Metropolitan Water Reclamation District of Greater Chicago

MONITORING AND RESEARCH DEPARTMENT

REPORT NO. 14-58

RE-EVALUATION OF LOCAL PRETREATMENT LIMITS

December 2014

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ACKNOWLEDGEMENTS

The data and information collected and provided by the staff of the Environmental Monitoring and Research Division, the Industrial Waste Division, and the Analytical Laboratories Division are very much appreciated. Without their efforts, this report would not be possible. Authors thankfully acknowledge the support of Mr. Justin Vick and Ms. Jennifer Wasik for providing State Water Quality Standards for pollutants of concern (POCs). Special thanks are given to Mses. Coleen Maurovich, Ms. Ann Schade, and Joan Scrima for their time and effort in checking and formatting this report.

DISCLAIMER

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

INTRODUCTION

The General Pretreatment Regulations of the Code of Federal Regulations (40 CFR Part 403) require that each Control Authority develop an approved pretreatment program. Each Control Authority must develop and enforce local limits to protect against pass-through and interference, which may be caused by industrial discharges to the publicly owned treatment works or water reclamation plants (WRPs) under its jurisdiction. The Metropolitan Water Reclamation District of Greater Chicago (District) re-evaluates its local limits to ensure a firm technical basis and adjust to changing conditions. Under this requirement, the District must review the adequacy of discharge limits and establish additional standards, if necessary.

The District operates seven activated sludge WRPs. The seven WRPs are the Calumet WRP, John E. Egan (Egan) WRP, Hanover Park WRP, James C. Kirie (Kirie) WRP, Lemont WRP, Terrence J. O'Brien (O'Brien) WRP and Stickney WRP.

The District operates anaerobic sludge digestion at four WRPs (Calumet, Egan, Hanover Park and Stickney). The Calumet, Egan, Hanover Park, and Stickney WRPs process the sludge from their own primary and secondary treatment. In addition, the primary and secondary sludge from the O'Brien WRP is piped to the Stickney WRP digester; the Lemont WRP sends its primary and secondary sludge to the Stickney WRP digesters via truck, and the secondary sludge from the Kirie WRP is piped to the Egan WRP digesters.

The local limits are intended to protect water quality, sludge quality, the biological integrity of WRPs, worker health and safety, the collection system, and air quality. Each of the District's seven WRPs is evaluated individually with regard to these issues. The District wishes to maintain uniform local limits throughout its jurisdiction, so the most stringent limit for any pollutant of concern (POC) at any single WRP is used as the limiting concentration for that pollutant throughout the District's service area. This study is a comprehensive re-evaluation for each of the District's seven WRPs to assess the needs of updating existing or establishing new local limits.

The POCs are identified for each WRP. The data collection strategy and analyses of data quality are reported. The District takes into account site-specific conditions, including National Pollutant Discharge Elimination System (NPDES) permit limits and compliance, receiving water quality, biosolids quality, and potential biological inhibition. The development of local limits are based on the methodology in the Local Limits Development Guidance (USEPA, 2004a), using maximum allowable headworks loading (MAHL). The historical influent loading data is evaluated and compared to the MAHL. In each case, the POCs technically based determinations and the historical data are evaluated and compared to the current District pretreatment local limits. A uniform allocation method is used within each of the seven service areas. Recommendations for any changes to the current limits are also presented.

DETERMINE POLLUTANTS OF CONCERN

The District's WRPs are required to prohibit industrial user discharges in amounts that result in the violation of water quality based NPDES permit limits. In addition, the District utilizes a toxicity-based approach for the receiving streams based on the State of Illinois Water Quality Standards in cases where there are no applicable NPDES permit limits at the respective WRPs. The District prohibits industrial user discharges in amounts that cause potential violations of biosolids regulations. The evaluation for biological process inhibition is considered, although the District has rarely experienced biological process inhibition at its WRPs. Worker health and safety, collection system problems, and air emissions are also considered. The POCs are identified for each of the District's WRPs. Each WRP is evaluated independently of the other District WRPs. Each WRP has its own NPDES permit, and each has unique operational requirements. Each WRP also has a unique industrial user base. Each WRP is evaluated on the impact of the fifteen national POCs and the additional parameters determined based on the above-mentioned consideration.

National Pollutants of Concern

The 2004 USEPA Guidance recommends screening of fifteen POCs. These are five-day biochemical oxygen demand (BOD_5), ammonia, arsenic, cadmium, chromium, copper, cyanide, lead, mercury, molybdenum, nickel, selenium, silver, total suspended solids (TSS), and zinc. The screening also includes four additional pollutants (fluoride, phenol, FOG, and total phosphorus) due to the potential concerns of receiving stream water quality standards, collection system problems, and potential NPDES permit limits. Iron is also included in the evaluation based on State of Illinois Water Quality Standards for receiving streams. The POCs are screened at each of the seven District WRPs.

National Pollutant Discharge Elimination System Permit Conditions

The NPDES permits issued to WRPs contain specific effluent limitations and water quality based pollutant limitations. The pollutants contained in the District's NPDES permits are screened with site-specific information for each WRP. The District's seven WRPs have the following pollutant limits. This re-evaluation is being conducted due to new NPDES permit issuance for the Stickney, Calumet and O'Brien WRPs. The new permit limits for these three plants are presented. All units are in milligrams per liter (mg/L).

Calumet Water Reclamation Plant:

NPDES Permit Daily Maximum Limit (mg/L):

1. Ammonia (NH_3-N) seasonal (summer/winter)	5.0/8.0
2. Cyanide (total)	0.30

NPDES Permit Monthly Maximum Limit (mg/L):

1. Carbonaceous BOD_5	10
2. TSS	15
3. Ammonia (NH_3-N) seasonal (summer/winter)	2.5/4.0
4. Cyanide	0.15

John E. Egan Water Reclamation Plant:

NPDES Permit Daily Maximum Limit (mg/L):

1. Carbonaceous BOD_5	20
2. TSS	24
3. Ammonia (NH_3-N) seasonal (April - October; November - February; March)	3.0/8.0/8.0

NPDES Permit Monthly Maximum Limit (mg/L):

1. Carbonaceous BOD_5	10
2. TSS	12
3. Ammonia (NH_3-N) seasonal (April - October; November - February; March)	1.5/3.6/2.3

Hanover Park Water Reclamation Plant:

NPDES Permit Daily Maximum Limit (mg/L):

1. Carbonaceous BOD_5	20
2. TSS	24
3. Ammonia (NH_3-N) seasonal	
(April - May/September - October;	6.5/6.5
June - August; November - February; March)	13.0/13.3
4. Copper	0.035

NPDES Permit Monthly Maximum Limit (mg/L):

1. Carbonaceous BOD_5	10
2. TSS	12
3. Ammonia (NH_3-N) seasonal	
(April - May/September - October	1.5/1.5
June - August; November - February; March)	3.9/2.9
5. Copper	0.022

James C. Kirie Water Reclamation Plant:

NPDES Permit Daily Maximum Limit (mg/L):

1. Carbonaceous BOD_5	20
2. TSS	24

4. Ammonia (NH_3-N) seasonal (March - May/September - October; June - August; November - February) 7.8/11.1/8.4

NPDES Permit Monthly Maximum Limit (mg/L):

1. BOD_5 4
2. TSS 5
3. Ammonia (NH_3-N) seasonal (March - May/September - October; June - August; November - February) 2.1/1.6/4.0

Lemont Water Reclamation Plant:

NPDES Permit Daily Maximum Limit (mg/L):

1. Carbonaceous BOD_5 40
2. TSS 45

NPDES Permit Monthly Maximum Limit (mg/L):

1. Carbonaceous BOD_5 20
2. TSS 25

Terrence J. O'Brien Water Reclamation Plant:

NPDES Permit Daily Maximum Limit (mg/L):

1. Ammonia (NH_3-N) seasonal (summer/winter) 5.0/8.0

NPDES Permit Monthly Maximum Limit (mg/L):

1. Carbonaceous BOD_5 10
2. TSS 12
3. Ammonia (NH_3-N) seasonal (summer/winter) 2.5/4.0

Stickney Water Reclamation Plant:

NPDES Permit Daily Maximum Limit (mg/L):

1. Ammonia (NH_3-N) seasonal (summer/winter) 5.0/8.0

NPDES Permit Monthly Maximum Limit (mg/L):

1. Carbonaceous BOD_5 10
2. TSS 12
3. Ammonia (NH_3-N) seasonal (summer/winter) 2.5/4.0

Water Quality Standards

The state of Illinois Water Quality Standards are used to establish the POCs in cases where there are no NPDES permit limits. Three District WRPs discharge to the waterways designated as General Use. The dischargers (Egan, Kirie, and Hanover Park WRPs) to the General Use Waters are evaluated on both acute and chronic toxicity standards, if either exist. The toxicity standards for cadmium, chromium, copper, lead, and total trivalent chromium are dependent on hardness. The annual average hardness at the sample point immediately upstream of the WRP in the receiving waters is used for evaluations. The other four District WRPs (Calumet, O'Brien, Lemont, and Stickney) discharge to waters designated as Secondary Contact and Indigenous Aquatic Life Use. The water quality standards are detailed in Appendix Table AI-1. The parameters used to derive hardness-based or pH-based water quality standards are provided in Appendix Table A1-2. Wherever soluble metal standards are applicable, a conversion factor (*Cf*) was used to convert the soluble metal standard to total metal concentration for estimating allowable headworks loading (AHL). The WRP specific *Cf* is presented in Appendix Table AI-3 for the POCs where sufficient data above reporting limits were available; and in case sufficient data were not available, *Cf* from "The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit From a Dissolved Criterion (USEPA, 1996) were used for calculating the AHL.

Biosolids Quality Standards

Standards for the Use or Disposal of Sewage Sludge (40 CFR Part 503.13) are used to determine the POCs for biosolids quality. The POCs are arsenic, cadmium, copper, lead mercury, molybdenum, nickel, selenium and zinc. The District's biosolids meet the pollutant concentrations contained in Table 3 of 40 CFR Part 503.13. In the case of molybdenum, there is no concentration criterion in Table 3 of 40 CFR Part 503.13. Therefore, the ceiling concentration contained in Table 1 of 40 CFR Part 503.13 is used. See Appendix Table AII for the maximum allowable concentration for each pollutant. The District's biosolids criteria are based on the most stringent criterion for each POC.

Air Emission Standards

Hazardous air pollutants at WRPs are regulated under the Federal Clean Air Act Amendments of 1990. Four Titles under the Clean Air Act Amendments of 1990 may apply to WRPs, but only one of these, Title III, has potential ramifications on the development and setting of local limits. Title III Subpart VVV, Hazardous, requires implementation of maximum achievable control technology for major sources of hazardous air pollutants at WRPs. Major sources are defined as those having the potential to emit at least ten tons/year of any individual hazardous air pollutant, or 25 tons/year total hazardous air pollutants. The USEPA has designated 189 compounds and elements as federal hazardous air pollutants, but only 26 of these have been identified or detected at WRPs.

The USEPA issued the guidance, "National Emission Standards for Hazardous Air Pollutants (NESHAP): Publicly Owned Treatment Works – Background Information for Final Standards" (USEPA, 1999a), to assist in determining whether a WRP is a major source of

hazardous air pollutants and subject to implementation of maximum achievable control technology. Under the guidance, a WRP would be subject to installing maximum achievable control technology if it meets two of the following three criteria:

1. Has a hydraulic capacity greater than 50 MGD.

2. Accepts more that 30 percent industrial waste contribution.

3. Has influent priority pollutant volatile organic chemical (VOC) concentrations greater than 5 mg/L.

None of the District's seven WRPs exceed two of these criteria and thus are not subject to maximum achievable control technology. The pretreatment regulations do not require the adoption of local limits to protect air quality unless the air quality standards associated with the WRP require it. The District evaluates VOC emissions annually using USEPA approved models. The District has found all potential pollutants to be below the threshold of concern.

Biological Inhibition of Water Reclamation Plants

Potential biological inhibition at WRPs is evaluated based on thresholds reported in the 2004 USEPA Guidance Appendices (USEPA, 2004b). The District's WRPs rarely experience biological inhibition. See Appendix Table AIII-1 for the inhibition thresholds used in the evaluation of the activated sludge process. All seven District WRPs are screened for activated sludge biological process inhibition. The District uses both nitrogenous and carbonaceous biological processes in secondary treatment. The anaerobic digestion process inhibition thresholds are shown in Appendix Table AIII-1. The four District WRPs utilizing anaerobic digestion are evaluated for potential disruption to the biological process. The POC loads from other WRPs that send their sludge to these WRPs are included in the evaluation.

Summary of Screening Process

The following tables summarize the POCs for each of the District's seven WRPs. The screening process is site-specific. Each District WRP is evaluated on the POCs indicated in Table 1 through Table 7.

TABLE 1: POLLUTANTS OF CONCERN FOR THE CALUMET WATER RECLAMATION PLANT

Pollutant	National Concern	NPDES Permit			State Water Quality Indigenous Aquatic Life Use	Sludge Quality	Biological Inhibition		
		Daily	Weekly	Monthly			Anaerobic Digestion	Activated Sludge	
								Nitrogenous	Carbonaceous
Arsenic	X				X	X	X	X	X
Cadmium	X				X	X	X	X	X
Chromium	X				X		X	X	X
Copper	X				X	X	X	X	X
Lead	X				X	X	X	X	X
Iron					X				
Fluoride									
Mercury	X				X	X			X
Molybdenum	X					X			
Nickel	X				X	X	X	X	X
Selenium	X				X	X			
Silver	X				X		X		
Zinc	X				X	X	X	X	X
Ammonia	X	X		X	X		X		X
Cyanide	X	X		X	X		X	X	X
Phenol					X			X	X
Total suspended solids	X		X	X					
$cBOD_5$ or BOD_5	X		X	X					
T. phosphorus				X					

TABLE 2: POLLUTANTS OF CONCERN FOR THE JOHN E. EGAN WATER RECLAMATION PLANT

Pollutant	National Concern	NPDES Permit			State Water Quality General Use		Sludge Quality	Biological Inhibition		
		Daily	Weekly	Monthly	Chronic Toxicity	Acute Toxicity		Anaerobic Digestion	Activated Sludge	
									Nitrogenous	Carbonaceous
Arsenic	X				X	X	X	X	X	X
Cadmium	X				X	X	X	X	X	X
Chromium	X				X	X		X	X	X
Copper	X				X	X	X	X	X	X
Lead	X				X	X	X	X	X	X
Iron						X[1]				
Fluoride					X	X				
Mercury	X				X	X	X			X
Molybdenum	X						X		X	
Nickel	X	X		X	X	X	X	X		X
Selenium	X					X[1]	X			
Silver	X					X[1]		X	X	
Zinc	X				X	X	X	X		X
Ammonia	X	X	X	X	X	X		X	X	X
Cyanide	X				X	X		X	X	X
Phenol						X[1]				X
Total suspended solids	X	X		X						
$cBOD_5$ or BOD_5	X	X		X						
Total phosphorus										

[1]Single-value standards apply.

TABLE 3: POLLUTANTS OF CONCERN FOR THE HANOVER PARK WATER RECLAMATION PLANT

Pollutant	National Concern	NPDES Permit			State Water Quality General Use		Sludge Quality	Biological Inhibition		
		Daily	Weekly	Monthly	Chronic Toxicity	Acute Toxicity		Anaerobic Digestion	Activated Sludge	
									Nitrogenous	Carbonaceous
Arsenic	X				X	X	X	X	X	X
Cadmium	X				X	X	X	X	X	X
Chromium	X				X	X		X	X	X
Copper	X	X		X	X	X	X	X	X	X
Lead	X				X	X	X	X	X	X
Iron						X[1]				
Fluoride					X	X				
Mercury	X				X	X	X			X
Molybdenum	X						X			
Nickel	X				X	X	X	X	X	X
Selenium	X					X[1]	X			
Silver	X					X[1]		X		
Zinc	X				X	X	X	X	X	X
Ammonia	X	X	X	X	X	X		X		X
Cyanide (WAD)	X				X	X		X	X	X
Phenol						X[1]			X	X
Total suspended solids	X	X		X						
$cBOD_5$ or BOD_5	X	X		X						
Total phosphorus										

[1]Single-value standards apply.

TABLE 4: POLLUTANTS OF CONCERN FOR THE JAMES C. KIRIE WATER RECLAMATION PLANT

Pollutant	National Concern	NPDES Permit			State Water Quality General Use		Sludge Quality	Biological Inhibition		
		Daily	Weekly	Monthly	Chronic Toxicity	Acute Toxicity		Anaerobic Digestion	Activated Sludge	
									Nitrogenous	Carbonaceous
Arsenic	X				X	X	X	X	X	X
Cadmium	X				X	X	X	X	X	X
Chromium	X				X	X		X	X	X
Copper	X				X	X	X	X	X	X
Lead	X				X	X	X	X	X	X
Iron						X[1]				
Fluoride					X	X				
Mercury	X				X	X	X			X
Molybdenum	X						X			
Nickel	X				X	X	X	X	X	X
Selenium	X					X[1]	X			
Silver	X					X[1]		X		
Zinc	X				X	X	X	X	X	X
Ammonia	X	X	X	X	X	X		X	X	X
Cyanide	X				X	X		X	X	X
Phenol						X[1]			X	X
Total suspended solids	X	X		X						
$cBOD_5$ or BOD_5	X	X		X						
Total phosphorus				X						

[1]Single-value standards apply.

TABLE 5: POLLUTANTS OF CONCERN FOR THE LEMONT WATER RECLAMATION PLANT

Pollutant	National Concern	NPDES Permit			State Water Quality Indigenous Aquatic Life Use	Sludge Quality	Biological Inhibition		
		Daily	Weekly	Monthly			Anaerobic Digestion	Activated Sludge	
								Nitrogenous	Carbonaceous
Arsenic	X				X	X	X	X	X
Cadmium	X				X	X	X	X	X
Chromium	X				X		X	X	X
Copper	X				X	X	X	X	X
Lead	X				X	X	X	X	X
Iron					X				
Fluoride									
Mercury	X				X	X			X
Molybdenum	X					X			
Nickel	X				X	X	X	X	X
Selenium	X				X	X			
Silver	X				X		X		
Zinc	X				X	X	X	X	X
Ammonia	X	X		X	X		X		X
Cyanide	X				X		X	X	X
Phenol					X			X	X
Total suspended solids	X		X	X					
$cBOD_5$ or BOD_5	X		X	X					
Total phosphorus									

TABLE 6: POLLUTANTS OF CONCERN FOR THE TERRENCE J. O'BRIEN WATER RECLAMATION PLANT

Pollutant	National Concern	NPDES Permit			State Water Quality Indigenous Life Use	Sludge Quality	Biological Inhibition		
		Daily	Weekly	Monthly			Anaerobic Digestion	Activated Sludge	
								Nitrogenous	Carbonaceous
Arsenic	X				X	X	X	X	X
Cadmium	X				X	X	X	X	X
Chromium	X				X		X	X	X
Copper	X				X	X	X	X	X
Lead	X				X	X	X	X	X
Iron					X				
Fluoride									
Mercury	X				X	X			X
Molybdenum	X					X			
Nickel	X				X	X	X	X	X
Selenium	X				X	X			
Silver	X				X		X		
Zinc	X				X	X	X	X	X
Ammonia	X	X		X	X		X		X
Cyanide	X				X		X	X	X
Phenol					X			X	X
Total suspended solids	X		X	X					
$cBOD_5$ or BOD_5	X		X	X					
Total phosphorus				X					

TABLE 7: POLLUTANTS OF CONCERN FOR THE STICKNEY WATER RECLAMATION PLANT

Pollutant	National Concern	NPDES Permit			State Water Quality Indigenous Aquatic Life Use	Sludge Quality	Biological Inhibition		
		Daily	Weekly	Monthly			Anaerobic Digestion	Activated Sludge	
								Nitrogenous	Carbonaceous
Arsenic	X				X	X	X	X	X
Cadmium	X				X	X	X	X	X
Chromium	X				X		X	X	X
Copper	X				X	X	X	X	X
Lead	X				X	X	X	X	X
Iron					X				
Fluoride									
Mercury	X				X	X			X
Molybdenum	X					X			
Nickel	X				X	X	X	X	X
Selenium	X				X	X			
Silver	X				X		X		
Zinc	X				X	X	X	X	X
Ammonia	X	X		X	X		X		X
Cyanide	X				X		X	X	X
Phenol					X			X	X
Total suspended solids	X		X	X					
$cBOD_5$ or BOD_5	X		X	X					
Total phosphorus				X					

SAMPLE COLLECTION AND DATA ANALYSIS

The necessary data, including sampling and analysis, are collected on a scheduled basis by District personnel. Site-specific data is used to determine influent and effluent loading. The analysis was conducted using two years (2010 and 2011) of data in all cases unless otherwise noted. The data analysis is used to identify the presence of individual pollutants, determine influent loading, calculate pollutant-removal efficiencies, and evaluate site-specific inhibition thresholds. The sludge to the Calumet, Egan, Hanover Park, and Stickney WRPs' digesters and biosolids generated at those WRPs are sampled and analyzed by District personnel on a scheduled basis.

The flow data needed for technically based evaluation for WRPs are:

1. Influent flow.
2. Industrial flow.
3. Receiving stream flow.
4. Primary and secondary sludge flow to digesters.
5. Digester draw-off flow.

The WRP influent flows, digester feed flows, and digester draw-off flows are continuously monitored. Receiving stream flows are based on the most current Illinois State Water Survey data. Industrial flows from Significant Industrial Users (SIUs) are reported annually under the District's Pretreatment Program. See Table 8 for the summary of the average daily flow data for the years 2010 and 2011. The domestic flow figures are calculated by finding the difference between the average influent flow and the industrial flow to each WRP.

The District samples and analyzes for pollutants on a specific schedule. Each WRP has a site-specific sampling schedule. The influent and effluent pollutant concentrations are analyzed at frequencies as detailed in Appendix Table AIV-1 and AIV-2, respectively. Pollutants in the receiving streams are monitored on a monthly basis.

Estimated Loadings from Background and Domestic Sources

Loadings from background and domestic sources are considered together as an estimated background loading. The data used for the background loading calculation is the pollutant concentrations in the city of Chicago's distributed Lake Michigan water. The pollutant concentration is the average of the north, south, and central distribution sample concentrations. The minimum detection limits are substituted for sample values for pollutant concentrations below the reporting limits. The concentration and minimum reporting limit values for the background sources are detailed in Appendix Table AV-1. For the conventional pollutants BOD_5 and suspended solids, the average concentrations from domestic sources are used as the background sources differentiating from industrial sources, which are also included in Appendix Table AV-1. The background flow for each WRP is the difference between the average WRP influent flow and the industrial flow into the WRP. Each WRP is evaluated independently. The background loads, once determined, are deducted from the maximum allowable pollutant loads at the headworks of each WRP. The remainder of the pollutant load for each WRP is distributed among industrial users in the corresponding WRP service area.

TABLE 8: AVERAGE FLOW DATA FOR YEARS 2010 AND 2011 AT THE METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO WATER RECLAMATION PLANTS

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
	MGD						
WRP influent	250.5	27.4	9.3	38.4	2.5	235.0	721.0
Industrial	8.3	0.5	0.2	0.9	0.0	1.9	22.6
Domestic[1]	242.2	26.8	9.1	37.5	2.5	233.1	698.4
Receiving Stream 7Q10[2]	12.9	0	0	0	848.6	0	201.0
Receiving Stream 1Q10[3]	0	0	0	0	526.0	0	54.0
Primary and secondary effluent to digesters	0.61	0.20	0.03	n/a	n/a	n/a	2.53
Digester draw-off	0.61	0.21	0.03	n/a	n/a	n/a	2.07

[1]Domestic = WRP influent – Industrial.

[2] 7Q10, refers to the lowest consecutive seven-day streamflow that is likely to occur in a ten-year period. Source: http://www.isws.illinois.edu/docs/maps/lowflow/images/maps/map2.gif.

[3]Computed by USGS using USGS gage data, WRP flows, and Chicago River Controlling Works flows.

Pollutant Removal Efficiency

Pollutant removal efficiencies at the District WRPs are needed to calculate allowable headworks loading based on effluent criteria.

Site-specific data collected over a period of two years (2010 and 2011) were used. The removal efficiency is the fraction or percent of the influent pollutant loadings which is removed from the liquid stream across an entire WRP. The removal efficiency can also be determined across a specific treatment unit. The mean removal efficiency method as described in the 2004 USEPA Guidance is used (USEPA, 2004a). The removal efficiency (R_{wrp}) for any given conservative or non-conservative pollutant is calculated with Equation 1.

