.020	0.000	0.000	0.000	0.001	0.004	0.013	0.010	0.011
50 Burnham Avenue, Wolf Lake	ND	0.005	0.020	0.000	0.000	0.000	0.000	0.002	0.014	0.011	0.013
55 130th Street, Calumet River	ND	0.005	0.020	0.000	0.000	0.000	0.001	0.006	0.013	0.013	0.012
86 Burnham Avenue, Grand Calumet River	ND	0.005	0.020	0.001	0.000	0.000	0.004	0.006	0.038	0.016	0.017
56 Indiana Avenue, Little Calumet River	ND	0.006	0.020	0.000	0.002	0.000	0.005	0.004	0.015	0.013	0.013
76 Halsted Street, Little Calumet River	ND	0.005	0.020	0.000	0.028	0.001	0.001	0.002	0.015	0.010	0.010
52 Wentworth Avenue, Little Calumet River	ND	0.005	0.020	0.001	0.000	0.000	0.002	0.003	0.015	0.015	0.012
54 Joe Orr Road, Thorn Creek	ND	0.005	0.020	0.000	0.000	0.000	0.000	0.001	0.020	0.014	0.008
97 170th Street, Thorn Creek	ND	0.005	0.020	0.001	0.000	0.000	0.003	0.002	0.017	0.016	0.014
57 Ashland Avenue, Little Calumet River	ND	0.017	0.020	0.001	0.007	0.000	0.004	0.002	0.019	0.014	0.010
58 Ashland Avenue, Calumet-Sag Channel	ND	0.029	0.020	0.000	0.013	0.000	0.001	0.002	0.020	0.011	0.011
59 Cicero Avenue, Calumet-Sag Channel	ND	0.005	0.020	0.000	0.000	0.000	0.001	0.002	0.014	0.011	0.011
43 Route 83, Calumet-Sag Channel	ND	0.005	0.020	0.000	0.000	0.000	0.001	0.002	0.014	0.012	0.013
Des Plaines River System											
90 Route 19, Poplar Creek	ND	0.005	0.020	0.000	0.000	0.000	0.001	0.001	0.015	0.009	0.012
110 Springinguth Road, West Branch DuPage River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	0.008	0.020	0.002	0.003	0.003	0.006	0.007	0.021	0.018	0.018
64 Lake Street, West Branch DuPage River	ND	ND	ND	0.000	0.000	0.000	0.005	0.006	0.022	0.016	0.019
111 Arlington Drive, West Branch DuPage River	ND	0.006	0.020	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	ND	0.005	0.020	0.000	0.000	0.000	0.002	0.001	0.017	0.011	0.014
80 Arlington Heights Road, Salt Creek	ND	0.005	0.020	0.000	0.000	0.000	0.002	0.003	0.018	0.013	0.017
18 Devon Avenue, Salt Creek	ND	0.005	0.020	0.000	0.001	0.000	0.002	0.003	0.021	0.012	0.016
24 Wolf Road, Salt Creek	ND	0.005	0.020	0.001	0.000	0.001	0.005	0.006	0.020	0.013	0.017
109 Brookfield Avenue, Salt Creek	ND	0.005	0.020	0.003	0.001	0.001	0.005	0.007	0.020	0.014	0.022
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	ND	0.005	0.020	0.000	0.000	0.003	0.005	0.006	0.016	0.017	0.018
78 Wille Road, Higgins Creek	ND	0.008	0.020	0.000	0.000	0.001	0.001	0.001	0.017	0.012	0.014
12 Lake-Cook Road, Buffalo Creek	ND	0.005	0.020	0.000	0.000	0.000	0.002	0.001	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	0.005	0.020	0.000	0.000	0.000	0.001	0.002	0.017	0.013	0.016
17 Oakton Street, Des Plaines River	ND	0.005	0.020	0.000	0.000	0.000	0.002	0.002	0.016	0.012	0.015
19 Belmont Avenue, Des Plaines River	ND	0.006	0.020	0.000	0.000	0.001	0.002	0.003	0.019	0.014	0.016
20 Roosevelt Road, Des Plaines River	ND	0.006	0.020	0.001	0.000	0.001	0.003	0.003	0.017	0.011	0.017
22 Ogden Avenue, Des Plaines River	ND	0.005	0.020	0.000	0.000	0.000	0.004	0.004	0.020	0.012	0.017
23 Willow Springs Road, Des Plaines River	ND	0.005	0.020	0.000	0.000	0.000	0.003	0.004	0.021	0.012	0.015
29 Stephen Street, Des Plaines River	ND	0.005	0.026	0.001	0.000	0.000	0.003	0.004	0.019	0.011	0.016
91 Material Service Road, Des Plaines River	ND	0.005	0.021	0.000	0.000	0.000	0.003	0.003	0.017	0.014	0.015

ND = No Data.

TABLE AII-54: LOW LEVEL MERCURY MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means (ng/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	3.5	3.6	7.0	6.9	3.7	2.4	5.6	ND	ND	ND
103 Golf Road, West Fork North Branch Chicago River	ND	6.7	3.3	9.7	11.0	6.9	3.6	9.5	ND	ND	ND
31 Lake-Cook Road, Middle Fork North Branch	ND	3.8	2.1	1.9	3.2	2.9	2.0	3.6	ND	ND	ND
104 Glenview Road, North Branch Chicago River	ND	3.8	3.3	3.0	3.8	3.9	1.8	6.8	ND	ND	ND
32 Lake-Cook Road, Skokie River	ND	4.0	2.8	5.2	6.5	6.3	2.8	6.2	ND	ND	ND
105 Frontage Road, Skokie River	ND	3.8	2.1	2.4	3.7	3.6	1.4	3.1	ND	ND	ND
34 Dempster Street, North Branch Chicago River	ND	5.7	2.6	3.3	5.3	5.5	2.9	5.8	ND	ND	ND
96 Albany Avenue, North Branch Chicago River	11.0	5.9	2.6	4.3	6.3	8.0	3.4	5.7	ND	ND	ND
35 Central Street, North Shore Channel	ND	4.6	2.2	1.8	2.3	2.3	0.7	1.6	ND	ND	ND
112 Dempster Street, North Shore Channel	10.0	7.4	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	4.5	3.0	7.2	4.9	5.4	2.7	4.7	ND	ND	ND
36 Touhy Avenue, North Shore Channel	ND	5.0	ND	ND	ND	ND	ND	ND	ND	ND	ND
101 Foster Avenue, North Shore Channel	ND	ND	ND	ND	4.4	ND	ND	ND	ND	ND	ND
37 Wilson Avenue, North Branch Chicago River	ND	ND	ND	ND	4.5	ND	ND	ND	ND	ND	ND
73 Diversey Parkway, North Branch Chicago River	ND	ND	ND	ND	5.9	ND	ND	ND	ND	ND	ND
46 Grand Avenue, North Branch Chicago River	ND	ND	ND	ND	12.0	ND	ND	ND	ND	ND	ND
74 Lake Shore Drive, Chicago River	ND	3.7	2.1	1.0	1.7	1.9	1.4	1.3	ND	ND	ND
100 Wells Street, Chicago River	12.5	8.3	8.5	2.2	2.9	2.7	1.6	2.1	ND	ND	ND
39 Madison Street, South Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
108 Loomis Street, South Branch Chicago River	ND	ND	ND	ND	1.1	ND	ND	ND	ND	ND	ND
99 Archer Avenue, South Fork South Branch Chicago River	ND	ND	ND	ND	3.1	ND	ND	ND	ND	ND	ND
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
41 Harlem Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
42 Route 83, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
48 Stephen Street, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
92 Lockport Forebay, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	6.1	0.0	ND	ND	ND	ND	ND
Calumet River System											
49 Ewing Avenue, Calumet River	ND	4.4	2.5	0.6	2.1	1.4	0.7	3.1	ND	ND	ND
50 Burnham Avenue, Wolf Lake	ND	3.9	1.9	0.9	1.9	1.6	0.2	1.8	ND	ND	ND
55 130th Street, Calumet River	ND	3.9	2.5	2.2	2.1	1.7	1.6	4.2	ND	ND	ND
86 Burnham Avenue, Grand Calumet River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
56 Indiana Avenue, Little Calumet River	ND	ND	ND	ND	1.4	ND	ND	ND	ND	ND	ND
76 Halsted Street, Little Calumet River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
52 Wentworth Avenue, Little Calumet River	ND	3.9	7.1	6.4	8.3	2.7	3.0	6.1	ND	ND	ND
54 Joe Orr Road, Thorn Creek	ND	5.2	4.6	3.1	4.9	1.6	2.8	2.5	ND	ND	ND
97 170th Street, Thorn Creek	ND	4.4	13.0	15.1	8.3	5.4	5.7	10.5	ND	ND	ND
57 Ashland Avenue, Little Calumet River	10.0	6.8	7.3	9.2	8.1	3.6	4.2	7.6	ND	ND	ND
58 Ashland Avenue, Calumet-Sag Channel	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
59 Cicero Avenue, Calumet-Sag Channel	ND	ND	ND	ND	1.8	ND	ND	ND	ND	ND	ND
43 Route 83, Calumet-Sag Channel	ND	ND	ND	ND	4.6	ND	ND	ND	ND	ND	ND
Des Plaines River System											
90 Route 19, Poplar Creek	ND	3.9	2.7	1.5	2.0	1.5	2.6	2.9	ND	ND	ND
110 Springinguth Road, West Branch DuPage River	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	5.5	3.1	5.1	3.4	3.7	1.6	4.4	ND	ND	ND
64 Lake Street, West Branch DuPage River	ND	ND	ND	3.0	3.3	2.6	2.3	4.0	ND	ND	ND
111 Arlington Drive, West Branch DuPage River	10.0	4.9	2.9	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	10.0	5.9	4.6	3.3	3.4	2.5	1.5	4.1	ND	ND	ND
80 Arlington Heights Road, Salt Creek	ND	3.9	2.5	2.5	2.5	1.6	0.5	2.3	ND	ND	ND
18 Devon Avenue, Salt Creek	9.8	5.5	3.2	2.1	2.7	1.4	0.9	2.2	ND	ND	ND
24 Wolf Road, Salt Creek	ND	5.0	4.4	4.8	4.9	3.1	2.7	6.2	ND	ND	ND
109 Brookfield Avenue, Salt Creek	10.0	7.1	2.5	3.9	7.3	3.9	2.5	8.6	ND	ND	ND
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	10.0	5.9	4.7	5.2	5.8	4.6	2.2	7.8	ND	ND	ND
78 Wille Road, Higgins Creek	10.0	6.3	3.5	0.8	2.3	1.7	0.7	2.0	ND	ND	ND
12 Lake-Cook Road, Buffalo Creek	ND	3.3	3.9	2.3	4.0	2.1	2.1	3.3	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	4.4	3.3	1.9	2.8	1.5	1.4	3.1	ND	ND	ND
17 Oakton Street, Des Plaines River	ND	3.6	3.3	2.4	3.5	2.2	1.7	3.6	ND	ND	ND
19 Belmont Avenue, Des Plaines River	9.8	5.2	3.0	2.8	3.4	2.7	1.8	3.9	ND	ND	ND
20 Roosevelt Road, Des Plaines River	ND	4.4	3.4	3.7	4.4	2.9	2.0	4.2	ND	ND	ND
22 Ogden Avenue, Des Plaines River	9.8	8.7	2.8	3.7	5.5	3.3	2.5	6.9	ND	ND	ND
23 Willow Springs Road, Des Plaines River	10.2	5.9	2.4	3.6	5.2	3.4	2.4	5.3	ND	ND	ND
29 Stephen Street, Des Plaines River	ND	4.7	3.0	4.2	5.1	3.3	2.1	6.4	ND	ND	ND
91 Material Service Road, Des Plaines River	9.8	5.4	3.4	3.9	4.9	3.0	2.6	6.2	ND	ND	ND

ND = No Data.

TABLE AII-55: TOTAL ZINC MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means (mg/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	0.040	0.060	0.013	0.027	0.040	0.030	0.045	0.039	0.052	0.045
103 Golf Road, West Fork North Branch Chicago River	ND	0.023	0.060	0.006	0.012	0.014	0.022	0.026	0.028	0.032	0.028
31 Lake-Cook Road, Middle Fork North Branch	ND	0.010	0.060	0.002	0.005	0.017	0.019	0.029	0.019	0.021	0.022
104 Glenview Road, North Branch Chicago River	ND	0.025	0.062	0.021	0.053	0.028	0.039	0.049	0.038	0.033	0.038
32 Lake-Cook Road, Skokie River	ND	0.017	0.065	0.007	0.009	0.021	0.021	0.036	0.027	0.021	0.024
105 Frontage Road, Skokie River	ND	0.020	0.060	0.015	0.023	0.021	0.026	0.029	0.035	0.042	0.047
34 Dempster Street, North Branch Chicago River	ND	0.023	0.060	0.012	0.015	0.028	0.021	0.025	0.031	0.034	0.046
96 Albany Avenue, North Branch Chicago River	ND	0.020	0.060	0.007	0.018	0.020	0.023	0.024	0.030	0.032	0.036
35 Central Street, North Shore Channel	ND	0.010	0.060	0.002	0.009	0.004	0.010	0.011	0.019	0.020	0.025
112 Dempster Street, North Shore Channel	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	0.035	0.060	0.012	0.013	0.018	0.030	0.027	0.030	0.026	0.042
36 Touhy Avenue, North Shore Channel	ND	0.035	0.060	0.020	0.027	0.034	0.038	0.035	0.042	0.040	0.045
101 Foster Avenue, North Shore Channel	ND	0.030	0.060	0.019	0.026	0.033	0.039	0.035	0.039	0.047	0.046
37 Wilson Avenue, North Branch Chicago River	ND	0.033	0.060	0.018	0.025	0.028	0.036	0.032	0.039	0.042	0.043
73 Diversey Parkway, North Branch Chicago River	ND	0.030	0.063	0.020	0.025	0.030	0.036	0.032	0.037	0.036	0.058
46 Grand Avenue, North Branch Chicago River	ND	0.038	0.060	0.019	0.029	0.033	0.040	0.041	0.049	0.051	0.064
74 Lake Shore Drive, Chicago River	ND	0.020	0.060	0.001	0.007	0.010	0.030	0.018	0.029	0.023	0.024
100 Wells Street, Chicago River	ND	0.033	0.060	0.013	0.012	0.018	0.026	0.021	0.030	0.028	0.030
39 Madison Street, South Branch Chicago River	ND	0.043	0.060	0.013	0.028	0.031	0.046	0.029	0.043	0.046	0.042
108 Loomis Street, South Branch Chicago River	ND	0.045	0.060	0.011	0.030	0.037	0.043	0.033	0.038	0.042	0.041
99 Archer Avenue, South Fork South Branch Chicago River	ND	0.035	0.060	0.010	0.023	0.033	0.032	0.028	0.039	0.040	0.038
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	0.038	0.060	0.015	0.030	0.036	0.043	0.042	0.045	0.047	0.065
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	ND	0.048	0.062	0.014	0.026	0.034	0.046	0.035	0.040	0.042	0.041
41 Harlem Avenue, Chicago Sanitary & Ship Canal	ND	0.033	0.060	0.020	0.029	0.035	0.046	0.035	0.041	0.037	0.038
42 Route 83, Chicago Sanitary & Ship Canal	ND	0.030	0.060	0.015	0.028	0.031	0.045	0.032	0.038	0.045	0.047
48 Stephen Street, Chicago Sanitary & Ship Canal	ND	0.035	0.060	0.015	0.028	0.033	0.045	0.033	0.044	0.056	0.047
92 Lockport Forebay, Chicago Sanitary & Ship Canal	ND	0.028	0.060	0.016	0.029	0.035	0.038	0.038	0.049	0.047	0.049
Calumet River System											
49 Ewing Avenue, Calumet River	ND	0.010	0.060	0.000	0.008	0.016	0.021	0.016	0.014	0.019	0.018
50 Burnham Avenue, Wolf Lake	ND	0.010	0.060	0.003	0.009	0.007	0.047	0.008	0.015	0.016	0.019
55 130th Street, Calumet River	ND	0.010	0.060	0.004	0.005	0.008	0.019	0.053	0.022	0.026	0.022
86 Burnham Avenue, Grand Calumet River	ND	0.023	0.060	0.021	0.049	0.039	0.053	0.055	0.154	0.062	0.081
56 Indiana Avenue, Little Calumet River	ND	0.013	0.060	0.007	0.015	0.025	0.033	0.021	0.030	0.032	0.034
76 Halsted Street, Little Calumet River	ND	0.028	0.073	0.016	0.032	0.059	0.053	0.041	0.051	0.052	0.050
52 Wentworth Avenue, Little Calumet River	ND	0.020	0.060	0.014	0.027	0.022	0.026	0.027	0.035	0.047	0.036
54 Joe Orr Road, Thorn Creek	ND	0.033	0.063	0.027	0.042	0.046	0.050	0.050	0.103	0.059	0.040
97 170th Street, Thorn Creek	ND	0.023	0.066	0.025	0.029	0.031	0.038	0.031	0.046	0.060	0.048
57 Ashland Avenue, Little Calumet River	ND	0.018	0.060	0.018	0.033	0.027	0.035	0.027	0.059	0.052	0.050
58 Ashland Avenue, Calumet-Sag Channel	ND	0.028	0.062	0.015	0.033	0.059	0.048	0.040	0.069	0.060	0.055
59 Cicero Avenue, Calumet-Sag Channel	ND	0.025	0.064	0.012	0.024	0.038	0.032	0.037	0.044	0.055	0.049
43 Route 83, Calumet-Sag Channel	ND	0.025	0.060	0.010	0.026	0.030	0.035	0.034	0.055	0.046	0.055
Des Plaines River System											
90 Route 19, Poplar Creek	ND	0.013	0.060	0.002	0.003	0.014	0.013	0.014	0.035	0.017	0.033
110 Springinguth Road, West Branch DuPage River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	0.040	0.060	0.030	0.038	0.045	0.042	0.039	0.051	0.062	0.053
64 Lake Street, West Branch DuPage River	ND	ND	ND	0.032	0.035	0.038	0.034	0.044	0.051	0.048	0.051
111 Arlington Drive, West Branch DuPage River	ND	0.030	0.060	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	ND	0.010	0.060	0.004	0.008	0.010	0.020	0.015	0.028	0.022	0.029
80 Arlington Heights Road, Salt Creek	ND	0.018	0.060	0.011	0.023	0.019	0.036	0.025	0.039	0.078	0.036
18 Devon Avenue, Salt Creek	ND	0.018	0.060	0.011	0.023	0.020	0.024	0.024	0.042	0.034	0.036
24 Wolf Road, Salt Creek	ND	0.025	0.060	0.016	0.030	0.035	0.034	0.040	0.049	0.050	0.051
109 Brookfield Avenue, Salt Creek	ND	0.030	0.060	0.016	0.028	0.032	0.032	0.040	0.050	0.040	0.049
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	ND	0.010	0.060	0.020	0.021	0.051	0.035	0.042	0.041	0.053	0.050
78 Wille Road, Higgins Creek	ND	0.040	0.060	0.026	0.036	0.050	0.047	0.049	0.076	0.066	0.066
12 Lake-Cook Road, Buffalo Creek	ND	0.015	0.060	0.014	0.017	0.016	0.019	0.017	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	0.010	0.060	0.007	0.019	0.032	0.025	0.024	0.036	0.034	0.043
17 Oakton Street, Des Plaines River	ND	0.010	0.060	0.003	0.016	0.019	0.023	0.024	0.037	0.032	0.048
19 Belmont Avenue, Des Plaines River	ND	0.020	0.061	0.012	0.020	0.028	0.029	0.033	0.054	0.040	0.060
20 Roosevelt Road, Des Plaines River	ND	0.020	0.060	0.015	0.023	0.033	0.031	0.034	0.046	0.037	0.059
22 Ogden Avenue, Des Plaines River	ND	0.010	0.060	0.017	0.021	0.036	0.037	0.037	0.046	0.036	0.055
23 Willow Springs Road, Des Plaines River	ND	0.013	0.060	0.010	0.020	0.028	0.028	0.034	0.043	0.037	0.045
29 Stephen Street, Des Plaines River	ND	0.018	0.060	0.015	0.021	0.027	0.033	0.033	0.042	0.035	0.048
91 Material Service Road, Des Plaines River	ND	0.013	0.060	0.014	0.020	0.027	0.027	0.033	0.040	0.039	0.052

ND = No Data.