Equation 1: Mean Removal Efficiency

$$R_{wrp} = \frac{L_{inf} - L_{eff}}{L_{inf}}$$

where,

R_{wrp} = removal Efficiency across the WRP, as a Decimal

L_{inf} = Average Influent Load, lbs/day

L_{eff} = Average Effluent Load, lbs/day

Frequently, the measured influent and effluent concentrations are near or less than method detection limits. Consequently, calculated removal efficiencies can be erratic. Where adequate data is lacking to establish a reliable percentage removal, an estimated removal efficiency is used. An estimated removal efficiency is used where more than seventy percent of the samples result in a pollutant concentration below the detection limit. For this purpose, the combined average removal efficiency from the other District WRPs is used as an estimate. This is an acceptable estimate since all of the District's WRPs have the same activated sludge process and operate in the same climate. In cases where there is not enough data for any removal efficiency determination, the values from the 2003 Re-evaluation of Local Limits Report (MWRDGC, 2003) were used. Table 9 summarizes the removal efficiencies for each WRP. The activated sludge inhibition evaluations are based on the pollutant concentrations entering the activated sludge unit. The primary treatment effluents are not typically sampled for metal concentrations at the District's WRPs. The 1987 USEPA Guidance literature values are used to determine estimated pollutant removal of the primary clarifiers (USEPA, 1987). The exception is the Kirie WRP, which does not have primary clarifiers. The removal efficiencies from primary treatment at each WRP are provided in Appendix Table AV-2.

TABLE 9: REMOVAL EFFICIENCIES FOR POLLUTANTS THROUGH WASTEWATER TREATMENT PROCESSES AT METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO WATER RECLAMATION PLANTS

	District Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
Ammonia	0.98	0.99	0.99	0.98	0.97	0.97	0.96
Arsenic	0.05*	0.06**	0.36	0.24	0.05*	0.04**	0.05
BOD_5	0.94	0.99	0.98	0.98	0.95	0.94	0.97
Cadmium	0.59*	0.59*	0.40	0.14	0.59*	0.14	0.98
Chromium, Total	0.68	0.57	0.77	0.57	0.40	0.40	0.83
Chromium, Hexavalent	0.33	0.76*	0.95	0.76*	0.50	0.76*	0.76*
Copper	0.90	0.90	0.86	0.91	0.85	0.85	0.89
Cyanide	0.30	0.29	0.38	0.39	0.23	0.37	0.48
Fats, oils and grease (FOG)	0.90	0.93	0.94	0.91	0.86	0.92	0.79
Fluoride	0.06	0.12	0.07	0.23	0.02	0.07	0.09
Iron, total	0.95	0.97	0.96	0.95	0.91	0.94	0.97
Iron, soluble	0.60	0.39	0.42	0.29	0.42	0.29	0.46
Lead	0.40	0.40	0.65	0.20	0.40	0.57	0.42
Mercury	0.92	0.84	0.82	0.84	0.86	0.83	0.40
Nickel	0.35	0.50	0.36	0.48	0.21	0.24	0.61
Phenol	0.98	0.88	0.90	0.88	0.85	0.83	0.63
Selenium	0.50*	0.21	0.43	0.14	0.50	0.14	0.15
Silver	0.30**	0.63	0.78	0.48	0.29**	0.40	0.36
Suspended Solids	0.95	0.99	0.97	0.99	0.96	0.95	0.99
Total Phosphorus	0.42	0.51	0.43	0.68	0.48	0.54	0.86
Zinc	0.88	0.72	0.76	0.70	0.67	0.63	0.86

[1]The value is the average removal efficiency over two years (2010 and 2011) for the WRPs which had at least 30 percent of the samples with pollutant concentrations above the detection limit.

*All values were below detection limits, removal efficiency from previous report (MWRDGC, 2003).

** Removal efficiency estimated using deciles approach using 2010 and 2011 data.

Pollutant Concentrations in Sludge

The concentrations of metals in biosolids are monitored at all District WRPs that generate the biosolids. See Appendix AVI for the two-year annual average metals concentrations (2010 and 2011), along with the applicable limits set in the 40 CFR Part 503 Regulation.

Receiving Stream Pollutant Concentration and Flow Data

The State of Illinois requires that pollutant concentrations in the receiving streams meet state water quality standards. The flow data for all of the receiving streams is determined from the most current Illinois State Water Survey data. The pollutant concentrations in the receiving waters are monitored by the District. The two-year average annual (2010 and 2011) pollutant concentration data is detailed in Appendix Table AVII.

CALCULATION AND EVALUATION FOR ALLOWABLE HEADWORKS LOADINGS

The allowable headworks loading (AHL) methodology allows local limits to be developed based on criteria pertaining to WRP operations and performance. The criteria used in local limits development include WRP NPDES permit limits, receiving stream water quality standards, biological process threshold inhibition criteria, and sludge quality standards. The most stringent AHL for each pollutant at each WRP is the maximum allowable pollutant load (MAHL). The MAHL of a WRP is the theoretical recommended amount of a pollutant in pounds per day that the WRP can receive without exceeding effluent, sludge, or process inhibition criteria. The AHL is calculated from the following equations.

Equation 2: AHL Based on NPDES Permit Limits

$$AHL = \frac{C_{NPDES}\, Q_{WRP}\, 8.34}{1 - R_{WRP}}$$

Equation 3: AHL Based on State Water Quality Standards

$$AHL = \frac{[C_{WATERQUAL}\,(Q_{WRP} + Q_{STREAM}) - C_{STREAM} Q_{STREAM}]\, 8.34}{1 - R_{WRP}}$$

Equation 4: AHL Based on Sludge Quality Criteria

$$AHL = \frac{C_{SLUDGE}\, Q_{SLUDGE}\, (PS/100)\, G_{SLUDGE}\, 8.34}{R_{WRP}}$$

Equation 5: AHL Based on Activated Sludge Inhibition Criteria

$$AHL = \frac{C_{AS/INHIBIT}\, Q_{WRP}\, 8.34}{1 - R_{PRI}}$$

Equation 6: AHL Based on Anaerobic Digestion Inhibition Criteria for Conservative Pollutants

$$AHL = \frac{C_{DIG/INHIBIT}\, Q_{DIGESTER}\, 8.34}{R_{WRP}}$$

where,

ALH = Allowable Headworks Loading, lbs/day
C_{NPDES} = Effluent NPDES Permit Concentration Limit, mg/L

$C_{WATERQUAL}$ = Water Quality Standard Concentration, mg/L

C_{STREAM} = Receiving Stream Concentration, mg/L

C_{SLUDGE} = Sludge Quality Standard Concentration, mg/Kg

$C_{AS/INHIBIT}$ = Activated Sludge Inhibition Concentration, mg/L

$C_{DIG/INHIBIT}$ = Anaerobic Digestion Inhibition Concentration, mg/L

Q_{WRP} = WRP Flow, MGD

Q_{STREAM} = Receiving Stream Flow, MGD

Q_{SLUDGE} = Sludge Flow from Digesters (digester draw-off), MGD

$Q_{DIGESTER}$ = Sludge Flow to Digester, MGD

R_{WRP} = Removal Efficiency Across WRP, as a Decimal

R_{PRI} = Removal Efficiency Across Primary Clarifier, as a Decimal

PS = Percent Solids of Sludge

G_{SLUDGE} = Specific Gravity of Sludge $\approx$ 1 Kg/L

8.34 = Unit Conversion Factor

Evaluation of Effluent Quality Based Allowable Headworks Loadings

Allowable pollutant concentrations in a WRP's effluents are specified in the WRP's NPDES permit. Where there are no NPDES permit limits for POCs, the state water quality standards are used. This approach assumes that the effluent must comply with the water quality standards after dilution in the stream. If the discharge is to a flowing stream, determination of the low stream flow available for dilution is needed. The hardness in the receiving stream is used to calculate the State of Illinois General Use Water Quality Standards for copper, cadmium, lead, and total trivalent chromium. The background concentrations of pollutants in the receiving water are established with scheduled sampling and analysis. The evaluation method presented in the 2004 USEPA Guidance (USEPA, 2004a) was used. The 2004 USEPA Guidance provides guidance on establishing the need for local limits after establishing POCs. Once a Control Authority has calculated the MAHLs for all of its POCs, the Control Authority then determines which pollutants will require a local limit. The actual loadings vs. MAHL approach is recommended. This method uses two influent loading comparisons. The first compares the average influent loadings to the MAHLs, establishing local limits where the loadings exceed 60 percent of the MAHLs. The second compares the maximum daily influent loading to the

MAHLs, establishing local limits where the loadings exceed 80 percent of the MAHLs. The maximum daily influent loading is derived using the daily loading data for the period of 2010 to 2011, excluding outliers using the quartile method as recommended in the 2004 USEPA Guidance. In this study, the outliers are defined as the data points that lie 3 times the interquartile range above the third quartile, which is more conservative than 1.5 times as recommended by the USEPA. The maximum daily influent loading is also compared to the acute toxicity based AHL, as it is a one-time loading. Tables 10 through 29 present the evaluations for each POC based on water quality AHL.

Evaluation of Biosolids Quality Based Allowable Headworks Loadings

The allowable pollutant concentrations in WRP influents based on sludge quality are calculated using the limits established for biosolids in the 40 CFR Part 503 Regulation. The pollutant concentration values from Table 3, 40 CFR 503.13 are used in the AHL calculations for all sludge quality related POCs except molybdenum. Molybdenum does not have a criterion in Table 3, 40 CFR 503.13; therefore, it is evaluated against the ceiling concentration in Table 1, 40 CFR 503.13.

As stated previously, the District processes sludge at four separate facilities using anaerobic digestion. Three of the District's WRPs do not process their own sludge on site. The District's WRPs without digesters have their sludge processed at District WRPs with digesters. All of the POCs evaluated for sludge quality are conservative pollutants. An evaluation method presented in the 2004 USEPA Guidance is used (USEPA, 2004a). Tables 30 through 38 present an evaluation for each POC based on sludge quality AHL. The evaluation compares the AHL to the actual loading at the respective WRPs. The actual headwork loading from all WRPs that have their sludge processed at one WRP is summed for the comparison. Further evaluation for local limit determination is necessary when the average influent load is greater than 60 percent of the AHL. In the case of biosolids quality, the criterion that actual maximum daily loading is greater than 80 percent of the AHL to further evaluate local limit is not necessary due to the long residence time of sludge in the digesters as per the 40 CFR Part 503 Regulation and the 2004 USEPA Guidance.

Evaluation of Inhibition Based Allowable Headworks Loadings

Any biological treatment process is potentially subject to toxic inhibition, including the activated sludge process and the anaerobic digestion process. Threshold inhibition levels for these processes are given in the 2004 USEPA Guidance and are summarized in Appendix AIII (USEPA, 2004b). These inhibition concentrations are based on literature information and may vary widely from WRP to WRP. An evaluation method presented in the 2004 USEPA Guidance is used (USEPA, 2004a). An AHL for each pollutant is calculated and compared to the actual loading at each WRP. Further evaluation for local limit determination is necessary when the average influent load is greater than 60 percent of the AHL, or the maximum daily influent load is greater than 80 percent of the AHL. The activated sludge inhibition of carbonaceous and nitrogenous organisms is evaluated in Tables 39 through 50. The anaerobic digestion toxicity

TABLE 10: EFFLUENT WATER QUALITY EVALUATION FOR ARSENIC

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
Concentration Limit, mg/L[1]	NPDES	Daily Limit	n/a*	n/a	n/a	n/a	n/a	n/a	n/a
		Monthly Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity[2]	n/a	0.19	0.19	0.19	n/a	n/a	n/a
		Acute Toxicity[2]	n/a	0.36	0.36	0.36	n/a	n/a	n/a
		Ind. Aquatic Life Use	1.00	n/a	n/a	n/a	1.00	1.00	1.00
AHL, lbs/day[3]	NPDES	Daily Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Monthly Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity	n/a	60.67	26.29	93.13	n/a	n/a	n/a
		Acute Toxicity	n/a	115.0	49.93	176.6	n/a	n/a	n/a
		Ind. Aquatic Life Use	2,199	n/a	n/a	n/a	4,501	2,042	6,789
Water Quality Based Allowable Headworks Loading (WQAHL), lbs/day[4]			2,199	60.67	26.29	93.13	4,501	2,042	6,789

TABLE 10 (Continued): EFFLUENT WATER QUALITY EVALUATION FOR ARSENIC

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
AAIL, (L_{avg}), lbs/day[5]	94.06	7.99	1.55	8.01	0.90	39.22	300.8
AMIL, (L_{max}), lbs/day[5]	181.9	9.82	5.22	19.62	1.81	104.0	869.1
Actual loading vs. WQAHL							
% L_{avg} /WQAHL[6]	4	13	6	9	< 1	2	4
% L_{max} /WQAHL[7]	8	16	20	21	< 1	5	13
%L_{max}/AHL Acute Toxicity[8]	n/a	9	10	11	n/a	n/a	n/a
Further Local Limit Evaluation Recommended	no	no	no	no	no	no	no

*n/a = Not applicable.

[1]Concentration limit determined from State of Illinois NPDES permit for each WRP and State of Illinois water quality standards in the respective receiving waters.

[2]Average hardness from applicable receiving waters during 2010 - 2011 was used to calculate water quality standards in soluble form; these standards were converted from soluble to total metal concentration using C_f in Appendix Table A1-3 before calculating the allowable headworks loading (AHL).

[3]AHL (Allowable Headworks Loading) is calculated using equation 2 or equation 3.

[4]WQAHL is the lowest calculated allowable headworks loading for each WRP.

[5]AAIL = Actual Average Influent Loading. Average flow and POC concentration of 2010 and 2011 data are used; AMIL = Actual Maximum Influent Loading. Daily flow and POC concentration of 2010 and 2011 data, when available, are used excluding outliers.

[6]When % L_{avg} /WQAHL is greater than 60 percent, further local limit evaluation is recommended; otherwise none.

[7]When % L_{max} /WQAHL is greater than 80 percent, further local limit evaluation is recommended; otherwise none.

[8]When % L_{max} /WQAHL is greater than 80 percent based on chronic, %L_{max}/AHL Acute Toxicity may be estimated and if < 80%, no limit may be necessary.

TABLE 11: EFFLUENT WATER QUALITY EVALUATION FOR CADMIUM

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
Concentration Limit, mg/L[1]	NPDES	Daily Limit	Report**	n/a*	n/a	n/a	n/a	Report	Report
		Monthly Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity[2]	n/a	0.00208	0.002	0.00242	n/a	n/a	n/a
		Acute Toxicity[2]	n/a	0.0257	0.0277	0.0323	n/a	n/a	n/a
		Ind.Aquatic Life Use	0.15	n/a	n/a	n/a	0.15	0.15	0.15
AHL, lbs/day[3]	NPDES	Daily Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Monthly Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity	n/a	1.28	0.31	1.01	n/a	n/a	n/a
		Acute Toxicity	n/a	15.13	3.77	12.74	n/a	n/a	n/a
		Ind. Aquatic Life Use	764.3	n/a	n/a	n/a	1,602	341.8	48,453
Water Quality Based Allowable Headworks Loading (WQAHL), lbs/day[4]			764.3	1.28	0.31	1.01	1,602	341.8	48,453

TABLE 11 (Continued): EFFLUENT WATER QUALITY EVALUATION FOR CADMIUM

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
AAIL, (L_{avg}), lbs/day[5]	2.09	0.23	0.08	0.32	0.02	1.96	42.11
AMIL, (L_{max}), lbs/day[5]	5.39	0.39	0.23	0.79	0.04	3.74	157.36
Actual loading vs. WQAHL							
% L_{avg} /WQAHL[6]	< 1	18	26	32	< 1	< 1	< 1
% L_{max} /WQAHL[7]	1	30	74	78	< 1	1	< 1
%L_{max}/AHL Acute Toxicity[8]	n/a	3	6	6	n/a	n/a	n/a
Further Local Limit Evaluation Recommended	no	no	no	no	no	no	no

*n/a = Not applicable.

**Report = report maximum on DMR.

[1]Concentration limit determined from State of Illinois NPDES permit for each WRP and State of Illinois water quality standards in the respective receiving waters.

[2]Average hardness from applicable receiving waters during 2010 - 2011 was used to calculate quality standards; these standards were converted from soluble to total metal concentration using C_f in Table 1 (The Metals Translator: Guidance For Calculating A Total Recoverable Permit Limit From A Dissolved Criterion (EPA 823-B-96-007) before calculating the allowable headworks loading (AHL) (USEPA, 1996).

[3]AHL (Allowable Headworks Loading) is calculated using equation 2 or equation 3.

[4]WQAHL is the lowest calculated allowable headworks loading for each WRP.

[5]AAIL = Actual Average Influent Loading. Average flow and POC concentration of 2010 and 2011 data are used; AMIL = Actual Maximum Influent Loading. Daily flow and POC concentration of 2010 and 2011 data, when available, are used excluding outliers.

[6]When % L_{avg} /WQAHL is greater than 60 percent, further local limit evaluation is recommended; otherwise none.

[7]When % L_{max} /WQAHL is greater than 80 percent, further local limit evaluation is recommended; otherwise none.

[8]When % L_{max} /WQAHL is greater than 80 percent based on chronic, %L_{max}/AHL Acute Toxicity may be estimated and if < 80%, no limit may be necessary.

TABLE 12: EFFLUENT WATER QUALITY EVALUATION FOR CHROMIUM, TRIVALENT

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
Concentration Limit, mg/L[1]	NPDES	Daily Limit	n/a*	n/a	n/a	n/a	n/a	n/a	n/a
		Monthly Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity[2]	n/a	0.387	0.409	0.459	n/a	n/a	n/a
		Acute Toxicity[2]	n/a	1.19	1.26	1.42	n/a	n/a	n/a
		Ind. Aquatic Life Use	1.00	n/a	n/a	n/a	1.00	1.00	1.00
AHL, lbs/day[3]	NPDES	Daily Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Monthly Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity	n/a	238.7	159.5	397.6	n/a	n/a	n/a
		Acute Toxicity	n/a	2,002	1,338	3,336	n/a	n/a	n/a
		Ind. Aquatic Life Use	6,529	n/a	n/a	n/a	7,258	3,267	38,005
Water Quality Based Allowable Headworks Loading (WQAHL), lbs/day[4]			6,529	238.7	159.5	397.6	7,258	3,267	38,005

TABLE 12 (Continued): EFFLUENT WATER QUALITY EVALUATION FOR CHROMIUM, TRIVALENT

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
AAIL. (L_{avg}), lbs/day[5]	12.54	2.05	0.77	3.20	0.08	19.61	284.3
AMIL, (L_{max}), lbs/day[5]	46.05	3.94	2.25	8.31	0.39	38.22	1,233
Actual loading vs. WQAHL							
% L_{avg} /WQAHL[6]	< 1	1	< 1	1	< 1	1	1
% L_{max} /WQAHL[7]	1	2	1	2	< 1	1	3
%L_{max}/AHL Acute Toxicity[8]	n/a	n/a	< 1	< 1	< 1	n/a	n/a
Further Local Limit Evaluation Recommended	no	no	no	no	no	no	no

*n/a = Not applicable.

[1]Concentration limit determined from State of Illinois NPDES permit for each WRP and State of Illinois water quality standards in the respective receiving waters.

[2]Average hardness from applicable receiving waters during 2010 - 2011 was used to calculate quality standards; these standards were converted from soluble to total metal concentration using C_f in Table 1 (The Metals Translator: Guidance For Calculating A Total Recoverable Permit Limit From A Dissolved Criterion (EPA 823-B-96-007) before calculating the allowable headworks loading (AHL) (USEPA, 1996).

[3]AHL (Allowable Headworks Loading) is calculated using equation 2 or equation 3; R_{WRP} assumed to be same as total chromium.

[4]WQAHL is the lowest calculated allowable headworks loading for each WRP.

[5]AAIL = Actual Average Influent Loading. Average flow and POC concentration of 2010 and 2011 data are used; AMIL = Actual Maximum Influent Loading. Daily flow and POC concentration of 2010 and 2011 data, when available, are used excluding outliers.

[6]When % L_{avg} /WQAHL is greater than 60 percent, further local limit evaluation is recommended; otherwise none.

[7]When % L_{max} /WQAHL is greater than 80 percent, further local limit evaluation is recommended; otherwise none.

[8]When % L_{max} /WQAHL is greater than 80 percent based on chronic, %L_{max}/AHL Acute Toxicity may be estimated and if < 80%, no limit may be necessary.

TABLE 13: EFFLUENT WATER QUALITY EVALUATION FOR HEXAVALENT CHROMIUM

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
Concentration Limit, mg/L[1]	NPDES	Daily Limit	n/a*	n/a	n/a	n/a	38	4.69	38
		Monthly Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity	n/a	0.011	0.011	0.011	n/a	n/a	n/a
		Acute Toxicity	n/a	0.016	0.016	0.016	n/a	n/a	n/a
		Ind. Aquatic Life Use	0.30	n/a	n/a	n/a	0.30	0.30	0.30
AHL, lbs/day[2]	NPDES	Daily Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Monthly Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity	34.46	10.46	16.98	14.68	n/a	n/a	n/a
		Acute Toxicity	49.89	15.21	24.70	21.35	n/a	n/a	n/a
		Ind. Aquatic Life Use	935.5	n/a	n/a	n/a	2,557	2,450	8,061
Water Quality Based Allowable Headworks Loading (WQAHL), lbs/day[3]			935.5	10.46	16.98	14.68	2,557	2,450	8,061

TABLE 13 (Continued): EFFLUENT WATER QUALITY EVALUATION FOR HEXAVALENT CHROMIUM

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
AAIL, (L_{avg}), lbs/day[4]	16.72	1.83	0.78	3.20	0.16	19.61	48.13
AMIL, (L_{max}), lbs/day[4]	20.90	2.29	0.78	3.20	0.25	19.61	60.16
Actual loading vs. WQAHL							
% L_{avg} /WQAHL[5]	2	17	5	22	< 1	1	1
% L_{max} /WQAHL[6]	2	22	5	22	< 1	1	1
%L_{max}/AHL Acute Toxicity[7]	n/a	15	3	5	n/a	n/a	n/a
Further Local Limit Evaluation Recommended	no	no	no	no	no	no	no

*n/a = Not applicable.

[1]Concentration limit determined from State of Illinois NPDES permit for each WRP and State of Illinois water quality standards in the respective receiving waters.

[2]AHL (Allowable Headworks Loading) is calculated using equation 2 or equation 3.

[3]WQAHL is the lowest calculated allowable headworks loading for each WRP.

[4]AAIL = Actual Average Influent Loading. Average flow and POC concentration of 2010 and 2011 data are used; AMIL = Actual Maximum Influent Loading. Daily flow and POC concentration of 2010 and 2011 data, when available, are used excluding outliers.

[5]When % L_{avg} /WQAHL is greater than 60 percent, further local limit evaluation is recommended; otherwise none.

[6]When % L_{max} /WQAHL is greater than 80 percent, further local limit evaluation is recommended; otherwise none.

[7]When % L_{max} /WQAHL is greater than 80 percent based on chronic, %L_{max}/AHL Acute Toxicity may be estimated and if < 80%, no limit may be necessary.

TABLE 14: EFFLUENT WATER QUALITY EVALUATION FOR COPPER

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
Concentration Limit, mg/L[1]	NPDES	Daily Limit	n/a*	n/a	0.035	n/a	n/a	n/a	n/a
		Monthly Limit	n/a	n/a	0.022	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity[2]	n/a	0.0255	0.0270	0.0305	n/a	n/a	n/a
		Acute Toxicity[2]	n/a	0.0416	0.0443	0.0506	n/a	n/a	n/a
		Ind. Aquatic Life Use	1.0	n/a	n/a	n/a	1.0	1.0	1.0
AHL, lbs/day[3]	NPDES	Daily Limit	n/a	n/a	19.30	n/a	n/a	n/a	n/a
		Monthly Limit	n/a	n/a	12.13	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity	n/a	67.75	17.53	127.8	n/a	n/a	n/a
		Acute Toxicity	n/a	109.03	28.72	211.0	n/a	n/a	n/a
		Ind. Aquatic Life Use	20,892	n/a	n/a	n/a	29,092	13,066	58,718
Water Quality Based Allowable Headworks Loading (WQAHL), lbs/day[4]			20,892	67.75	12.13	127.8	29,092	13,066	58,718

TABLE 14 (Continued): EFFLUENT WATER QUALITY EVALUATION FOR COPPER

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
AAIL, (L_{avg}), lbs/day[5]	84.66	15.52	5.02	25.47	1.35	83.34	848.3
AMIL, (L_{max}), lbs/day[5]	242.1	36.80	10.28	48.23	2.88	174.11	2,972
Actual loading vs. WQAHL							
% L_{avg} /WQAHL[6]	<1	23	41	20	<1	1	1
% L_{max} /WQAHL[7]	1	54	85	38	<1	1	5
%L_{max}/AHL Acute Toxicity[8]	n/a	34	36	23	n/a	n/a	n/a
Further Local Limit Evaluation Recommended	no	no	no	no	no	no	no

*n/a = Not applicable.

[1]Concentration limit determined from State of Illinois NPDES permit for each WRP and State of Illinois water quality standards in the respective receiving waters.

[2]Average hardness from applicable receiving waters during 2010 - 2011 was used to calculate quality standards; these standards were converted from soluble to total metal concentration using C_f in Appendix Table A1-3 before calculating the allowable headworks loading (AHL).

[3]AHL (Allowable Headworks Loading) is calculated using equation 2 or equation 3.

[4]WQAHL is the lowest calculated allowable headworks loading for each WRP.

[5]AAIL = Actual Average Influent Loading. Average flow and POC concentration of 2010 and 2011 data are used; AMIL = Actual Maximum Influent Loading. Daily flow and POC concentration of 2010 and 2011 data, when available, are used excluding outliers.

[6]When % L_{avg} /WQAHL is greater than 60 percent, further local limit evaluation is recommended; otherwise none.

[7]When % L_{max} /WQAHL is greater than 80 percent, further local limit evaluation is recommended; otherwise none.

[8]When % L_{max} /WQAHL is greater than 80 percent based on chronic, %L_{max}/AHL Acute Toxicity may be estimated and if < 80%, no limit may be necessary.

TABLE 15: EFFLUENT WATER QUALITY EVALUATION FOR LEAD

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
Concentration Limit, mg/L[1]	NPDES	Daily Limit	n/a*	n/a	n/a	n/a	n/a	n/a	n/a
		Monthly Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity[2]	n/a	0.0438	0.0470	0.0545	n/a	n/a	n/a
		Acute Toxicity[2]	n/a	0.209	0.224	0.260	n/a	n/a	n/a
		Ind. Aquatic Life Use	0.10	n/a	n/a	n/a	0.10	0.10	0.10
AHL, lbs/day[3]	NPDES	Daily Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Monthly Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity	n/a	20.07	12.99	29.10	n/a	n/a	n/a
		Acute Toxicity	n/a	95.80	61.75	138.79	n/a	n/a	n/a
		Ind. Aquatic Life Use	348.20	n/a	n/a	n/a	588.4	455.8	1,099
Water Quality Based Allowable Headworks Loading (WQAHL), lbs/day[4]			348.20	20.07	12.99	29.10	588.4	455.8	1,099

TABLE 15 (Continued): EFFLUENT WATER QUALITY EVALUATION FOR LEAD

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
AAIL, (L_{avg}), lbs/day[5]	41.81	4.56	1.54	6.41	0.40	39.22	315.9
AMIL, (L_{max}), lbs/day[5]	142.4	7.53	4.51	13.94	1.15	75.10	1,242
Actual loading vs. WQAHL							
% L_{avg} /WQAHL[6]	12	23	12	22	< 1	9	29
% L_{max} /WQAHL[7]	41	38	35	48	< 1	16	113
%L_{max}/AHL Acute Toxicity[8]	n/a	8	7	10	n/a	n/a	n/a
Further Local Limit Evaluation Recommended	no	no	no	no	no	no	yes

*n/a = Not applicable.

[1]Concentration limit determined from State of Illinois NPDES permit for each WRP and State of Illinois water quality standards in the respective receiving waters.

[2]Average hardness from applicable receiving waters during 2010 - 2011 was used to calculate quality standards; these standards were converted from soluble to total metal concentration using C_f in Appendix Table A1-3 before calculating the allowable headworks loading (AHL).

[3] AHL (Allowable Headworks Loading) is calculated using equation 2 or equation 3.

[4]WQAHL is the lowest calculated allowable headworks loading for each WRP.

[5]AAIL = Actual Average Influent Loading. Average flow and POC concentration of 2010 and 2011 data are used; AMIL = Actual Maximum Influent Loading. Daily flow and POC concentration of 2010 and 2011 data, when available, are used excluding outliers.

[6]When % L_{avg} /WQAHL is greater than 60 percent, further local limit evaluation is recommended; otherwise none.

[7]When % L_{max} /WQAHL is greater than 80 percent, further local limit evaluation is recommended; otherwise none.

[8]When % L_{max} /WQAHL is greater than 80 percent based on chronic, %L_{max}/AHL Acute Toxicity may be estimated and if < 80%, no limit may be necessary.

TABLE 16-1: EFFLUENT WATER QUALITY EVALUATION FOR SOLUBLE IRON

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
Concentration Limit, mg/L[1]	NPDES	Daily Limit	n/a*	n/a	n/a	n/a	n/a	n/a	n/a
		Monthly Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Acute Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Single value	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Ind. Aquatic Life Use[2]	0.5	n/a	n/a	n/a	0.5	0.5	0.5
AHL, lbs/day[3]	NPDES	Daily Limit							
		Monthly Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Acute Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Single value	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Ind. Aquatic Life Use	2,600	n/a	n/a	n/a	629.9	1,380	5,794
Water Quality Based Allowable Headworks Loading (WQAHL), lbs/day[4]			2,600	n/a	n/a	n/a	629.9	1,380	5,794

TABLE 16-1 (Continued): EFFLUENT WATER QUALITY EVALUATION FOR SOLUBLE IRON

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
AAIL, (L_{avg}), lbs/day[5]	208.9	n/a	n/a	n/a	2.6	205.9	1,772
AMIL, (L_{max}), lbs/day[5]	585.0	n/a	n/a	n/a	11.5	470.6	3,415
Actual loading vs. WQAHL							
% L_{avg} /WQAHL[6]	8	n/a	n/a	n/a	< 1	15	31
% L_{max} /WQAHL[7]	22	n/a	n/a	n/a	2	34	59
Further Local Limit Evaluation Recommended	no	no	no	no	no	no	no

*n/a = Not applicable.

[1]Concentration limit determined from State of Illinois NPDES permit for each WRP and State of Illinois water quality standards in the respective receiving waters.

[2]Standard in soluble form.

[3]AHL (Allowable Headworks Loading) is calculated using equation 2 or equation 3.

[4]WQAHL is the lowest calculated allowable headworks loading for each WRP.

[5]AAIL = Actual Average Influent Loading. Average flow and POC concentration of 2010 and 2011 data are used; AMIL = Actual Maximum Influent Loading. Daily flow and POC concentration of 2010 and 2011 data, when available, are used excluding outliers.

[6]When % L_{avg} /WQAHL is greater than 60 percent, further local limit evaluation is recommended; otherwise none.

[7]When % L_{max} /WQAHL is greater than 80 percent, further local limit evaluation is recommended; otherwise none.

TABLE 16-2: EFFLUENT WATER QUALITY EVALUATION FOR TOTAL IRON

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
Concentration Limit, mg/L[1]	NPDES	Daily Limit	n/a*	n/a	n/a	n/a	n/a	n/a	n/a
		Monthly Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Acute Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Single value[2]	n/a	1.0	1.0	1.0	n/a	n/a	n/a
		Ind. Aquatic Life Use[2]	2.0	n/a	n/a	n/a	2.0	2.0	2.0
AHL, lbs/day[3]	NPDES	Daily Limit							
		Monthly Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Acute Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Single value	n/a	7,603	1,930	6,405	n/a	n/a	n/a
		Ind. Aquatic Life Use	83,567	n/a	n/a	n/a	77,521	65,330	427,462
Water Quality Based Allowable Headworks Loading (WQAHL), lbs/day[4]			83,567	7,603	1,930	6,405	77,521	65,330	427,462

TABLE 16-2 (Continued): EFFLUENT WATER QUALITY EVALUATION FOR TOTAL IRON

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
AAIL, (L_{avg}), lbs/day[5]	4,964	350.3	63.3	455.0	22.33	2,147	40,174
AMIL, (L_{max}), lbs/day[5]	16,904	712.6	144.5	1,072	55.9	6,328	149,341
Actual loading vs. WQAHL							
% L_{avg} /WQAHL[6]	6	5	3	7	< 1	3	9
% L_{max} /WQAHL[7]	20	9	7	17	< 1	10	35
Further Local Limit Evaluation Recommended	no	no	no	no	no	no	no

*n/a = Not applicable.

[1]Concentration limit determined from State of Illinois NPDES permit for each WRP and State of Illinois water quality standards in the respective receiving waters.

[2]Single value limit which is separate from the acute standard and is not to be exceeded at any time.

[3]AHL (Allowable Headworks Loading) is calculated using equation 2 or equation 3.

[4]WQAHL is the lowest calculated allowable headworks loading for each WRP.

[5]AAIL = Actual Average Influent Loading. Average flow and POC concentration of 2010 and 2011 data are used; AMIL = Actual Maximum Influent Loading. Daily flow and POC concentration of 2010 and 2011 data, when available, are used excluding outliers.

[6]When % L_{avg} /WQAHL is greater than 60 percent, further local limit evaluation is recommended; otherwise none.

[7]When % L_{max} /WQAHL is greater than 80 percent, further local limit evaluation is recommended; otherwise none.

TABLE 17: EFFLUENT WATER QUALITY EVALUATION FOR FLUORIDE

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
Concentration Limit, mg/L[1]	NPDES	Daily Limit	n/a*	n/a	n/a	n/a	n/a	n/a	n/a
		Monthly Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity	n/a	4.0	4.0	4.0	n/a	n/a	n/a
		Acute Toxicity	n/a	16.8	17.4	18.8	n/a	n/a	n/a
		Ind. Aquatic Life Use	15.0	n/a	n/a	n/a	15.0	15.0	15.0
AHL, lbs/day[2]	NPDES	Daily Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Monthly Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity	n/a	1,037	331.9	1,664	n/a	n/a	n/a
		Acute Toxicity	n/a	4,346	1,392	7,806	n/a	n/a	n/a
		Ind. Aquatic Life Use	33,338	n/a	n/a	n/a	65,294	31,611	106,300
Water Quality Based Allowable Headworks Loading (WQAHL), lbs/day[3]			33,338	1,037	331.9	1,664	65,294	31,611	106,300

TABLE 17 (Continued): EFFLUENT WATER QUALITY EVALUATION FOR FLUORIDE

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
AAIL, (L_{avg}), lbs/day[4]	1,495	204.6	53.93	275.6	17.52	1,520	4,888
AMIL, (L_{max}), lbs/day[4]	2,478	289.0	87.00	367.4	23.72	1,909	6,771
Actual loading vs. WQAHL							
% L_{avg} /WQAHL[5]	4	20	16	17	< 1	5	5
% L_{max} /WQAHL[6]	7	28	26	22	< 1	6	6
%L_{max}/AHL Acute Toxicity[7]	n/a	7	6	5	n/a	n/a	n/a
Further Local Limit Evaluation Recommended	none	none	none	none	none	none	none

*n/a = Not applicable.

[1]Concentration limit determined from State of Illinois NPDES permit for each WRP and State of Illinois water quality standards in the respective receiving waters.

[2]AHL (Allowable Headworks Loading) is calculated using equation 2 or equation 3.

[3]WQAHL is the lowest calculated allowable headworks loading for each WRP.

[4]AAIL = Actual Average Influent Loading. Average flow and POC concentration of 2010 and 2011 data are used; AMIL = Actual Maximum Influent Loading. Daily flow and POC concentration of 2010 and 2011 data, when available, are used excluding outliers.

[5]When % L_{avg} /WQAHL is greater than 60 percent, further local limit evaluation is recommended; otherwise none.

[6]When % L_{max} /WQAHL is greater than 80 percent, further local limit evaluation is recommended; otherwise none.

[7]When % L_{max} /WQAHL is greater than 80 percent based on chronic, %L_{max}/AHL Acute Toxicity may be estimated and if < 80%, no limit may be necessary.

TABLE 18: EFFLUENT WATER QUALITY EVALUATION FOR MERCURY

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
Concentration Limit, mg/L[1]	NPDES	Daily Limit	n/a*	n/a	n/a	n/a	n/a	n/a	n/a
		Monthly Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity[2]	n/a	0.0011	0.0011	0.0011	n/a	n/a	n/a
		Acute Toxicity[2]	n/a	0.0022	0.0022	0.0022	n/a	n/a	n/a
		Human Health[3]	n/a	0.012	0.012	0.012	n/a	n/a	n/a
		Ind. Aquatic Life Use	0.0005	n/a	n/a	n/a	0.0005	0.0005	0.0005
AHL, lbs/day[4]	NPDES	Daily Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Monthly Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity	n/a	1.85	0.56	2.60	n/a	n/a	n/a
		Acute Toxicity	n/a	3.71	1.11	5.20	n/a	n/a	n/a
		Human Health	n/a	0.02	0.0052	0.024	n/a	n/a	n/a
		Ind. Aquatic Life Use	13.06	n/a	n/a	n/a	15.74	5.76	5.39
Water Quality Based Allowable Headworks Loading (WQAHL), lbs/day[5]			13.06	0.02	0.0052	0.024	15.74	5.76	5.39

TABLE 18 (Continued): EFFLUENT WATER QUALITY EVALUATION FOR MERCURY

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
AAIL, (L_{avg}), lbs/day[6]	0.42	0.05	0.02	0.06	0.004	0.39	1.96
AMIL, (L_{max}), lbs/day[6]	1.30	0.08	0.04	0.13	0.01	0.73	6.97
Actual loading vs. WQAHL							
% L_{avg} /WQAHL[7]	3	250	385	250	< 1	7	36
% L_{max} /WQAHL[8]	16	400	769	542	< 1	13	129
%L_{max}/AHL-Acute Toxicity[9]	n/a	2	4	3	n/a	n/a	n/a
Further Local Limit Evaluation Recommended	no	yes	yes	yes	no	no	yes

*n/a = Not applicable.

[1]Concentration limit determined from State of Illinois NPDES permit for each WRP and State of Illinois water quality standards in the respective receiving waters.

[2]Average hardness from applicable receiving waters during 2010 - 2011 was used to calculate quality standards; these standards were converted to total metal concentration using C_f in Table 1 (The Metals Translator: Guidance For Calculating A Total Recoverable Permit Limit From A Dissolved Criterion (EPA 823-B-96-007) before calculating the allowable headworks loading (AHL) (USEPA, 1996).

[3]Single value limit which is separate from the acute standard and is not to be exceeded at any time, standard limit in µg/L.

[4]AHL = (Allowable Headworks Loading) is calculated using equation 2 or equation 3.

[5]WQAHL is the lowest calculated allowable headworks loading for each WRP.

[6]AAIL = Actual Average Influent Loading. Average flow and POC concentration of 2010 and 2011 data are used; AMIL = Actual Maximum Influent Loading. Daily flow and POC concentration of 2010 and 2011 data, when available, are used excluding outliers.

[7]When % L_{avg} /WQAHL is greater than 60 percent, further local limit evaluation is recommended; otherwise none.

[8]When % L_{max} /WQAHL is greater than 80 percent, further local limit evaluation is recommended; otherwise none.

[9]When % L_{max} /WQAHL is greater than 80 percent based on chronic, %L_{max}/AHL Acute Toxicity may be estimated and if < 80%, no limit may be necessary.

TABLE 19: EFFLUENT WATER QUALITY EVALUATION FOR NICKEL

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
Concentration Limit, mg/L[1]	NPDES	Daily Limit	n/a*	n/a	n/a	n/a	n/a	n/a	n/a
		Monthly Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity[2]	n/a	0.0111	0.0118	0.0133	n/a	n/a	n/a
		Acute Toxicity[2]	n/a	0.184	0.194	0.219	n/a	n/a	n/a
		Ind. Aquatic Life Use	1.00	n/a	n/a	n/a	1.00	1.00	1.00
AHL, lbs/day[3]	NPDES	Daily Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Monthly Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity	n/a	6.66	2.04	10.10	n/a	n/a	n/a
		Acute Toxicity	n/a	110.5	33.42	166.5	n/a	n/a	n/a
		Ind. Aquatic Life Use	3,214	n/a	n/a	n/a	5,535	2,579	16,568
Water Quality Based Allowable Headworks Loading (WQAHL), lbs/day[4]			3,214	6.66	2.04	10.10	5,535	2,579	16,568

TABLE 19 (Continued): EFFLUENT WATER QUALITY EVALUATION FOR NICKEL

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
AAIL, (L_{avg}), lbs/day[5]	13.59	3.88	0.42	4.17	0.08	9.80	141.4
AMIL, (L_{max}), lbs/day[5]	36.59	9.95	1.13	10.50	0.31	25.11	451.7
Actual loading vs. WQAHL							
% L_{avg} /WQAHL[6]	< 1	58	21	41	< 1	< 1	1
% L_{max} /WQAHL[7]	1	149	55	104	< 1	1	3
%L_{max}/AHL Acute Toxicity[8]	n/a	9	3	6	n/a	n/a	n/a
Further Local Limit Evaluation Recommended	no	yes	no	yes	no	no	no

*n/a = Not applicable.

[1]Concentration limit determined from State of Illinois NPDES permit for each WRP and State of Illinois water quality standards in the respective receiving waters.

[2]Average hardness from applicable receiving waters during 2010 - 2011 was used to calculate quality standards; these standards were converted from soluble to total metal concentration using C_f in Appendix Table A1-3 before calculating the allowable headworks loading (AHL).

[3]AHL (Allowable Headworks Loading) is calculated using equation 2 or equation 3.

[4]WQAHL is the lowest calculated allowable headworks loading for each WRP.

[5]AAIL = Actual Average Influent Loading. Average flow and POC concentration of 2010 and 2011 data are used; AMIL = Actual Maximum Influent Loading. Daily flow and POC concentration of 2010 and 2011 data, when available, are used excluding outliers.

[6]When % L_{avg} /WQAHL is greater than 60 percent, further local limit evaluation is recommended; otherwise none.

[7]When % L_{max} /WQAHL is greater than 80 percent, further local limit evaluation is recommended; otherwise none.

[8]When % L_{max} /WQAHL is greater than 80 percent based on chronic, %L_{max}/AHL Acute Toxicity may be estimated and if < 80%, no limit may be necessary.

TABLE 20: EFFLUENT WATER QUALITY EVALUATION FOR SELENIUM

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
Concentration Limit, mg/L[1]	NPDES	Daily Limit	n/a*	n/a	n/a	n/a	n/a	n/a	n/a
		Monthly Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Acute Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Single Value[2]	n/a	1.00	1.00	1.00	n/a	n/a	n/a
		Ind. Aquatic Life Use	1.00	n/a	n/a	n/a	1.00	1.00	1.00
AHL, lbs/day[3]	NPDES	Daily Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Monthly Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Acute Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Single Value	n/a	288.7	135.4	372.4	n/a	n/a	n/a
		Ind. Aquatic Life Use	4,393	n/a	n/a	n/a	141,539	2,279	9,138
Water Quality Based Allowable Headworks Loading (WQAHL), lbs/day[4]			4,393	288.7	135.4	372.4	141,539	2,279	9,138

TABLE 20 (Continued): EFFLUENT WATER QUALITY EVALUATION FOR SELENIUM

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
AAIL, (L_{avg}), lbs/day[5]	10.45	1.49	0.50	2.24	0.10	12.75	244.4
AMIL, (L_{max}), lbs/day[5]	22.13	4.43	1.88	8.19	0.19	40.94	1,233
Actual loading vs. WQAHL							
% L_{avg} /WQAHL[6]	< 1	< 1	< 1	< 1	< 1	< 1	3
% L_{max} /WQAHL[7]	< 1	2	1	2	< 1	2	13
Further Local Limit Evaluation Recommended	no	no	no	no	no	no	no

*n/a = Not applicable.

[1]Concentration limit determined from State of Illinois NPDES permit for each WRP and State of Illinois water quality standards in the respective receiving waters.

[2]Single value limit which is separate from the acute standard and is not to be exceeded at any time.

[3]AHL (Allowable Headworks Loading) is calculated using equation 2 or equation 3.

[4]WQAHL is the lowest calculated allowable headworks loading for each WRP.

[5]AAIL = Actual Average Influent Loading. Average flow and POC concentration of 2010 and 2011 data are used; AMIL = Actual Maximum Influent Loading. Daily flow and POC concentration of 2010 and 2011 data, when available, are used excluding outliers.

[6]When % L_{avg} /WQAHL is greater than 60 percent, further local limit evaluation is recommended; otherwise none.

[7]When % L_{max} /WQAHL is greater than 80 percent, further local limit evaluation is recommended; otherwise none.

TABLE 21: EFFLUENT WATER QUALITY EVALUATION FOR SILVER

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
Concentration Limit, mg/L[1]	NPDES	Daily Limit	n/a*	n/a	n/a	n/a	n/a	n/a	n/a
		Monthly Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Acute Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Single Value[2]	n/a	0.005	0.005	0.005	n/a	n/a	n/a
		Ind. Aquatic Life Use	1.1	n/a	n/a	n/a	1.1	1.1	1.1
AHL, lbs/day[3]	NPDES	Daily Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Monthly Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Acute Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Single Value	n/a	3.08	1.75	3.08	n/a	n/a	n/a
		Ind. Aquatic Life Use	3,283	n/a	n/a	n/a	6,817	3,593	11,108
Water Quality Based Allowable Headworks Loading (WQAHL), lbs/day[4]			3,283	3.08	1.75	3.08	6,817	3,593	11,108

TABLE 21 (Continued): EFFLUENT WATER QUALITY EVALUATION FOR SILVER

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
AAIL, (L_{avg}), lbs/day[5]	4.18	0.46	0.23	0.96	0.02	3.92	19.55
AMIL, (L_{max}), lbs/day[5]	15.16	0.87	0.49	2.10	0.21	7.52	84.20
Actual loading vs. WQAHL							
% L_{avg} /WQAHL[6]	< 1	15	13	31	< 1	< 1	< 1
% L_{max} /WQAHL[7]	< 1	28	28	68	< 1	< 1	1
Further Local Limit Evaluation Recommended	no	no	no	no	no	no	no

*n/a = Not applicable.

[1]Concentration limit determined from State of Illinois NPDES permit for each WRP and State of Illinois water quality criteria standards in the respective receiving waters.

[2] Single value limit which is separate from the acute standard and is not to be exceeded at any time.

[3]AHL (Allowable Headworks Loading) is calculated using equation 2 or equation 3.

[4]WQAHL is the lowest allowable headworks loading for each WRP.

[5]AAIL = Actual Average Influent Loading. Average flow and POC concentration of 2010 and 2011 data are used; AMIL = Actual Maximum Influent Loading. Daily flow and POC concentration of 2010 and 2011 data, when available, are used excluding outliers.

[6]When percent L_{avg} /WQAHL is greater than 60 percent further local limit evaluation is recommended; otherwise none.

[7]When percent L_{max} /WQAHL is greater than 80 percent further local limit evaluation is recommended; otherwise none.

TABLE 22: EFFLUENT WATER QUALITY EVALUATION FOR ZINC

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
Concentration Limit, mg/L[1]	NPDES	Daily Limit	n/a*	n/a	n/a	n/a	n/a	n/a	n/a
		Monthly Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity[2]	n/a	0.0698	0.0739	0.0833	n/a	n/a	n/a
		Acute Toxicity[2]	n/a	0.267	0.282	0.318	n/a	n/a	n/a
		Ind. Aquatic Life Use	1.00	n/a	n/a	n/a	1.00	1.00	1.00
AHL, lbs/day[3]	NPDES	Daily Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Monthly Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	State r Water	Chronic Toxicity	n/a	65.33	25.83	108.5	n/a	n/a	n/a
		Acute Toxicity	n/a	250.0	98.57	414.0	n/a	n/a	n/a
		Ind. Aquatic Life Use	17,410	n/a	n/a	n/a	12,852	5,297	46,046
Water Quality Based Allowable Headworks Loading (WQAHL), lbs/day[4]			17,410	65.33	25.83	108.5	12,852	5,297	46,046

TABLE 22 (Continued): EFFLUENT WATER QUALITY EVALUATION FOR ZINC

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
AAIL, (L_{avg}), lbs/day[5]	595.7	22.25	7.18	42.46	2.60	164.7	2,143
AMIL, (L_{max}), lbs/day[5]	2,007	47.07	13.18	80.79	5.18	355.2	8,616
Actual loading vs. WQAHL							
% L_{avg} /WQAHL[6]	3	34	28	39	< 1	3	5
% L_{max} /WQAHL[7]	13	72	51	74	< 1	7	19
%L_{max}/AHL Acute Toxicity[8]	n/a	19	13	20	n/a	n/a	n/a
Further Local Limit Evaluation Recommended	no	no	no	no	no	no	no

*n/a = Not applicable.