**TABLE AII-56: TOTAL SELENIUM MEAN HISTORY
2003 THROUGH 2013**

Sampling Station (No. Name)	Annual Means (mg/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	0.006	0.006	0.000	0.011	0.000	0.000	0.003	0.007	0.010	0.003
103 Golf Road, West Fork North Branch Chicago River	ND	0.005	0.005	0.000	0.000	0.000	0.000	0.001	0.006	0.015	0.003
31 Lake-Cook Road, Middle Fork North Branch	ND	0.006	0.006	0.000	0.000	0.000	0.000	0.001	0.005	0.014	0.005
104 Glenview Road, North Branch Chicago River	ND	0.006	0.005	0.000	0.000	0.000	0.000	0.001	0.004	0.011	0.002
32 Lake-Cook Road, Skokie River	ND	0.007	0.005	0.000	0.000	0.000	0.000	0.001	0.005	0.012	0.005
105 Frontage Road, Skokie River	ND	0.007	0.005	0.000	0.000	0.000	0.000	0.001	0.006	0.012	0.006
34 Dempster Street, North Branch Chicago River	ND	0.006	0.006	0.000	0.000	0.000	0.000	0.001	0.006	0.012	0.008
96 Albany Avenue, North Branch Chicago River	0.024	0.005	0.005	0.000	0.000	0.000	0.000	0.001	0.004	0.009	0.006
35 Central Street, North Shore Channel	ND	0.006	0.006	0.000	0.013	0.000	0.000	0.000	0.007	0.008	0.003
112 Dempster Street, North Shore Channel	0.024	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	0.005	0.005	0.000	0.012	0.000	0.000	0.002	0.004	0.011	0.004
36 Touhy Avenue, North Shore Channel	0.027	0.005	0.005	0.000	0.000	0.000	0.000	0.001	0.008	0.010	0.008
101 Foster Avenue, North Shore Channel	ND	0.005	0.005	0.000	0.000	0.000	0.000	0.001	0.006	0.010	0.006
37 Wilson Avenue, North Branch Chicago River	ND	0.005	0.006	0.000	0.000	0.000	0.000	0.001	0.007	0.011	0.006
73 Diversey Parkway, North Branch Chicago River	0.025	0.006	0.005	0.000	0.000	0.000	0.000	0.001	0.005	0.010	0.006
46 Grand Avenue, North Branch Chicago River	ND	0.006	0.005	0.000	0.000	0.000	0.000	0.001	0.009	0.010	0.007
74 Lake Shore Drive, Chicago River	ND	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.006	0.009	0.005
100 Wells Street, Chicago River	0.018	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.005	0.008	0.004
39 Madison Street, South Branch Chicago River	ND	0.005	0.006	0.000	0.000	0.000	0.000	0.000	0.007	0.009	0.004
108 Loomis Street, South Branch Chicago River	0.017	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.008	0.007	0.004
99 Archer Avenue, South Fork South Branch Chicago River	0.019	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.006	0.009	0.005
Damen Avenue, Chicago Sanitary & Ship Canal	ND	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.008	0.008	0.005
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	0.016	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.010	0.008	0.004
41 Harlem Avenue, Chicago Sanitary & Ship Canal	0.019	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.008	0.010	0.004
42 Route 83, Chicago Sanitary & Ship Canal	ND	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.007	0.008	0.004
48 Stephen Street, Chicago Sanitary & Ship Canal	0.020	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.007	0.008	0.005
92 Lockport Forebay, Chicago Sanitary & Ship Canal	0.024	0.006	0.005	0.000	0.004	0.000	0.000	0.000	0.007	0.011	0.005
Calumet River System											
49 Ewing Avenue, Calumet River	ND	0.005	0.005	0.000	0.014	0.000	0.000	0.000	0.004	0.008	0.005
50 Burnham Avenue, Wolf Lake	ND	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.004	0.007	0.003
55 130th Street, Calumet River	ND	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.005	0.011	0.003
86 Burnham Avenue, Grand Calumet River	0.025	0.005	0.005	0.001	0.000	0.000	0.000	0.000	0.005	0.015	0.004
56 Indiana Avenue, Little Calumet River	0.023	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.005	0.008	0.003
76 Halsted Street, Little Calumet River	0.023	0.005	0.006	0.000	0.010	0.000	0.000	0.000	0.006	0.011	0.007
52 Wentworth Avenue, Little Calumet River	ND	0.005	0.005	0.000	0.013	0.000	0.000	0.000	0.004	0.012	0.003
54 Joe Orr Road, Thorn Creek	ND	0.005	0.005	0.000	0.013	0.000	0.000	0.000	0.005	0.006	0.009
97 170th Street, Thorn Creek	ND	0.006	0.005	0.000	0.011	0.000	0.000	0.000	0.005	0.008	0.005
57 Ashland Avenue, Little Calumet River	0.025	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.007	0.012	0.004
58 Ashland Avenue, Calumet-Sag Channel	ND	0.005	0.005	0.000	0.013	0.000	0.000	0.000	0.005	0.010	0.006
59 Cicero Avenue, Calumet-Sag Channel	0.024	0.006	0.005	0.000	0.013	0.000	0.000	0.000	0.005	0.013	0.003
43 Route 83, Calumet-Sag Channel	0.026	0.005	0.005	0.000	0.013	0.000	0.000	0.000	0.005	0.010	0.004
Des Plaines River System											
90 Route 19, Poplar Creek	ND	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.008	0.013	0.016
110 Springinguth Road, West Branch DuPage River	0.022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	0.005	0.005	0.000	0.000	0.000	0.000	0.001	0.008	0.012	0.005
64 Lake Street, West Branch DuPage River	ND	ND	ND	0.000	0.000	0.000	0.000	0.000	0.008	0.013	0.005
111 Arlington Drive, West Branch DuPage River	0.022	0.005	0.005	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	0.023	0.005	0.005	0.000	0.000	0.000	0.000	0.002	0.007	0.013	0.001
80 Arlington Heights Road, Salt Creek	ND	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.009	0.010	0.003
18 Devon Avenue, Salt Creek	0.022	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.008	0.011	0.005
24 Wolf Road, Salt Creek	ND	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.009	0.012	0.003
109 Brookfield Avenue, Salt Creek	0.022	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.007	0.011	0.003
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	0.021	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.010	0.014	0.005
78 Wille Road, Higgins Creek	0.023	0.006	0.005	0.000	0.000	0.000	0.000	0.001	0.008	0.011	0.006
12 Lake-Cook Road, Buffalo Creek	ND	0.006	0.005	0.000	0.000	0.000	0.000	0.001	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.007	0.014	0.006
17 Oakton Street, Des Plaines River	ND	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.006	0.011	0.004
19 Belmont Avenue, Des Plaines River	0.023	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.007	0.010	0.004
20 Roosevelt Road, Des Plaines River	ND	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.007	0.013	0.002
22 Ogden Avenue, Des Plaines River	0.023	0.005	0.005	0.000	0.009	0.000	0.000	0.000	0.010	0.011	0.007
23 Willow Springs Road, Des Plaines River	0.025	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.008	0.010	0.004
29 Stephen Street, Des Plaines River	ND	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.008	0.011	0.003
91 Material Service Road, Des Plaines River	0.023	0.005	0.005	0.000	0.000	0.000	0.000	0.002	0.010	0.013	0.005

ND = No Data.

TABLE AII-57: SOLUBLE CALCIUM MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means (mg/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	84.3	76.7	75.3	65.8	68.8	70.9	57.9	65.7	81.4	53.7
103 Golf Road, West Fork North Branch Chicago River	ND	92.8	74.9	72.4	65.2	65.8	72.2	70.4	74.0	69.0	66.0
31 Lake-Cook Road, Middle Fork North Branch	ND	79.5	60.2	63.8	55.7	59.0	63.4	58.4	59.4	62.4	62.0
104 Glenview Road, North Branch Chicago River	ND	79.5	59.8	65.0	59.7	63.2	61.4	58.1	55.5	62.9	65.7
32 Lake-Cook Road, Skokie River	ND	84.3	66.8	72.2	61.4	62.6	72.8	63.1	64.0	70.5	66.4
105 Frontage Road, Skokie River	ND	79.5	60.2	63.7	60.5	63.6	60.2	59.9	55.7	61.7	56.8
34 Dempster Street, North Branch Chicago River	ND	91.0	63.7	71.7	59.5	61.7	62.6	62.8	61.6	65.7	61.4
96 Albany Avenue, North Branch Chicago River	ND	88.3	67.0	65.8	62.6	65.2	64.7	64.7	63.7	64.1	62.4
35 Central Street, North Shore Channel	ND	63.5	38.9	38.1	35.3	38.1	38.6	35.3	32.8	36.4	39.0
112 Dempster Street, North Shore Channel	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	61.0	48.6	48.4	46.1	45.8	47.0	45.2	42.7	44.4	46.2
36 Touhy Avenue, North Shore Channel	ND	59.3	55.6	51.7	58.3	57.9	53.7	49.8	46.8	54.6	51.1
101 Foster Avenue, North Shore Channel	ND	60.8	54.8	55.2	56.0	59.0	56.6	51.5	47.4	54.7	52.2
37 Wilson Avenue, North Branch Chicago River	ND	63.3	56.8	60.0	56.4	60.1	56.8	53.4	49.6	57.6	53.8
73 Diversey Parkway, North Branch Chicago River	ND	65.0	57.3	57.9	56.7	60.8	56.4	53.7	49.1	58.1	52.7
46 Grand Avenue, North Branch Chicago River	ND	66.8	58.1	55.5	54.8	58.8	56.4	54.0	52.7	57.5	54.4
74 Lake Shore Drive, Chicago River	ND	54.5	44.5	37.3	36.0	37.5	40.6	36.7	37.9	40.1	39.1
100 Wells Street, Chicago River	ND	61.5	50.5	43.0	42.6	47.0	44.5	42.3	41.8	43.5	46.2
39 Madison Street, South Branch Chicago River	ND	63.5	59.3	49.7	51.7	52.8	49.1	49.0	49.0	50.2	53.0
108 Loomis Street, South Branch Chicago River	ND	63.8	54.2	51.2	52.3	53.1	49.8	50.7	51.2	50.4	51.5
99 Archer Avenue, South Fork South Branch Chicago River	ND	52.3	54.4	54.6	50.6	56.2	49.4	49.3	48.5	50.7	49.8
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	63.8	54.3	51.9	52.8	52.7	50.4	49.6	49.8	50.5	ND
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	ND	64.8	54.5	52.8	50.9	57.0	50.9	48.2	51.1	51.6	49.9
41 Harlem Avenue, Chicago Sanitary & Ship Canal	ND	62.5	56.9	58.1	56.2	57.7	53.0	47.5	51.4	53.5	52.0
42 Route 83, Chicago Sanitary & Ship Canal	ND	62.5	59.2	57.4	54.4	57.3	54.1	52.8	53.6	54.7	55.2
48 Stephen Street, Chicago Sanitary & Ship Canal	ND	69.3	60.2	58.5	54.4	58.8	55.7	55.9	56.1	59.0	57.7
92 Lockport Forebay, Chicago Sanitary & Ship Canal	ND	70.0	58.7	59.0	56.3	59.2	56.9	55.0	54.9	56.8	55.7
Calumet River System											
49 Ewing Avenue, Calumet River	ND	36.7	35.3	34.4	34.2	34.3	35.1	32.2	34.4	35.1	35.8
50 Burnham Avenue, Wolf Lake	ND	42.8	34.5	36.0	34.8	35.0	34.7	28.7	34.8	35.1	31.8
55 130th Street, Calumet River	ND	49.8	41.2	41.5	41.2	41.5	45.6	38.4	40.9	40.5	41.1
86 Burnham Avenue, Grand Calumet River	ND	110.3	75.3	78.8	80.8	91.4	86.4	92.8	64.3	77.0	83.9
56 Indiana Avenue, Little Calumet River	ND	59.3	48.6	47.5	47.4	49.4	51.5	45.1	44.7	45.7	47.4
76 Halsted Street, Little Calumet River	ND	75.0	62.7	61.6	61.1	65.8	63.3	58.2	60.7	60.4	59.3
52 Wentworth Avenue, Little Calumet River	ND	84.0	61.3	65.1	71.7	88.8	74.3	80.9	70.9	82.2	90.7
54 Joe Orr Road, Thorn Creek	ND	89.5	65.7	77.0	74.1	84.4	74.9	79.6	66.9	77.3	60.7
97 170th Street, Thorn Creek	ND	89.5	67.8	68.6	75.3	85.3	68.0	80.8	78.0	81.3	77.4
57 Ashland Avenue, Little Calumet River	ND	83.3	65.0	68.2	69.2	80.5	66.1	77.8	68.9	74.3	82.1
58 Ashland Avenue, Calumet-Sag Channel	ND	75.3	62.2	59.7	59.3	65.7	59.6	61.7	63.2	61.9	62.8
59 Cicero Avenue, Calumet-Sag Channel	ND	71.8	63.5	62.5	60.8	66.3	58.3	65.2	61.6	62.8	61.7
43 Route 83, Calumet-Sag Channel	ND	77.0	59.0	64.9	59.3	65.4	59.4	63.0	60.7	59.9	61.1
Des Plaines River System											
90 Route 19, Poplar Creek	ND	85.0	68.1	69.9	65.5	70.4	66.6	67.0	60.5	70.9	60.5
110 Springinguth Road, West Branch DuPage River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	78.8	68.7	62.0	64.9	60.4	60.5	63.2	54.8	58.7	53.0
64 Lake Street, West Branch DuPage River	ND	ND	ND	75.0	64.0	64.7	56.5	61.2	56.7	63.0	52.7
111 Arlington Drive, West Branch DuPage River	ND	84.0	66.7	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	ND	91.7	67.8	47.1	60.4	68.4	61.9	60.6	60.1	69.8	53.0
80 Arlington Heights Road, Salt Creek	ND	79.5	59.8	63.4	59.0	68.9	61.6	61.9	62.7	61.9	56.7
18 Devon Avenue, Salt Creek	ND	79.8	62.4	67.5	58.2	67.4	61.5	62.0	61.9	61.9	57.2
24 Wolf Road, Salt Creek	ND	88.0	66.2	70.4	66.4	69.0	61.9	60.7	59.7	66.4	56.9
109 Brookfield Avenue, Salt Creek	ND	88.3	66.8	66.1	63.6	65.3	60.7	59.6	58.2	66.2	55.1
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	ND	85.7	52.3	46.1	50.2	58.8	40.9	52.5	52.2	70.0	46.3
78 Wille Road, Higgins Creek	ND	84.5	81.8	71.9	76.9	75.0	68.0	66.7	64.0	67.1	61.2
12 Lake-Cook Road, Buffalo Creek	ND	89.3	69.7	72.7	66.9	76.2	68.6	70.9	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	75.3	64.2	64.8	59.7	70.8	64.4	69.4	63.4	66.9	62.0
17 Oakton Street, Des Plaines River	ND	77.5	64.7	62.9	58.9	68.2	62.6	67.1	62.6	68.1	59.4
19 Belmont Avenue, Des Plaines River	ND	78.5	65.4	62.1	61.1	69.4	61.6	66.5	62.5	67.8	59.3
20 Roosevelt Road, Des Plaines River	ND	79.5	64.9	61.6	59.2	69.5	60.4	65.2	60.7	67.6	54.0
22 Ogden Avenue, Des Plaines River	ND	81.5	64.8	63.3	59.3	65.7	59.5	62.8	58.0	65.6	64.9
23 Willow Springs Road, Des Plaines River	ND	81.5	64.7	61.9	59.5	67.3	59.4	62.1	59.2	66.9	56.2
29 Stephen Street, Des Plaines River	ND	80.8	64.2	64.2	59.1	68.5	63.2	66.1	62.3	67.1	60.3
91 Material Service Road, Des Plaines River	ND	80.8	63.5	66.7	60.5	67.9	62.4	67.2	61.8	67.1	62.2

ND = No Data.