[1]Concentration limit determined from State of Illinois NPDES permit for each WRP and State of Illinois water quality standards in the respective receiving waters.

[2]Average hardness from applicable receiving waters during 2010 - 2011 was used to calculate quality standards; these standards were converted from soluble to total metal concentration using C_f in Appendix Table A1-3 before calculating the allowable headworks loading (AHL).

[3]AHL (Allowable Headworks Loading) is calculated using equation 2 or equation 3.

[4]WQAHL is the lowest calculated allowable headworks loading for each WRP.

[5]AAIL = Actual Average Influent Loading. Average flow and POC concentration of 2010 and 2011 data are used; AMIL = Actual Maximum Influent Loading. Daily flow and POC concentration of 2010 and 2011 data, when available, are used excluding outliers.

[6]When % L_{avg} /WQAHL is greater than 60 percent, further local limit evaluation is recommended; otherwise none.

[7]When % L_{max} /WQAHL is greater than 80 percent, further local limit evaluation is recommended; otherwise none.

[8]When % L_{max} /WQAHL is greater than 80 percent based on chronic, %L_{max}/AHL Acute Toxicity may be estimated and if < 80%, no limit may be necessary.

TABLE 23: EFFLUENT WATER QUALITY EVALUATION FOR AMMONIA

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
Concentration Limit, mg/L[1]	NPDES	Daily Limit	5.0	3.0	6.5	4.7	5.0	5.0	5.0
		Monthly Limit	2.5	1.5	1.5	1.5	2.5	2.5	2.5
	State Water	Chronic Toxicity[2]	n/a*	4.08	3.89	3.29	n/a	n/a	n/a
		Acute Toxicity[3]	n/a	15	15	15	n/a	n/a	n/a
		Ind. Aquatic Life Use	0.10[4]	n/a	n/a	n/a	0.10[4]	0.10[4]	0.10[4]
AHL, lbs/day[5]	NPDES	Daily Limit	522,293	68,430	50,171	75,260	3,475	326,650	751,642
		Monthly Limit	261,146	34,215	11,578	24,019	1,738	163,325	375,821
	State Water	Chronic Toxicity	n/a	93,055	30,042	52,631	n/a	n/a	n/a
		Acute Toxicity	n/a	342,149	115,780	240,192	n/a	n/a	n/a
		Ind. Aquatic Life Use	10,446	n/a	n/a	n/a	14,107.4	6,533	16,114
Water Quality Based Allowable Headworks Loading (WQAHL), lbs/day[6]			261,146 (10,446)[7]	34,215	11,578	24,019	1,738 (14,107.4)[7]	163,325 (6,533.0)[7]	375,821 (16,114)[7]

TABLE 23 (Continued): EFFLUENT WATER QUALITY EVALUATION FOR AMMONIA

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
AAIL, (L_{avg}), lbs/day[8]	21,854 (188.1)[7]	3,361	1,267	4,919	337 (5.6)[7]	25,679 (156.9)[7]	96,120 (541.5)[7]
AMIL, (L_{max}), lbs/day[8]	34,458 (543.5)[7]	4,883	1,921	6,179	495 (12.7)[7]	34,520 (353.0)[7]	155,365 (1,324)[7]
Actual loading vs. WQAHL							
% L_{avg} /WQAHL[9]	8 (2)[10]	10	11	20	19 (< 1)[10]	16 (2)[10]	26 (3)[10]
% L_{max} /WQAHL[11]	14 (5)[10]	14	17	26	28 (< 1)[10]	21 (5)[10]	41 (8)[10]
%L_{max}/AHL Acute Toxicity[12]	n/a	1	2	3	n/a	n/a	n/a
Further Local Limit Evaluation Recommended	no	no	no	no	no	no	no

*n/a = Not applicable.

[1]Concentration limit determined from State of Illinois NPDES permit for each WRP and State of Illinois water quality standards in the respective receiving waters. Most stringent value of the seasonal limit used. Un-ionized ammonia standards are converted to total ammonia. See Appendix XI.

[2]Average pH and temperature from applicable receiving waters during 2010 – 2011 were used to calculate water quality standard..

[3]The maximum concentration allowed is 15 mg/L.

[4]Un-ionized ammonia standard.

[5]AHL (Allowable Headworks Loading) is calculated using equation 2 or equation 3.

[6]WQAHL is the lowest allowable headworks loading for each WRP.

[7]Data in parenthesis are based on un-ionized ammonia (UA), UA = NH_3-N/[0.94412(1+10^x)+0.0559], where x = 0.09018 + [2729.92/(T+273.16)] – pH, T - Temperature °C.

[8]AAIL = Actual Average Influent Loading. Average flow and POC concentration of 2010 and 2011 data are used; AMIL = Actual Maximum Influent Loading. Daily flow and POC concentration of 2010 and 2011 data, when available, are used excluding outliers.

[9]When percent L_{avg} /WQAHL is greater than 60 percent further local limit evaluation is recommended; otherwise none.

[10]Values in parentheses are based on the calculations using the UA data.

[11]When percent L_{max} /WQAHL is greater than 80 percent further local limit evaluation is recommended; otherwise none.

[12]When % L_{max} /WQAHL is greater than 80 percent based on chronic, %L_{max}/AHL Acute Toxicity may be estimated and if < 80%, no limit may be necessary.

TABLE 24: EFFLUENT WATER QUALITY EVALUATION FOR CYANIDE

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
Concentration Limit, mg/L[1]	NPDES	Daily Limit	0.30	n/a*	n/a	n/a	n/a	n/a	n/a
		Monthly Limit	0.15	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity[2]	n/a	0.010	0.010	0.010	n/a	n/a	n/a
		Acute Toxicity[3]	n/a	0.022	0.022	0.022	n/a	n/a	n/a
		Ind. Aquatic Life Use	0.1	n/a	n/a	n/a	0.1	0.1	0.1
AHL, lbs/day[4]	NPDES	Daily Limit	895.4	n/a	n/a	n/a	n/a	n/a	n/a
		Monthly Limit	447.7	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity	n/a	1.67	0.65	2.73	n/a	n/a	n/a
		Acute Toxicity	n/a	7.07	2.74	11.55	n/a	n/a	n/a
		Ind. Aquatic Life Use	298.5	n/a	n/a	n/a	563.9	311.1	1,240
Water Quality Based Allowable Headworks Loading (WQAHL), lbs/day[5]			298.5	1.67	0.65	2.73	563.9	311.1	1,240

TABLE 24 (Continued): EFFLUENT WATER QUALITY EVALUATION FOR CYANIDE

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
AAIL, (L_{avg}), lbs/day[6]	15.7	0.23	0.08	0.32	0.12	12.75	60.16
AMIL, (L_{max}), lbs/day[6]	43.27	0.49	0.21	0.94	0.29	29.33	108.7
Actual loading vs. MAHL							
% L_{avg} /WQAHL[7]	5	14	12	12	< 1	4	5
% L_{max} /WQAHL[8]	15	29	32	34	< 1	9	9
%L_{max}/AHL Acute Toxicity[9]	n/a	7	8	8	n/a	n/a	n/a
Further Local Limit Evaluation Recommended	no	no	no	no	no	no	no

*n/a = Not applicable

[1]Concentration limit determined from State of Illinois NPDES permit for each WRP and State of Illinois water quality standards in the respective receiving waters. Standards based on WAD cyanide from Egan, Hanover Park, and Kirie WRPs and total cyanide at the Calumet, Lemont, O'Brien, and Stickney WRPs.

[2]Site-specific chronic cyanide standard for DuPage River, Salt Creek, and Higgins Creek.

[3]State water quality standard.

[4]AHL (Allowable Headworks Loading) is calculated using equation 2 or equation 3.

[5]WQAHL is the lowest allowable headworks loading for each WRP.

[6]AAIL = Actual Average Influent Loading. Average flow and POC concentration of 2010 and 2011 data are used; AMIL = Actual Maximum Influent Loading. Daily flow and POC concentration of 2010 and 2011 data, when available, are used excluding outliers.

[7]When percent L_{avg} /WQAHL is greater than 60 percent further local limit evaluation is recommended; otherwise none.

[8]When percent L_{max} /WQAHL is greater than 80 percent further local limit evaluation is recommended; otherwise none.

[9]When % L_{max} /WQAHL is greater than 80 percent based on chronic, %L_{max}/AHL Acute Toxicity may be estimated and if < 80%, no limit may be necessary.

TABLE 25: EFFLUENT WATER QUALITY EVALUATION FOR PHENOL

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
Concentration Limit, mg/L[1]	NPDES	Daily Limit	n/a*	n/a	n/a	n/a	n/a	n/a	n/a
		Monthly Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Acute Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Single value[2]	n/a	0.1	0.1	0.1	n/a	n/a	n/a
		Ind. Aquatic Life Use	0.3	n/a	n/a	n/a	0.3	0.3	0.3
AHL, lbs/day[3]	NPDES	Daily Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Monthly Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Acute Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Single value	n/a	190.1	77.19	266.9	n/a	n/a	n/a
		Ind. Aquatic Life Use	31,338	n/a	n/a	n/a	8,728	3,459	5,237
Water Quality Based Allowable Headworks Loading (WQAHL), lbs/day[4]			31,338	190.1	77.19	266.9	8,728	3,459	5,237

TABLE 25 (Continued): EFFLUENT WATER QUALITY EVALUATION FOR PHENOL

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
Actual Average Influent Loading (L_{avg}), lbs/day[5]	576.9	7.77	2.48	10.57	0.89	49.02	78.21
Actual Maximum Influent Loading (L_{max}), lbs/day[5]	1,474	16.20	5.80	23.30	1.86	95.49	184.4
Actual loading vs. WQAHL							
% L_{avg} /WQAHL[6]	2	4	3	3	< 1	1	1
% L_{max} /WQAHL[7]	5	9	8	9	< 1	3	4
Further Local Limit Evaluation Recommended	no	no	no	no	no	no	no

*n/a = Not applicable.

[1]Concentration limit determined from State of Illinois NPDES permit for each WRP and State of Illinois water quality standards in the respective receiving waters.

[2] Single value limit which is separate from the acute standard and is not to be exceeded at any time.

[3]AHL (Allowable Headworks Loading) is calculated using equation 2 or equation 3.

[4]WQAHL is the lowest calculated allowable headworks loading for each WRP.

[5]AAIL = Actual Average Influent Loading. Average flow and POC concentration of 2010 and 2011 data are used; AMIL = Actual Maximum Influent Loading. Daily flow and POC concentration of 2010 and 2011 data, when available, are used excluding outliers.

[6]When % L_{avg} /WQAHL is greater than 60 percent, further local limit evaluation is recommended; otherwise none.

[7]When % L_{max} /WQAHL is greater than 80 percent, further local limit evaluation is recommended; otherwise none.

TABLE 26: EFFLUENT WATER QUALITY EVALUATION FOR FIVE-DAY CARBONACEOUS BIOCHEMICAL OXYGEN DEMAND

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park[1]	Kirie[1]	Lemont	O'Brien	Stickney
Concentration Limit, mg/L[2]	NPDES	Daily Limit	n/a*	20	20	20	n/a	n/a	n/a
		Weekly Limit	20	n/a	n/a	n/a	n/a	12	15
		Monthly Limit	10	10	10	4	20	10	10
	State Water	Chronic Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Acute Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
AHL, lbs/day[3]	NPDES	Daily Limit	n/a	834,000	183,480	917,400	n/a	n/a	n/a
		Weekly Limit	1,195,400	n/a	n/a	n/a	n/a	750,600	6,004,800
		Monthly Limit	597,700	417,000	91,740	183,480	13,344	625,500	4,003,200
	State Water	Chronic Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Acute Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Water Quality Based Allowable Headworks Loading (WQAHL), lbs/day[4]			597,700	417,000	91,740	183,480	13,344	625,500	4,003,200

TABLE 26 (Continued): EFFLUENT WATER QUALITY EVALUATION FOR FIVE-DAY CARBONACEOUS BIOCHEMICAL OXYGEN DEMAND

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park[1]	Kirie[1]	Lemont	O'Brien	Stickney
AAIL, (L_{avg}), lbs/day[5]	163,044	26,271	12,455	48,225	2,326	170,604	978,418
AMIL, (L_{max}), lbs/day[5]	343,104	47,148	24,645	84,443	4,710	290,000	2,274,724
Actual loading vs. WQAHL							
% L_{avg} /WQAHL[6]	27	6	14	26	17	27	24
% L_{max} /WQAHL[7]	57	11	27	46	35	46	57
Further Local Limit Evaluation Recommended	no	no	no	no	no	no	no

*n/a = Not applicable.

[1]No influent $CBOD_5$ data is available; instead, influent BOD_5 data is used in loading calculations.

[2]Concentration limit determined from State of Illinois NPDES permit for each WRP and State of Illinois water quality standards in the receiving waters.

[3]AHL (Allowable Headworks Loading) is calculated using equation 2 or equation 3.

[4]WQAHL is the lowest calculated allowable headworks loading for each WRP.

[5]AAIL = Actual Average Influent Loading. Average flow and POC concentration of 2010 and 2011 data are used; AMIL = Actual Maximum Influent Loading. Daily flow and POC concentration of 2010 and 2011 data, when available, are used excluding outliers.

[6]When percent L_{avg} /WQAHL is greater than 60 percent further local limit evaluation is recommended; otherwise none.

[7]When percent L_{max} /WQAHL is greater than 80 percent further local limit evaluation is recommended; otherwise none.

TABLE 27: EFFLUENT WATER QUALITY EVALUATION FOR SUSPENDED SOLIDS

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
Concentration Limit, mg/L[1]	NPDES	Daily Limit	n/a*	24	24	24	n/a	n/a	n/a
		Weekly Limit	25	n/a	n/a	n/a	n/a	18	20
		Monthly Limit	15	12	12	5	25	12	12
	State Water	Chronic Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Acute Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
AHL, lbs/day[2]	NPDES	Daily Limit	n/a	1,000,800	146,784	2,001,760	n/a	n/a	n/a
		Weekly Limit	1,793,100					1,351,080	24,019,200
		Monthly Limit	1,075,860	500,400	73,392	160,128	20,850	900,720	14,411,520
	State Water	Chronic Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Acute Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Water Quality Based Allowable Headworks Loading (WQAHL), lbs/day[3]			1,075,860	500,400	73,392	160,128	20,850	900,720	14,411,520

TABLE 27 (Continued): EFFLUENT WATER QUALITY EVALUATION FOR SUSPENDED SOLIDS

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
AAIL, (L_{avg}), lbs/day[4]	283,236	43,327	11,718	58,799	4,141	226,491	3,383,476
AMIL, (L_{max}), lbs/day[4]	815,124	90,500	24,800	121,518	7,956	523,340	10,469,671
Actual loading vs. WQAHL							
% L_{avg} /WQAHL[5]	26	9	16	13	20	25	23
% L_{max} /WQAHL[6]	76	18	34	26	38	58	73
Further Local Limit Evaluation Recommended	no	no	no	no	no	no	no

*n/a = Not applicable.

[1]Concentration limit determined from State of Illinois NPDES permit for each WRP and State of Illinois water quality standards in the respective receiving waters.

[2]AHL (Allowable Headworks Loading) is calculated using equation 2 or equation 3. .

[3]WQAHL is the lowest calculated allowable headworks loading for each WRP.

[4]AAIL = Actual Average Influent Loading. Average flow and POC concentration of 2010 and 2011 data are used; AMIL = Actual Maximum Influent Loading. Daily flow and POC concentration of 2010 and 2011 data, when available, are used excluding outliers.

[5]When % L_{avg} /WQAHL is greater than 60 percent, further local limit evaluation is recommended; otherwise none.

[6]When % L_{max} /WQAHL is greater than 80 percent, further local limit evaluation is recommended; otherwise none.

TABLE 28: EFFLUENT WATER QUALITY EVALUATION FOR TOTAL PHOSPHORUS

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
Concentration Limit, mg/L[1]	NPDES	Daily Limit	n/a*	n/a	n/a	n/a	n/a	n/a	n/a
		Monthly Limit	1.00	n/a	Monitor only	n/a	n/a	1.00	1.00
	State Water	Chronic Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Acute Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
AHL, lbs/day[2]	NPDES	Daily Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Monthly Limit	3,602	n/a	Monitor only	n/a	n/a	4,261	42,951
	State Water	Chronic Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Acute Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Water Quality Based Allowable Headworks Loading (WQAHL), lbs/day[3]			3,602	none	Monitor only	n/a	n/a	4,261	42,951

TABLE 28 (Continued): EFFLUENT WATER QUALITY EVALUATION FOR TOTAL PHOSPHORUS

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
AAIL, (L_{avg}), lbs/day[4]	12,437	n/a	n/a	n/a	n/a	5,795	60,886
AMIL, (L_{max}), lbs/day[4]	34,302	n/a	n/a	n/a	n/a	8,844	157,346
Actual loading vs. WQAHL							
% L_{avg} /WQAHL[5]	345	n/a	n/a	n/a	n/a	136	142
% L_{max} /WQAHL[6]	952	n/a	n/a	n/a	n/a	208	366
Further Local Limit Evaluation Recommended	yes	no	no	no	no	yes	yes

*n/a = Not applicable.

[1]Concentration limit determined from State of Illinois NPDES permit for each WRP and State of Illinois water quality standards in the respective receiving waters; NPDES limits are based on anticipated new permit limits.

[2]AHL (Allowable Headworks Loading) is calculated using equation 2 or equation 3.

[3]WQAHL is the lowest calculated allowable headworks loading for each WRP.

[4]AAIL = Actual Average Influent Loading· Average flow and POC concentration of 2010 and 2011 data used; AMIL – Actual Maximum Influent Loading. Daily flow and POC concentration of 2010 and 2011 data, when available, are used excluding outliers.

[5]When % L_{avg} /WQAHL is greater than 60 percent, further local limit evaluation is recommended; otherwise none.

[6]When % L_{max} /WQAHL is greater than 80 percent, further local limit evaluation is recommended; otherwise none.

TABLE 29: EFFLUENT WATER QUALITY EVALUATION FOR FATS, OILS, AND GREASE (FOG)

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
Concentration Limit, mg/L[1]	NPDES	Daily Limit	n/a*	n/a	n/a	n/a	n/a	n/a	n/a
		Monthly Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Acute Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Ind. Aquatic Life Use	15.0	n/a	n/a	n/a	15.0	15.0	15.0
AHL, lbs/day[2]	NPDES	Daily Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Monthly Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Acute Toxicity	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Ind. Aquatic Life Use	313,376	n/a	n/a	n/a	378,249	367,481	456,317
Water Quality Based Allowable Headworks Loading (WQAHL), lbs/day			313,376	n/a	n/a	n/a	378,249	367,481	456,317

TABLE 29 (Continued): EFFLUENT WATER QUALITY EVALUATION FOR FATS, OILS, AND GREASE (FOG)

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
AAIL, (L_{avg}), lbs/day[3]	28,846	n/a	n/a	n/a	275	47,848	113,560
AMIL, (L_{max}), lbs/day[3]	132,525	n/a	n/a	n/a	964	137,464	358,695
Actual loading vs. WQAHL							
% L_{avg} /WQAHL[4]	9	n/a	n/a	n/a	< 1	13	25
% L_{max} /WQAHL[5]	42	n/a	n/a	n/a	< 1	37	79
Further Local Limit Evaluation Recommended	no	no	no	no	no	no	no

*n/a = Not applicable.

[1]Concentration limit determined from State of Illinois NPDES permit for each WRP and State of Illinois water quality standards in the respective receiving waters.

[2]AHL (Allowable headworks loading) is calculated using Equation 2 or Equation 3.

[3]AAIL = Actual Average Influent Loading. Average flow and POC concentration of 2010 and 2011 data are used; AMIL = Actual Maximum Influent Loading. Daily flow and POC concentration of 2010 and 2011 data, when available, are used excluding outliers.

[4]When % L_{avg} /WQAHL is greater than 60 percent, further local limit evaluation is recommended; otherwise none.

[5]When % L_{max} /WQAHL is greater than 80 percent, further local limit evaluation is recommended; otherwise none.

TABLE 30: BIOSOLIDS QUALITY EVALUATION FOR ARSENIC

	District Biosolids Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
	mg/dry Kg			
40 CFR Part 503.13 Biosolids Limit (C_{503})[1]	41	41	41	41
Actual Average Concentration (C_{avg})	7	13	12	10
Actual Maximum Concentration (C_{max})	10	18	17	10
	lbs/day			
Biosolids Quality Based Allowable Headworks Loading (BQAHL)[2]	105.5	26.33	0.70	420.4
Actual Average Influent Loading (L_{avg})[3]	94.06	16.00[5]	1.54	340.9[6]
	%			
Actual Concentration vs. 40 CFR Part 503.13 Biosolids Limit				
C_{avg} / C_{503}	18	30	28	24
C_{max} /C_{503}	24	44	41	24
Actual Loading vs. BQAHL (L_{avg} / BQAHL)	89	61	219	81
Further Local Limit Evaluation Recommended[4]	yes	yes	yes	yes

[1]Pollutant concentration from Table 3, 40 CFR Part 503.13.
[2]Allowable headworks loading are calculated using Equation 4.
[3]Average flow and POC concentration of 2010 and 2011 data used.
[4]When L_{avg} /BQAHL is greater than 60 percent, further local limit evaluation is recommended; otherwise none.
[5]Includes actual average loading from Kirie WRP.
[6]Includes actual average loading from Lemont and O'Brien WRPs.

TABLE 31: BIOSOLIDS QUALITY EVALUATION FOR CADMIUM

	District Biosolids Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
	mg/dry Kg			
40 CFR Part 503.13 Biosolids Limit (C_{503})[1]	39	39	39	39
Actual Average Concentration (C_{avg})	2	4	1	3
Actual Maximum Concentration (C_{max})	3	5	2	4
	lbs/day			
Biosolids Quality Based Allowable Headworks Loading (BQAHL)[2]	8.51	2.55	0.60	20.40
Actual Average Influent Loading (L_{avg})[3]	2.09	0.55[5]	0.08	44.10[6]
	%			
Actual Concentration vs. 40 CFR Part 503.13 Biosolids Limit				
C_{avg} / C_{503}	5	10	3	8
C_{max} /C_{503}	8	13	5	10
Actual Loading vs. BQAHL (L_{avg} / BQAHL)	25	22	13	216
Further Local Limit Evaluation Recommended[4]	no	no	no	yes

[1]Pollutant concentration from Table 3, 40 CFR Part 503.13.
[2]Allowable headworks loading is calculated using Equation 4.
[3]Average flow and POC concentration of 2010 and 2011 data used.
[4]When L_{avg} /BQAHL is greater than 60 percent, further local limit evaluation is recommended; otherwise none.
[5]Includes actual average loading from Kirie WRP.
[6]Includes actual average loading from Lemont and O'Brien WRPs.

TABLE 32: BIOSOLIDS QUALITY EVALUATION FOR COPPER

	District Biosolids Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
	mg/dry Kg			
40 CFR Part 503.13 Biosolids Limit (C_{503})[1]	1,500	1,500	1,500	1,500
Actual Average Concentration (C_{avg})	373	774	876	367
Actual Maximum Concentration (C_{max})	480	895	1,112	416
	lbs/day			
Biosolids Quality Based Allowable Headworks Loading (BQAHL)[2]	214.52	64.22	10.78	864.2
Actual Average Influent Loading (L_{avg})[3]	84.66	40.99[5]	5.02	933.0[6]
	%			
Actual Concentration vs. 40 CFR Part 503.13 Biosolids Limit				
C_{avg} / C_{503}	25	52	58	24
C_{max} /C_{503}	32	60	74	28
Actual Loading vs. BQAHL (L_{avg} / BQAHL)	39	64	47	108
Further Local Limit Evaluation Recommended[4]	no	yes	no	yes

[1]Pollutant concentration from Table 3, 40 CFR Part 503.13.
[2]Allowable headworks loading are calculated using Equation 4.
[3]Average flow and POC concentration of 2010 and 2011 data used.
[4]When L_{avg} /BQAHL is greater than 60 percent, further local limit evaluation is recommended; otherwise none.
[5]Includes actual average loading from Kirie WRP.
[6]Includes actual average loading from Lemont and O'Brien WRPs.

TABLE 33: BIOSOLIDS QUALITY EVALUATION FOR LEAD

	District Biosolids Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
	mg/dry Kg			
40 CFR Part 503.13 Biosolids Limit (C_{503})[1]	300	300	300	300
Actual Average Concentration (C_{avg})	73	37	33	97
Actual Maximum Concentration (C_{max})	101	46	45	127
	lbs/day			
Biosolids Quality Based Allowable Headworks Loading (BQAHL)[2]	96.53	28.90	2.85	366.2
Actual Average Influent Loading (L_{avg})[3]	41.81	10.97[5]	1.54	355.5[6]
	%			
Actual Concentration vs. 40 CFR Part 503.13 Biosolids Limit				
C_{avg} / C_{503}	24	12	11	32
C_{max} /C_{503}	34	15	15	42
Actual Loading vs. BQAHL (L_{avg} / BQAHL)	43	38	54	97
Further Local Limit Evaluation Recommended[4]	no	no	no	yes

[1]Pollutant concentration from Table 3, 40 CFR Part 503.13.
[2]Allowable headworks loading are calculated using Equation 4.
[3]Average flow and POC concentration of 2010 and 2011 data used.
[4]When L_{avg} /BQAHL is greater than 60 percent, further local limit evaluation is recommended; otherwise none.
[5]Includes actual average loading from Kirie WRP.
[6]Includes actual average loading from Lemont and O'Brien WRPs.

TABLE 34: BIOSOLIDS QUALITY EVALUATION FOR MERCURY

	District Biosolids Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
	mg/dry Kg			
40 CFR Part 503.13 Biosolids Limit (C_{503})[1]	17	17	17	17
Actual Average Concentration (C_{avg})	1	1	2	1
Actual Maximum Concentration (C_{max})	1	2	7	1
	lbs/day			
Biosolids Quality Based Allowable Headworks Loading (BQAHL)[2]	2.38	0.78	0.13	21.79
Actual Average Influent Loading (L_{avg})[3]	0.42	0.11[5]	0.02	2.35[6]
	%			
Actual Concentration vs. 40 CFR Part 503.13 Biosolids Limit				
C_{avg} / C_{503}	6	6	14	6
C_{max} /C_{503}	6	13	40	6
Actual Loading vs. BQAHL (L_{avg} / BQAHL)	18	14	12	11
Further Local Limit Evaluation Recommended[4]	no	no	no	no

[1]Pollutant concentration from Table 3, 40 CFR Part 503.13.
[2]Allowable headworks loading are calculated using Equation 4.
[3]Average flow and POC concentration of 2010 and 2011 data used.
[4]When L_{avg}/BQAHL is greater than 60 percent, further local limit evaluation is recommended; otherwise none.
[5]Includes actual average loading from Kirie WRP.
[6]Includes actual average loading from Lemont and O'Brien WRPs.

TABLE 35: BIOSOLIDS QUALITY EVALUATION FOR MOLYBDENUM

	District Biosolids Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
	mg/dry Kg			
40 CFR Part 503.13 Biosolids Limit (C_{503})[1]	75	75	75	75
Actual Average Concentration (C_{avg})	13	14	13	11
Actual Maximum Concentration (C_{max})	21	20	15	14
	lbs/day			
Biosolids Quality Based Allowable Headworks Loading (BQAHL)[2]	n/a	n/a	n/a	n/a
Actual Average Influent Loading (L_{avg})[3]	n/a	n/a	n/a	n/a
	%			
Actual Concentration vs. 40 CFR Part 503.13 Biosolids Limit				
C_{avg} / C_{503}	17	19	17	15
C_{max} /C_{503}	28	27	20	19
Actual Loading vs. BQAHL (L_{avg} / BQAHL)	n/a	n/a	n/a	n/a
Further Local Limit Evaluation Recommended[4]	no	no	no	no

[1]Pollutant concentration from Table 3, 40 CFR Part 503.13.
[2]Allowable headworks loading cannot be calculated because molybdenum concentration in WRP influents are not available.
[3]Actual Average Influent Loading cannot be calculated because molybdenum concentration in WRP influents are not available.
[4]Local Limit Evaluation recommendation is based on concentration comparison (C_{avg}/C_{503} or C_{max}/C_{503}).

TABLE 36: BIOSOLIDS QUALITY EVALUATION FOR NICKEL

	District Biosolids Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
	mg/dry Kg			
40 CFR Part 503.13 Biosolids Limit (C_{503})[1]	420	420	420	420
Actual Average Concentration (C_{avg})	31	64	38	38
Actual Maximum Concentration (C_{max})	38	94	99	42
	lbs/day			
Biosolids Quality Based Allowable Headworks Loading (BQAHL)[2]	154.5	32.37	7.21	256.4
Actual Average Influent Loading (L_{avg})[3]	13.59	8.05[5]	0.42	151.3[6]
	%			
Actual Concentration vs. 40 CFR Part 503.13 Biosolids Limit				
C_{avg} / C_{503}	7	15	9	9
C_{max} /C_{503}	9	22	24	10
Actual Loading vs. BQAHL (L_{avg} / BQAHL)	9	25	6	43
Further Local Limit Evaluation Recommended[4]	no	no	no	no

[1]Pollutant concentration from Table 3, 40 CFR Part 503.13.
[2]Allowable headworks loading are calculated using Equation 4.
[3]Average flow and POC concentration of 2010 and 2011 data used.
[4]When L_{avg} /BQAHL is greater than 60 percent, further local limit evaluation is recommended; otherwise none.
[5]Includes actual average loading from Kirie WRP.
[6]Includes actual average loading from Lemont and O'Brien WRPs.

TABLE 37: BIOSOLIDS QUALITY EVALUATION FOR SELENIUM

	District Biosolids Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
	mg/dry Kg			
40 CFR Part 503.13 Biosolids Limit (C_{503})[1]	100	100	100	100
Actual Average Concentration (C_{avg})	3	2	5	8
Actual Maximum Concentration (C_{max})	8	3	9	20
	lbs/day			
Biosolids Quality Based Allowable Headworks Loading (BQAHL)[2]	25.74	18.35	1.44	341.8
Actual Average Influent Loading (L_{avg})[3]	10.45	5.89[5]	0.50	390.6[6]
	%			
Actual Concentration vs. 40 CFR Part 503.13 Biosolids Limit				
C_{avg} / C_{503}	3	2	5	8
C_{max} /C_{503}	8	3	9	20
Actual Loading vs. BQAHL (L_{avg} / BQAHL)	41	32	35	114
Further Local Limit Evaluation Recommended[4]	no	no	no	yes

[1]Pollutant concentration from Table 3, 40 CFR Part 503.13.
[2]Allowable headworks loading are calculated using Equation 4.
[3]Average flow and POC concentration of 2010 and 2011 data used.
[4]When L_{avg} /BQAHL is greater than 60 percent, further local limit evaluation is recommended; otherwise none.
[5]Includes actual average loading from Kirie WRP.
[6]Includes actual average loading from Lemont and O'Brien WRPs.

TABLE 38: BIOSOLIDS QUALITY EVALUATION FOR ZINC

	District Biosolids Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
	mg/dry Kg			
40 CFR Part 503.13 Biosolids Limit (C_{503})[1]	2,800	2,800	2,800	2,800
Actual Average Concentration (C_{avg})	986	1029	884	805
Actual Maximum Concentration (C_{max})	1,121	2,382	1,083	948
	lbs/day			
Biosolids Quality Based Allowable Headworks Loading (BQAHL)[2]	409.5	149.8	22.77	1,669
Actual Average Influent Loading (L_{avg})[3]	595.7	64.71[5]	7.18	2,311[6]
	%			
Actual Concentration vs. 40 CFR Part 503.13 Biosolids Limit				
C_{avg} / C_{503}	35	37	32	29
C_{max} /C_{503}	40	85	36	34
Actual Loading vs. BQAHL (L_{avg} / BQAHL)	145	43	32	138
Further Local Limit Evaluation Recommended[4]	yes	no	no	yes

[1]Pollutant concentration from Table 3, 40 CFR Part 503.13.
[2]Allowable headworks loading are calculated using Equation 4.
[3]Average flow and POC concentration of 2010 and 2011 data used.
[4]When L_{avg} /BQAHL is greater than 60 percent, further local limit evaluation is recommended; otherwise none.
[5]Includes actual average loading from Kirie WRP.
[6]Includes actual average loading from Lemont and O'Brien WRPs.

TABLE 39: ACTIVATED SLUDGE TOXIC POLLUTANT INHIBITION EVALUATION FOR ARSENIC

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
	mg/L						
Threshold Concentration Limit[1]							
Carbonaceous Microorganism Inhibition	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Nitrogenous Microorganism Inhibition	1.50	1.50	1.50	1.50	1.50	1.50	1.50
	lbs/day						
Allowable Headworks Loading[2]							
Carbonaceous Microorganism Inhibition	208.9	22.81	7.72	32.03	2.09	196.0	601.3
Nitrogenous Microorganism Inhibition	3,134	342.2	115.8	480.4	31.28	2,940	9,020
Activated Sludge Toxicity (ASTAHL)[3]	208.9	22.81	7.72	32.03	2.09	196.0	601.3
Actual Average Influent Loading (L_{avg})[4]	94.06	7.99	1.55	8.01	0.90	39.22	300.8
Actual Maximum Influent Loading (L_{max})[5]	181.9	9.82	5.22	19.62	1.81	107.0	869.1
	%						
Actual loading vs. ASTAHL							
L_{avg} /ASTAHL	45	35	20	25	43	20	50
L_{max} /ASTAHL	87	43	68	61	87	53	145
Further Local Limit Evaluation Recommended	yes	no	no	no	yes	no	yes

[1]Source: EPA 833-R-04-002B, EPA Office of Water, July 2004, Appendix G (http://www.epa.gov/npdes/pubs/final_local_limits_appendices.pdf).
[2]Allowable headworks loading are calculated using Equation 5; R_{pri} used for carbonaceous and nitrogenous microorganisms (Appendix Table AV-2).
[3]ASTAHL is the lowest calculated allowable headworks loading for each WRP.
[4]Average flow and POC concentration of 2010 and 2011 data are used.
[5]Daily flow and POC concentration of 2010 and 2011 data, when available, are used excluding outliers.

TABLE 40: ACTIVATED SLUDGE TOXIC POLLUTANT INHIBITION EVALUATION FOR CADMIUM

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
	mg/L						
Threshold Concentration Limit[1]							
Carbonaceous Microorganism Inhibition	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Nitrogenous Microorganism Inhibition	5.20	5.20	5.20	5.20	5.20	5.20	5.20
	lbs/day						
Allowable Headworks Loading[2]							
Carbonaceous Microorganism Inhibition	2,458	268.4	85.76	320.3	24.53	2,042	8,018
Nitrogenous Microorganism Inhibition	12,781	1,395	446.0	1,665	127.6	10,616	41,691
Activated Sludge Toxicity (ASTAHL)[3]	2,458	268.4	85.76	320.3	24.53	2,042	8,018
Actual Average Influent Loading (L_{avg})[4]	2.09	0.23	0.08	0.32	0.02	1.96	42.11
Actual Maximum Influent Loading (L_{max})[5]	5.39	0.39	0.23	0.79	0.04	3.74	157.4
	%						
Actual loading vs. ASTAHL							
L_{avg} /ASTAHL	< 1	< 1	< 1	< 1	< 1	< 1	1
L_{max} /ASTAHL	< 1	< 1	< 1	< 1	< 1	< 1	2
Further Local Limit Evaluation Recommended	no	no	no	no	no	no	no

[1]Source: EPA 833-R-04-002B, EPA Office of Water, July 2004, Appendix G (http://www.epa.gov/npdes/pubs/final_local_limits_appendices.pdf).
[2]Allowable headworks loading are calculated using Equation 5; R_{pri} used for carbonaceous and nitrogenous microorganisms (Appendix Table AV-2).
[3]ASTAHL is the lowest calculated allowable headworks loading for each WRP.
[4]Average flow and POC concentration of 2010 and 2011 data are used.
[5]Daily flow and POC concentration of 2010 and 2011 data, when available, are used excluding outliers.

TABLE 41: ACTIVATED SLUDGE TOXIC POLLUTANT INHIBITION EVALUATION FOR CHROMIUM

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
	mg/L						
Threshold Concentration Limit[1]							
Carbonaceous Microorganism Inhibition	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Nitrogenous Microorganism Inhibition	0.25	0.25	0.25	0.25	0.25	0.25	0.25
	lbs/day						
Allowable Headworks Loading[2]							
Carbonaceous Microorganism Inhibition	2,611	271.6	98.96	320.3	23.43	2,202	8,018
Nitrogenous Microorganism Inhibition	652.9	67.89	24.74	80.06	5.86	550.5	2,004
Activated Sludge Toxicity (ASTAHL)[3]	652.9	67.89	24.74	80.06	5.86	550.5	2,004
Actual Average Influent Loading (L_{avg})[4]	12.54	2.05	0.77	3.20	0.08	19.61	284.3
Actual Maximum Influent Loading (L_{max})[5]	46.05	3.94	2.25	8.31	0.39	38.22	1,233
	%						
Actual loading vs. ASTAHL							
L_{avg} /ASTAHL	2	3	3	4	1	4	14
L_{max} /ASTAHL	7	6	9	10	7	7	62
Further Local Limit Evaluation Recommendation	no	no	no	no	no	no	no

[1]Source: EPA 833-R-04-002B, EPA Office of Water, July 2004, Appendix G (http://www.epa.gov/npdes/pubs/final_local_limits_appendices.pdf).
[2]Allowable headworks loading are calculated using Equation 5; R_{pri} used for carbonaceous and nitrogenous microorganisms (Appendix Table AV-2).
[3]ASTAHL is the lowest calculated allowable headworks loading for each WRP.
[4]Average flow and POC concentration of 2010 and 2011 data are used.
[5]Daily flow and POC concentration of 2010 and 2011 data, when available, are used excluding outliers.

TABLE 42: ACTIVATED SLUDGE TOXIC POLLUTANT INHIBITION EVALUATION FOR HEXAVALENT CHROMIUM

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
	mg/L						
Threshold Concentration Limit[1]							
Carbonaceous Microorganism Inhibition	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Nitrogenous Microorganism Inhibition	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	lbs/day						
Allowable Headworks Loading[2]							
Carbonaceous Microorganism Inhibition	2,089	228.1	77.19	320.3	20.85	1,960	6,013
Nitrogenous Microorganism Inhibition	2,089	228.1	77.19	320.3	20.85	1,960	6,013
Activated Sludge Toxicity (ASTAHL)[3]	2,089	228.1	77.19	320.3	20.85	1,960	6,013
Actual Average Influent Loading (L_{avg})[4]	16.72	1.83	0.77	3.20	0.16	19.61	48.13
Actual Maximum Influent Loading (L_{max})[5]	20.90	2.28	0.77	3.20	0.25	19.61	60.16
	%						
Actual loading vs. ASTAHL							
L_{avg} /ASTAHL	1	1	1	1	1	1	1
L_{max} /ASTAHL	1	1	1	1	1	1	1
Further Local Limit Evaluation Recommended	no	no	no	no	no	no	no

[1]Source: EPA 833-R-04-002B, EPA Office of Water, July 2004, Appendix G (http://www.epa.gov/npdes/pubs/final_local_limits_appendices.pdf).
[2]Allowable headworks loading are calculated using Equation 5; R_{pri} used for carbonaceous and nitrogenous microorganisms (Appendix Table AV-2)
[3]ASTAHL is the lowest calculated allowable headworks loading for each WRP.
[4]Average flow and POC concentration of 2010 and 2011 data are used.
[5]Daily flow and POC concentration of 2010 and 2011 data, when available, are used excluding outliers.

TABLE 43: ACTIVATED SLUDGE TOXIC POLLUTANT INHIBITION EVALUATION FOR COPPER

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
	mg/L						
Threshold Concentration Limit[1]							
Carbonaceous Microorganism Inhibition	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Nitrogenous Microorganism Inhibition	0.05	0.05	0.05	0.05	0.05	0.05	0.05
	lbs/day						
Allowable Headworks Loading[2]							
Carbonaceous Microorganism Inhibition	2,786	292.4	97.70	320.3	26.06	2,481	7,809
Nitrogenous Microorganism Inhibition	139.3	14.62	4.89	16.01	1.30	124.0	390.5
Activated Sludge Toxicity (ASTAHL)[3]	139.3	14.62	4.89	16.01	1.30	124.0	390.5
Actual Average Influent Loading (L_{avg})[4]	84.66	15.52	5.02	25.47	1.35	83.34	848.3
Actual Maximum Influent Loading (L_{max})[5]	242.1	36.80	10.28	48.23	15.08	174.1	2,972
	%						
Actual loading vs. ASTAHL							
L_{avg} /ASTAHL	61	106	103	159	104	67	217
L_{max} /ASTAHL	174	252	210	301	1,160	140	761
Further Local Limit Evaluation Recommended	yes	yes	yes	yes	yes	yes	yes

[1]Source: EPA 833-R-04-002B, EPA Office of Water, July 2004, Appendix G (http://www.epa.gov/npdes/pubs/final_local_limits_appendices.pdf).
[2]Allowable headworks loading are calculated using Equation 5; R_{pri} used for carbonaceous and nitrogenous microorganisms (Appendix Table AV-2).
[3]ASTAHL is the lowest calculated allowable headworks loading for each WRP.
[4]Average flow and POC concentration of 2010 and 2011 data are used.
[5]Daily flow and POC concentration of 2010 and 2011 data, when available, are used excluding outliers.

TABLE 44: ACTIVATED SLUDGE TOXIC POLLUTANT INHIBITION EVALUATION FOR LEAD

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
	mg/L						
Threshold Concentration Limit[1]							
Carbonaceous Microorganism Inhibition	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Nitrogenous Microorganism Inhibition	0.50	0.50	0.50	0.50	0.50	0.50	0.50
	lbs/day						
Allowable Headworks Loading[2]							
Carbonaceous Microorganism Inhibition	2,749	300.1	126.5	320.3	27.41	2,970	8,018
Nitrogenous Microorganism Inhibition	1,374	150.1	63.27	160.1	13.72	1,485	4,009
Activated Sludge Toxicity (ASTAHL)[3]	1,374	150.1	63.27	160.1	13.72	1,485	4,009
Actual Average Influent Loading (L_{avg})[4]	41.81	4.56	1.54	6.41	0.40	39.22	315.9
Actual Maximum Influent Loading (L_{max})[5]	142.4	7.53	4.51	13.94	1.15	75.10	1,242
	%						
Actual loading vs. ASTAHL							
L_{avg} /ASTAHL	3	3	2	4	3	3	8
L_{max} /ASTAHL	10	5	7	9	8	5	31
Further Local Limit Evaluation Recommended	no	no	no	no	no	no	no

[1]Source: EPA 833-R-04-002B, EPA Office of Water, July 2004, Appendix G (http://www.epa.gov/npdes/pubs/final_local_limits_appendices.pdf).
[2]Allowable headworks loading are calculated using Equation 5; R_{pri} used for carbonaceous and nitrogenous microorganisms (Appendix Table AV-2).
[3]ASTAHL is the lowest calculated allowable headworks loading for each WRP.
[4]Average flow and POC concentration of 2010 and 2011 data are used.
[5]Daily flow and POC concentration of 2010 and 2011 data, when available, are used excluding outliers.

TABLE 45: ACTIVATED SLUDGE TOXIC POLLUTANT INHIBITION EVALUATION FOR MERCURY

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
	----------mg/L----------						
Threshold Concentration Limit[1]							
Carbonaceous Microorganism Inhibition	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Nitrogenous Microorganism Inhibition	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	----------lbs/day----------						
Allowable Headworks Loading[2]							
Carbonaceous Microorganism Inhibition	232.1	25.06	8.39	32.02	2.29	215.4	626.4
Nitrogenous Microorganism Inhibition	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Activated Sludge Toxicity (ASTAHL)[3]	232.1	25.06	8.39	32.02	2.29	215.4	626.4
Actual Average Influent Loading (L_{avg})[4]	0.42	0.05	0.02	0.06	0.004	0.39	1.96
Actual Maximum Influent Loading (L_{max})[5]	1.36	0.08	0.04	0.13	0.01	0.73	6.97
	----------%----------						
Actual loading vs. ASTAHL							
L_{avg} /ASTAHL	< 1	< 1	< 1	< 1	< 1	< 1	< 1
L_{max} /ASTAHL	1	< 1	< 1	1	< 1	< 1	1
Further Local Limit Evaluation Recommended	no	no	no	no	no	no	no

[1]Source: EPA 833-R-04-002B, EPA Office of Water, July 2004, Appendix G (http://www.epa.gov/npdes/pubs/final_local_limits_appendices.pdf).
[2]Allowable headworks loading are calculated using Equation 5; R_{pri} used for carbonaceous microorganisms (Appendix Table AV-2).
[3]ASTAHL is the lowest calculated allowable headworks loading for each WRP.
[4]Average flow and POC concentration of 2010 and 2011 data are used.
[5]Daily flow and POC concentration of 2010 and 2011 data, when available, are used excluding outliers.

TABLE 46: ACTIVATED SLUDGE TOXIC POLLUTANT INHIBITION EVALUATION FOR NICKEL

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
	----------mg/L----------						
Threshold Concentration Limit[1]							
Carbonaceous Microorganism Inhibition	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Nitrogenous Microorganism Inhibition	0.25	0.25	0.25	0.25	0.25	0.25	0.25
	----------lbs/day----------						
Allowable Headworks Loading[2]							
Carbonaceous Microorganism Inhibition	2,296	262.2	83.90	320.3	22.18	2,130	7,159
Nitrogenous Microorganism Inhibition	985.2	65.54	20.97	80.06	5.55	1,020	1,790
Activated Sludge Toxicity (ASTAHL)[3]	985.2	65.54	20.97	80.06	5.55	1,020	1,790
Actual Average Influent Loading (L_{avg})[4]	13.59	3.88	0.42	4.17	0.08	9.80	141.4
Actual Maximum Influent Loading (L_{max})[5]	36.59	9.95	1.13	10.50	0.31	25.11	451.7
	----------%----------						
Actual loading vs. ASTAHL							
L_{avg} /ASTAHL	1	6	2	5	1	< 1	8
L_{max} /ASTAHL	4	15	5	13	6	2	25
Further Local Limit Evaluation Recommended	no	no	no	no	no	no	no

[1]Source: EPA 833-R-04-002B, EPA Office of Water, July 2004, Appendix G (http://www.epa.gov/npdes/pubs/final_local_limits_appendices.pdf).
[2]Allowable headworks loading are calculated using Equation 5; R_{pri} used for carbonaceous and nitrogenous microorganisms (Appendix Table AV-2).
[3]ASTAHL is the lowest calculated allowable headworks loading for each WRP.
[4]Average flow and POC concentration of 2010 and 2011 data are used.
[5]Daily flow and POC concentration of 2010 and 2011 data, when available, are used excluding outliers.

TABLE 47: ACTIVATED SLUDGE TOXIC POLLUTANT INHIBITION EVALUATION FOR ZINC

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
	mg/L						
Threshold Concentration Limit[1]							
Carbonaceous Microorganism Inhibition	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Nitrogenous Microorganism Inhibition	0.08	0.08	0.08	0.08	0.08	0.08	0.08
	lbs/day						
Allowable Headworks Loading[2]							
Carbonaceous Microorganism Inhibition	921.7	96.38	33.08	96.08	8.02	805.4	2,505
Nitrogenous Microorganism Inhibition	245.8	25.70	8.82	25.62	2.14	214.8	668.1
Activated Sludge Toxicity (ASTAHL)[3]	245.8	25.70	8.82	25.62	2.14	214.8	668.1
Actual Average Influent Loading (L_{avg})[4]	595.7	22.25	7.18	42.46	2.60	164.7	2,143
Actual Maximum Influent Loading (L_{max})[5]	2,007	47.07	13.18	80.79	5.18	355.2	8,616
	%						
Actual loading vs. ASTAHL							
L_{avg} /ASTAHL	242	87	81	166	121	77	321
L_{max} /ASTAHL	816	183	149	315	242	165	1,290
Further Local Limit Evaluation Recommended	yes	yes	yes	yes	yes	yes	yes

[1]Source: EPA 833-R-04-002B, EPA Office of Water, July 2004, Appendix G (http://www.epa.gov/npdes/pubs/final_local_limits_appendices.pdf).
[2]Allowable headworks loading are calculated using Equation 5; R_{pri} used for carbonaceous and nitrogenous microorganisms (Appendix Table AV-2).
[3]ASTAHL is the lowest calculated allowable headworks loading for each WRP.
[4]Average flow and POC concentration of 2010 and 2011 data areused.
[5]Daily flow and POC concentration of 2010 and 2011 data, when available, are used excluding outliers.