**TABLE AII-58: SOLUBLE MAGNESIUM MEAN HISTORY
2003 THROUGH 2013**

Sampling Station (No. Name)	Annual Means (mg/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	33.7	31.9	30.8	27.8	29.2	28.1	23.9	27.3	33.3	21.6
103 Golf Road, West Fork North Branch Chicago River	ND	37.8	30.0	29.2	26.3	26.0	29.2	28.7	29.9	26.5	26.0
31 Lake-Cook Road, Middle Fork North Branch	ND	37.5	25.9	28.2	24.3	25.0	28.9	27.0	30.8	28.1	27.6
104 Glenview Road, North Branch Chicago River	ND	35.8	25.0	28.5	25.6	26.7	26.8	25.5	25.4	26.5	28.0
32 Lake-Cook Road, Skokie River	ND	37.0	27.8	31.5	25.5	26.0	30.9	28.3	30.2	30.0	27.9
105 Frontage Road, Skokie River	ND	36.8	25.5	27.9	26.0	26.8	26.0	26.0	25.0	26.1	23.9
34 Dempster Street, North Branch Chicago River	ND	39.0	26.9	29.9	24.8	25.5	27.0	26.8	27.2	26.9	24.8
96 Albany Avenue, North Branch Chicago River	ND	38.3	28.0	27.4	26.1	26.4	27.8	27.3	27.7	26.4	25.7
35 Central Street, North Shore Channel	ND	24.5	13.5	13.1	12.3	13.0	13.3	11.9	11.3	12.1	13.4
112 Dempster Street, North Shore Channel	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	22.0	17.0	17.2	16.3	15.8	16.5	15.9	15.2	15.0	15.6
36 Touhy Avenue, North Shore Channel	ND	21.0	19.7	18.5	20.8	21.0	19.2	18.0	16.8	19.1	18.2
101 Foster Avenue, North Shore Channel	ND	21.5	19.5	19.8	19.8	21.4	20.1	18.7	16.9	19.4	18.5
37 Wilson Avenue, North Branch Chicago River	ND	23.0	20.9	22.7	20.7	22.4	20.9	20.1	18.2	20.9	19.4
73 Diversey Parkway, North Branch Chicago River	ND	25.0	21.1	21.3	20.6	22.6	20.9	20.0	17.8	21.0	18.8
46 Grand Avenue, North Branch Chicago River	ND	25.3	21.5	20.4	19.9	21.5	20.8	20.1	19.5	20.5	19.4
74 Lake Shore Drive, Chicago River	ND	20.3	15.4	12.9	12.3	12.8	14.3	12.6	13.4	14.1	13.1
100 Wells Street, Chicago River	ND	23.0	18.1	15.2	15.0	16.7	15.7	15.0	14.7	15.3	16.0
39 Madison Street, South Branch Chicago River	ND	24.3	21.6	18.0	18.9	19.1	17.8	18.2	17.8	17.9	19.1
108 Loomis Street, South Branch Chicago River	ND	24.3	19.7	18.6	19.0	19.0	18.0	18.8	18.9	18.0	18.1
99 Archer Avenue, South Fork South Branch Chicago River	ND	17.5	19.5	19.7	17.8	20.2	17.6	18.1	17.4	18.0	17.5
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	23.8	19.8	18.8	19.1	19.2	18.1	18.4	18.3	18.0	ND
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	ND	24.0	19.7	19.3	18.4	20.8	18.4	17.6	18.8	18.5	17.3
41 Harlem Avenue, Chicago Sanitary & Ship Canal	ND	22.5	20.2	21.0	20.2	21.2	19.0	17.6	18.9	19.1	18.1
42 Route 83, Chicago Sanitary & Ship Canal	ND	22.5	20.7	20.3	19.6	20.7	19.7	19.5	19.8	19.7	19.5
48 Stephen Street, Chicago Sanitary & Ship Canal	ND	25.5	21.4	20.9	19.5	21.2	20.6	20.7	21.0	21.4	20.4
92 Lockport Forebay, Chicago Sanitary & Ship Canal	ND	25.8	20.8	21.2	20.4	21.2	21.0	20.3	20.4	20.6	20.1
Calumet River System											
49 Ewing Avenue, Calumet River	ND	12.0	11.8	11.7	11.3	11.4	11.7	10.5	11.5	11.6	11.9
50 Burnham Avenue, Wolf Lake	ND	13.3	12.1	12.6	11.5	12.0	11.7	11.3	13.1	13.0	12.2
55 130th Street, Calumet River	ND	16.3	14.2	14.5	14.0	14.0	15.7	13.0	14.2	13.9	13.7
86 Burnham Avenue, Grand Calumet River	ND	40.0	27.3	27.1	37.1	36.8	38.6	47.6	43.0	50.1	62.4
56 Indiana Avenue, Little Calumet River	ND	21.3	17.2	16.6	16.5	17.2	19.1	16.3	16.7	17.2	17.4
76 Halsted Street, Little Calumet River	ND	26.5	21.8	21.3	21.2	23.0	22.3	20.7	21.7	21.1	20.1
52 Wentworth Avenue, Little Calumet River	ND	33.8	23.8	26.3	27.4	34.6	29.7	32.0	28.6	32.1	35.3
54 Joe Orr Road, Thorn Creek	ND	34.5	24.9	28.3	28.0	31.7	29.6	34.8	30.2	32.5	24.8
97 170th Street, Thorn Creek	ND	36.5	28.9	28.2	29.9	34.4	27.3	35.7	35.0	35.2	33.5
57 Ashland Avenue, Little Calumet River	ND	33.3	25.7	26.5	26.9	31.4	25.9	32.8	29.1	30.1	33.3
58 Ashland Avenue, Calumet-Sag Channel	ND	27.3	22.6	21.6	21.4	23.4	21.5	22.4	23.2	22.3	22.8
59 Cicero Avenue, Calumet-Sag Channel	ND	26.3	22.8	22.7	22.0	23.8	20.9	24.1	22.7	23.1	22.2
43 Route 83, Calumet-Sag Channel	ND	28.8	21.5	23.8	21.9	23.8	21.9	23.6	22.7	22.1	22.2
Des Plaines River System											
90 Route 19, Poplar Creek	ND	37.8	29.6	31.9	28.6	31.6	30.1	29.5	28.2	32.3	26.4
110 Springinguth Road, West Branch DuPage River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	31.0	26.4	23.7	25.1	23.1	23.0	23.9	20.9	21.8	18.9
64 Lake Street, West Branch DuPage River	ND	ND	ND	28.0	24.4	24.3	21.8	22.9	21.8	23.3	18.9
111 Arlington Drive, West Branch DuPage River	ND	32.5	25.0	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	ND	38.7	27.3	19.5	25.7	28.4	26.0	25.4	27.6	29.4	21.2
80 Arlington Heights Road, Salt Creek	ND	31.3	22.5	24.4	22.5	26.4	24.3	24.3	25.0	23.6	21.8
18 Devon Avenue, Salt Creek	ND	31.5	23.1	25.8	22.6	25.8	24.3	24.4	24.6	23.6	21.4
24 Wolf Road, Salt Creek	ND	35.8	26.0	27.2	26.3	27.4	25.3	24.6	25.3	26.9	21.9
109 Brookfield Avenue, Salt Creek	ND	35.8	26.0	26.0	25.2	26.2	24.8	24.1	24.6	26.8	21.4
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	ND	32.0	18.4	15.7	18.1	19.1	13.9	17.7	17.8	25.4	14.3
78 Wille Road, Higgins Creek	ND	33.3	30.5	26.7	29.0	28.0	25.3	24.9	24.3	24.7	21.7
12 Lake-Cook Road, Buffalo Creek	ND	40.5	29.8	31.6	28.7	33.3	30.2	31.8	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	35.0	28.7	29.0	26.7	31.4	29.4	31.7	28.9	30.1	27.1
17 Oakton Street, Des Plaines River	ND	35.8	28.4	27.3	25.9	29.7	28.5	30.3	28.6	30.7	25.6
19 Belmont Avenue, Des Plaines River	ND	35.8	28.0	26.1	26.4	29.5	27.3	29.0	27.7	30.0	23.8
20 Roosevelt Road, Des Plaines River	ND	36.3	27.7	25.8	25.6	29.7	27.0	28.4	27.2	30.0	22.3
22 Ogden Avenue, Des Plaines River	ND	36.0	26.9	26.3	25.1	27.6	25.8	26.7	25.6	28.5	25.3
23 Willow Springs Road, Des Plaines River	ND	35.8	27.1	25.7	25.5	28.5	26.1	26.8	26.4	29.3	22.9
29 Stephen Street, Des Plaines River	ND	35.5	26.6	26.7	25.1	28.8	27.8	28.4	27.6	29.2	24.6
91 Material Service Road, Des Plaines River	ND	35.5	26.4	28.0	25.6	28.7	27.5	29.1	27.7	29.3	25.5

ND = No Data.

TABLE AII-60: SOLUBLE ARSENIC MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means (mg/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
103 Golf Road, West Fork North Branch Chicago River	ND	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
31 Lake-Cook Road, Middle Fork North Branch	ND	0.020	0.020	0.000	0.000	0.000	0.000	0.001	0.001	0.000	0.000
104 Glenview Road, North Branch Chicago River	ND	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
32 Lake-Cook Road, Skokie River	ND	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
105 Frontage Road, Skokie River	ND	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
34 Dempster Street, North Branch Chicago River	ND	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
96 Albany Avenue, North Branch Chicago River	0.029	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
35 Central Street, North Shore Channel	ND	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
112 Dempster Street, North Shore Channel	0.025	0.020	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
36 Touhy Avenue, North Shore Channel	0.028	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
101 Foster Avenue, North Shore Channel	ND	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
37 Wilson Avenue, North Branch Chicago River	ND	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
73 Diversey Parkway, North Branch Chicago River	0.028	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
46 Grand Avenue, North Branch Chicago River	ND	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
74 Lake Shore Drive, Chicago River	ND	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100 Wells Street, Chicago River	0.028	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
39 Madison Street, North Branch Chicago River	ND	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
108 Loomis Street, South Branch Chicago River	0.030	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
99 Archer Avenue, South Fork South Branch Chicago River	0.032	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Damen Avenue, Chicago Sanitary & Ship Canal	ND	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	0.031	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
41 Harlem Avenue, Chicago Sanitary & Ship Canal	0.033	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
42 Route 83, Chicago Sanitary & Ship Canal	ND	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
48 Stephen Street, Chicago Sanitary & Ship Canal	0.033	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
92 Lockport Forebay, Chicago Sanitary & Ship Canal	0.033	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Calumet River System											
49 Ewing Avenue, Calumet River	ND	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50 Burnham Avenue, Wolf Lake	ND	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
55 130th Street, Calumet River	ND	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
86 Burnham Avenue, Grand Calumet River	0.041	0.025	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
56 Indiana Avenue, Little Calumet River	0.030	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
76 Halsted Street, Little Calumet River	0.035	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
52 Wentworth Avenue, Little Calumet River	ND	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
54 Joe Orr Road, Thorn Creek	ND	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
97 170th Street, Thorn Creek	ND	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
57 Ashland Avenue, Little Calumet River	0.037	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
58 Ashland Avenue, Calumet-Sag Channel	ND	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
59 Cicero Avenue, Calumet-Sag Channel	0.035	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
43 Route 83, Calumet-Sag Channel	0.037	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Des Plaines River System											
90 Route 19, Poplar Creek	ND	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
110 Springinguth Road, West Branch DuPage River	0.036	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
64 Lake Street, West Branch DuPage River	ND	ND	ND	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
111 Arlington Drive, West Branch DuPage River	0.035	0.020	0.020	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	0.034	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
80 Arlington Heights Road, Salt Creek	ND	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
18 Devon Avenue, Salt Creek	0.031	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
24 Wolf Road, Salt Creek	ND	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
109 Brookfield Avenue, Salt Creek	0.035	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	0.025	0.021	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
78 Wille Road, Higgins Creek	0.036	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
12 Lake-Cook Road, Buffalo Creek	ND	0.020	0.020	0.000	0.000	0.000	0.000	0.000	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.001
17 Oakton Street, Des Plaines River	ND	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
19 Belmont Avenue, Des Plaines River	0.032	0.021	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20 Roosevelt Road, Des Plaines River	ND	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
22 Ogden Avenue, Des Plaines River	0.034	0.021	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
23 Willow Springs Road, Des Plaines River	0.033	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
29 Stephen Street, Des Plaines River	ND	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
91 Material Service Road, Des Plaines River	0.032	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

ND = No Data.

**TABLE AII-61: SOLUBLE BARIUM MEAN HISTORY
2003 THROUGH 2013**

Sampling Station (No. Name)	Annual Means (mg/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	0.066	0.067	0.060	0.051	0.052	0.054	0.042	0.043	0.054	0.034
103 Golf Road, West Fork North Branch Chicago River	ND	0.058	0.049	0.046	0.042	0.043	0.046	0.044	0.046	0.042	0.043
31 Lake-Cook Road, Middle Fork North Branch	ND	0.040	0.034	0.037	0.032	0.035	0.037	0.035	0.034	0.034	0.037
104 Glenview Road, North Branch Chicago River	ND	0.036	0.030	0.029	0.028	0.032	0.030	0.028	0.026	0.028	0.033
32 Lake-Cook Road, Skokie River	ND	0.046	0.037	0.041	0.034	0.036	0.042	0.035	0.035	0.040	0.039
105 Frontage Road, Skokie River	ND	0.033	0.027	0.027	0.026	0.030	0.027	0.026	0.025	0.025	0.024
34 Dempster Street, North Branch Chicago River	ND	0.049	0.035	0.037	0.030	0.034	0.033	0.033	0.032	0.033	0.032
96 Albany Avenue, North Branch Chicago River	ND	0.044	0.036	0.035	0.033	0.037	0.035	0.034	0.033	0.032	0.032
35 Central Street, North Shore Channel	ND	0.033	0.022	0.022	0.019	0.022	0.022	0.020	0.019	0.020	0.021
112 Dempster Street, North Shore Channel	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	0.024	0.023	0.022	0.021	0.022	0.022	0.020	0.021	0.020	0.021
36 Touhy Avenue, North Shore Channel	ND	0.024	0.024	0.020	0.024	0.024	0.022	0.019	0.018	0.019	0.017
101 Foster Avenue, North Shore Channel	ND	0.025	0.023	0.022	0.023	0.025	0.023	0.020	0.018	0.019	0.018
37 Wilson Avenue, North Branch Chicago River	ND	0.027	0.026	0.026	0.025	0.027	0.024	0.022	0.020	0.021	0.020
73 Diversey Parkway, North Branch Chicago River	ND	0.026	0.025	0.024	0.024	0.027	0.023	0.021	0.019	0.021	0.019
46 Grand Avenue, North Branch Chicago River	ND	0.027	0.025	0.022	0.023	0.026	0.023	0.021	0.020	0.020	0.019
74 Lake Shore Drive, Chicago River	ND	0.027	0.025	0.022	0.021	0.022	0.022	0.021	0.021	0.020	0.021
100 Wells Street, Chicago River	ND	0.027	0.024	0.022	0.023	0.024	0.022	0.021	0.020	0.020	0.020
39 Madison Street, South Branch Chicago River	ND	0.026	0.026	0.022	0.023	0.024	0.022	0.021	0.020	0.019	0.017
108 Loomis Street, South Branch Chicago River	ND	0.027	0.024	0.023	0.023	0.024	0.022	0.022	0.021	0.019	0.019
99 Archer Avenue, South Fork South Branch Chicago River	ND	0.025	0.025	0.023	0.023	0.026	0.022	0.021	0.020	0.018	0.017
Damen Avenue, Chicago Sanitary & Ship Canal	ND	0.026	0.024	0.022	0.024	0.024	0.022	0.021	0.020	0.019	ND
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	ND	0.025	0.023	0.021	0.022	0.025	0.022	0.020	0.020	0.019	0.017
41 Harlem Avenue, Chicago Sanitary & Ship Canal	ND	0.022	0.021	0.020	0.020	0.022	0.019	0.016	0.016	0.016	0.015
42 Route 83, Chicago Sanitary & Ship Canal	ND	0.018	0.019	0.018	0.019	0.020	0.017	0.017	0.016	0.016	0.015
48 Stephen Street, Chicago Sanitary & Ship Canal	ND	0.021	0.020	0.019	0.019	0.021	0.018	0.018	0.017	0.017	0.017
92 Lockport Forebay, Chicago Sanitary & Ship Canal	ND	0.021	0.021	0.020	0.020	0.021	0.019	0.018	0.017	0.018	0.017
Calumet River System											
49 Ewing Avenue, Calumet River	ND	0.021	0.022	0.021	0.020	0.021	0.020	0.019	0.020	0.020	0.019
50 Burnham Avenue, Wolf Lake	ND	0.035	0.033	0.034	0.032	0.033	0.034	0.025	0.030	0.029	0.025
55 130th Street, Calumet River	ND	0.031	0.029	0.027	0.028	0.029	0.030	0.026	0.027	0.027	0.024
86 Burnham Avenue, Grand Calumet River	ND	0.033	0.025	0.025	0.023	0.025	0.022	0.019	0.016	0.016	0.018
56 Indiana Avenue, Little Calumet River	ND	0.030	0.028	0.026	0.029	0.030	0.029	0.026	0.025	0.026	0.023
76 Halsted Street, Little Calumet River	ND	0.020	0.022	0.018	0.021	0.021	0.021	0.017	0.018	0.018	0.016
52 Wentworth Avenue, Little Calumet River	ND	0.032	0.028	0.030	0.030	0.034	0.029	0.033	0.028	0.033	0.034
54 Joe Orr Road, Thorn Creek	ND	0.026	0.026	0.031	0.026	0.030	0.025	0.029	0.026	0.030	0.024
97 170th Street, Thorn Creek	ND	0.033	0.029	0.029	0.031	0.034	0.028	0.033	0.032	0.034	0.027
57 Ashland Avenue, Little Calumet River	ND	0.034	0.031	0.031	0.030	0.034	0.029	0.033	0.029	0.032	0.032
58 Ashland Avenue, Calumet-Sag Channel	ND	0.022	0.023	0.022	0.022	0.022	0.022	0.019	0.020	0.020	0.018
59 Cicero Avenue, Calumet-Sag Channel	ND	0.023	0.023	0.022	0.023	0.023	0.021	0.021	0.019	0.021	0.019
43 Route 83, Calumet-Sag Channel	ND	0.024	0.022	0.023	0.022	0.024	0.023	0.021	0.019	0.021	0.017
Des Plaines River System											
90 Route 19, Poplar Creek	ND	0.064	0.059	0.062	0.059	0.065	0.071	0.085	0.095	0.091	0.071
110 Springinguth Road, West Branch DuPage River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	0.035	0.033	0.027	0.028	0.028	0.027	0.027	0.022	0.022	0.024
64 Lake Street, West Branch DuPage River	ND	ND	ND	0.038	0.030	0.031	0.026	0.029	0.026	0.026	0.025
111 Arlington Drive, West Branch DuPage River	ND	0.038	0.033	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	ND	0.047	0.038	0.030	0.034	0.042	0.039	0.037	0.041	0.045	0.036
80 Arlington Heights Road, Salt Creek	ND	0.036	0.028	0.027	0.024	0.028	0.024	0.028	0.028	0.024	0.027
18 Devon Avenue, Salt Creek	ND	0.036	0.028	0.028	0.024	0.028	0.024	0.028	0.027	0.024	0.026
24 Wolf Road, Salt Creek	ND	0.036	0.031	0.031	0.029	0.032	0.029	0.027	0.025	0.028	0.024
109 Brookfield Avenue, Salt Creek	ND	0.037	0.032	0.031	0.029	0.032	0.029	0.027	0.026	0.029	0.025
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	ND	0.058	0.041	0.040	0.038	0.051	0.036	0.048	0.049	0.059	0.040
78 Wille Road, Higgins Creek	ND	0.033	0.028	0.022	0.027	0.023	0.022	0.021	0.018	0.019	0.018
12 Lake-Cook Road, Buffalo Creek	ND	0.041	0.038	0.042	0.037	0.043	0.039	0.041	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	0.035	0.035	0.035	0.028	0.034	0.034	0.038	0.031	0.031	0.031
17 Oakton Street, Des Plaines River	ND	0.036	0.037	0.038	0.029	0.035	0.035	0.041	0.033	0.033	0.032
19 Belmont Avenue, Des Plaines River	ND	0.036	0.034	0.034	0.029	0.035	0.033	0.037	0.031	0.032	0.027
20 Roosevelt Road, Des Plaines River	ND	0.037	0.035	0.034	0.028	0.035	0.033	0.037	0.031	0.033	0.027
22 Ogden Avenue, Des Plaines River	ND	0.038	0.033	0.033	0.028	0.033	0.031	0.033	0.028	0.031	0.027
23 Willow Springs Road, Des Plaines River	ND	0.037	0.033	0.032	0.028	0.034	0.031	0.033	0.029	0.031	0.027
29 Stephen Street, Des Plaines River	ND	0.037	0.032	0.031	0.028	0.033	0.032	0.034	0.028	0.031	0.028
91 Material Service Road, Des Plaines River	ND	0.036	0.032	0.032	0.028	0.034	0.032	0.033	0.027	0.030	0.028

ND = No Data.