TABLE 48: ACTIVATED SLUDGE TOXIC POLLUTANT INHIBITION EVALUATION FOR CYANIDE

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
	mg/L						
Threshold Concentration Limit[1]							
Carbonaceous Microorganism Inhibition	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Nitrogenous Microorganism Inhibition	0.34	0.34	0.34	0.34	0.34	0.34	0.34
	lbs/day						
Allowable Headworks Loading[2]							
Carbonaceous Microorganism Inhibition	229.6	27.16	10.29	32.02	2.29	236.1	742.4
Nitrogenous Microorganism Inhibition	780.6	92.32	34.99	108.90	7.79	802.9	2,524
Activated Sludge Toxicity (ASTAHL)[3]	229.6	27.16	10.29	32.02	2.29	236.1	742.4
Actual Average Influent Loading (L_{avg})[4]	15.68	1.37	0.50	2.40	0.12	12.75	60.16
Actual Maximum Influent Loading (L_{max})[5]	43.27	2.62	1.18	5.49	0.29	29.33	108.7
	%						
Actual loading vs. ASTAHL							
L_{avg} /ASTAHL	7	5	5	8	5	5	8
L_{max} /ASTAHL	19	10	11	17	13	12	15
Further Local Limit Evaluation Recommended	no	no	no	no	no	no	no

[1]Source: EPA 833-R-04-002B, EPA Office of Water, July 2004, Appendix G (http://www.epa.gov/npdes/pubs/final_local_limits_appendices.pdf).
[2]Allowable headworks loading are calculated using Equation 5; R_{pri} used for carbonaceous and nitrogenous microorganisms (Appendix Table AV-2).
[3]ASTAHL is the lowest calculated allowable headworks loading for each WRP.
[4]Average flow and POC concentration of 2010 and 2011 data are used.
[5]Daily flow and POC concentration of 2010 and 2011 data, when available, are used excluding outliers.

TABLE 49: ACTIVATED SLUDGE TOXIC POLLUTANT INHIBITION EVALUATION FOR PHENOL

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
	mg/L						
Threshold Concentration Limit[1]							
Carbonaceous Microorganism Inhibition	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Nitrogenous Microorganism Inhibition	4.00	4.00	4.00	4.00	4.00	4.00	4.00
	lbs/day						
Allowable Headworks Loading[2]							
Carbonaceous Microorganism Inhibition	113,542	12,263	4,150	16,013	1,121	105,371	316,481
Nitrogenous Microorganism Inhibition	9,083	981.1	332.0	1,281	89.68	8,430	25,318
Activated Sludge Toxicity (ASTAHL)[3]	9,083	981.1	332.0	1,281	89.68	8,430	25,318
Actual Average Influent Loading (L_{avg})[4]	576.9	6.73	2.47	10.57	0.65	49.02	79.72
Actual Maximum Influent Loading (L_{max})[5]	1,474	16.20	5.80	23.30	1.86	95.49	183.5
	%						
Actual loading vs. ASTAHL							
L_{avg} /ASTAHL	6	1	1	1	2	1	< 1
L_{max} /ASTAHL	16	2	2	2	5	1	1
Further Local Limit Evaluation Recommended	no	no	no	no	no	no	no

[1]Source: EPA 833-R-04-002B, EPA Office of Water, July 2004, Appendix G (http://www.epa.gov/npdes/pubs/final_local_limits_appendices.pdf).
[2]Allowable headworks loading are calculated using Equation 5; R_{pri} used for carbonaceous and nitrogenous microorganisms (Appendix Table AV-2).
[3]ASTAHL is the lowest calculated allowable headworks loading for each WRP.
[4]Average flow and POC concentration of 2010 and 2011 data are used.
[5]Daily flow and POC concentration of 2010 and 2011 data, when available, are used excluding outliers.

TABLE 50: ACTIVATED SLUDGE TOXIC POLLUTANT INHIBITION EVALUATION FOR AMMONIA

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
	----------mg/L----------						
Threshold Concentration Limit[1]							
Carbonaceous Microorganism Inhibition	480	480	480	480	480	480	480
Nitrogenous Microorganism Inhibition	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	----------lbs/day----------						
Allowable Headworks Loading[2]							
Carbonaceous Microorganism Inhibition	1,002,802	109,488	37,050	153,723	10,008	940,752	2,886,307
Nitrogenous Microorganism Inhibition	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Activated Sludge Toxicity (ASTAHL)[3]	1,002,802	109,488	37,050	153,723	10,008	940,752	2,886,307
Actual Average Influent Loading (L_{avg})[4]	21,854	3,658	1,260	4,919	358	25,678	97,539
Actual Maximum Influent Loading (L_{max})[5]	35,458	4,883	1,921	6,179	495	34,520	155,365
	----------%----------						
Actual loading vs. ASTAHL							
L_{avg} /ASTAHL	2	3	3	3	4	3	3
L_{max} /ASTAHL	4	4	5	4	5	4	5
Further Local Limit Evaluation Recommended	no	no	no	no	no	no	no

[1]Source: EPA 833-R-04-002B, EPA Office of Water, July 2004, Appendix G (http://www.epa.gov/npdes/pubs/final_local_limits_appendices.pdf).
[2]Allowable headworks loading are calculated using Equation 5; R_{pri} used for carbonaceous microorganisms (Appendix Table AV-2).
[3]ASTAHL is the lowest calculated allowable headworks loading for each WRP.
[4]Average flow and POC concentration of 2010 and 2011 data are used.
[5]Daily flow and POC concentration of 2010 and 2011 data, when available, are used excluding outliers.

evaluation is presented in Tables 51 through 60. Similar to evaluation for biosolids quality based AHL evaluation, the criterion that actual maximum daily loading is greater than 80 percent of the AHL to further evaluate local limit is not necessary for anaerobic digestion inhibition also due to long residence time of sludge in the digesters as per the 40 CFR Part 503 Regulation. Furthermore, similar to biosolids quality based AHL evaluation, the actual headwork loading from all WRPs that have their sludge processed at one WRP is summed for comparison.

Evaluation of Industrial and Commercial Discharges, Hauled, or Hazardous Waste

In order to maintain an accurate database of the industrial and commercial discharges within the jurisdiction of the District, the District's Sewage and Waste Control Ordinance (Ordinance) requires all Significant Industrial Users (SIUs), once identified, to apply and adhere to the requirements of a Discharge Authorization. The Ordinance prohibits any SIU from causing or allowing the discharge of process wastewater into the sewerage system under the jurisdiction of the District unless such SIU is in conformance with all the terms and conditions of a current valid Discharge Authorization issued by the District.

The Discharge Authorization process begins once a user has been identified as a potential SIU as defined in the Ordinance. A SIU is defined as any user who:

1. Is subject to categorical pretreatment standards applicable to an industrial category promulgated by the USEPA, or

2. Discharges greater than 25,000 gallons per day of process wastewater to the sewage system, or

3. Discharges process wastewater in excess of five percent of the average dry weather hydraulic or organic capacity of the receiving WRPs, or

4. Is designated by the District as having a reasonable potential for adversely affecting the operations of the WRPs or for violating any standard or requirement of the Ordinance.

Once a user has been identified by the District as an SIU, the user has 90 days to complete and submit to the District, on forms supplied by the District, a Discharge Authorization Request (DAR). The DAR requires a user to describe the scope of the operations taking place at the facility, including processes that may or may not use water. All products produced and services performed at the facility, as well as raw materials and chemicals used, must be described in the DAR. The DAR requires the user to identify the type, quantity, and method of storage or disposal of any liquid wastes or sludges generated by the facility. Sampling requirements for completion of the DAR are specified on the DAR form supplied by the District. Sample collection and analysis must conform to the requirements of 40 CFR Part 403/12(b)(5)(iii).

Within 90 days of the receipt of the completed DAR, the District notifies the user submitting the DAR of the approval or denial of the DAR and the reasons for the denial. The District's

TABLE 51: ANAEROBIC DIGESTION TOXIC POLLUTANT EVALUATION FOR ARSENIC

	District Biosolids Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
	mg/L			
Anaerobic Digestion Inhibition Level[1]	1.60	1.60	1.60	1.60
	lbs/day			
Anaerobic Digestion Toxicity Based Allowable Headworks Loading (ADTAHL)[2]	162.8	44.48	1.11	675.2
Actual Average Influent Loading, (L_{avg})[3]	94.06	16.00[5]	1.54	340.9[6]
	%			
Actual Loading vs. ADTAHL (L_{avg} / ADTAHL)[4]	58	36	139	50
Further Local Limit Evaluation Recommended	no	no	yes	no

[1]Estimated inhibition threshold from literature values (2004 USEPA , 2004b).
[2]Allowable headworks loading are calculated using Equation 6.
[3]Average flow and POC concentration of 2010 and 2011 data are used.
[4]When L_{avg} /ADTAHL is greater than 60 percent, further local limit evaluation is recommended; otherwise none.
[5]Includes actual average loading from Kirie WRP.
[6]Includes actual average loading from Lemont and O'Brien WRPs.

TABLE 52: ANAEROBIC DIGESTION TOXIC POLLUTANT EVALUATION FOR CADMIUM

	District Biosolids Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
	mg/L			
Anaerobic Digestion Inhibition Level[1]	20.00	20.00	20.00	20.00
	lbs/day			
Anaerobic Digestion Toxicity Based Allowable Headworks Loading (ADTAHL)[2]	172.5	56.54	12.51	430.6
Actual Average Influent Loading, (L_{avg})[3]	2.09	0.55[5]	0.08	44.10[6]
	%			
Actual Loading vs. ADTAHL (L_{avg} / ADTAHL)[4]	1	1	1	10
Further Local Limit Evaluation Recommended	no	no	no	no

[1]Estimated inhibition threshold from literature values (USEPA, 2004b).
[2]Allowable headworks loading are calculated using Equation 6.
[3]Average flow and POC concentration of 2010 and 2011 data are used.
[4]When L_{avg} /ADTAHL is greater than 60 percent, further local limit evaluation is recommended; otherwise none.
[5]Includes actual average loading from Kirie WRP.
[6]Includes actual average loading from Lemont and O'Brien WRPs.

TABLE 53: ANAEROBIC DIGESTION TOXIC POLLUTANT EVALUATION FOR CHROMIUM

	District Biosolids Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
	mg/L			
Anaerobic Digestion Inhibition Level[1]	130.0	130.0	130.0	130.0
	lbs/day			
Anaerobic Digestion Toxicity Based Allowable Headworks Loading (ADTAHL)[2]	972.6	380.4	42.24	3,305
Actual Average Influent Loading, (L_{avg})[3]	12.54	5.26[5]	0.77	304.0[6]
	%			
Actual Loading vs. ADTAHL (L_{avg} / ADTAHL)[4]	1	1	2	9
Further Local Limit Evaluation Recommended	no	no	no	no

[1]Estimated inhibition threshold from literature values (USEPA, 2004b).
[2]Allowable headworks loading are calculated using Equation 6.
[3]Average flow and POC concentration of 2010 and 2011 data are used.
[4]When L_{avg} /ADTAHL is greater than 60 percent, further local limit evaluation is recommended; otherwise none.
[5]Includes actual average loading from Kirie WRP.
[6]Includes actual average loading from Lemont and O'Brien WRPs.

TABLE 54: ANAEROBIC DIGESTION TOXIC POLLUTANT EVALUATION FOR HEXAVALENT CHROMIUM

	District Biosolids Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
	mg/L			
Anaerobic Digestion Inhibition Level[1]	110.0	110.0	110.0	110.0
	lbs/day			
Anaerobic Digestion Toxicity Based Allowable Headworks Loading (ADTAHL)[2]	1,696	241.4	28.97	3,054
Actual Average Influent Loading, (L_{avg})[3]	16.72	5.03[5]	0.77	67.90[6]
	%			
Actual Loading vs. ADTAHL (L_{avg} / ADTAHL)[4]	1	2	3	2
Further Local Limit Evaluation Recommended	no	no	no	no

[1]Estimated inhibition threshold from literature values (USEPA, 2004b).
[2]Allowable headworks loading are calculated using Equation 6.
[3]Average flow and POC concentration of 2010 and 2011 data are used.
[4]When L_{avg} /ADTAHL is greater than 60 percent, further local limit evaluation is recommended; otherwise none.
[5]Includes actual average loading from Kirie WRP.
[6]Includes actual average loading from Lemont and O'Brien WRPs.

TABLE 55: ANAEROBIC DIGESTION TOXIC POLLUTANT EVALUATION FOR COPPER

	District Biosolids Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
	mg/L			
Anaerobic Digestion Inhibition Level[1]	40.00	40.00	40.00	40.00
	lbs/day			
Anaerobic Digestion Toxicity Based Allowable Headworks Loading (ADTAHL)[2]	226.11	74.13	11.64	948.3
Actual Average Influent Loading, (L_{avg})[3]	84.65	40.99[5]	5.02	933.0[6]
	%			
Actual Loading vs. ADTAHL (L_{avg} / ADTAHL)[4]	37	55	43	98
Further Local Limit Evaluation Recommended	no	no	no	yes

[1]Estimated inhibition threshold from literature values (USEPA, 2004b).
[2]Allowable headworks loading are calculated using Equation 6.
[3]Average flow and POC concentration of 2010 and 2011 data are used.
[4]When L_{avg} /ADTAHL is greater than 60 percent, further local limit evaluation is recommended; otherwise none.
[5]Includes actual average loading from Kirie WRP.
[6]Includes actual average loading from Lemont and O'Brien WRPs.

TABLE 56: ANAEROBIC DIGESTION TOXIC POLLUTANT EVALUATION FOR LEAD

	District Biosolids Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
	mg/L			
Anaerobic Digestion Inhibition Level[1]	340.0	340.0	340.0	340.0
	lbs/day			
Anaerobic Digestion Toxicity Based Allowable Headworks Loading (ADTAHL)[2]	4,324	1,418	130.9	17,081
Actual Average Influent Loading, (L_{avg})[3]	41.81	10.97[5]	1.54	355.5[6]
	%			
Actual Loading vs. ADTAHL (L_{avg} / ADTAHL)[4]	1	1	1	2
Further Local Limit Evaluation Recommended	no	no	no	no

[1]Estimated inhibition threshold from literature values (USEPA, 2004b).
[2]Allowable headworks loading are calculated using Equation 6.
[3]Average flow and POC concentration of 2010 and 2011 data are used.
[4]When L_{avg} /ADTAHL is greater than 60 percent, further local limit evaluation is recommended; otherwise none.
[5]Includes actual average loading from Kirie WRP.
[6]Includes actual average loading from Lemont and O'Brien WRPs.

TABLE 57: ANAEROBIC DIGESTION TOXIC POLLUTANT EVALUATION FOR CYANIDE

	District Biosolids Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
	mg/L			
Anaerobic Digestion Inhibition Level[1]	13.00	13.00	13.00	13.00
	lbs/day			
Anaerobic Digestion Toxicity Based Allowable Headworks Loading (ADTAHL)[2]	220.5	74.77	8.56	571.5
Actual Average Influent Loading, (L_{avg})[3]	15.68	3.77[5]	0.50	73.03[6]
	%			
Actual Loading vs. ADTAHL (L_{avg} / ADTAHL)[4]	7	5	6	13
Further Local Limit Evaluation Recommended	no	no	no	no

[1]Estimated inhibition threshold from literature values (USEPA, 2004b).
[2]Allowable headworks loading are calculated using Equation 6.
[3]Average flow and POC concentration of 2010 and 2011 data are used.
[4]When L_{avg} /AHL is greater than 60 percent, further local limit evaluation is recommended; otherwise none.
[5]Includes actual average loading from Kirie WRP.
[6]Includes actual average loading from Lemont and O'Brien WRPs.

TABLE 58: ANAEROBIC DIGESTION TOXIC POLLUTANT EVALUATION FOR NICKEL

	District Biosolids Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
	mg/L			
Anaerobic Digestion Inhibition Level[1]	10.00	10.00	10.00	10.00
	lbs/day			
Anaerobic Digestion Toxicity Based Allowable Headworks Loading (ADTAHL)[2]	145.4	33.36	6.95	345.9
Actual Average Influent Loading, (L_{avg})[3]	13.59	8.05[5]	0.42	151.3[6]
	%			
Actual Loading vs. ADTAHL (L_{avg} / ADTAHL)[4]	9	24	6	44
Further Local Limit Evaluation Recommended	no	no	no	no

[1]Estimated inhibition threshold from literature values (USEPA, 2004b).
[2]Allowable headworks loading are calculated using Equation 6.
[3]Average flow and POC concentration of 2010 and 2011 data are used.
[4]When L_{avg} /ADTAHL is greater than 60 percent, further local limit evaluation is recommended, otherwise none.
[5]Includes actual average loading from Kirie WRP.
[6]Includes actual average loading from Lemont and O'Brien WRPs.

TABLE 59: ANAEROBIC DIGESTION TOXIC POLLUTANT EVALUATION FOR SILVER

	District Biosolids Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
	mg/L			
Anaerobic Digestion Inhibition Level[1]	13.00	13.00	13.00	13.00
	lbs/day			
Anaerobic Digestion Toxicity Based Allowable Headworks Loading (ADTAHL)[2]	220.5	34.42	4.17	762.0
Actual Average Influent Loading, (L_{avg})[3]	4.18	1.30[5]	0.23	23.49[6]
	%			
Actual Loading vs. ADTAHL (L_{avg} / ADTAHL)[4]	2	4	6	3
Further Local Limit Evaluation Recommended	no	no	no	no

[1]Estimated inhibition threshold from literature values (USEPA, 2004b).
[2]Allowable headworks loading are calculated using Equation 6.
[3]Average flow and POC concentration of 2010 and 2011 data are used.
[4]When L_{avg} /ADTAHL is greater than 60 percent, further local limit evaluation is recommended; otherwise none.
[5]Includes actual average loading from Kirie WRP.
[6]Includes actual average loading from Lemont and O'Brien WRPs.

TABLE 60: ANAEROBIC DIGESTION TOXIC POLLUTANT EVALUATION FOR ZINC

	District Biosolids Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
	mg/L			
Anaerobic Digestion Inhibition Level[1]	400.0	400.0	400.0	400.0
	lbs/day			
Anaerobic Digestion Toxicity Based Allowable Headworks Loading (ADTAHL)[2]	2,312	926.7	131.7	9,814
Actual Average Influent Loading, (L_{avg})[3]	595.7	64.71[5]	7.18	2,311[6]
	%			
Actual Loading vs. ADTAHL (L_{avg} / ADTAHL)[4]	26	7	5	24
Further Local Limit Evaluation Recommended	no	no	no	no

[1]Estimated inhibition threshold from literature values (USEPA, 2004b).
[2]Allowable headworks loading are calculated using Equation 6.
[3]Average flow and POC concentration 2010 and 2011 data are used.
[4]When L_{avg} /ADTAHL is greater than 60 percent, further local limit evaluation is recommended; otherwise none.
[5]Includes actual average loading from Kirie WRP.
[6]Includes actual average loading from Lemont and O'Brien WRPs.

approval or denial is based on a review of the DAR and an inspection and sampling study conducted by District personnel to verify the information contained in the DAR. An approved DAR results in the issuance of a Discharge Authorization. A Discharge Authorization document issued by the District shall contain, at a minimum, the following conditions:

1. Statement of limited duration not to exceed five years.

2. A transferability provision as provided by and limited by the Ordinance.

3. Effluent discharge limitations applicable to all effluent discharge monitoring points of the industrial user.

4. Self-monitoring, sampling, reporting, notification and record-keeping requirements, including identification of the pollutants to be monitored, sampling points, sampling frequency, and sample type.

5. Statement of applicable penalties for violation of standards and requirements.

6. Compliance milestone requirements and dates of any compliance schedule entered into by the SIU to remedy a condition of noncompliance with the terms and conditions of the Ordinance or a Discharge Authorization issued to the SIU.

Any user whose DAR has been denied by the District may request a review of the District's determination. If the DAR was submitted for a new discharge, then the user is prohibited from commencing the discharge of process wastewater into the sewerage system of the District until such time as a Discharge Authorization is issued to the user. If the DAR has been submitted for an existing discharge, the user may continue to discharge into the sewer system of the District, in accordance with all conditions reported in the DAR and not otherwise in violation of the Ordinances, during the review and until final administrative decisions by the District. Table 61 lists the current SIUs by category.

Detailed in Appendix Table AVIII are the 2011 industrial metal loadings from the SIUs under each point source category. Detailed in Appendix Table AVIX are the 2011 industrial metal loadings from the SIUs sorted by District WRP.

Collection System Based Allowable Headworks Loadings

The District's Ordinance currently contains discharge prohibitions regarding discharge to the collection system to protect the health and safety of workers at the District's WRPs. Specifically, Appendix B Section 2, Discharge Prohibitions of the Ordinance states the restrictions. The restrictions include, but are not limited to:

1. Liquids, solids or gases which by reason of their nature or quantity are sufficient to cause fire or explosion or be injurious in any other way to the sewerage system or to the operation of the water reclamation facilities.

TABLE 61: SIGNIFICANT INDUSTRIAL USERS BY CATEGORY

Category		SIUs per Description Category
410	Textile Mills	1
413	Electroplating	58
414	Organic Chemicals, Plastics and Synthetic Fibers	8
415	Inorganic Chemicals	1
417	Soaps and Detergent Manufacturing	1
419	Petroleum Refining	1
420	Iron and Steel Manufacturing	8
421	Nonferrous Metals Manufacturing	2
425	Leather Tanning and Finishing	1
430	Pulp, Paper and Paperboard Mills	1
433	Metal Finishing	125
437	Centralized Waste Treatment	5
439	Pharmaceutical Manufacturing	3
442	Transportation Equipment Cleaning	9
455	Pesticide Chemicals	2
463	Plastics Molding and Forming	1
464	Metal Molding and Casting	3
465	Coil Coating	3
466	Porcelain Enameling	1
467	Aluminum Forming	1
468	Copper Forming	2
469	Electrical and Electronic Components	1
471	Nonferrous Metals Forming and Metal Powders	1
SIU	Non-categorical Significant Industrial Users	136
Total (as of 5/1/2014)		375

2. Any waste-stream having a closed cup flashpoint less than 140 degrees Fahrenheit (60 degrees Centigrade) using the test methods specified in 40 CFR 261.21.

3. Noxious or malodorous liquids, gases or substances which either singly or by interaction with other wastes are sufficient to create a public nuisance or hazard to life, to cause injury or acute worker health or safety problems, or to prevent entry into the sewers for their maintenance or repair.

4. Water or wastes containing toxic substances in quantities which are sufficient to interfere with the biological processes of the water reclamation facilities.

5. Garbage that has not been ground or comminuted to such a degree that all particles will be carried freely in suspension under conditions normally prevailing in public sewers, with no particle greater than one-half inch in any dimension

6. Radioactive wastes unless they comply with 10 CFR 20 and 32 Illinois Administrative Code 340.

7. Solid or viscous wastes which cause obstruction to the flow in sewers or other interference with the proper operation of the sewerage system or water reclamation facilities, such as grease, uncomminuted garbage, animal guts or tissues, paunch manure, bone, hair, hides, fleshings, entrails, feathers, sand, cinders, ashes, spent lime, stone or marble dust, metal, glass, straw, shavings, grass clippings, rags, spent grain, waste paper, wood, plastic, gas, tar, asphalt residues, residues from refining or processing of fuel or lubricating oil, gasoline, naphtha, and similar substances. Potentially Infectious Medical Wastes unless they comply with 35 Illinois Administrative Code, Subtitle C.

8. Waters or waste containing substances which are not amenable to treatment or reduction by the sewage treatment process employed or are amenable to treatment only to such degree that the water reclamation facilities' effluent cannot meet the requirements of other agencies having jurisdiction over discharge to the receiving waters.

9. Excessive discoloration (such as, but not limited to, dye waste and vegetable tanning solutions) which threatens the District's operations.

10. Pollutants which will cause corrosive structural damage.

11. Pollutants, including but not limited to, petroleum oil, non-biodegradable cutting oil, and products of mineral origin, which cause interference or pass-through.

12. Hauled or trucked wastes, except at discharge points designated by and under valid written authorization of the District.

13. Any pollutant, including oxygen-demanding pollutants (BOD, etc.) released in a discharge at a flow rate and/or pollutant concentration, which will cause Interference with the water reclamation facilities.

14. Heat in amounts which will inhibit biological activity in the water reclamation facilities resulting in Interference but in no case heat in such quantities that the temperature at the water reclamation plant exceeds 40°C (104°F).

DEVELOPING OF LOCAL LIMITS

In this study, local limits were calculated as site-specific for each WRP or WRPs for sludge-related evaluations. Variations are caused by differences in treatment processes, pollutant removal efficiencies, receiving water quality standards, biosolids disposal methods, and domestic wastewater pollutant background concentrations. The AHLs derived based on various criteria that were determined for each pollutant at each WRP are summarized in Table 62. The corresponding MAHL for further evaluation are noted in the table. Only a portion of the MAHL for each POC is allocated to the WRP's current users. The remaining portion is held in reserve as a safety factor to account for future industrial growth, potential slug loadings, and other uncertainties. A safety factor of 10 to 30 percent is adequate as recommended by the USEPA (USEPA, 2004a). The background contributions, Table 63, of pollutants are subtracted from the MAHL to determine the maximum allowable industrial loading (MAIL) for each POC (Equation 7). A local limit is then calculated by dividing the MAIL by the total industrial flow to the respective WRP (or WRPs with respect to biosolids quality or sludge anaerobic digestion inhibition) (Equation 8).

Equation 7: Maximum Allowable Industrial Load Calculation

$$L_{MAIL} = MAHL\ (1\text{-}SF) - L_{DOM}$$

where,

L_{MAIL} = Maximum Allowable Industrial Load, lbs/day

MAHL = Maximum Allowable Headworks Loading, lbs/day

SF = Safety Factor, as a Decimal

L_{DOM} = Loading from Background Sources, lbs/day

Equation 8: Uniform Concentration Limit Calculation

$$C_{LOCAL\_LIMIT} = \frac{L_{MAIL}}{(Q_{IND})\ (8.34)}$$

where,

C_{LOCAL_LIMIT} = Uniform Concentration Local Limit, mg/L

L_{MAIL} = Maximum Allowable Industrial Load, lbs/day

Q_{IND} = Total Flow from Industrial Sources within a WRP service area, MGD

8.34 = Unit Conversion Factor

TABLE 62: SUMMARY OF ALLOWABLE HEADWORKS LOADINGS FOR POLLUTANTS OF CONCERN BASED ON APPLICABLE CRITERIA

POC	Allowable Headworks Loading (AHL) Based on Various Criteria, lbs/day	Report Table	Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
Arsenic	Water Quality, total (WQAHL)	10	2,199	60.67	26.29	93.13	4,501	2,042	6,789
	Biosolids Quality (BQAHL)	30	105.5*	26.33*	0.70*	n/a	n/a	n/a	420.4*
	Sludge Inhibition (ASTAHL)	39	208.9*	22.81	7.72	32.03	2.09*	196.0	601.3*
	Anaerobic Digestion (ADTAHL)	51	162.8	44.48	1.11*	n/a	n/a	n/a	675.2
Cadmium	Water Quality, (WQAHL)	11	764.3	1.28	0.31	1.01	1,602	341.8	48,454
	Biosolids Quality (BQAHL)	31	8.51	2.55	0.60	n/a	n/a	n/a	20.40*
	Sludge Inhibition (ASTAHL)	40	2,458	268.4	85.76	320.3	24.53	2,042	8,018
	Anaerobic Digestion (ADTAHL)	52	172.5	56.54	12.51	n/a	n/a	n/a	430.6
Chromium, trivalent	Water Quality (WQAHL)	12	6,529	238.7	159.5	397.6	7,258	3,267	38,005
	Sludge Inhibition (ASTAHL)	41	652.9	67.89	24.74	80.06	5.86	550.5	2,004
	Anaerobic Digestion (ADTAHL)	53	972.6	380.42	42.24	n/a	n/a	n/a	3,305
Chromium, hexavalent	Water Quality (WQAHL)	13	935.5	10.46	16.98	14.68	2,557	2,450	8,061
	Sludge Inhibition (ASTAHL)	42	2,089	228.1	77.19	320.3	20.85	1,960	6,013
	Anaerobic Digestion (ADTAHL)	54	1,696	241.4	28.97	n/a	n/a	n/a	3,054
Copper	Water Quality (WQAHL)	14	20,892	67.75	12.13*	127.8	29,092	13,066	58,718
	Biosolids Quality (BQAHL)	32	214.5	64.22*	10.78	n/a	n/a	n/a	864.2*
	Sludge Inhibition (ASTAHL)	43	139.3*	14.62*	4.89*	16.01*	1.30*	124.0*	390.5*
	Anaerobic Digestion (ADTAHL)	55	226.1	74.13	11.64	n/a	n/a	n/a	948.3*
Lead	Water Quality (WQAHL)	15	348.2	20.07	12.99	29.10	588.4	455.79	1,099*
	Biosolids Quality (BQAHL)	33	96.53	28.90	2.85	n/a	n/a	n/a	366.2*
	Sludge Inhibition (ASTAHL)	44	1,374	150.1	63.27	160.1	13.72	1,485	4,009
	Anaerobic Digestion (ADTAHL)	56	4,324	1,418	130.9	n/a	n/a	n/a	17,081

TABLE 62 (Continued): SUMMARY OF ALLOWABLE HEADWORKS LOADINGS FOR POLLUTANTS OF CONCERN BASED ON APPLICABLE CRITERIA

POC	Allowable Headworks Loading (AHL) Based on Various Criteria lbs/day	Report Table	Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
Iron Soluble	Water Quality (WQAHL)	16-1	2,600	n/a	n/a	n/a	629.9	1,380	5,794
Iron Total	Water Quality (WQAHL)	16-2	83,567	7,603	1,930	6,405	77,521	65,330	427,462
Fluoride	Water Quality (WQAHL)	17	33,338	1,037	331.9	1,664	65,294	31,611	106,300
Mercury	Water Quality(WQAHL)	18	13.06	0.02*	0.0052*	0.024*	15.74	5.76	5.39*
	Biosolids Quality (BQAHL)	34	2.38	0.78	0.13	n/a	n/a	n/a	21.79
	Sludge Inhibition (ASTAHL)	45	232.1	25.06	8.39	32.02	2.29	215.4	626.4
Molybdenum[1]	Biosolids Quality (BQAHL)	35	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Nickel	Water Quality (WQAHL)	19	3,214	6.66*	2.04	10.10*	5,535	2,579	16,568
	Biosolids Quality (BQAHL)	36	154.5	32.37	7.21	n/a	n/a	n/a	256.4
	Sludge Inhibition (ASTAHL)	46	985.2	65.54	20.97	80.06	5.55	1,020	1,790
	Anaerobic Digestion (ADTAHL)	58	145.4	33.36	6.95	n/a	n/a	n/a	345.9
Selenium	Water Quality, (WQAHL)	20	4,393	288.7	135.4	372.4	141,539	2,279	9,138
	Biosolids Quality (BQAHL)	37	25.74	18.35	1.44	n/a	n/a	n/a	341.8*
Silver	Water Quality (WQAHL)	21	3,283	3.08	1.75	3.08	6,817	3,593	11,108
	Anaerobic Digestion (ADTAHL)	59	220.5	34.42	4.17	n/a	n/a	n/a	762.0

TABLE 62 (Continued): SUMMARY OF ALLOWABLE HEADWORKS LOADINGS FOR POLLUTANTS OF CONCERN BASED ON APPLICABLE CRITERIA

POC	Allowable Headworks Loading (AHL) Based on Various Criteria, lbs/day	Report Table	Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
Zinc	Water Quality (WQAHL)	22	17,410	65.33	25.83	108.5	12,852	5,297	46,046
	Biosolids Quality (BQAHL)	38	409.5*	149.8	22.77	n/a	n/a	n/a	1,669*
	Sludge Inhibition (ASTAHL)	47	245.8*	25.70*	8.82*	25.62*	2.14*	214.8*	668.1*
	Anaerobic Digestion (ADTAHL)	60	2,312	926.7	131.7	n/a	n/a	n/a	9,814
Ammonia	Water Quality (WQAHL)	23	261,146 (10,446)[2]	34,215	11,578	24,019	1,738 (14,107)[2]	163,325 (6,533)[2]	375,821 (16,114)[2]
	Sludge Inhibition (ASTAHL)	50	1,002,802	109,488	37,050	153,723	10,008	940,752	2,886,307
Cyanide, WAD or Total	Water Quality (WQAHL)	24	298.5	1.67	0.65	2.73	563.9	311.1	1,240
	Sludge Inhibition (ASTAHL)	48	229.6	27.16	10.29	32.02	2.29	236.1	742.4
	Anaerobic Digestion (ADTAHL)	57	220.5	74.77	8.56	n/a	n/a	n/a	571.5
Phenol	Water Quality (WQAHL)	25	31,338	190.1	77.19	266.9	8,728	3,459	5,237
	Sludge Inhibition (ASTAHL)	49	9,083	981.1	332.0	1,281	89.68	8,430	25,318
BOD_5	Water Quality (WQAHL)	26	597,700	417,000	91,740	183,480	13,344	625,500	4,003,200
Suspended Solids	Water Quality (WQAHL)	27	1,075,860	500,400	73,392	160,128	20,850	900,720	14,411,520

TABLE 62 (Continued): SUMMARY OF ALLOWABLE HEADWORKS LOADINGS FOR POLLUTANTS OF CONCERN BASED ON DIFFERENT CRITERIA

POC	Allowable Headworks Loading (AHL) Based on Various Criteria lbs/day	Report Table	Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
Phosphorus	Water Quality (WQAHL)	28	3,602*	n/a	n/a	n/a	n/a	4,261*	42,951*
FOG	Water Quality (WQAHL)	29	313,376	n/a	n/a	n/a	378,249	364,481	456,317

n/a – not applicable.
*Further Evaluation of Local Limit Recommended.
[1]Allowable headworks loading cannot be calculated because molybdenum concentrations in WRP influents are not available. Evaluation was made based on molybdenum concentrations in biosolids, which are routinely monitored.
[2]Data in parenthesis is un-ionized ammonia.

TABLE 63: BACKGROUND/DOMESTIC LOADINGS

	Background Pollutant Concentration[1], (mg/L)	Domestic Load at District WRP (lb/day)[2]						
		Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
Arsenic	0.001	2.87	0.32	0.11	0.44	0.03	2.77	8.29
Cadmium	0.001	2.02	0.22	0.08	0.31	0.02	1.94	5.82
Chromium	0.003	6.93	0.77	0.26	1.07	0.07	6.67	19.97
Hex. Chromium	0.000	0.40	0.04	0.02	0.06	0.00	0.39	1.16
Copper	0.002	3.23	0.36	0.12	0.50	0.03	3.11	9.31
Lead	0.001	2.39	0.26	0.09	0.37	0.02	2.30	6.90
Iron	0.017	35.08	3.88	1.31	5.43	0.37	33.77	101.2
Fluoride	0.675	1,363	150.9	51.04	211.0	14.18	1,312	3,930
Mercury	0.0009	1.74	0.19	0.07	0.27	0.02	1.67	5.01
Molybdenum	0.002	3.10	0.34	0.12	0.48	0.03	2.99	8.95
Nickel	0.002	3.10	0.34	0.12	0.48	0.03	2.99	8.95
Selenium	0.002	4.19	0.46	0.16	0.65	0.04	4.03	12.09
Silver	0.002	3.16	0.35	0.12	0.49	0.03	3.05	9.13
Zinc	0.013	26.46	2.93	0.99	4.10	0.28	25.48	76.32
Ammonia	16.875[3]	34,080	3,775	1,275	5,277	351.8	32,812	98,297
Cyanide	0.005	10.10	1.12	0.38	1.56	0.11	9.72	29.12
Phenol	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00

TABLE 63 (Continued): BACKGROUND/DOMESTIC LOADINGS

	Background Pollutant Concentration,[1] (mg/L)	Domestic Load at District WRP (lb/day)[2]						
		Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
TSS	168.00[4]	339,289	37,578	12,691	52,531	3,503	326,657	978,605
TP	2.56[5]	5,170	572.6	193.4	800.5	53.38	4,978	14,912
BOD_5	119.00[4]	240,330	26,617	8,890	37,210	2,481	231,382	693,179
Average WRP Flow, MGD		250.5	27.35	9.26	38.4	2.52	235	721
Average Industrial Flow, MGD		8.32	0.53	0.19	0.903	0	1.86	22.61
Average Domestic Flow, MGD		242.2	26.82	9.07	37.50	2.52	233.1	698.4

[1]The limit value is used in the load calculation if it is less than the reporting limit.
[2] Domestic flow, which is the difference between the WRP influent flow and the industrial flow, is used in domestic load calculation.
[3]Concentration estimated from Wastewater Treatment and Reuse (4th Ed) by Metcalf and Eddy for average per capita water use of 170 gallons/day.
[4]Concentrations in domestic sewage based on User Charge Ordinance-2013, Metropolitan Water Reclamation District of Greater Chicago.
[5]Concentrations in domestic sewage based on Report No. 12-44 Monitoring and Research Department (MWRDGC, 2012).

Compliance History

Table 64 is a summation of the annual enforcement actions taken by the Enforcement Section of the Industrial Waste Division for all industrial users under the District's jurisdiction.

In accordance with the requirements of the USEPA in 40 CFR Part 403.8(f)(2)(vii), the District provides notification to the public by publication in a local newspaper of those industrial dischargers to its system which demonstrate exemplary performance and consistent compliance, and those industrial discharges which were determined to be significant violators of applicable pretreatment standards or other requirements.

Table 65 lists the number of users which were published locally in 2011 and 2012 by the District to identify a user's compliance status with the District's Sewage and Waste Control Ordinance in 2010 and 2011, respectively. A user's compliance status was identified in the table as exemplary (no violations), or in significant noncompliance (significant, chronic or acute violations). The Summary indicates an annual decrease in the number of users listed in compliance and a slight increase in the number of users in noncompliance.

Slug Loading Potential

In order to prevent slug discharges, the District's Ordinance requires each SIU and each industrial user so notified of applicability to provide a plan to prevent the accidental discharge to the sewerage system of any flammable, volatile, explosive, or corrosive materials. Spill Prevention, Control and Countermeasure Plans must contain all the elements required under 40 CFR Part 403.8(f)(2)(V) and must be approved prior to construction. Plans and industrial facilities are re-evaluated every two years by the District.

Of the District's seven WRPs, six have headworks loading capacities such that an isolated slug loading would be unlikely to threaten their capacity to treat the influent sufficiently to avoid an upset or to cause pass-through. The District's WRP with the lowest capacity does not have an industrial component contributing to its influent.

Hauled Waste

The District has developed a permitting, entry, and disposal program limited to haulers discharging chemical toilet wastes at the Stickney WRP. The disposal program follows the USEPA's Guidance Manual for the Control of Wastes Hauled to Publicly Owned Treatment Works and has established a designated discharge point within the Stickney WRP for such wastes pursuant to 40 CFR Part 403.5(b)(8) (USEPA, 1999b). Disposal is limited to cleanings from chemical toilets and approved holding tanks. Personnel may be dispatched to sample the discharge depending on availability of personnel and the frequency of visits made by the waste hauler. Random samples are collected and analyzed and data is accessed by the Enforcement Section to determine compliance with the Chemical Toilet Wastes Disposal Ordinance pollutant

TABLE 64: ANNUAL ENFORCEMENT ACTIONS

Year	Cease & Desist Orders/NONs[1]/Amendments	Board Orders	Legal Actions
2007	368	0	0
2008	359	1	0
2009	299	1	0
2010	321	3	0
2011	281	0	0
2012	364	0	0

[1]NON = Notice of Noncompliance.

TABLE 65: COMPLIANCE STATUS

Compliance Status	Users Published in 2011	Users Published in 2012
Exemplary	248	235
Significant Noncompliance	27	41

loading limits. The current sampling protocol attempts collection from at least 10 percent of all loads discharged per calendar year. The District's hauled waste program may be expanded at a future date to include intake of high-strength wastes for energy production.

Expansion and Growth Allowance

The industrial base within the District's jurisdiction has shown a steady decline since the early 1990s. Since 1996 the number of SIUs has declined 39 percent. Table 66 reflects the actual number of SIUs under the District's jurisdiction from 2007 to 2012.

TABLE 66: SIGNIFICANT INDUSTRIAL USERS

Year	Number of SIUs
2007	407
2008	394
2009	373
2010	363
2011	361
2012	357

The industrial decline as a result of closure and/or relocation has led to a decrease in the WRPs' industrial loading. The urban geographical areas once occupied by industry have been subject to urban gentrification, resulting in an increase in the residential population. According to the United States Census Bureau, the population of the Chicago metropolitan area grew by approximately 350,000 (3.7 percent) between 2000 and 2010. During the same period, the city of Chicago population declined by approximately 200,000 (6.9 percent).

Evaluation of Local Limits for Pollutants of Concern

Arsenic. Arsenic is currently not regulated under a local limit. Arsenic was evaluated at each of the District's seven activated sludge WRPs. The technically based evaluation considered water quality, biosolids quality, and biological inhibition. The allowable headworks loadings were determined for each environmental criterion. The derived AHLs were compared to the average and maximum historical influent loadings. The biosolids arsenic concentrations were compared to the limits established in the 40 CFR Part 503.13 Regulation.

The effluent water quality evaluation for arsenic, Table 10, indicates that it is not necessary to further evaluate the need for a local limit for arsenic at the District's seven WRPs

relative to water quality. A local limit for arsenic is not needed to protect water quality at the District's WRPs.

The biosolids quality evaluation, Table 30, indicates that, based on actual loading and allowable headworks loading, further evaluation of arsenic is required for the Calumet, Egan, Hanover Park, and Stickney WRPs. Table 30 indicates that the average arsenic concentrations in biosolids from those WRPs do not exceed 30 percent of the highest quality 40 CFR Part 503.13 limit, and the maximum concentrations do not exceed 45 percent of this limit. The arsenic concentrations in the biosolids are low enough in relation to 40 CFR Part 503.13 biosolids limits that no local limit is needed.

The evaluation of activated sludge inhibition due to arsenic, Table 39, indicates that further evaluation is needed at the Kirie, Lemont, and Stickney WRPs based on the methodology of the 2004 USEPA Guidance (USEPA, 2004a). However, the historical operations of these WRPs indicate that arsenic is not responsible for any biological inhibition. Therefore, no local limit based on activated sludge inhibition is needed.

The headworks loadings of arsenic were determined to potentially be high enough to cause anaerobic digestion inhibition at the Hanover Park WRP digesters only, based on the 2004 USEPA Guidance (USEPA, 2004a). The summary evaluation is shown on Table 51. However, the historical operation of the Hanover Park WRP digesters indicates that there has been no inhibition in the digestion process. Therefore, no local limit based on anaerobic digestion inhibition is needed.

The District will not establish a local limit for arsenic at this time, as no environmental problems or biological inhibition issues have been shown in the District service area and at the District's WRPs. The interference and pass-through potential of arsenic will continue to be monitored.

Cadmium. Cadmium is currently regulated under a local limit. The pollutant was evaluated at each of the District's seven activated sludge WRPs. The technically based evaluation considered water quality, biosolids quality, and biological inhibition. The allowable headworks loadings were determined for each environmental criterion. The derived AHLs were compared to the average and maximum historical influent loadings. The sludge cadmium concentrations were compared to the 40 CFR Part 503.13 regulation.

The effluent water quality evaluation for cadmium, Table 11, indicates that it is not necessary to further evaluate the need for a local limit for cadmium at the District's seven WRPs relative to water quality. The current local limit for cadmium is sufficient to protect effluent water quality at the District's WRPs.

The biosolids quality evaluation, Table 31, indicates that further evaluation for cadmium is recommended for the Stickney WRP based on actual loading versus allowable headworks loading. However, Table 31 also indicates that the concentration of cadmium in the Stickney WRP biosolids is much lower than the 40 CFR Part 503.13 limit, with the maximum

concentration not exceeding 10 percent of the highest quality 40 CFR Part 503.13 limit. The current local limit, therefore, appears to be sufficiently protective of biosolids quality.

The evaluation of activated sludge inhibition due to cadmium, Table 40, indicates that the headworks loadings are not high enough to cause inhibition at any of the District's WRPs.

The actual headwork loadings of cadmium are not high enough to cause anaerobic digestion inhibition at any of the District's digesters, according to Table 52.

Based on this evaluation, the District has determined that an update on local limit for cadmium is not needed. However, because the District has historically regulated cadmium under a local limit, the District will maintain the current local limit of 2.0 mg/L. The interference and pass-through potential of cadmium will continue to be monitored.

Chromium. Total chromium is currently regulated under a local limit. The pollutant was evaluated at each of the District's seven activated sludge WRPs. The technically based evaluation considered water quality, biosolids quality, and biological inhibition. The allowable headworks loadings were determined for each environmental criterion. The derived AHLs were compared to the average and maximum influent loadings.

The effluent water quality evaluation for chromium, Table 12, indicates that it is not necessary to further evaluate the need for a local limit for chromium at the District's seven WRPs relative to the water quality in the receiving streams. The current local limit is sufficient to protect water quality at the District's WRPs.

The evaluation of activated sludge inhibition due to total chromium, Table 41, indicates that the loadings are not high enough to cause inhibition at any of the seven District WRPs. Based on this evaluation, the District has determined that an update of the local limit for chromium is not needed.

The potential for chromium to exhibit toxicity to anaerobic digestion was also evaluated. Table 53 shows the results, which indicate that there is a very low potential for chromium to be toxic to anaerobic digestion and, therefore, there is no need to change the current local limit.

The District has historically regulated chromium under a local limit of 25.0 mg/L, the District will maintain the current limit of 25.0 mg/L. The interference and pass-through potential of total chromium will continue to be monitored.

Hexavalent Chromium. Hexavalent chromium is currently regulated under a local limit. The pollutant was evaluated at each of the District's seven activated sludge WRPs. The technically based evaluation considered water quality, biosolids quality, and biological inhibition. The allowable headworks loadings were determined for each environmental criterion. The derived AHLs were compared to the average and maximum influent loadings.

The effluent water quality evaluation for hexavalent chromium, Table 13, indicates that it is not necessary to further evaluate the need for a local limit for hexavalent chromium at the

District's seven WRPs relative to the water quality. The current local limit for hexavalent chromium is sufficient to protect water quality at the District's WRPs.

The evaluation of activated sludge inhibition due to hexavalent chromium, Table 42, indicates that the loadings are not high enough to cause inhibition at any of the District's WRPs.

The headworks loadings of hexavalent chromium are not high enough to cause anaerobic digestion inhibition at any of the District's digesters, as shown in Table 54.

Based on this evaluation, the District has determined that an update of the local limit for hexavalent chromium is not needed. However, because the District has historically regulated hexavalent chromium under a local limit, the District will maintain the current local limit of 10.0 mg/L. The interference and pass-through potential of hexavalent chromium will continue to be monitored.

Copper. Copper is currently regulated under a local limit. The pollutant was evaluated at each of the District's seven activated sludge WRPs. The technically based evaluation considered water quality, biosolids quality, and biological inhibition. The allowable headworks loadings were determined for each environmental criterion. The derived AHLs were compared to the average and maximum influent loadings. The biosolids copper concentrations were compared to the 40 CFR Part 503.13 standard.

The effluent water quality evaluation for copper, Table 14, indicates that the average copper loadings at all seven of the WRPs were significantly lower than the maximum allowable headworks loadings except for the Hanover Park WRP.

Hanover Park Water Reclamation Plant Maximum Allowable Headworks Loading Based Local Limit Calculation.

According to Equation 7:

$L_{MAIL} = MAHL\ (1\text{-}SF) - L_{DOM}$

$$L_{MAIL} = 12.13 \text{ lbs/day } (1 - 0.20) - 0.12 \text{ lbs/day} = 9.58 \text{ lbs/day}$$

According to Equation 8:

$$C_{LOCAL\_LIMIT} = \frac{L_{MAIL}}{(Q_{IND})\ (8.34)}$$

$$C_{LOCAL\_LIMIT} = \frac{9.58}{(0.20)\ (8.34)} = 5.83 \text{ mg/L}$$

where,

MAHL = 12.13 lbs/day (from Table 14)

SF = 0.20

L_{DOM} = 0.12 lbs/day (from Table 63)

Q_{IND} = 0.20 MGD (from Table 8)

The AHLs derived based on biosolids quality at the Egan and Stickney WRPs exceed 60 percent of the allowed headworks loadings based upon the methodology of the 2004 USEPA Guidance, as shown in Table 32. However, the post-digestion maximum copper concentrations in the biosolids are well below the 40 CFR Part 503.13 standard at all District biosolids processing facilities. The historical operations data suggest that no limit is necessary to protect biosolids quality at this time.

The evaluation of activated sludge inhibition due to copper, Table 43, indicates that further evaluation is recommended at all of the seven WRPs based upon the methodology of the 2004 USEPA Guidance. The limiting parameter is nitrogenous microorganisms inhibition.

The uniform concentration local limit method is used to determine the local limit.