**TABLE AII-62: SOLUBLE BORON MEAN HISTORY
2003 THROUGH 2013**

Sampling Station (No. Name)	Annual Means (mg/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	0.120	0.147	0.156	0.147	0.146	0.143	0.126	0.176	0.195	0.132
103 Golf Road, West Fork North Branch Chicago River	ND	0.113	0.127	0.125	0.122	0.103	0.149	0.138	0.178	0.130	0.122
31 Lake-Cook Road, Middle Fork North Branch	ND	0.070	0.076	0.088	0.074	0.079	0.110	0.111	0.163	0.162	0.098
104 Glenview Road, North Branch Chicago River	ND	0.103	0.108	0.131	0.115	0.111	0.141	0.133	0.170	0.146	0.130
32 Lake-Cook Road, Skokie River	ND	0.090	0.091	0.109	0.105	0.093	0.115	0.128	0.151	0.123	0.115
105 Frontage Road, Skokie River	ND	0.115	0.124	0.136	0.129	0.118	0.150	0.151	0.175	0.161	0.174
34 Dempster Street, North Branch Chicago River	ND	0.110	0.115	0.113	0.111	0.113	0.139	0.135	0.174	0.143	0.159
96 Albany Avenue, North Branch Chicago River	ND	0.115	0.115	0.123	0.120	0.105	0.139	0.141	0.177	0.141	0.150
35 Central Street, North Shore Channel	ND	0.060	0.070	0.013	0.036	0.033	0.035	0.035	0.030	0.032	0.044
112 Dempster Street, North Shore Channel	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	0.178	0.108	0.077	0.083	0.074	0.088	0.109	0.085	0.071	0.081
36 Touhy Avenue, North Shore Channel	ND	0.170	0.153	0.161	0.156	0.164	0.186	0.180	0.168	0.158	0.173
101 Foster Avenue, North Shore Channel	ND	0.170	0.137	0.156	0.148	0.162	0.183	0.184	0.164	0.159	0.157
37 Wilson Avenue, North Branch Chicago River	ND	0.150	0.124	0.142	0.136	0.144	0.160	0.162	0.155	0.147	0.148
73 Diversey Parkway, North Branch Chicago River	ND	0.168	0.128	0.145	0.131	0.138	0.166	0.155	0.150	0.148	0.155
46 Grand Avenue, North Branch Chicago River	ND	0.158	0.123	0.134	0.123	0.129	0.155	0.152	0.161	0.142	0.150
74 Lake Shore Drive, Chicago River	ND	0.093	0.087	0.040	0.041	0.054	0.057	0.055	0.053	0.060	0.050
100 Wells Street, Chicago River	ND	0.120	0.101	0.064	0.061	0.077	0.070	0.074	0.073	0.082	0.096
39 Madison Street, South Branch Chicago River	ND	0.138	0.122	0.109	0.106	0.107	0.107	0.118	0.126	0.130	0.130
108 Loomis Street, South Branch Chicago River	ND	0.138	0.109	0.114	0.106	0.111	0.110	0.121	0.126	0.125	0.118
99 Archer Avenue, South Fork South Branch Chicago River	ND	0.110	0.110	0.129	0.104	0.122	0.114	0.114	0.128	0.125	0.130
Damen Avenue, Chicago Sanitary & Ship Canal	ND	0.135	0.108	0.115	0.106	0.108	0.108	0.119	0.126	0.129	ND
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	ND	0.148	0.110	0.121	0.099	0.128	0.119	0.117	0.126	0.126	0.132
41 Harlem Avenue, Chicago Sanitary & Ship Canal	ND	0.173	0.154	0.160	0.154	0.155	0.168	0.161	0.165	0.187	0.176
42 Route 83, Chicago Sanitary & Ship Canal	ND	0.253	0.211	0.232	0.171	0.166	0.212	0.205	0.207	0.236	0.206
48 Stephen Street, Chicago Sanitary & Ship Canal	ND	0.248	0.193	0.212	0.161	0.168	0.196	0.198	0.201	0.199	0.202
92 Lockport Forebay, Chicago Sanitary & Ship Canal	ND	0.237	0.191	0.203	0.167	0.179	0.198	0.209	0.209	0.185	0.186
Calumet River System											
49 Ewing Avenue, Calumet River	ND	0.050	0.070	0.032	0.038	0.036	0.042	0.044	0.036	0.030	0.028
50 Burnham Avenue, Wolf Lake	ND	0.238	0.238	0.236	0.239	0.172	0.169	0.108	0.142	0.131	0.082
55 130th Street, Calumet River	ND	0.183	0.116	0.096	0.123	0.117	0.152	0.103	0.109	0.094	0.065
86 Burnham Avenue, Grand Calumet River	ND	1.000	0.767	0.686	0.357	0.642	0.528	0.578	0.271	0.403	0.375
56 Indiana Avenue, Little Calumet River	ND	0.203	0.131	0.115	0.134	0.146	0.167	0.131	0.111	0.109	0.113
76 Halsted Street, Little Calumet River	ND	0.210	0.185	0.172	0.176	0.197	0.195	0.218	0.193	0.170	0.177
52 Wentworth Avenue, Little Calumet River	ND	0.175	0.132	0.175	0.175	0.250	0.228	0.231	0.216	0.220	0.256
54 Joe Orr Road, Thorn Creek	ND	0.260	0.196	0.220	0.263	0.316	0.314	0.391	0.252	0.288	0.243
97 170th Street, Thorn Creek	ND	0.193	0.178	0.185	0.214	0.237	0.222	0.290	0.235	0.242	0.230
57 Ashland Avenue, Little Calumet River	ND	0.178	0.168	0.188	0.199	0.227	0.200	0.247	0.222	0.196	0.254
58 Ashland Avenue, Calumet-Sag Channel	ND	0.198	0.166	0.159	0.167	0.191	0.174	0.219	0.199	0.173	0.181
59 Cicero Avenue, Calumet-Sag Channel	ND	0.193	0.168	0.174	0.163	0.192	0.167	0.214	0.189	0.177	0.184
43 Route 83, Calumet-Sag Channel	ND	0.203	0.153	0.183	0.158	0.176	0.168	0.198	0.195	0.165	0.156
Des Plaines River System											
90 Route 19, Poplar Creek	ND	0.050	0.070	0.037	0.050	0.051	0.055	0.057	0.061	0.049	0.046
110 Springinguth Road, West Branch DuPage River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	0.193	0.172	0.215	0.211	0.214	0.248	0.242	0.267	0.245	0.231
64 Lake Street, West Branch DuPage River	ND	ND	ND	0.119	0.157	0.183	0.188	0.186	0.222	0.209	0.204
111 Arlington Drive, West Branch DuPage River	ND	0.140	0.144	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	ND	0.070	0.099	0.075	0.085	0.083	0.084	0.088	0.092	0.081	0.068
80 Arlington Heights Road, Salt Creek	ND	0.158	0.132	0.190	0.147	0.168	0.196	0.186	0.192	0.179	0.171
18 Devon Avenue, Salt Creek	ND	0.148	0.146	0.197	0.143	0.165	0.199	0.190	0.198	0.172	0.164
24 Wolf Road, Salt Creek	ND	0.165	0.161	0.164	0.150	0.176	0.183	0.184	0.227	0.175	0.160
109 Brookfield Avenue, Salt Creek	ND	0.165	0.155	0.184	0.156	0.180	0.181	0.199	0.254	0.178	0.158
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	ND	0.177	0.082	0.055	0.067	0.113	0.089	0.078	0.074	0.077	0.055
78 Wille Road, Higgins Creek	ND	0.230	0.224	0.202	0.201	0.235	0.254	0.285	0.341	0.284	0.256
12 Lake-Cook Road, Buffalo Creek	ND	0.075	0.081	0.091	0.083	0.088	0.093	0.099	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	0.088	0.115	0.141	0.121	0.150	0.153	0.170	0.211	0.168	0.179
17 Oakton Street, Des Plaines River	ND	0.090	0.115	0.144	0.111	0.141	0.138	0.151	0.204	0.158	0.165
19 Belmont Avenue, Des Plaines River	ND	0.103	0.124	0.152	0.121	0.151	0.152	0.166	0.225	0.168	0.169
20 Roosevelt Road, Des Plaines River	ND	0.103	0.124	0.157	0.116	0.163	0.152	0.166	0.230	0.165	0.184
22 Ogden Avenue, Des Plaines River	ND	0.120	0.128	0.152	0.128	0.162	0.156	0.184	0.229	0.162	0.182
23 Willow Springs Road, Des Plaines River	ND	0.115	0.129	0.158	0.125	0.166	0.158	0.182	0.234	0.165	0.165
29 Stephen Street, Des Plaines River	ND	0.115	0.121	0.146	0.119	0.157	0.167	0.189	0.235	0.161	0.184
91 Material Service Road, Des Plaines River	ND	0.118	0.124	0.151	0.122	0.158	0.170	0.196	0.241	0.161	0.195

ND = No Data.

TABLE AII-63: SOLUBLE CADMIUM MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means (mg/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000
103 Golf Road, West Fork North Branch Chicago River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.001	0.001	0.000	0.000
31 Lake-Cook Road, Middle Fork North Branch	ND	0.001	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.000	0.000
104 Glenview Road, North Branch Chicago River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000
32 Lake-Cook Road, Skokie River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000
105 Frontage Road, Skokie River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000
34 Dempster Street, North Branch Chicago River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000
96 Albany Avenue, North Branch Chicago River	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000
35 Central Street, North Shore Channel	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
112 Dempster Street, North Shore Channel	0.001	0.001	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
36 Touhy Avenue, North Shore Channel	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
101 Foster Avenue, North Shore Channel	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
37 Wilson Avenue, North Branch Chicago River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
73 Diversey Parkway, North Branch Chicago River	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
46 Grand Avenue, North Branch Chicago River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
74 Lake Shore Drive, Chicago River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100 Wells Street, Chicago River	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
39 Madison Street, South Branch Chicago River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
108 Loomis Street, South Branch Chicago River	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
99 Archer Avenue, South Fork South Branch Chicago River	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
41 Harlem Avenue, Chicago Sanitary & Ship Canal	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
42 Route 83, Chicago Sanitary & Ship Canal	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
48 Stephen Street, Chicago Sanitary & Ship Canal	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
92 Lockport Forebay, Chicago Sanitary & Ship Canal	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Calumet River System											
49 Ewing Avenue, Calumet River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50 Burnham Avenue, Wolf Lake	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
55 130th Street, Calumet River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
86 Burnham Avenue, Grand Calumet River	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.001	0.001	0.000	0.000
56 Indiana Avenue, Little Calumet River	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
76 Halsted Street, Little Calumet River	0.001	0.001	0.001	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000
52 Wentworth Avenue, Little Calumet River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000
54 Joe Orr Road, Thorn Creek	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000
97 170th Street, Thorn Creek	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000
57 Ashland Avenue, Little Calumet River	0.001	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.000	0.000	0.000
58 Ashland Avenue, Calumet-Sag Channel	ND	0.001	0.001	0.000	0.001	0.000	0.000	0.001	0.000	0.000	0.000
59 Cicero Avenue, Calumet-Sag Channel	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000
43 Route 83, Calumet-Sag Channel	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000
Des Plaines River System											
90 Route 19, Poplar Creek	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
110 Springinguth Road, West Branch DuPage River	0.001	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
64 Lake Street, West Branch DuPage River	ND	ND	ND	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
111 Arlington Drive, West Branch DuPage River	0.001	0.001	0.001	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	0.001	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
80 Arlington Heights Road, Salt Creek	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
18 Devon Avenue, Salt Creek	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
24 Wolf Road, Salt Creek	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
109 Brookfield Avenue, Salt Creek	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.001	0.000	0.001	0.000
78 Wille Road, Higgins Creek	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000
12 Lake-Cook Road, Buffalo Creek	ND	0.001	0.001	0.002	0.000	0.000	0.000	0.000	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000
17 Oakton Street, Des Plaines River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
19 Belmont Avenue, Des Plaines River	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20 Roosevelt Road, Des Plaines River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
22 Ogden Avenue, Des Plaines River	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
23 Willow Springs Road, Des Plaines River	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
29 Stephen Street, Des Plaines River	ND	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
91 Material Service Road, Des Plaines River	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

ND = No Data.

TABLE AII-64: SOLUBLE COPPER MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means (mg/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	0.007	0.008	0.005	0.001	0.000	0.004	0.003	0.003	0.009	0.005
103 Golf Road, West Fork North Branch Chicago River	ND	0.005	0.005	0.000	0.000	0.000	0.001	0.000	0.001	0.002	0.002
31 Lake-Cook Road, Middle Fork North Branch	ND	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.001
104 Glenview Road, North Branch Chicago River	ND	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.001	0.002	0.001
32 Lake-Cook Road, Skokie River	ND	0.005	0.006	0.000	0.000	0.000	0.000	0.001	0.001	0.002	0.001
105 Frontage Road, Skokie River	ND	0.005	0.005	0.000	0.000	0.000	0.000	0.001	0.002	0.002	0.001
34 Dempster Street, North Branch Chicago River	ND	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.001	0.002	0.001
96 Albany Avenue, North Branch Chicago River	0.005	0.005	0.005	0.000	0.000	0.000	0.001	0.001	0.001	0.002	0.001
35 Central Street, North Shore Channel	ND	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
112 Dempster Street, North Shore Channel	0.005	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.001
36 Touhy Avenue, North Shore Channel	0.005	0.005	0.005	0.000	0.002	0.000	0.001	0.000	0.000	0.001	0.001
101 Foster Avenue, North Shore Channel	ND	0.005	0.005	0.000	0.000	0.000	0.001	0.002	0.000	0.001	0.001
37 Wilson Avenue, North Branch Chicago River	ND	0.005	0.005	0.000	0.000	0.000	0.001	0.000	0.001	0.001	0.001
73 Diversey Parkway, North Branch Chicago River	0.005	0.005	0.005	0.001	0.000	0.000	0.001	0.000	0.000	0.001	0.000
46 Grand Avenue, North Branch Chicago River	ND	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001
74 Lake Shore Drive, Chicago River	ND	0.006	0.006	0.001	0.000	0.000	0.001	0.001	0.001	0.003	0.002
100 Wells Street, Chicago River	0.005	0.006	0.005	0.002	0.000	0.000	0.002	0.002	0.002	0.002	0.001
39 Madison Street, South Branch Chicago River	ND	0.005	0.005	0.000	0.000	0.000	0.000	0.001	0.001	0.002	0.002
108 Loomis Street, South Branch Chicago River	0.005	0.005	0.005	0.002	0.000	0.000	0.002	0.002	0.002	0.002	0.002
99 Archer Avenue, South Fork South Branch Chicago River	0.005	0.005	0.005	0.000	0.000	0.001	0.000	0.000	0.001	0.001	0.001
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	0.007	0.005	0.000	0.000	0.000	0.001	0.001	0.002	0.002	ND
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	0.005	0.005	0.005	0.000	0.000	0.000	0.001	0.001	0.001	0.002	0.002
41 Harlem Avenue, Chicago Sanitary & Ship Canal	0.005	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001
42 Route 83, Chicago Sanitary & Ship Canal	ND	0.005	0.005	0.000	0.000	0.000	0.000	0.001	0.000	0.001	0.000
48 Stephen Street, Chicago Sanitary & Ship Canal	0.005	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
92 Lockport Forebay, Chicago Sanitary & Ship Canal	0.005	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001
Calumet River System											
49 Ewing Avenue, Calumet River	ND	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50 Burnham Avenue, Wolf Lake	ND	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
55 130th Street, Calumet River	ND	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.001
86 Burnham Avenue, Grand Calumet River	0.005	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
56 Indiana Avenue, Little Calumet River	0.006	0.005	0.005	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.001
76 Halsted Street, Little Calumet River	0.005	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
52 Wentworth Avenue, Little Calumet River	ND	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
54 Joe Orr Road, Thorn Creek	ND	0.005	0.005	0.001	0.000	0.000	0.000	0.000	0.000	0.001	0.000
97 170th Street, Thorn Creek	ND	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001
57 Ashland Avenue, Little Calumet River	0.005	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
58 Ashland Avenue, Calumet-Sag Channel	ND	0.005	0.005	0.002	0.000	0.000	0.000	0.000	0.000	0.001	0.001
59 Cicero Avenue, Calumet-Sag Channel	0.005	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
43 Route 83, Calumet-Sag Channel	0.005	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.001
Des Plaines River System											
90 Route 19, Poplar Creek	ND	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
110 Springinguth Road, West Branch DuPage River	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	0.006	0.006	0.002	0.001	0.001	0.004	0.003	0.004	0.005	0.004
64 Lake Street, West Branch DuPage River	ND	ND	ND	0.000	0.000	0.000	0.003	0.003	0.003	0.003	0.003
111 Arlington Drive, West Branch DuPage River	0.005	0.005	0.005	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	0.005	0.005	0.005	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.001
80 Arlington Heights Road, Salt Creek	ND	0.005	0.005	0.001	0.000	0.000	0.002	0.002	0.002	0.003	0.002
18 Devon Avenue, Salt Creek	0.005	0.005	0.005	0.001	0.000	0.000	0.001	0.002	0.003	0.003	0.002
24 Wolf Road, Salt Creek	ND	0.005	0.005	0.002	0.000	0.000	0.002	0.002	0.003	0.003	0.003
109 Brookfield Avenue, Salt Creek	0.005	0.005	0.005	0.000	0.000	0.000	0.002	0.001	0.002	0.003	0.003
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	0.005	0.005	0.005	0.000	0.000	0.000	0.001	0.001	0.001	0.002	0.003
78 Wille Road, Higgins Creek	0.005	0.005	0.005	0.004	0.000	0.000	0.000	0.000	0.002	0.002	0.002
12 Lake-Cook Road, Buffalo Creek	ND	0.005	0.005	0.000	0.000	0.000	0.000	0.000	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.001	0.002	0.002
17 Oakton Street, Des Plaines River	ND	0.005	0.005	0.001	0.000	0.000	0.000	0.001	0.001	0.002	0.001
19 Belmont Avenue, Des Plaines River	0.005	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.001	0.002	0.002
20 Roosevelt Road, Des Plaines River	ND	0.005	0.005	0.000	0.000	0.000	0.000	0.001	0.001	0.001	0.001
22 Ogden Avenue, Des Plaines River	0.005	0.005	0.005	0.000	0.000	0.000	0.001	0.001	0.002	0.002	0.002
23 Willow Springs Road, Des Plaines River	0.005	0.005	0.005	0.000	0.000	0.000	0.000	0.001	0.001	0.002	0.002
29 Stephen Street, Des Plaines River	ND	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.001	0.002	0.002
91 Material Service Road, Des Plaines River	0.005	0.005	0.005	0.000	0.000	0.000	0.001	0.000	0.001	0.002	0.002

ND = No Data.

**TABLE AII-65: SOLUBLE CHROMIUM MEAN HISTORY
2003 THROUGH 2013**

Sampling Station (No. Name)	Annual Means (mg/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	0.005	0.003	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.001
103 Golf Road, West Fork North Branch Chicago River	ND	0.005	0.003	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.001
31 Lake-Cook Road, Middle Fork North Branch	ND	0.005	0.003	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.001
104 Glenview Road, North Branch Chicago River	ND	0.005	0.003	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.001
32 Lake-Cook Road, Skokie River	ND	0.005	0.003	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.001
105 Frontage Road, Skokie River	ND	0.005	0.003	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.001
34 Dempster Street, North Branch Chicago River	ND	0.005	0.003	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.001
96 Albany Avenue, North Branch Chicago River	0.005	0.005	0.003	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.001
35 Central Street, North Shore Channel	ND	0.005	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
112 Dempster Street, North Shore Channel	0.005	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	0.005	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001
36 Touhy Avenue, North Shore Channel	0.005	0.005	0.003	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.001
101 Foster Avenue, North Shore Channel	ND	0.005	0.003	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.001
37 Wilson Avenue, North Branch Chicago River	ND	0.005	0.003	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.001
73 Diversey Parkway, North Branch Chicago River	0.005	0.005	0.003	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.001
46 Grand Avenue, North Branch Chicago River	ND	0.006	0.003	0.000	0.000	0.000	0.001	0.000	0.001	0.001	0.002
74 Lake Shore Drive, Chicago River	ND	0.005	0.003	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.001
100 Wells Street, Chicago River	0.005	0.005	0.003	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.001
39 Madison Street, South Branch Chicago River	ND	0.005	0.003	0.000	0.000	0.000	0.001	0.001	0.000	0.001	0.002
108 Loomis Street, South Branch Chicago River	0.005	0.005	0.004	0.000	0.000	0.000	0.001	0.001	0.000	0.001	0.001
99 Archer Avenue, South Fork South Branch Chicago River	0.005	0.005	0.003	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.001
Damen Avenue, Chicago Sanitary & Ship Canal	ND	0.005	0.003	0.000	0.000	0.000	0.001	0.000	0.000	0.001	ND
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	0.005	0.005	0.003	0.000	0.000	0.002	0.001	0.000	0.000	0.000	0.001
41 Harlem Avenue, Chicago Sanitary & Ship Canal	0.005	0.005	0.003	0.000	0.000	0.004	0.001	0.001	0.001	0.002	0.003
42 Route 83, Chicago Sanitary & Ship Canal	ND	0.005	0.004	0.000	0.000	0.000	0.001	0.001	0.001	0.002	0.002
48 Stephen Street, Chicago Sanitary & Ship Canal	0.006	0.005	0.003	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.002
92 Lockport Forebay, Chicago Sanitary & Ship Canal	0.005	0.005	0.003	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.002
Calumet River System											
49 Ewing Avenue, Calumet River	ND	0.005	0.003	0.001	0.000	0.000	0.001	0.000	0.000	0.000	0.001
50 Burnham Avenue, Wolf Lake	ND	0.005	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
55 130th Street, Calumet River	ND	0.005	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
86 Burnham Avenue, Grand Calumet River	0.005	0.005	0.003	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.002
56 Indiana Avenue, Little Calumet River	0.005	0.005	0.003	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.001
76 Halsted Street, Little Calumet River	0.005	0.005	0.003	0.000	0.000	0.000	0.001	0.000	0.001	0.001	0.002
52 Wentworth Avenue, Little Calumet River	ND	0.005	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001
54 Joe Orr Road, Thorn Creek	ND	0.005	0.003	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.002
97 170th Street, Thorn Creek	ND	0.005	0.003	0.000	0.000	0.000	0.001	0.000	0.001	0.000	0.002
57 Ashland Avenue, Little Calumet River	0.005	0.005	0.003	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.001
58 Ashland Avenue, Calumet-Sag Channel	ND	0.005	0.003	0.000	0.000	0.000	0.001	0.001	0.000	0.001	0.001
59 Cicero Avenue, Calumet-Sag Channel	0.005	0.005	0.003	0.000	0.000	0.000	0.000	0.001	0.000	0.001	0.001
43 Route 83, Calumet-Sag Channel	0.005	0.005	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001
Des Plaines River System											
90 Route 19, Poplar Creek	ND	0.005	0.003	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.001
110 Springinguth Road, West Branch DuPage River	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	0.005	0.004	0.000	0.000	0.000	0.001	0.001	0.000	0.001	0.001
64 Lake Street, West Branch DuPage River	ND	ND	ND	0.000	0.000	0.000	0.001	0.001	0.000	0.001	0.001
111 Arlington Drive, West Branch DuPage River	0.005	0.005	0.003	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	0.005	0.005	0.003	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.001
80 Arlington Heights Road, Salt Creek	ND	0.005	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001
18 Devon Avenue, Salt Creek	0.005	0.005	0.003	0.000	0.000	0.000	0.000	0.001	0.000	0.001	0.001
24 Wolf Road, Salt Creek	ND	0.005	0.003	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001
109 Brookfield Avenue, Salt Creek	0.005	0.006	0.003	0.000	0.000	0.000	0.001	0.004	0.002	0.004	0.001
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	0.005	0.005	0.003	0.000	0.001	0.000	0.001	0.002	0.000	0.001	0.001
78 Wille Road, Higgins Creek	0.005	0.005	0.003	0.000	0.000	0.000	0.001	0.001	0.001	0.002	0.001
12 Lake-Cook Road, Buffalo Creek	ND	0.005	0.003	0.000	0.001	0.000	0.001	0.001	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	0.005	0.003	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.001
17 Oakton Street, Des Plaines River	ND	0.005	0.003	0.000	0.000	0.000	0.001	0.001	0.000	0.001	0.001
19 Belmont Avenue, Des Plaines River	0.005	0.036	0.003	0.000	0.000	0.000	0.001	0.001	0.014	0.001	0.025
20 Roosevelt Road, Des Plaines River	ND	0.005	0.003	0.001	0.000	0.000	0.001	0.001	0.004	0.001	0.013
22 Ogden Avenue, Des Plaines River	0.009	0.011	0.003	0.000	0.000	0.000	0.001	0.001	0.001	0.002	0.001
23 Willow Springs Road, Des Plaines River	0.007	0.005	0.003	0.012	0.000	0.000	0.001	0.002	0.004	0.001	0.001
29 Stephen Street, Des Plaines River	ND	0.005	0.003	0.000	0.000	0.000	0.001	0.002	0.002	0.001	0.001
91 Material Service Road, Des Plaines River	0.005	0.005	0.003	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001

ND = No Data.

TABLE AII-66: SOLUBLE IRON MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means (mg/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	0.100	0.200	0.025	0.057	0.054	0.055	0.046	0.041	0.042	0.042
103 Golf Road, West Fork North Branch Chicago River	ND	0.100	0.200	0.023	0.041	0.049	0.024	0.037	0.029	0.031	0.025
31 Lake-Cook Road, Middle Fork North Branch	ND	0.100	0.200	0.073	0.074	0.086	0.081	0.063	0.072	0.052	0.070
104 Glenview Road, North Branch Chicago River	ND	0.100	0.208	0.021	0.051	0.054	0.037	0.033	0.029	0.035	0.045
32 Lake-Cook Road, Skokie River	ND	0.100	0.200	0.032	0.077	0.073	0.060	0.062	0.040	0.052	0.071
105 Frontage Road, Skokie River	ND	0.100	0.200	0.079	0.042	0.042	0.047	0.026	0.023	0.027	0.036
34 Dempster Street, North Branch Chicago River	ND	0.100	0.200	0.041	0.048	0.058	0.042	0.033	0.025	0.035	0.035
96 Albany Avenue, North Branch Chicago River	0.100	0.100	0.200	0.023	0.042	0.061	0.032	0.050	0.027	0.028	0.038
35 Central Street, North Shore Channel	ND	0.100	0.200	0.014	0.048	0.015	0.015	0.024	0.022	0.040	0.021
112 Dempster Street, North Shore Channel	0.110	0.100	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	0.100	0.200	0.025	0.027	0.024	0.026	0.023	0.025	0.036	0.047
36 Touhy Avenue, North Shore Channel	0.100	0.100	0.200	0.021	0.031	0.030	0.028	0.031	0.025	0.029	0.026
101 Foster Avenue, North Shore Channel	ND	0.100	0.200	0.024	0.032	0.032	0.035	0.029	0.030	0.033	0.037
37 Wilson Avenue, North Branch Chicago River	ND	0.100	0.200	0.025	0.047	0.042	0.034	0.032	0.035	0.041	0.038
73 Diversey Parkway, North Branch Chicago River	0.100	0.100	0.200	0.028	0.044	0.045	0.039	0.035	0.036	0.043	0.049
46 Grand Avenue, North Branch Chicago River	ND	0.100	0.200	0.026	0.041	0.048	0.038	0.033	0.033	0.042	0.048
74 Lake Shore Drive, Chicago River	ND	0.100	0.200	0.000	0.005	0.014	0.014	0.009	0.008	0.015	0.012
100 Wells Street, Chicago River	0.100	0.100	0.200	0.011	0.017	0.029	0.017	0.014	0.014	0.020	0.021
39 Madison Street, South Branch Chicago River	ND	0.100	0.200	0.026	0.033	0.043	0.024	0.023	0.025	0.031	0.035
108 Loomis Street, South Branch Chicago River	0.100	0.100	0.200	0.027	0.031	0.045	0.024	0.021	0.033	0.032	0.027
99 Archer Avenue, South Fork South Branch Chicago River	0.110	0.108	0.200	0.045	0.043	0.056	0.025	0.019	0.019	0.034	0.028
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	0.100	0.200	0.032	0.039	0.043	0.024	0.021	0.023	0.034	0.030
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	0.100	0.100	0.200	0.026	0.032	0.038	0.020	0.020	0.026	0.022	0.020
41 Harlem Avenue, Chicago Sanitary & Ship Canal	0.100	0.100	0.200	0.033	0.037	0.034	0.027	0.027	0.027	0.033	0.029
42 Route 83, Chicago Sanitary & Ship Canal	ND	0.100	0.317	0.049	0.037	0.037	0.028	0.033	0.028	0.046	0.033
48 Stephen Street, Chicago Sanitary & Ship Canal	0.100	0.117	0.233	0.025	0.043	0.038	0.030	0.033	0.025	0.041	0.031
92 Lockport Forebay, Chicago Sanitary & Ship Canal	0.100	0.100	0.204	0.026	0.044	0.035	0.028	0.031	0.025	0.033	0.030
Calumet River System											
49 Ewing Avenue, Calumet River	ND	0.100	0.200	0.000	0.000	0.000	0.006	0.004	0.004	0.005	0.006
50 Burnham Avenue, Wolf Lake	ND	0.129	0.200	0.014	0.014	0.006	0.024	0.007	0.008	0.014	0.010
55 130th Street, Calumet River	ND	0.100	0.200	0.002	0.014	0.007	0.016	0.008	0.007	0.004	0.011
86 Burnham Avenue, Grand Calumet River	0.182	0.318	0.210	0.110	0.107	0.101	0.128	0.034	0.070	0.057	0.052
56 Indiana Avenue, Little Calumet River	0.100	0.100	0.200	0.003	0.007	0.005	0.009	0.007	0.006	0.006	0.013
76 Halsted Street, Little Calumet River	0.100	0.100	0.200	0.022	0.030	0.034	0.030	0.032	0.038	0.038	0.037
52 Wentworth Avenue, Little Calumet River	ND	0.100	0.200	0.071	0.069	0.067	0.072	0.061	0.082	0.084	0.054
54 Joe Orr Road, Thorn Creek	ND	0.100	0.200	0.089	0.084	0.090	0.063	0.056	0.078	0.069	0.082
97 170th Street, Thorn Creek	ND	0.100	0.200	0.076	0.051	0.051	0.051	0.036	0.040	0.049	0.053
57 Ashland Avenue, Little Calumet River	0.100	0.100	0.200	0.052	0.055	0.051	0.062	0.031	0.046	0.081	0.057
58 Ashland Avenue, Calumet-Sag Channel	ND	0.100	0.200	0.047	0.043	0.043	0.040	0.032	0.032	0.053	0.040
59 Cicero Avenue, Calumet-Sag Channel	0.100	0.100	0.200	0.045	0.043	0.036	0.051	0.038	0.029	0.033	0.034
43 Route 83, Calumet-Sag Channel	0.100	0.100	0.200	0.035	0.039	0.029	0.073	0.020	0.017	0.020	0.025
Des Plaines River System											
90 Route 19, Poplar Creek	ND	0.100	0.200	0.058	0.080	0.084	0.054	0.050	0.055	0.042	0.057
110 Springinguth Road, West Branch DuPage River	0.213	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	0.100	0.200	0.033	0.051	0.065	0.061	0.050	0.054	0.054	0.069
64 Lake Street, West Branch DuPage River	ND	ND	ND	0.045	0.048	0.051	0.037	0.037	0.042	0.038	0.049
111 Arlington Drive, West Branch DuPage River	0.100	0.100	0.200	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	0.100	0.100	0.200	0.039	0.052	0.051	0.041	0.027	0.043	0.054	0.095
80 Arlington Heights Road, Salt Creek	ND	0.100	0.200	0.056	0.073	0.056	0.048	0.039	0.044	0.050	0.055
18 Devon Avenue, Salt Creek	0.100	0.100	0.200	0.045	0.070	0.056	0.044	0.038	0.037	0.050	0.049
24 Wolf Road, Salt Creek	ND	0.100	0.200	0.030	0.051	0.049	0.036	0.032	0.051	0.032	0.056
109 Brookfield Avenue, Salt Creek	0.100	0.100	0.200	0.032	0.049	0.053	0.037	0.034	0.039	0.035	0.040
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	0.100	0.100	0.200	0.035	0.063	0.070	0.059	0.048	0.052	0.060	0.086
78 Wille Road, Higgins Creek	0.100	0.100	0.200	0.032	0.051	0.051	0.044	0.045	0.046	0.051	0.044
12 Lake-Cook Road, Buffalo Creek	ND	0.100	0.200	0.037	0.059	0.048	0.036	0.027	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	0.100	0.200	0.036	0.056	0.048	0.055	0.026	0.027	0.031	0.037
17 Oakton Street, Des Plaines River	ND	0.100	0.200	0.046	0.052	0.045	0.047	0.035	0.028	0.030	0.032
19 Belmont Avenue, Des Plaines River	0.100	0.100	0.200	0.031	0.056	0.045	0.064	0.031	0.033	0.033	0.034
20 Roosevelt Road, Des Plaines River	ND	0.100	0.200	0.025	0.052	0.042	0.052	0.027	0.035	0.032	0.040
22 Ogden Avenue, Des Plaines River	0.100	0.100	0.200	0.036	0.053	0.046	0.046	0.035	0.037	0.042	0.046
23 Willow Springs Road, Des Plaines River	0.100	0.100	0.200	0.035	0.048	0.032	0.051	0.046	0.029	0.047	0.033
29 Stephen Street, Des Plaines River	ND	0.100	0.200	0.031	0.058	0.036	0.035	0.021	0.019	0.039	0.026
91 Material Service Road, Des Plaines River	0.100	0.100	0.200	0.027	0.043	0.035	0.032	0.023	0.020	0.040	0.032

ND = No Data.

**TABLE AII-67: SOLUBLE LEAD MEAN HISTORY
2003 THROUGH 2013**

Sampling Station (No. Name)	Annual Means (mg/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	0.020	0.030	0.000	0.007	0.006	0.004	0.002	0.002	0.004	0.002
103 Golf Road, West Fork North Branch Chicago River	ND	0.020	0.030	0.000	0.000	0.002	0.002	0.003	0.001	0.004	0.002
31 Lake-Cook Road, Middle Fork North Branch	ND	0.020	0.030	0.000	0.000	0.002	0.002	0.003	0.002	0.004	0.001
104 Glenview Road, North Branch Chicago River	ND	0.020	0.030	0.000	0.007	0.006	0.002	0.003	0.002	0.003	0.002
32 Lake-Cook Road, Skokie River	ND	0.020	0.030	0.000	0.000	0.005	0.001	0.004	0.001	0.005	0.001
105 Frontage Road, Skokie River	ND	0.020	0.030	0.000	0.006	0.005	0.002	0.003	0.001	0.003	0.002
34 Dempster Street, North Branch Chicago River	ND	0.020	0.030	0.000	0.007	0.006	0.002	0.004	0.001	0.004	0.002
96 Albany Avenue, North Branch Chicago River	0.020	0.020	0.030	0.000	0.006	0.005	0.002	0.003	0.001	0.004	0.002
35 Central Street, North Shore Channel	ND	0.020	0.030	0.000	0.000	0.000	0.001	0.003	0.001	0.003	0.001
112 Dempster Street, North Shore Channel	0.020	0.020	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	0.020	0.030	0.000	0.000	0.005	0.001	0.003	0.001	0.003	0.001
36 Touhy Avenue, North Shore Channel	0.020	0.020	0.030	0.000	0.007	0.005	0.002	0.003	0.001	0.003	0.002
101 Foster Avenue, North Shore Channel	ND	0.020	0.030	0.000	0.006	0.005	0.002	0.003	0.001	0.003	0.002
37 Wilson Avenue, North Branch Chicago River	ND	0.020	0.030	0.000	0.006	0.005	0.002	0.003	0.001	0.003	0.002
73 Diversey Parkway, North Branch Chicago River	0.020	0.020	0.030	0.000	0.007	0.005	0.002	0.003	0.001	0.003	0.002
46 Grand Avenue, North Branch Chicago River	ND	0.020	0.030	0.000	0.006	0.005	0.002	0.003	0.001	0.003	0.002
74 Lake Shore Drive, Chicago River	ND	0.020	0.030	0.000	0.000	0.003	0.001	0.003	0.001	0.003	0.001
100 Wells Street, Chicago River	0.020	0.020	0.030	0.000	0.000	0.005	0.002	0.003	0.001	0.002	0.002
39 Madison Street, South Branch Chicago River	ND	0.020	0.030	0.000	0.000	0.005	0.002	0.004	0.001	0.003	0.002
108 Loomis Street, South Branch Chicago River	0.020	0.020	0.030	0.000	0.005	0.006	0.002	0.003	0.001	0.003	0.002
99 Archer Avenue, South Fork South Branch Chicago River	0.020	0.020	0.030	0.000	0.000	0.004	0.001	0.003	0.001	0.003	0.002
Damen Avenue, Chicago Sanitary & Ship Canal	ND	0.020	0.030	0.000	0.000	0.005	0.001	0.003	0.001	0.003	ND
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	0.020	0.020	0.030	0.000	0.005	0.005	0.002	0.003	0.001	0.003	0.002
41 Harlem Avenue, Chicago Sanitary & Ship Canal	0.020	0.020	0.030	0.000	0.006	0.004	0.001	0.003	0.001	0.003	0.002
42 Route 83, Chicago Sanitary & Ship Canal	ND	0.020	0.030	0.000	0.007	0.007	0.001	0.003	0.002	0.003	0.002
48 Stephen Street, Chicago Sanitary & Ship Canal	0.020	0.020	0.030	0.002	0.007	0.005	0.001	0.003	0.002	0.003	0.002
92 Lockport Forebay, Chicago Sanitary & Ship Canal	0.020	0.020	0.030	0.000	0.005	0.005	0.002	0.003	0.002	0.003	0.002
Calumet River System											
49 Ewing Avenue, Calumet River	ND	0.020	0.030	0.004	0.000	0.000	0.001	0.002	0.001	0.002	0.001
50 Burnham Avenue, Wolf Lake	ND	0.020	0.030	0.002	0.000	0.003	0.001	0.002	0.001	0.002	0.001
55 130th Street, Calumet River	ND	0.020	0.030	0.002	0.000	0.002	0.001	0.003	0.001	0.002	0.001
86 Burnham Avenue, Grand Calumet River	0.020	0.020	0.030	0.000	0.000	0.003	0.002	0.003	0.002	0.003	0.001
56 Indiana Avenue, Little Calumet River	0.020	0.020	0.030	0.000	0.000	0.002	0.001	0.002	0.002	0.003	0.001
76 Halsted Street, Little Calumet River	0.020	0.020	0.030	0.000	0.006	0.006	0.001	0.003	0.002	0.003	0.002
52 Wentworth Avenue, Little Calumet River	ND	0.020	0.030	0.000	0.000	0.003	0.001	0.003	0.001	0.004	0.001
54 Joe Orr Road, Thorn Creek	ND	0.020	0.030	0.000	0.000	0.000	0.002	0.003	0.002	0.004	0.001
97 170th Street, Thorn Creek	ND	0.020	0.030	0.000	0.000	0.003	0.002	0.003	0.002	0.004	0.002
57 Ashland Avenue, Little Calumet River	0.020	0.020	0.030	0.000	0.000	0.003	0.001	0.003	0.002	0.004	0.001
58 Ashland Avenue, Calumet-Sag Channel	ND	0.020	0.030	0.000	0.007	0.005	0.001	0.003	0.002	0.003	0.002
59 Cicero Avenue, Calumet-Sag Channel	0.020	0.020	0.030	0.000	0.000	0.002	0.001	0.003	0.002	0.003	0.002
43 Route 83, Calumet-Sag Channel	0.020	0.020	0.030	0.000	0.000	0.002	0.001	0.003	0.002	0.003	0.002
Des Plaines River System											
90 Route 19, Poplar Creek	ND	0.020	0.030	0.000	0.008	0.004	0.001	0.003	0.002	0.004	0.002
110 Springinguth Road, West Branch DuPage River	0.020	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	0.020	0.030	0.000	0.007	0.003	0.002	0.003	0.001	0.004	0.002
64 Lake Street, West Branch DuPage River	ND	ND	ND	0.000	0.009	0.003	0.002	0.004	0.001	0.003	0.002
111 Arlington Drive, West Branch DuPage River	0.020	0.020	0.030	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	0.020	0.020	0.030	0.000	0.000	0.000	0.002	0.003	0.002	0.005	0.001
80 Arlington Heights Road, Salt Creek	ND	0.020	0.030	0.002	0.006	0.003	0.003	0.003	0.001	0.004	0.002
18 Devon Avenue, Salt Creek	0.020	0.020	0.030	0.002	0.007	0.003	0.002	0.003	0.001	0.004	0.002
24 Wolf Road, Salt Creek	ND	0.020	0.030	0.000	0.007	0.004	0.001	0.003	0.002	0.004	0.002
109 Brookfield Avenue, Salt Creek	0.020	0.020	0.030	0.002	0.006	0.003	0.002	0.003	0.001	0.005	0.002
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	0.020	0.020	0.030	0.000	0.000	0.006	0.002	0.004	0.002	0.005	0.003
78 Wille Road, Higgins Creek	0.020	0.020	0.030	0.005	0.006	0.003	0.001	0.003	0.002	0.004	0.002
12 Lake-Cook Road, Buffalo Creek	ND	0.020	0.030	0.003	0.009	0.004	0.003	0.003	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	0.020	0.030	0.002	0.006	0.003	0.002	0.004	0.002	0.005	0.002
17 Oakton Street, Des Plaines River	ND	0.020	0.030	0.000	0.006	0.003	0.001	0.004	0.002	0.004	0.001
19 Belmont Avenue, Des Plaines River	0.020	0.020	0.030	0.000	0.006	0.003	0.002	0.003	0.002	0.004	0.002
20 Roosevelt Road, Des Plaines River	ND	0.020	0.030	0.000	0.006	0.003	0.001	0.003	0.002	0.004	0.001
22 Ogden Avenue, Des Plaines River	0.020	0.020	0.030	0.002	0.006	0.003	0.002	0.004	0.001	0.004	0.003
23 Willow Springs Road, Des Plaines River	0.020	0.020	0.030	0.002	0.006	0.004	0.003	0.003	0.002	0.004	0.001
29 Stephen Street, Des Plaines River	ND	0.020	0.030	0.000	0.006	0.003	0.002	0.003	0.002	0.004	0.002
91 Material Service Road, Des Plaines River	0.020	0.020	0.030	0.002	0.006	0.004	0.002	0.003	0.001	0.004	0.002

ND = No Data.

TABLE AII-68: SOLUBLE NICKEL MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means (mg/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	0.005	0.008	0.000	0.000	0.001	0.001	0.001	0.000	0.000	0.000
103 Golf Road, West Fork North Branch Chicago River	ND	0.005	0.008	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.001
31 Lake-Cook Road, Middle Fork North Branch	ND	0.005	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
104 Glenview Road, North Branch Chicago River	ND	0.005	0.008	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.000
32 Lake-Cook Road, Skokie River	ND	0.005	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
105 Frontage Road, Skokie River	ND	0.005	0.008	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
34 Dempster Street, North Branch Chicago River	ND	0.005	0.008	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
96 Albany Avenue, North Branch Chicago River	0.005	0.005	0.008	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001
35 Central Street, North Shore Channel	ND	0.005	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
112 Dempster Street, North Shore Channel	0.006	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	0.008	0.008	0.000	0.001	0.000	0.001	0.001	0.001	0.001	0.002
36 Touhy Avenue, North Shore Channel	0.005	0.006	0.008	0.000	0.001	0.000	0.001	0.001	0.001	0.002	0.003
101 Foster Avenue, North Shore Channel	ND	0.008	0.008	0.000	0.001	0.000	0.001	0.001	0.002	0.002	0.003
37 Wilson Avenue, North Branch Chicago River	ND	0.005	0.008	0.000	0.001	0.000	0.001	0.001	0.002	0.001	0.003
73 Diversey Parkway, North Branch Chicago River	0.005	0.007	0.010	0.000	0.001	0.000	0.001	0.001	0.002	0.002	0.003
46 Grand Avenue, North Branch Chicago River	ND	0.010	0.008	0.000	0.002	0.000	0.002	0.002	0.003	0.003	0.005
74 Lake Shore Drive, Chicago River	ND	0.006	0.008	0.000	0.000	0.000	0.001	0.002	0.000	0.000	0.001
100 Wells Street, Chicago River	0.005	0.006	0.008	0.000	0.000	0.000	0.001	0.000	0.001	0.001	0.003
39 Madison Street, South Branch Chicago River	ND	0.006	0.008	0.001	0.000	0.000	0.001	0.001	0.002	0.003	0.004
108 Loomis Street, South Branch Chicago River	0.005	0.006	0.008	0.000	0.000	0.000	0.002	0.001	0.002	0.002	0.004
99 Archer Avenue, South Fork South Branch Chicago River	0.005	0.006	0.008	0.000	0.001	0.001	0.002	0.001	0.002	0.002	0.004
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	0.006	0.008	0.001	0.001	0.000	0.001	0.001	0.003	0.002	ND
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	0.005	0.006	0.008	0.000	0.001	0.000	0.002	0.002	0.002	0.003	0.003
41 Harlem Avenue, Chicago Sanitary & Ship Canal	0.006	0.008	0.008	0.001	0.001	0.001	0.003	0.004	0.004	0.004	0.004
42 Route 83, Chicago Sanitary & Ship Canal	ND	0.008	0.009	0.002	0.002	0.002	0.005	0.004	0.005	0.007	0.005
48 Stephen Street, Chicago Sanitary & Ship Canal	0.013	0.007	0.015	0.001	0.002	0.001	0.004	0.003	0.004	0.005	0.005
92 Lockport Forebay, Chicago Sanitary & Ship Canal	0.007	0.006	0.009	0.001	0.002	0.002	0.004	0.004	0.004	0.004	0.005
Calumet River System											
49 Ewing Avenue, Calumet River	ND	0.005	0.008	0.000	0.000	0.001	0.001	0.000	0.000	0.000	0.000
50 Burnham Avenue, Wolf Lake	ND	0.005	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
55 130th Street, Calumet River	ND	0.005	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
86 Burnham Avenue, Grand Calumet River	0.005	0.005	0.009	0.000	0.001	0.001	0.001	0.002	0.002	0.003	0.002
56 Indiana Avenue, Little Calumet River	0.005	0.005	0.008	0.000	0.000	0.000	0.002	0.000	0.001	0.001	0.001
76 Halsted Street, Little Calumet River	0.005	0.005	0.008	0.000	0.000	0.001	0.001	0.000	0.002	0.001	0.002
52 Wentworth Avenue, Little Calumet River	ND	0.005	0.008	0.001	0.000	0.000	0.000	0.000	0.000	0.001	0.000
54 Joe Orr Road, Thorn Creek	ND	0.005	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
97 170th Street, Thorn Creek	ND	0.007	0.008	0.001	0.001	0.001	0.001	0.002	0.004	0.002	0.001
57 Ashland Avenue, Little Calumet River	0.005	0.005	0.008	0.000	0.001	0.001	0.001	0.002	0.002	0.001	0.002
58 Ashland Avenue, Calumet-Sag Channel	ND	0.005	0.008	0.000	0.000	0.001	0.001	0.000	0.002	0.001	0.001
59 Cicero Avenue, Calumet-Sag Channel	0.006	0.005	0.008	0.000	0.000	0.001	0.001	0.001	0.003	0.002	0.002
43 Route 83, Calumet-Sag Channel	0.005	0.005	0.008	0.001	0.000	0.001	0.002	0.001	0.002	0.002	0.002
Des Plaines River System											
90 Route 19, Poplar Creek	ND	0.005	0.008	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000
110 Springinguth Road, West Branch DuPage River	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	0.005	0.009	0.001	0.003	0.002	0.002	0.001	0.002	0.000	0.000
64 Lake Street, West Branch DuPage River	ND	ND	ND	0.000	0.004	0.001	0.002	0.002	0.002	0.000	0.000
111 Arlington Drive, West Branch DuPage River	0.005	0.005	0.008	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	0.005	0.005	0.008	0.000	0.000	0.001	0.000	0.000	0.001	0.000	0.000
80 Arlington Heights Road, Salt Creek	ND	0.006	0.008	0.005	0.001	0.002	0.002	0.001	0.002	0.001	0.001
18 Devon Avenue, Salt Creek	0.006	0.007	0.008	0.006	0.001	0.002	0.002	0.001	0.002	0.002	0.000
24 Wolf Road, Salt Creek	ND	0.006	0.008	0.003	0.002	0.002	0.002	0.002	0.003	0.004	0.002
109 Brookfield Avenue, Salt Creek	0.005	0.009	0.008	0.003	0.002	0.002	0.002	0.002	0.003	0.004	0.002
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	0.005	0.005	0.008	0.000	0.000	0.000	0.001	0.000	0.001	0.001	0.001
78 Wille Road, Higgins Creek	0.006	0.007	0.008	0.006	0.002	0.005	0.006	0.007	0.012	0.006	0.004
12 Lake-Cook Road, Buffalo Creek	ND	0.006	0.008	0.000	0.001	0.000	0.000	0.001	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	0.005	0.008	0.000	0.000	0.000	0.001	0.001	0.003	0.002	0.003
17 Oakton Street, Des Plaines River	ND	0.005	0.008	0.000	0.002	0.000	0.001	0.000	0.002	0.001	0.002
19 Belmont Avenue, Des Plaines River	0.005	0.005	0.010	0.000	0.001	0.001	0.001	0.002	0.005	0.002	0.003
20 Roosevelt Road, Des Plaines River	ND	0.005	0.008	0.000	0.001	0.001	0.001	0.001	0.004	0.002	0.002
22 Ogden Avenue, Des Plaines River	0.006	0.006	0.008	0.000	0.000	0.001	0.001	0.002	0.003	0.002	0.003
23 Willow Springs Road, Des Plaines River	0.005	0.006	0.008	0.000	0.000	0.002	0.001	0.002	0.003	0.002	0.003
29 Stephen Street, Des Plaines River	ND	0.005	0.008	0.000	0.000	0.001	0.002	0.001	0.003	0.002	0.002
91 Material Service Road, Des Plaines River	0.006	0.005	0.009	0.000	0.000	0.001	0.001	0.001	0.003	0.002	0.003

ND = No Data.

**TABLE AII-69: SOLUBLE MANGANESE MEAN HISTORY
2003 THROUGH 2013**

Sampling Station (No. Name)	Annual Means (mg/L)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	0.053	0.057	0.076	0.054	0.043	0.056	0.039	0.059	0.054	0.032
103 Golf Road, West Fork North Branch Chicago River	ND	0.066	0.041	0.048	0.057	0.046	0.044	0.041	0.054	0.043	0.037
31 Lake-Cook Road, Middle Fork North Branch	ND	0.094	0.062	0.154	0.058	0.056	0.124	0.045	0.100	0.071	0.057
104 Glenview Road, North Branch Chicago River	ND	0.049	0.048	0.055	0.063	0.044	0.038	0.033	0.054	0.035	0.025
32 Lake-Cook Road, Skokie River	ND	0.092	0.071	0.089	0.059	0.067	0.097	0.051	0.094	0.109	0.065
105 Frontage Road, Skokie River	ND	0.023	0.031	0.025	0.032	0.026	0.021	0.012	0.021	0.020	0.012
34 Dempster Street, North Branch Chicago River	ND	0.056	0.041	0.056	0.043	0.047	0.047	0.033	0.044	0.036	0.034
96 Albany Avenue, North Branch Chicago River	ND	0.056	0.040	0.040	0.036	0.056	0.033	0.031	0.033	0.022	0.025
35 Central Street, North Shore Channel	ND	0.010	0.017	0.012	0.011	0.025	0.009	0.009	0.005	0.010	0.010
112 Dempster Street, North Shore Channel	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	0.025	0.026	0.025	0.014	0.016	0.013	0.016	0.011	0.018	0.019
36 Touhy Avenue, North Shore Channel	ND	0.029	0.020	0.018	0.010	0.017	0.013	0.009	0.013	0.013	0.010
101 Foster Avenue, North Shore Channel	ND	0.030	0.025	0.013	0.019	0.015	0.015	0.011	0.013	0.016	0.012
37 Wilson Avenue, North Branch Chicago River	ND	0.032	0.021	0.025	0.018	0.019	0.019	0.013	0.018	0.017	0.015
73 Diversey Parkway, North Branch Chicago River	ND	0.035	0.072	0.029	0.025	0.021	0.024	0.018	0.019	0.020	0.021
46 Grand Avenue, North Branch Chicago River	ND	0.027	0.032	0.025	0.027	0.038	0.039	0.022	0.025	0.028	0.024
74 Lake Shore Drive, Chicago River	ND	0.025	0.021	0.012	0.011	0.012	0.010	0.004	0.011	0.007	0.007
100 Wells Street, Chicago River	ND	0.041	0.048	0.017	0.013	0.029	0.019	0.010	0.015	0.014	0.016
39 Madison Street, South Branch Chicago River	ND	0.041	0.042	0.031	0.021	0.028	0.024	0.014	0.040	0.020	0.022
108 Loomis Street, South Branch Chicago River	ND	0.036	0.106	0.028	0.024	0.040	0.032	0.019	0.028	0.021	0.020
99 Archer Avenue, South Fork South Branch Chicago River	ND	0.052	0.038	0.029	0.037	0.043	0.025	0.019	0.028	0.026	0.024
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	0.041	0.031	0.026	0.023	0.034	0.024	0.021	0.022	0.021	ND
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	ND	0.037	0.026	0.023	0.025	0.032	0.020	0.019	0.018	0.018	0.020
41 Harlem Avenue, Chicago Sanitary & Ship Canal	ND	0.018	0.023	0.041	0.022	0.018	0.018	0.014	0.013	0.013	0.013
42 Route 83, Chicago Sanitary & Ship Canal	ND	0.025	0.024	0.020	0.017	0.020	0.016	0.015	0.017	0.018	0.020
48 Stephen Street, Chicago Sanitary & Ship Canal	ND	0.035	0.037	0.026	0.022	0.025	0.021	0.023	0.028	0.027	0.026
92 Lockport Forebay, Chicago Sanitary & Ship Canal	ND	0.035	0.074	0.031	0.028	0.057	0.030	0.026	0.025	0.029	0.026
Calumet River System											
49 Ewing Avenue, Calumet River	ND	0.016	0.014	0.006	0.021	0.009	0.010	0.007	0.008	0.008	0.006
50 Burnham Avenue, Wolf Lake	ND	0.011	0.016	0.022	0.010	0.013	0.008	0.005	0.008	0.014	0.004
55 130th Street, Calumet River	ND	0.011	0.019	0.017	0.014	0.036	0.013	0.011	0.012	0.014	0.005
86 Burnham Avenue, Grand Calumet River	ND	0.237	0.197	0.198	0.081	0.157	0.131	0.132	0.067	0.083	0.108
56 Indiana Avenue, Little Calumet River	ND	0.017	0.025	0.029	0.019	0.021	0.019	0.009	0.012	0.009	0.008
76 Halsted Street, Little Calumet River	ND	0.028	0.032	0.038	0.025	0.033	0.035	0.025	0.029	0.027	0.026
52 Wentworth Avenue, Little Calumet River	ND	0.099	0.073	0.093	0.084	0.105	0.096	0.084	0.089	0.114	0.090
54 Joe Orr Road, Thorn Creek	ND	0.058	0.057	0.051	0.047	0.058	0.057	0.042	0.060	0.059	0.026
97 170th Street, Thorn Creek	ND	0.070	0.051	0.062	0.060	0.061	0.058	0.051	0.061	0.064	0.046
57 Ashland Avenue, Little Calumet River	ND	0.074	0.057	0.058	0.065	0.065	0.081	0.065	0.081	0.083	0.083
58 Ashland Avenue, Calumet-Sag Channel	ND	0.052	0.045	0.050	0.035	0.042	0.038	0.037	0.039	0.036	0.033
59 Cicero Avenue, Calumet-Sag Channel	ND	0.047	0.047	0.047	0.035	0.056	0.041	0.040	0.036	0.046	0.033
43 Route 83, Calumet-Sag Channel	ND	0.061	0.049	0.047	0.034	0.048	0.042	0.038	0.039	0.057	0.024
Des Plaines River System											
90 Route 19, Poplar Creek	ND	0.063	0.047	0.067	0.054	0.090	0.050	0.047	0.077	0.048	0.040
110 Springinguth Road, West Branch DuPage River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	0.037	0.025	0.047	0.023	0.039	0.026	0.024	0.034	0.031	0.029
64 Lake Street, West Branch DuPage River	ND	ND	ND	0.063	0.044	0.049	0.035	0.037	0.053	0.042	0.037
111 Arlington Drive, West Branch DuPage River	ND	0.056	0.040	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	ND	0.068	0.054	0.025	0.022	0.035	0.033	0.021	0.036	0.044	0.023
80 Arlington Heights Road, Salt Creek	ND	0.031	0.026	0.032	0.023	0.039	0.031	0.014	0.024	0.030	0.020
18 Devon Avenue, Salt Creek	ND	0.026	0.030	0.042	0.030	0.051	0.030	0.017	0.026	0.031	0.021
24 Wolf Road, Salt Creek	ND	0.036	0.035	0.034	0.034	0.040	0.032	0.027	0.031	0.035	0.029
109 Brookfield Avenue, Salt Creek	ND	0.041	0.038	0.041	0.038	0.040	0.036	0.031	0.035	0.034	0.026
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	ND	0.087	0.061	0.027	0.069	0.077	0.067	0.057	0.072	0.091	0.074
78 Wille Road, Higgins Creek	ND	0.029	0.015	0.022	0.026	0.051	0.028	0.023	0.016	0.018	0.019
12 Lake-Cook Road, Buffalo Creek	ND	0.249	0.040	0.056	0.056	0.066	0.047	0.043	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	0.047	0.031	0.036	0.032	0.035	0.030	0.025	0.036	0.033	0.030
17 Oakton Street, Des Plaines River	ND	0.028	0.029	0.028	0.026	0.030	0.030	0.032	0.039	0.028	0.025
19 Belmont Avenue, Des Plaines River	ND	0.033	0.060	0.038	0.029	0.034	0.032	0.032	0.045	0.035	0.029
20 Roosevelt Road, Des Plaines River	ND	0.031	0.034	0.030	0.025	0.034	0.028	0.034	0.039	0.034	0.021
22 Ogden Avenue, Des Plaines River	ND	0.029	0.024	0.026	0.020	0.033	0.028	0.026	0.029	0.028	0.033
23 Willow Springs Road, Des Plaines River	ND	0.032	0.028	0.027	0.018	0.039	0.028	0.030	0.033	0.052	0.019
29 Stephen Street, Des Plaines River	ND	0.051	0.043	0.023	0.016	0.032	0.027	0.024	0.022	0.027	0.018
91 Material Service Road, Des Plaines River	ND	0.029	0.037	0.023	0.014	0.030	0.019	0.020	0.021	0.027	0.019

ND = No Data.

TABLE AII-70: SOLUBLE MERCURY MEAN HISTORY
2003 THROUGH 2013

Sampling Station (No. Name)	Annual Means ($\mu\text{g/L}$)										
	13	12	11	10	09	08	07	06	05	04	03
Chicago River System											
106 Dundee Road, West Fork North Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.093	ND
103 Golf Road, West Fork North Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	0.000	0.080	0.020
31 Lake-Cook Road, Middle Fork North Branch	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.030	0.075
104 Glenview Road, North Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.000	ND
32 Lake-Cook Road, Skokie River	ND	ND	ND	ND	ND	ND	ND	ND	0.025	0.000	0.065
105 Frontage Road, Skokie River	ND	ND	ND	ND	ND	ND	ND	ND	0.045	0.014	0.000
34 Dempster Street, North Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	0.000	0.018	0.075
96 Albany Avenue, North Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	0.000	0.000	0.075
35 Central Street, North Shore Channel	ND	ND	ND	ND	ND	ND	ND	ND	0.000	ND	0.000
112 Dempster Street, North Shore Channel	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
102 Oakton Street, North Shore Channel	ND	ND	ND	ND	ND	ND	ND	ND	0.000	0.012	ND
36 Touhy Avenue, North Shore Channel	ND	ND	ND	ND	ND	ND	ND	ND	0.000	0.015	0.000
101 Foster Avenue, North Shore Channel	ND	ND	ND	ND	ND	ND	ND	ND	0.000	0.023	0.000
37 Wilson Avenue, North Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	0.080	0.015	0.000
73 Diversey Parkway, North Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.000	0.000
46 Grand Avenue, North Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	0.000	0.103	0.000
74 Lake Shore Drive, Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.167	0.015
100 Wells Street, Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	0.000	0.083	0.000
39 Madison Street, South Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.050	0.075
108 Loomis Street, South Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.000	0.000
99 Archer Avenue, South Fork South Branch Chicago River	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.000	0.000
40 Damen Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.000	ND
107 Western Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75 Cicero Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.000	0.000
41 Harlem Avenue, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.000	0.007
42 Route 83, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	0.000	0.030	0.000
48 Stephen Street, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.016	0.087
92 Lockport Forebay, Chicago Sanitary & Ship Canal	ND	ND	ND	ND	ND	ND	ND	ND	0.000	0.025	0.002
Calumet River System											
49 Ewing Avenue, Calumet River	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.090	0.000
50 Burnham Avenue, Wolf Lake	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.000	0.000
55 130th Street, Calumet River	ND	ND	ND	ND	ND	ND	ND	0.000	ND	0.000	ND
86 Burnham Avenue, Grand Calumet River	ND	ND	ND	ND	ND	ND	ND	0.040	0.085	0.020	0.022
56 Indiana Avenue, Little Calumet River	ND	ND	ND	ND	ND	ND	ND	0.000	ND	ND	0.000
76 Halsted Street, Little Calumet River	ND	ND	ND	ND	ND	ND	ND	0.000	ND	0.000	0.000
52 Wentworth Avenue, Little Calumet River	ND	ND	ND	ND	ND	ND	ND	0.000	0.000	ND	0.000
54 Joe Orr Road, Thorn Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.070
97 170th Street, Thorn Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.000
57 Ashland Avenue, Little Calumet River	ND	ND	ND	ND	ND	ND	ND	0.000	0.000	0.000	0.000
58 Ashland Avenue, Calumet-Sag Channel	ND	ND	ND	ND	ND	ND	ND	0.050	ND	0.000	0.070
59 Cicero Avenue, Calumet-Sag Channel	ND	ND	ND	ND	ND	ND	ND	0.000	ND	0.043	0.000
43 Route 83, Calumet-Sag Channel	ND	ND	ND	ND	ND	ND	ND	0.000	0.000	ND	0.000
Des Plaines River System											
90 Route 19, Poplar Creek	ND	ND	ND	ND	ND	ND	0.000	ND	0.060	0.055	0.000
110 Springinguth Road, West Branch DuPage River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
89 Walnut Lane, West Branch DuPage River	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.000	0.000
64 Lake Street, West Branch DuPage River	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.043	0.000
111 Arlington Drive, West Branch DuPage River	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
79 Higgins Road, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.080	0.000
80 Arlington Heights Road, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	0.000	0.000	0.000
18 Devon Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	0.000	0.027	0.070
24 Wolf Road, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.030	0.020
109 Brookfield Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.050	0.000
21 First Avenue, Salt Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
77 Elmhurst Road, Higgins Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.000	0.000
78 Wille Road, Higgins Creek	ND	ND	ND	ND	ND	ND	ND	0.000	0.000	0.050	0.000
12 Lake-Cook Road, Buffalo Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
13 Lake-Cook Road, Des Plaines River	ND	ND	ND	ND	ND	ND	ND	ND	0.000	0.063	0.045
17 Oakton Street, Des Plaines River	ND	ND	ND	ND	ND	ND	ND	0.080	0.080	0.070	0.033
19 Belmont Avenue, Des Plaines River	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.030	0.000
20 Roosevelt Road, Des Plaines River	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.000	0.000
22 Ogden Avenue, Des Plaines River	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.025	0.090
23 Willow Springs Road, Des Plaines River	ND	ND	ND	ND	ND	ND	ND	ND	0.000	0.000	0.000
29 Stephen Street, Des Plaines River	ND	ND	ND	ND	ND	ND	ND	0.000	ND	0.000	0.005
91 Material Service Road, Des Plaines River	ND	ND	ND	ND	ND	ND	ND	ND	0.000	0.100	0.000

ND = No Data.

APPENDIX AIII

STATISTICAL ANALYSIS OF UPSTREAM AND DOWNSTREAM LOCATIONS, SAMPLE
MEANS, AND APPLICABLE SIGNIFICANCE PROBABILITY TESTS

TABLE AIII-1: SIGNIFICANCE PROBABILITIES DUE TO OR ASSOCIATED WITH TESTING FOR EQUALITY OF MEAN CONCENTRATIONS OF 52 WATER QUALITY PARAMETERS ASSAYED AT UPSTREAM AND DOWNSTREAM LOCATIONS OF THE TERENCE J. O'BRIEN WATER RECLAMATION PLANT IN 2013

Parameter (Unit)	¹ Significance Probabilities for Testing Null Hypothesis (H_0)					
	H_0 :Normal U ²	H_0 :Normal D ³	$H_0 : \sigma_u = \sigma_d$ F	$H_0 : \mu_u = \mu_d$ Exact T	$H_0 : \mu_u = \mu_d$ Approx T	$H_0 : \mu_u = \mu_d$ WilCox T
DO (mg/L)	1.000	0.924	0.100	0.943	...	...
Temp (°C)	0.996	0.999	0.243	0.871	...	...
pH	0.879	0.795	0.007	...	0.369	...
Alk (mg/L)	0.780	1.000	0.321	0.249	...	...
Cl (mg/L)	0.165	0.828	0.005	...	0.960	...
TKN (mg/L)	0.048	0.719	0.104	...	...	0.135
NH ₄ -N (mg/L)	0.799	0.627	0.002	...	0.113	...
NH ₃ -N (mg/L)	0.907	0.998	0.001	...	0.037	...
ORG-N (mg/L)	0.418	0.995	0.106	0.736	...	...
NO ₂ + NO ₃ (mg/L)	0.205	1.000	0.221	0.000	...	...
TS (mg/L)	0.176	0.988	0.005	...	0.745	...
TSS (mg/L)	0.417	0.751	0.001	...	0.108	...
VSS (mg/L)	0.360	0.597	0.015	...	0.526	...
TDS (mg/L)	0.160	0.998	0.005	...	0.681	...
Phenol (µg/L)	-	-	-	-	-	-
SO ₄ (mg/L)	0.303	0.998	0.019	...	0.088	...
FOG (mg/L)	-	-	-	-	-	-
TP (mg/L)	0.176	0.997	0.001	0.000	...	...
CN (mg/L)	-	-	-	-	-	-
WAD-CN (mg/L)	0.750	0.454	0.438	0.992	...	...
F (mg/L)	0.386	0.990	0.453	0.000	...	...
TOC (mg/L)	0.299	0.733	0.342	0.006	...	...
FC (#/100ml)*	0.964	1.000	0.000	...	0.005	...
Ca (mg/L)	0.374	0.997	0.126	0.204	...	...
Mg (mg/L)	0.318	0.863	0.153	0.191	...	...
Hard (mg/L)	0.256	0.958	0.142	0.194	...	...
G. Alpha (pCi/L)	0.644	0.332	0.023	...	0.661	...
G. Beta (pCi/L)	0.182	0.997	0.092	0.012	...	...

TABLE AIII-1 (Continued): SIGNIFICANCE PROBABILITIES DUE TO OR ASSOCIATED WITH TESTING FOR EQUALITY OF MEAN CONCENTRATIONS OF 52 WATER QUALITY PARAMETERS ASSAYED AT UPSTREAM AND DOWNSTREAM LOCATIONS OF THE TERRENCE J. O'BRIEN WATER RECLAMATION PLANT IN 2013

Parameter (Unit)	¹ Significance Probabilities for Testing Null Hypothesis (H_0)					
	H_0 :Normal U ²	H_0 :Normal D ³	$H_0 : \sigma_u = \sigma_d$ F	$H_0 : \mu_u = \mu_d$ Exact T	$H_0 : \mu_u = \mu_d$ Approx T	$H_0 : \mu_u = \mu_d$ WilCox T
Chlrphl ($\mu\text{g/L}$)	0.652	0.263	0.479	0.289	...	...
Bzn ($\mu\text{g/L}$)	-	-	-	-	-	-
Ebnzn ($\mu\text{g/L}$)	-	-	-	-	-	-
Toln ($\mu\text{g/L}$)	-	-	-	-	-	-
Xyln ($\mu\text{g/L}$)	-	-	-	-	-	-
xylnmp ($\mu\text{g/L}$)	-	-	-	-	-	-
xyln ($\mu\text{g/L}$)	-	-	-	-	-	-
Ag (mg/L)	-	-	-	-	-	-
Ba (mg/L)	0.787	0.999	0.225	0.007	...	...
B (mg/L)	0.291	0.809	0.021	...	0.003	...
Cr ⁺⁶ ($\mu\text{g/L}$)	-	-	-	-	-	-
Mn (mg/L)	0.936	0.564	0.419	0.119	...	...
Hg ($\mu\text{g/L}$)	-	-	-	-	-	-
Hg- (ng/L)	-	-	-	-	-	-
Se (mg/L)	1.000	0.510	0.242	0.609	...	...
Sol. Ag (mg/L)	-	-	-	-	-	-
Sol. As (mg/L)	0.643	0.831	0.443	0.335	...	...
Sol. Cd (mg/L)	-	-	-	-	-	-
Sol. Cu (mg/L)	0.022	0.012	0.033	...	...	1.000
Sol. Cr (mg/L)	-	-	-	-	-	-
Sol. Fe (mg/L)	-	-	-	-	-	-
Sol. Pb (mg/L)	-	-	-	-	-	-
Sol. Ni (mg/L)	-	-	-	-	-	-
Sol. Zn (mg/L)	0.181	0.716	0.301	0.025	...	...

¹Significance probabilities ≤ 0.05 indicates that upstream and downstream population means are not equal.

²Upstream (U).

³Downstream (D).

*Test applies to population means if variances of log values are equal, otherwise applies to geometric means only.

- = No test is done since standard deviation is either 0 or does not exist.

... = Not appropriate Test.

TABLE AIII-2: SIGNIFICANCE PROBABILITIES DUE TO OR ASSOCIATED WITH TESTING FOR EQUALITY OF MEAN CONCENTRATIONS OF 52 WATER QUALITY PARAMETERS ASSAYED AT UPSTREAM AND DOWNSTREAM LOCATIONS OF THE STICKNEY WATER RECLAMATION PLANT IN 2013

Parameter (Unit)	¹ Significance Probabilities for Testing Null Hypothesis (H_0)					
	H_0 :Normal U ²	H_0 :Normal D ³	$H_0 : \sigma_u = \sigma_d$ F	$H_0 : \mu_u = \mu_d$ Exact T	$H_0 : \mu_u = \mu_d$ Approx T	$H_0 : \mu_u = \mu_d$ WilCox T
DO (mg/L)	1.000	0.894	0.093	0.107	...	...
Temp (°C)	0.994	0.984	0.321	0.882	...	...
pH	1.000	1.000	0.195	0.502	...	...
Alk (mg/L)	1.000	0.990	0.256	0.746	...	...
Cl (mg/L)	0.650	0.755	0.157	0.997	...	...
TKN (mg/L)	0.043	0.256	0.480	...	...	0.512
NH ₄ -N (mg/L)	0.528	0.084	0.006	...	0.654	...
NH ₃ -N (mg/L)	0.334	0.152	0.020	...	0.634	...
ORG-N (mg/L)	0.436	0.872	0.150	0.970	...	...
NO ₂ + NO ₃ (mg/L)	0.999	0.979	0.169	0.006	...	...
TS (mg/L)	0.629	0.987	0.119	0.731	...	...
TSS (mg/L)	1.000	0.527	0.325	0.116	...	...
VSS (mg/L)	0.385	0.016	0.026	...	...	0.232
TDS (mg/L)	0.704	0.987	0.122	0.703	...	...
Phenol (µg/L)	-	-	-	-	-	-
SO ₄ (mg/L)	0.999	0.996	0.287	0.001	...	...
FOG (mg/L)	-	-	-	-	-	-
TP (mg/L)	0.906	1.000	0.005	...	0.550	...
CN (mg/L)	-	-	-	-	-	-
WAD-CN (mg/L)	0.530	0.489	0.482	0.810	...	...
F (mg/L)	0.402	0.589	0.142	0.005	...	...
TOC (mg/L)	0.059	0.141	0.143	0.116	...	...
FC (#/100ml)*	0.885	0.899	0.014	...	0.023	...
Ca (mg/L)	0.993	1.000	0.213	0.702	...	...
Mg (mg/L)	1.000	0.993	0.220	0.938	...	...
Hard (mg/L)	0.998	1.000	0.215	0.794	...	...
G. Alpha (pCi/L)	0.301	0.863	0.367	0.758	...	...
G. Beta (pCi/L)	0.948	0.999	0.235	0.119	...	...

TABLE AIII-2 (Continued): SIGNIFICANCE PROBABILITIES DUE TO OR ASSOCIATED WITH TESTING FOR EQUALITY OF MEAN CONCENTRATIONS OF 52 WATER QUALITY PARAMETERS ASSAYED AT UPSTREAM AND DOWNSTREAM LOCATIONS OF THE STICKNEY WATER RECLAMATION PLANT IN 2013

Parameter (Unit)	¹ Significance Probabilities for Testing Null Hypothesis (H_0)					
	H_0 :Normal U ²	H_0 :Normal D ³	$H_0 : \sigma_u = \sigma_d$ F	$H_0 : \mu_u = \mu_d$ Exact T	$H_0 : \mu_u = \mu_d$ Approx T	$H_0 : \mu_u = \mu_d$ WilCox T
Chlrphl ($\mu\text{g/L}$)	0.326	0.133	0.442	0.592	...	...
Bzn ($\mu\text{g/L}$)	-	-	-	-	-	-
Ebnzn ($\mu\text{g/L}$)	-	-	-	-	-	-
Toln ($\mu\text{g/L}$)	-	-	-	-	-	-
Xyln ($\mu\text{g/L}$)	-	-	-	-	-	-
xylmp ($\mu\text{g/L}$)	-	-	-	-	-	-
xylno ($\mu\text{g/L}$)	-	-	-	-	-	-
Ag (mg/L)	-	-	-	-	-	-
Ba (mg/L)	0.531	0.806	0.301	0.010	...	...
B (mg/L)	1.000	0.935	0.176	0.000	...	...
Cr ⁺⁶ ($\mu\text{g/L}$)	-	-	-	-	-	-
Mn (mg/L)	0.985	0.858	0.180	0.080	...	...
Hg ($\mu\text{g/L}$)	-	-	-	-	-	-
Hg- (ng/L)	-	-	-	-	-	-
Se (mg/L)	0.995	0.956	0.404	0.269	...	...
Sol. Ag (mg/L)	-	-	-	-	-	-
Sol. As (mg/L)	0.511	0.492	0.404	0.616	...	...
Sol. Cd (mg/L)	-	-	-	-	-	-
Sol. Cu (mg/L)	0.006	0.006	0.097	...	...	1.000
Sol. Cr (mg/L)	-	-	-	-	-	-
Sol. Fe (mg/L)	-	-	-	-	-	-
Sol. Pb (mg/L)	-	-	-	-	-	-
Sol. Ni (mg/L)	-	-	-	-	-	-
Sol. Zn (mg/L)	0.360	0.631	0.237	0.427	...	...

¹Significance probabilities ≤ 0.05 indicates that upstream and downstream population means are not equal.

²Upstream (U).

³Downstream (D).

*Test applies to population means if variances of log values are equal, otherwise applies to geometric means only.

- = No test is done since standard deviation is either 0 or does not exist.

... = Not appropriate Test.

TABLE AIII-3: SIGNIFICANCE PROBABILITIES DUE TO OR ASSOCIATED WITH TESTING FOR EQUALITY OF MEAN CONCENTRATIONS OF 52 WATER QUALITY PARAMETERS ASSAYED AT UPSTREAM AND DOWNSTREAM LOCATIONS OF THE CALUMET WATER RECLAMATION PLANT IN 2013

Parameter (Unit)	¹ Significance Probabilities for Testing Null Hypothesis (H_0)					
	H_0 :Normal U ²	H_0 :Normal D ³	$H_0 : \sigma_u = \sigma_d$ F	$H_0 : \mu_u = \mu_d$ Exact T	$H_0 : \mu_u = \mu_d$ Approx T	$H_0 : \mu_u = \mu_d$ WilCox T
DO (mg/L)	0.999	0.991	0.050	0.497	...	...
Temp (°C)	0.995	1.000	0.266	0.983	...	...
pH	0.999	1.000	0.416	0.023	...	...
Alk (mg/L)	0.778	0.965	0.010	...	0.294	...
Cl (mg/L)	0.956	0.955	0.315	0.113	...	...
TKN (mg/L)	-	-	-	-	-	-
NH ₄ -N (mg/L)	0.888	0.941	0.347	0.073	...	...
NH ₃ -N (mg/L)	1.000	0.526	0.071	0.896	...	...
ORG-N (mg/L)	0.888	0.333	0.000	...	0.332	...
NO ₂ + NO ₃ (mg/L)	0.264	0.983	0.219	0.003	...	...
TS (mg/L)	0.787	0.997	0.397	0.013	...	...
TSS (mg/L)	0.587	1.000	0.004	...	0.235	...
VSS (mg/L)	-	-	-	-	-	-
TDS (mg/L)	0.559	0.993	0.422	0.012	...	...
Phenol (µg/L)	-	-	-	-	-	-
SO ₄ (mg/L)	0.982	1.000	0.363	0.008	...	...
FOG (mg/L)	0.078	0.012	0.085	...	...	0.938
TP (mg/L)	0.197	0.851	0.109	...	...	0.004
CN (mg/L)	-	-	-	-	-	-
WAD-CN (mg/L)	0.639	0.408	0.288	0.842	...	...
F (mg/L)	0.669	1.000	0.400	0.003	...	...
TOC (mg/L)	0.773	0.876	0.185	0.003	...	...
FC (#/100ml)*	0.986	0.988	0.433	0.000	...	...
Ca (mg/L)	0.972	0.996	0.411	0.010	...	...
Mg (mg/L)	0.952	0.991	0.486	0.010	...	...
Hard (mg/L)	0.970	0.994	0.439	0.010	...	...
G. Alpha (pCi/L)	1.000	0.987	0.215	0.047	...	...
G. Beta (pCi/L)	0.930	1.000	0.178	0.020	...	...

TABLE AIII-3 (Continued): SIGNIFICANCE PROBABILITIES DUE TO OR ASSOCIATED WITH TESTING FOR EQUALITY OF MEAN CONCENTRATIONS OF 52 WATER QUALITY PARAMETERS ASSAYED AT UPSTREAM AND DOWNSTREAM LOCATIONS OF THE CALUMET WATER RECLAMATION PLANT IN 2013

Parameter (Unit)	¹ Significance Probabilities for Testing Null Hypothesis (H_0)					
	H_0 :Normal U ²	H_0 :Normal D ³	$H_0 : \sigma_u = \sigma_d$ F	$H_0 : \mu_u = \mu_d$ Exact T	$H_0 : \mu_u = \mu_d$ Approx T	$H_0 : \mu_u = \mu_d$ WilCox T
Chlrphl ($\mu\text{g/L}$)	1.000	0.124	0.269	0.258	...	...
Bzn ($\mu\text{g/L}$)	-	-	-	-	-	-
Ebnzn ($\mu\text{g/L}$)	-	-	-	-	-	-
Toln ($\mu\text{g/L}$)	-	-	-	-	-	-
Xyln ($\mu\text{g/L}$)	-	-	-	-	-	-
xylnmp ($\mu\text{g/L}$)	-	-	-	-	-	-
xylno ($\mu\text{g/L}$)	-	-	-	-	-	-
Ag (mg/L)	-	-	-	-	-	-
Ba (mg/L)	1.000	1.000	0.168	0.021	...	...
B (mg/L)	0.567	0.972	0.420	0.004	...	...
Cr ⁺⁶ ($\mu\text{g/L}$)	-	-	-	-	-	-
Mn (mg/L)	0.974	0.625	0.009	...	0.237	...
Hg ($\mu\text{g/L}$)	-	-	-	-	-	-
Hg- (ng/L)	-	-	-	-	-	-
Se (mg/L)	0.820	0.999	0.271	0.917	...	...
Sol. Ag (mg/L)	-	-	-	-	-	-
Sol. As (mg/L)	0.978	0.921	0.161	0.274	...	...
Sol. Cd (mg/L)	-	-	-	-	-	-
Sol. Cu (mg/L)	0.102	0.012	0.001	...	...	0.649
Sol. Cr (mg/L)	-	-	-	-	-	-
Sol. Fe (mg/L)	-	-	-	-	-	-
Sol. Pb (mg/L)	-	-	-	-	-	-
Sol. Ni (mg/L)	-	-	-	-	-	-
Sol. Zn (mg/L)	0.197	0.581	0.344	0.262	...	...

¹Significance probabilities ≤ 0.05 indicates that upstream and downstream population means are not equal.

²Upstream (U).

³Downstream (D).

*Test applies to population means if variances of log values are equal, otherwise applies to geometric means only.

- = No test is done since standard deviation is either 0 or does not exist.

... = Not appropriate Test.

TABLE AIII-4: SIGNIFICANCE PROBABILITIES DUE TO OR ASSOCIATED WITH TESTING FOR EQUALITY OF MEAN CONCENTRATIONS OF 52 WATER QUALITY PARAMETERS ASSAYED AT UPSTREAM AND DOWNSTREAM LOCATIONS OF THE JOHN E. EGAN WATER RECLAMATION PLANT IN 2013

Parameter (Unit)	¹ Significance Probabilities for Testing Null Hypothesis (H_0)					
	H_0 :Normal U ²	H_0 :Normal D ³	$H_0 : \sigma_u = \sigma_d$ F	$H_0 : \mu_u = \mu_d$ Exact T	$H_0 : \mu_u = \mu_d$ Approx T	$H_0 : \mu_u = \mu_d$ WilCox T
DO (mg/L)	0.999	1.000	0.436	0.395	...	...
Temp (°C)	1.000	0.984	0.463	0.289	...	...
pH	0.994	0.999	0.215	0.764	...	...
Alk (mg/L)	0.941	0.625	0.059	0.146	...	...
Cl (mg/L)	0.844	0.306	0.406	0.967	...	...
TKN (mg/L)	-	-	-	-	-	-
NH ₄ -N (mg/L)	0.169	0.509	0.187	0.136	...	...
NH ₃ -N (mg/L)	0.375	0.224	0.480	1.000	...	...
ORG-N (mg/L)	0.169	0.042	0.000	...	...	0.455
NO ₂ + NO ₃ (mg/L)	0.841	0.993	0.000	0.000	...	...
TS (mg/L)	0.773	0.750	0.437	0.865	...	...
TSS (mg/L)	0.989	0.627	0.258	0.251	...	...
VSS (mg/L)	1.000	0.058	0.155	0.274	...	...
TDS (mg/L)	0.743	0.785	0.472	0.825	...	...
Phenol (µg/L)	-	-	-	-	-	-
SO ₄ (mg/L)	0.535	1.000	0.010	...	0.639	...
FOG (mg/L)	-	-	-	-	-	-
TP (mg/L)	-	-	-	-	-	-
CN (mg/L)	-	-	-	-	-	-
WAD-CN (mg/L)	0.639	0.527	0.282	0.926	...	...
F (mg/L)	0.078	0.577	0.000	0.000	...	...
TOC (mg/L)	0.474	0.907	0.305	0.480	...	...
FC (#/100ml)*	0.999	0.932	0.433	0.023	...	...
Ca (mg/L)	0.849	0.948	0.077	0.702	...	...
Mg (mg/L)	0.779	0.988	0.015	...	0.985	...
Hard (mg/L)	0.783	0.984	0.040	...	0.854	...
G. Alpha (pCi/L)	0.880	1.000	0.313	0.860	...	...
G. Beta (pCi/L)	0.994	0.918	0.009	...	0.019	...

TABLE AIII-4 (Continued): SIGNIFICANCE PROBABILITIES DUE TO OR ASSOCIATED WITH TESTING FOR EQUALITY OF MEAN CONCENTRATIONS OF 52 WATER QUALITY PARAMETERS ASSAYED AT UPSTREAM AND DOWNSTREAM LOCATIONS OF THE JOHN E. EGAN WATER RECLAMATION PLANT IN 2013

Parameter (Unit)	¹ Significance Probabilities for Testing Null Hypothesis (H_0)					
	H_0 :Normal U ²	H_0 :Normal D ³	$H_0 : \sigma_u = \sigma_d$ F	$H_0 : \mu_u = \mu_d$ Exact T	$H_0 : \mu_u = \mu_d$ Approx T	$H_0 : \mu_u = \mu_d$ WilCox T
Chlrphl ($\mu\text{g/L}$)	1.000	0.561	0.431	0.003	...	...
Bzn ($\mu\text{g/L}$)	-	-	-	-	-	-
Ebnzn ($\mu\text{g/L}$)	-	-	-	-	-	-
Toln ($\mu\text{g/L}$)	-	-	-	-	-	-
Xyln ($\mu\text{g/L}$)	-	-	-	-	-	-
xylnmp ($\mu\text{g/L}$)	-	-	-	-	-	-
xyln ($\mu\text{g/L}$)	-	-	-	-	-	-
Ag (mg/L)	-	-	-	-	-	-
Ba (mg/L)	0.597	0.994	0.182	0.016	...	...
B (mg/L)	0.207	0.979	0.010	...	...	0.001
Cr ⁺⁶ ($\mu\text{g/L}$)	-	-	-	-	-	-
Mn (mg/L)	1.000	1.000	0.010	...	0.003	...
Hg ($\mu\text{g/L}$)	-	-	-	-	-	-
Hg- (ng/L)	-	-	-	-	-	-
Se (mg/L)	0.988	0.966	0.465	0.831	...	...
Sol. Ag (mg/L)	-	-	-	-	-	-
Sol. As (mg/L)	0.944	0.578	0.323	0.594	...	...
Sol. Cd (mg/L)	-	-	-	-	-	-
Sol. Cu (mg/L)	-	-	-	-	-	-
Sol. Cr (mg/L)	-	-	-	-	-	-
Sol. Fe (mg/L)	-	-	-	-	-	-
Sol. Pb (mg/L)	-	-	-	-	-	-
Sol. Ni (mg/L)	-	-	-	-	-	-
Sol. Zn (mg/L)	0.078	0.631	0.016	...	0.003	...

¹Significance probabilities ≤ 0.05 indicates that upstream and downstream population means are not equal.

²Upstream (U).

³Downstream (D).

*Test applies to population means if variances of log values are equal, otherwise applies to geometric means only.

- = No test is done since standard deviation is either 0 or does not exist.

... = Not appropriate Test.

TABLE AIII-5: SIGNIFICANCE PROBABILITIES DUE TO OR ASSOCIATED WITH TESTING FOR EQUALITY OF MEAN CONCENTRATIONS OF 52 WATER QUALITY PARAMETERS ASSAYED AT UPSTREAM AND DOWNSTREAM LOCATIONS OF THE JAMES C. KIRIE WATER RECLAMATION PLANT IN 2013

Parameter (Unit)	¹ Significance Probabilities for Testing Null Hypothesis (H_0)					
	H_0 :Normal U ²	H_0 :Normal D ³	$H_0 : \sigma_u = \sigma_d$ F	$H_0 : \mu_u = \mu_d$ Exact T	$H_0 : \mu_u = \mu_d$ Approx T	$H_0 : \mu_u = \mu_d$ WilCox T
DO (mg/L)	1.000	0.999	0.017	...	0.344	...
Temp (°C)	1.000	0.988	0.513	0.860	...	...
pH	1.000	1.000	0.123	0.003	...	...
Alk (mg/L)	1.000	1.000	0.149	0.155	...	...
Cl (mg/L)	1.000	0.799	0.003	...	0.372	...
TKN (mg/L)	-	-	-	-	-	-
NH ₄ -N (mg/L)	0.818	0.462	0.113	0.070	...	...
NH ₃ -N (mg/L)	1.000	0.488	0.301	0.622	...	...
ORG-N (mg/L)	0.818	0.642	0.014	...	0.079	...
NO ₂ + NO ₃ (mg/L)	1.000	1.000	0.000	0.000	...	...
TS (mg/L)	1.000	0.753	0.003	...	0.626	...
TSS (mg/L)	0.893	0.019	0.001	...	...	0.004
VSS (mg/L)	0.927	0.006	0.003	...	...	0.091
TDS (mg/L)	1.000	0.809	0.002	...	0.717	...
Phenol (µg/L)	-	-	-	-	-	-
SO ₄ (mg/L)	1.000	0.614	0.163	0.015	...	...
FOG (mg/L)	-	-	-	-	-	-
TP (mg/L)	-	-	-	-	-	-
CN (mg/L)	-	-	-	-	-	-
WAD-CN (mg/L)	1.000	0.489	0.424	0.550	...	...
F (mg/L)	0.818	0.776	0.026	0.000	...	...
TOC (mg/L)	1.000	0.702	0.011	...	0.967	...
FC (#/100ml)*	1.000	0.974	0.077	0.572	...	...
Ca (mg/L)	1.000	0.998	0.061	0.303	...	...
Mg (mg/L)	1.000	0.990	0.037	...	0.665	...
Hard (mg/L)	1.000	0.996	0.050	0.385	...	...
G. Alpha (pCi/L)	1.000	0.892	0.010	...	0.292	...
G. Beta (pCi/L)	1.000	0.914	0.155	0.056	...	...

TABLE AIII-5 (Continued): SIGNIFICANCE PROBABILITIES DUE TO OR ASSOCIATED WITH TESTING FOR EQUALITY OF MEAN CONCENTRATIONS OF 52 WATER QUALITY PARAMETERS ASSAYED AT UPSTREAM AND DOWNSTREAM LOCATIONS OF THE JAMES C. KIRIE WATER RECLAMATION PLANT IN 2013

Parameter (Unit)	¹ Significance Probabilities for Testing Null Hypothesis (H_0)					
	H_0 :Normal U ²	H_0 :Normal D ³	$H_0 : \sigma_u = \sigma_d$ F	$H_0 : \mu_u = \mu_d$ Exact T	$H_0 : \mu_u = \mu_d$ Approx T	$H_0 : \mu_u = \mu_d$ WilCox T
Chlrphl ($\mu\text{g/L}$)	1.000	0.867	0.004	...	0.040	...
Bzn ($\mu\text{g/L}$)	-	-	-	-	-	-
Ebnzn ($\mu\text{g/L}$)	-	-	-	-	-	-
Toln ($\mu\text{g/L}$)	-	-	-	-	-	-
Xyln ($\mu\text{g/L}$)	-	-	-	-	-	-
xylmp ($\mu\text{g/L}$)	-	-	-	-	-	-
xylno ($\mu\text{g/L}$)	-	-	-	-	-	-
Ag (mg/L)	-	-	-	-	-	-
Ba (mg/L)	1.000	0.847	0.107	0.000	...	...
B (mg/L)	1.000	1.000	0.039	...	0.000	...
Cr ⁺⁶ ($\mu\text{g/L}$)	-	-	-	-	-	-
Mn (mg/L)	0.940	0.358	0.392	0.002	...	...
Hg ($\mu\text{g/L}$)	-	-	-	-	-	-
Hg- (ng/L)	-	-	-	-	-	-
Se (mg/L)	1.000	0.999	0.298	0.624	...	...
Sol. Ag (mg/L)	-	-	-	-	-	-
Sol. As (mg/L)	0.999	0.465	0.345	0.020	...	...
Sol. Cd (mg/L)	-	-	-	-	-	-
Sol. Cu (mg/L)	-	-	-	-	-	-
Sol. Cr (mg/L)	-	-	-	-	-	-
Sol. Fe (mg/L)	-	-	-	-	-	-
Sol. Pb (mg/L)	-	-	-	-	-	-
Sol. Ni (mg/L)	-	-	-	-	-	-
Sol. Zn (mg/L)	-	-	-	-	-	-

¹Significance probabilities ≤ 0.05 indicates that upstream and downstream population means are not equal.

²Upstream (U).

³Downstream (D).

*Test applies to population means if variances of log values are equal, otherwise applies to geometric means only.

- = No test is done since standard deviation is either 0 or does not exist.

... = Not appropriate Test.

TABLE AIII-6: SIGNIFICANCE PROBABILITIES DUE TO OR ASSOCIATED WITH TESTING FOR EQUALITY OF MEAN CONCENTRATIONS OF 52 WATER QUALITY PARAMETERS ASSAYED AT UPSTREAM AND DOWNSTREAM LOCATIONS OF THE HANOVER PARK WATER RECLAMATION PLANT IN 2013

Parameter (Unit)	¹ Significance Probabilities for Testing Null Hypothesis (H_0)					
	H_0 :Normal U ²	H_0 :Normal D ³	$H_0 : \sigma_u = \sigma_d$ F	$H_0 : \mu_u = \mu_d$ Exact T	$H_0 : \mu_u = \mu_d$ Approx T	$H_0 : \mu_u = \mu_d$ WilCox T
DO (mg/L)	0.995	0.879	0.062	0.153	...	...
Temp (°C)	1.000	1.000	0.167	0.468	...	...
pH	1.000	0.955	0.455	0.755	...	...
Alk (mg/L)	1.000	0.899	0.120	0.011	...	...
Cl (mg/L)	1.000	0.730	0.485	0.442	...	...
TKN (mg/L)	0.424	0.030	0.000	...	...	0.437
NH ₄ -N (mg/L)	0.609	0.833	0.000	...	0.257	...
NH ₃ -N (mg/L)	0.641	0.809	0.000	...	0.335	...
ORG-N (mg/L)	0.981	0.522	0.005	...	0.295	...
NO ₂ + NO ₃ (mg/L)	1.000	1.000	0.000	0.000	...	...
TS (mg/L)	0.659	0.752	0.309	0.342	...	...
TSS (mg/L)	0.288	0.999	0.000	...	0.727	...
VSS (mg/L)	0.405	0.775	0.000	...	0.362	...
TDS (mg/L)	0.879	0.636	0.228	0.409	...	...
Phenol (µg/L)	-	-	-	-	-	-
SO ₄ (mg/L)	0.848	0.999	0.003	...	0.981	...
FOG (mg/L)	-	-	-	-	-	-
TP (mg/L)	0.760	0.996	0.000	0.000	...	...
CN (mg/L)	0.078	0.013	0.000	...	...	0.950
WAD-CN (mg/L)	0.639	0.527	0.282	0.926	...	...
F (mg/L)	0.474	0.872	0.084	0.000	...	...
TOC (mg/L)	0.999	0.380	0.012	0.000	...	...
FC (#/100ml)*	1.000	0.999	0.520	0.005	...	...
Ca (mg/L)	0.946	1.000	0.028	...	0.521	...
Mg (mg/L)	0.862	1.000	0.020	...	0.662	...
Hard (mg/L)	0.915	1.000	0.024	...	0.576	...
G. Alpha (pCi/L)	0.446	0.951	0.013	...	0.084	...
G. Beta (pCi/L)	0.589	0.874	0.313	0.199	...	...

TABLE AIII-6 (Continued): SIGNIFICANCE PROBABILITIES DUE TO OR ASSOCIATED WITH TESTING FOR EQUALITY OF MEAN CONCENTRATIONS OF 52 WATER QUALITY PARAMETERS ASSAYED AT UPSTREAM AND DOWNSTREAM LOCATIONS OF THE HANOVER PARK WATER RECLAMATION PLANT IN 2013

Parameter (Unit)	¹ Significance Probabilities for Testing Null Hypothesis (H_0)					
	H_0 :Normal U ²	H_0 :Normal D ³	$H_0 : \sigma_u = \sigma_d$ F	$H_0 : \mu_u = \mu_d$ Exact T	$H_0 : \mu_u = \mu_d$ Approx T	$H_0 : \mu_u = \mu_d$ WilCox T
Chlrphl ($\mu\text{g/L}$)	1.000	0.386	0.239	0.356	...	...
Bzn ($\mu\text{g/L}$)	-	-	-	-	-	-
Ebnzn ($\mu\text{g/L}$)	-	-	-	-	-	-
Toln ($\mu\text{g/L}$)	-	-	-	-	-	-
Xyln ($\mu\text{g/L}$)	-	-	-	-	-	-
xylmp ($\mu\text{g/L}$)	-	-	-	-	-	-
xylno ($\mu\text{g/L}$)	-	-	-	-	-	-
Ag (mg/L)	-	-	-	-	-	-
Ba (mg/L)	0.994	1.000	0.389	0.003	...	...
B (mg/L)	0.375	1.000	0.141	...	...	0.006
Cr ⁺⁶ ($\mu\text{g/L}$)	-	-	-	-	-	-
Mn (mg/L)	1.000	0.933	0.000	...	0.002	...
Hg ($\mu\text{g/L}$)	-	-	-	-	-	-
Hg- (ng/L)	-	-	-	-	-	-
Se (mg/L)	0.468	1.000	0.334	0.902	...	...
Sol. Ag (mg/L)	-	-	-	-	-	-
Sol. As (mg/L)	0.987	0.434	0.044	...	0.830	...
Sol. Cd (mg/L)	-	-	-	-	-	-
Sol. Cu (mg/L)	-	-	-	-	-	-
Sol. Cr (mg/L)	-	-	-	-	-	-
Sol. Fe (mg/L)	-	-	-	-	-	-
Sol. Pb (mg/L)	-	-	-	-	-	-
Sol. Ni (mg/L)	-	-	-	-	-	-
Sol. Zn (mg/L)	-	-	-	-	-	-

¹Significance probabilities ≤ 0.05 indicates that upstream and downstream population means are not equal.

²Upstream (U).

³Downstream (D).

*Test applies to population means if variances of log values are equal, otherwise applies to geometric means only.

- = No test is done since standard deviation is either 0 or does not exist.

... = Not appropriate Test.