Calumet Water Reclamation Plant Maximum Allowable Headworks Loading Based Local Limit Calculation:

According to Equation 7:

$L_{MAIL} = MAHL\ (1\text{-}SF) - L_{DOM}$

$$L_{MAIL} = 139.28 \text{ lbs/day } (1 - 0.10) - 3.23 \text{ lbs/day} = 122.12 \text{ lbs/day}$$

According to Equation 8:

$$C_{LOCAL\_LIMIT} = \frac{L_{MAIL}}{(Q_{IND})\ (8.34)}$$

$$C_{LOCAL\_LIMIT} = \frac{122.12}{(8.34)\ (8.34)} = 1.75 \text{ mg/L}$$

where,

MAHL = 139.28 lbs/day (from Table 43)

SF = 0.10

L_{DOM} = 3.23 lbs/day (from Table 63)
Q_{IND} = 8.34 MGD (from Table 8)

John E. Egan Water Reclamation Plant Maximum Allowable Headworks Loading Based Local Limit Calculation.

According to Equation 7

$L_{MAIL} = MAHL\ (1\text{-}SF) - L_{DOM}$

$$L_{MAIL} = 14.62 \text{ lbs/day } (1 - 0.10) - 0.36 \text{ lbs/day} = 12.80 \text{ lbs/day}$$

According to Equation 8:

$$C_{LOCAL\_LIMIT} = \frac{L_{MAIL}}{(Q_{IND})\ (8.34)}$$

$$C_{LOCAL\_LIMIT} = \frac{12.80}{(0.53)\ (8.34)} = 2.89 \text{ mg/L}$$

where,

MAHL = 14.62 lbs/day (from Table 43)

SF = 0.10

L_{DOM} = 0.36 lbs/day (from Table 63)

Q_{IND} = 0.53 MGD (from Table 8)

Hanover Park Water Reclamation Plant Maximum Allowable Headworks Loading Based Local Limit Calculation.

According to Equation 7:

$L_{MAIL} = MAHL\ (1\text{-}SF) - L_{DOM}$

$$L_{MAIL} = 4.89 \text{ lbs/day } (1 - 0.10) - 0.12 \text{ lbs/day} = 4.28 \text{ lbs/day}$$

According to Equation 8:

$$C_{LOCAL\_LIMIT} = \frac{L_{MAIL}}{(Q_{IND})\ (8.34)}$$

$$C_{LOCAL\_LIMIT} = \frac{4.28}{(0.20)\ (8.34)} = 2.60 \text{ mg/L}$$

where,

MAHL = 4.89 lbs/day (from Table 43)

SF = 0.10

L_{DOM} = 0.12 lbs/day (from Table 63)

Q_{IND} = 0.20 MGD (from Table 8)

James C. Kirie Water Reclamation Plant Maximum Allowable Headworks Loading Based Local Limit Calculation.

According to Equation 7:

$L_{MAIL} = MAHL\ (1\text{-}SF) - L_{DOM}$

$$L_{MAIL} = 16.01 \text{ lbs/day } (1 - 0.10) - 0.50 \text{ lbs/day} = 13.91 \text{ lbs/day}$$

According to Equation 8: $C_{LOCAL\_LIMIT} = \dfrac{L_{MAIL}}{(Q_{IND})\ (8.34)}$

$$C_{LOCAL\_LIMIT} = \frac{13.91}{(0.91)\ (8.34)} = 1.84 \text{ mg/L}$$

where,

MAHL = 16.01 lbs/day (from Table 43)

SF = 0.10

L_{DOM} = 0.50 lbs/day (from Table 63)

Q_{IND} = 0.91 MGD (from Table 8)

Lemont Water Reclamation Plant Maximum Allowable Headworks Loading Based Local Limit Calculation.

Lemont WRP doesn't have any industrial flow; thus no local limit can be calculated.

Terrence J. O'Brien Water Reclamation Plant Maximum Allowable Headworks Loading Based Local Limit Calculation.

According to Equation 7:

L_{MAIL} = MAHL (1-SF) - L_{DOM}

$$L_{MAIL} = 124.04 \text{ lbs/day } (1 - 0.10) - 9.31 \text{ lbs/day} = 108.53 \text{ lbs/day}$$

According to Equation 8:

$$C_{LOCAL\_LIMIT} = \frac{L_{MAIL}}{(Q_{IND})\ (8.34)}$$

$$C_{LOCAL\_LIMIT} = \frac{108.53}{(1.86)\ (8.34)} = 6.70 \text{ mg/L}$$

where,

MAHL = 124.04 lbs/day (from Table 43)

SF = 0.10

L_{DOM} = 3.11 lbs/day (from Table 63)

Q_{IND} = 1.86 MGD (from Table 8)

Stickney Water Reclamation Plant Maximum Allowable Headworks Loading Based Local Limit Calculation.

According to Equation 7:

L_{MAIL} = MAHL (1-SF) - L_{DOM}

$$L_{MAIL} = 390.5 \text{ lbs/day } (1 - 0.10) - 9.31 \text{ lbs/day} = 342.11 \text{ lbs/day}$$

According to Equation 8:

$$C_{LOCAL\_LIMIT} = \frac{L_{MAIL}}{(Q_{IND})\ (8.34)}$$

$$C_{LOCAL\_LIMIT} = \frac{342.11}{(22.56)\ (8.34)} = 1.80 \text{ mg/L}$$

where,

MAHL = 390.5 lbs/day (from Table 43)

SF = 0.10

L_{DOM} = 9.31 lbs/day (from Table 63)

Q_{IND} = 22.56 MGD (from Table 8)

The headworks loadings of copper, Table 55, indicate that the headwork loading of copper at the Stickney WRP is higher than 60 percent of the AHL for anaerobic digestion inhibition, and further evaluation is recommended for biological inhibition during anaerobic digestion.

Maximum Allowable Headworks Loading Based Local Limit Calculation for Stickney WRP Digesters.

According to Equation 7:

$L_{MAIL} = MAHL(1\text{-}SF) - L_{DOM}$

$$L_{MAIL} = 948.32 \text{ lbs/day } (1 - 0.10) - 12.42 \text{ lbs/day} = 841.1 \text{ lbs/day}$$

According to Equation 8:

$$C_{LOCAL\_LIMIT} = \frac{L_{MAIL}}{(Q_{IND})\,(8.34)}$$

$$C_{LOCAL\_LIMIT} = \frac{841.1}{(24.42)\,(8.34)} = 4.13 \text{ mg/L}$$

where,

MAHL = 948.82 lbs/day (from Table 55)

SF = 0.10

L_{DOM} = 12.42 lbs/day (Stickney WRP plus O'Brien WRP) (from Table 63)

Q_{IND} = 24.42 MGD (Stickney WRP plus O'Brien WRP) (from Table 8)

The uniform allocation of the copper loading at the Calumet WRP for nitrogenous microorganisms is the most stringent with a calculated limit value of 1.75 mg/L. However, historically no inhibition due to copper has been observed at any of the seven WRPs. In literature, the inhibition threshold concentration for nitrogenous microorganisms varies from 0.05 to 0.48 mg/L based on Appendix G of the 2004 USEPA Guidance Appendices(USEPA, 2004b), and we used the most stringent value 0.05 mg/L for this evaluation.

The District has historically regulated copper under a local limit; the District will maintain the current local limit of 3.0 mg/L. The current limit of 3.0 mg/L is protective enough to avoid any inhibition of activated sludge process at all seven WRPs. The interference and pass-through potential of copper will continue to be monitored.

Lead. Lead is currently regulated under a local limit. The pollutant was evaluated at each of the District's seven activated sludge WRPs, including the four anaerobic sludge digeston facilities. The technically based evaluation considered water quality, biosolids quality, and biological inhibition. The allowable headworks loadings were determined for each environmental criterion. The effluent derived MAHLs were compared to the average and maximum influent loadings. The biosolids lead concentrations were compared to the 40 CFR Part 503.13 standard.

The effluent water quality evaluation for lead, Table 15, indicates that it is necessary to further evaluate the need for a local limit for lead at the Stickney WRP relative to the receiving stream water quality.

Stickney Water Reclamation Plant Maximum Allowable Headworks Loading Based Local Limit Calculation.

According to Equation 7:

$L_{MAIL} = MAHL(1\text{-}SF) - L_{DOM}$

$L_{MAIL} = 1098.87 \text{ lbs/day } (1 - 0.20) - 6.90 \text{ lbs/day} = 872.19 \text{ lbs/day}$

According to Equation 8:

$$C_{LOCAL\_LIMIT} = \frac{L_{MAIL}}{(Q_{IND})\ (8.34)}$$

$$C_{LOCAL\_LIMIT} = \frac{872.19}{(22.56)\ (8.34)} = 4.64 \text{ mg/L}$$

where,

MAHL = 948.82 lbs/day (from Table 15)

SF = 0.20

L_{DOM} = 6.90 lbs/day (from Table 63)

Q_{IND} = 22.56 MGD (from Table 8)

The biosolids quality evaluation, Table 33, indicates that the historical lead loading at the Stickney WRP digesters exceeds 60 percent of the allowed headworks loadings based upon the methodology of the 2004 USEPA Guidance. However, the post-digestion maximum lead concentrations in the biosolids are only 42 percent of or lower than the 40 CFR Part 503.13 standard at all District biosolids processing facilities as shown in Table 33. The historical operations data suggest that the current local limit is sufficient to protect biosolids quality at this time.

The evaluation of activated sludge inhibition due to lead, Table 44, indicates that the actual loadings at the Stickney WRP may cause potential inhibition even though, historically, no inhibition due to lead has been observed at the Stickney WRP.

Stickney Water Reclamation Plant Maximum Allowable Headworks Loading Based Local Limit Calculation.

According to Equation 7:

$L_{MAIL} = MAHL(1\text{-}SF) - L_{DOM}$

$$L_{MAIL} = 3622.37 \text{ lbs/day } (1 - 0.20) - 6.90 \text{ lbs/day} = 2891.0 \text{ lbs/day}$$

According to Equation 8:

$$C_{LOCAL\_LIMIT} = \frac{L_{MAIL}}{(Q_{IND})\ (8.34)}$$

$$C_{LOCAL\_LIMIT} = \frac{2891.0}{(22.56)\ (8.34)} = 15.37 \text{ mg/L}$$

where,

MAHL = 3622.37 lbs/day (from Table 44)

SF = 0.20

L_{DOM} = 6.90 lbs/day (from Table 63)

Q_{IND} = 22.56 MGD (from Table 8)

The headworks loadings of lead are not high enough to cause anaerobic digestion inhibition at any of the District's digesters as shown in Table 56.

Based on this evaluation, the District has determined that a local limit for lead is required and calculated to be 4.64 mg/L based on water quality evaluations for the Stickney WRP. The District has historically regulated lead under a local limit; the District will maintain the current local limit of 0.5 mg/L. The interference and pass-through potential of lead will continue to be monitored.

Iron. Iron is currently regulated under a local limit. The pollutant was evaluated at each of the District's seven activated sludge WRPs. The technically based evaluation considered water quality standards. The allowable headworks loadings were determined for secondary contact water quality standards. The derived AHLs were compared to the average and maximum influent loadings.

The effluent water quality evaluation for soluble iron, Table 16-1, indicates that it is not necessary to further evaluate the need for a local limit for iron at the District's seven WRPs relative to water quality. The effluent water quality evaluation for total iron, Table 16-2, also indicates that it is not necessary to further evaluate the need for a local limit at any of the District WRPs relative to water quality.

The District has historically regulated iron under a local limit, the District will maintain the current local limit of 250.0 mg/L for total iron. The interference and pass-through potential of iron will continue to be monitored.

Fluoride. Fluoride is not currently regulated under a local limit. The effluent water quality evaluation for fluoride, Table 17, indicates that further evaluation is not needed for local limit consideration.

Mercury. Mercury is currently regulated under a local limit. The pollutant was evaluated at each of the District's seven activated sludge WRPs. The technically based evaluation considered water quality, biosolids quality, and biological inhibition. The allowable headworks loadings were determined for each environmental criterion. The derived AHLs were compared to the average and maximum influent loadings. The biosolids mercury concentrations were compared to the 40 CFR Part 503.13 standard.

The effluent water quality evaluation for mercury, Table 18, indicates that it is necessary to further evaluate the need for a local limit for mercury at four of the District's seven WRPs relative to water quality (Egan, Hanover Park, Kirie, and Stickney). The Egan, Hanover Park, and Kirie WRPs have a State Human Health Water Quality based standard for total mercury, and based on this State Water Quality Standard for protecting Human Health, further evaluation is recommended for these three District WRPs (Table 18). Further evaluation is also recommended for the Stickney WRP based on Indigenous Aquatic Life Use standard (Table 18).

John E. Egan Water Reclamation Plant Maximum Allowable Headworks Loading Based Local Limit Calculation.

MAHL = 0.02 lbs/day (Table 18)

L_{DOM} = 0.19 lbs/day (Table 63)

Since MAHL < L_{DOM}, calculation of local limit is not possible.

Hanover Park Water Reclamation Plant Maximum Allowable Headworks Loading Based Local Limit Calculation.

MAHL = 0.0052 lbs/day (Table 18)

L_{DOM} = 0.07 lbs/day (Table 63)

Since MAHL < L_{DOM}, calculation of local limit is not possible.

James C. Kirie Water Reclamation Plant Maximum Allowable Headworks Loading Based Local Limit Calculation.

MAHL = 0.024 lbs/day (Table 18)

L_{DOM} = 0.27 lbs/day (Table 63)

Since MAHL < L_{DOM}, calculation of local limit is not possible.

Stickney Water Reclamation Plant Maximum Allowable Headworks Loading Based Local Limit Calculation.

According to Equation 7:

$L_{MAIL} = MAHL\ (1\text{-}SF) - L_{DOM}$

$$L_{MAIL} = 5.39 \text{ lbs/day } (1 - 0.10) - 5.01 \text{ lbs/day} < 0$$

where,

MAHL = 5.39 lbs/day (from Table 18)

SF = 0.10

L_{DOM} = 5.01 lbs/day (from Table 63)

Since $L_{MAIL} < 0$, calculation of local limit is not possible.

However, further evaluation indicates that since general domestic and commercial loading for total mercury calculated based on the limit concentration value in domestic drinking water is higher than the MAHL, calculation of a local limit is not feasible for all WRPs except the Calumet WRP, which does not require a local limit based on the evaluation as shown in Table 18.

The biosolids quality evaluation, Table 34, indicates that the loadings are not high enough to be of concern for biosolids quality at any of the District's WRPs.

The historic headworks loadings of mercury are not high enough to cause activated sludge inhibition (Table 45).

The District has historically regulated mercury under a local limit of 0.0005 mg/L, the District will maintain the current limit of 0.0005 mg/L. The interference and pass-through potential of mercury will continue to be monitored. The USEPA is developing 'Effluent Limitations Guidelines and Standards for the Dental Catogory; Proposed Rule 40 CFR Parts 403 and 441 (USEPA, 2014), once promulgated the mercury concentrations in the District WRPs are going to be further reduced. Midwest Generation's Fisk and Crawford power plants in the District service area closed in 2013, and it is expected that this will result in dry deposition of mercury being further reduced in the District service area.

Molybdenum. Molybdenum is not currently regulated under a local limit. The pollutant was evaluated at the four anaerobic sludge digestion WRPs. The technically based evaluation considered biosolids quality. The allowable headworks loadings could not be calculated because the influent concentrations of molybdenum were not available. However, the biosolids molybdenum concentrations are compared to the 40 CFR Part 503.13 sludge standard for evaluation.

The biosolids quality evaluation, Table 35, indicates that the molybdenum concentrations in biosolids are low (maximum concentrations do not exceed 28 percent of the highest quality standard in 40 CFR Part 508.13) and that no local limit is needed to protect biosolids quality.

The District will not establish a local limit for molybdenum at this time, as no environmental problems have been shown in the District service area. The concentration of molybdenum in biosolids will continue to be monitored.

Nickel. Nickel is currently regulated under a local limit. The pollutant was evaluated at each of the District's seven activated sludge WRPs. The technically based evaluation considers water quality, biosolids quality, and biological inhibition. The allowable headworks loadings are determined for each environmental criterion. The derived AHLs were compared to the average and maximum influent loadings. The biosolids nickel concentrations were compared to the 40 CFR Part 503.13 standard.

The effluent water quality evaluation for nickel, Table 19, indicates that it is necessary to further evaluate the need for a local limit for nickel at the Egan and Kirie WRPs relative to water quality. However, the trigger for a local limit evaluation is based on L_{max}/WQMAHL greater than 80 percent, and WQMAHL is derived based on the chronic water quality standard. Theoretically, L_{max} is a one-time load and should be compared to AHL derived from Acute Toxicity (AHL-Acute Toxicity) and not the AHL derived from Chronic Toxicity. The L_{max}/AHL-Acute Toxicity was calculated to be only 9 percent and 6 percent for Egan and Kirie WRPs, respectively. Since L_{avg}/AHL-Chronic Toxicity did not exceed 60 percent at either the Egan or Kirie WRPs, there does not appear to be a water quality concern for nickel at this time.

To address the nickel issue raised by the MAHL based limit calculations for the Egan and Kirie WRPs, the District has a Code of Management Practices (CMP) for potential nickel dischargers in the Egan and Kirie WRP discharge basins. The CMP is designed to reduce nickel discharges without any increase in regulatory burden. The CMP relies on the principles of

pollution prevention by controlling nickel at the source rather than the traditional end-of-pipe approach. There is only one major industry which discharges Ni to Egan WRP and District has already imposed a strictor categorical limit of 2.38 mg/L on that industry rather than the District wide nickel local limit of 10.0 mg/L. Industrial Waste Division of the District is already working closely with the said industry to develop best management practices to further reduce the nickel discharge from the industry.

The biosolids quality evaluation, Table 36, indicates that the nickel loadings and nickel concentrations in the biosolids are low enough that no local limit is needed to protect biosolids quality.

The evaluation of activated sludge inhibition due to nickel, Table 46, indicates that the loadings of nickel are not high enough to cause any inhibition of activated sludge process at any of the District WRPs.

The headworks loadings of nickel are not high enough to cause inhibition or any effect on anaerobic digestion at the District's digesters (see Table 58).

Based on this evaluation, the District has determined that an update on local limit for nickel is not needed at this time. The District has historically regulated nickel under a local limit of 10.0 mg/L and will retain that limit. The interference and pass-through potential of nickel will continue to be monitored.

Selenium. Selenium is not currently regulated under a local limit. The pollutant was evaluated at each of the District's seven activated sludge WRPs. The technically based evaluation considered water quality, biosolids quality, and biological inhibition. The allowable headworks loadings were determined for each area of concern. The effluent AHLs were compared to the average and maximum influent loadings. The biosolids selenium concentrations were compared to the 40 CFR Part 503.13 sludge standard.

The effluent water quality evaluation for selenium, Table 20, indicates that it is not necessary to further evaluate the need for a local limit for selenium at the District's seven WRPs relative to water quality. A local limit for selenium is not needed to protect water quality at the District's WRPs.

The biosolids quality evaluation, Table 37, indicates that only for Stickney WRP, the actual average influent loading was greater than 60 percent of allowable headworks loading requiring further evaluation. However, the concentration of selenium in biosolids is significantly lower than the 40 CFR Part 503.13 standards (maximum concentrations do not exceed 20 percent of the highest quality standards in 40 CFR Part 503.13), indicating that sludge quality is not affected.

The District will not establish a local limit for selenium at this time, as no environmental problems have been shown in the District's service area. The interference and pass-through potential of selenium will continue to be monitored.

Silver. Silver is not currently regulated under a local limit. The pollutant was evaluated at each of the District's seven activated sludge WRPs. The technically based evaluation considered water quality and biological inhibition. The allowable headworks loadings were determined for each area of concern. The effluent AHLs were compared to the average and maximum influent loadings.

The effluent water quality evaluation for silver, Table 21, indicates that further evaluation is not required at any of the seven WRPs.

The biological inhibition threshold for silver to the activated sludge process is not available. The headworks loadings of silver are not high enough to cause anaerobic digestion inhibition at any of the District digesters (see Table 59).

Therefore, a local limit for silver is not necessary at this time. The interference and pass-through potential of silver will continue to be monitored.

Zinc. Zinc is currently regulated under a local limit. The pollutant was evaluated at each of the District's seven activated sludge WRPs. The technically based evaluation considered water quality, biosolids quality, and biological inhibition. The allowable headworks loadings are determined for each area of concern. The derived AHLs were compared to the average and maximum influent loadings. The biosolids zinc concentrations were compared to the 40 CFR Part 503.13 standard.

The effluent water quality evaluation for zinc, Table 22, indicates that further evaluation is not needed at any of the District's WRPs.

The biosolids quality evaluation, Table 38, indicates that further evaluation is recommended at the Calumet and Stickney WRPs. The zinc loading exceeds 60 percent of the allowed headworks loadings. However, the post-digestion maximum zinc concentrations in the biosolids are well below the 40 CFR Part 503.13 standard at all District facilities. The historical operations data suggest that no new local limit is necessary to protect biosolids quality at this time.

The evaluation of activated sludge inhibition due to zinc, Table 47, indicates that further evaluation is recommended at all of the District WRPs based on the methodology of the 2004 USEPA Guidance. Inhibition of nitrogenous microorganisms was the most limiting parameter for all the WRPs. According to the 2004 USEPA Guidance, the threshold concentrations for nitrogenous microorganisms' inhibition range from 0.08 to 0.5 mg/L, and the thresholds for carbonaceous microorganisms' inhibition have two sets of literature values are reported, which are 0.3 – 5 mg/L and 5 – 10 mg/L (USEPA, 2004b). The most stringent value 0.08 mg/L was used for this evaluation (Table 47). Calculated AHLs based on a 0.5 mg/L inhibition threshold for nitrogenous microorganisms and carbonaceous microorganisms triggered further evaluation for only the Calumet and Stickney WRPs with a calculated local limit of 17 mg/L using a safety factor of 20 percent and 19 mg/L using a safety factor of 10 percent. However, the historical

operations of the District WRPs indicate that zinc is not responsible for any biological inhibition. Therefore, no new local limit based on activated sludge inhibition is needed.

The headworks loadings of zinc are not high enough to cause anaerobic digestion inhibition at any of the District's digesters (see Table 60).

However, because the District has historically regulated zinc under a local limit, the District will maintain the current local limit of 15.0 mg/L. The interference and pass-through potential of zinc will continue to be monitored.

Ammonia. Ammonia is not currently regulated under a local limit. The pollutant was evaluated at each of the District's seven activated sludge WRPs. The technically based evaluation considered water quality and biological inhibition. The allowable headworks loadings were determined for each area of concern. The derived AHLs were compared to the average and maximum influent loadings.

The effluent water quality evaluation for ammonia, Table 23, indicates that it is not necessary to further evaluate the need for a local limit for ammonia at the District's seven WRPs relative to water quality.

The evaluation of activated sludge inhibition due to ammonia, Table 50, indicates that the loadings are not high enough to cause inhibition at any of the District's WRPs. The rare historical nitrification inhibition in the District WRPs was not related to influent ammonia loadings.

The District will not establish a local limit for ammonia at this time, as no environmental problems have been shown in the District's service area. The interference and pass-through potential of ammonia will continue to be monitored.

Cyanide. Cyanide is currently regulated under a local limit. The pollutant was evaluated at each of the District's seven activated sludge WRPs as well as the four anaerobic sludge digestion facilities. The technically based evaluation considered water quality and biological inhibition. Cyanide is not conservative through the treatment process. Cyanide provides the nitrogen source used by certain types of microbes. Chlorination can also affect cyanide speciation.

The effluent water quality evaluation for cyanide, Table 24, indicates that further evaluation is not needed for any of the seven District's WRPs based upon the methodology of the 2004 USEPA Guidance.

The evaluation of activated sludge inhibition due to cyanide, Table 48, indicates that the loadings are not high enough to cause inhibition at any of the seven WRPs and no further evaluation is required.

The headworks loadings of cyanide are not high enough to cause inhibition or any effect on anaerobic digestion at the District's digesters (Table 57).

Total cyanide and WAD cyanide concentrations in the raw sewage and final effluent will continue to be closely monitored, as future disinfection may cause some changes in cyanide concentrations.

Phenol. Phenol is not currently regulated under a local limit. The pollutant was evaluated at each of the District's seven activated sludge WRPs. The technically based evaluation considered water quality and biological inhibition. The allowable headworks loadings were determined for each area of concern. The effluent derived MAHLs were compared to the average and maximum influent loadings.

The effluent water quality evaluation for phenol, Table 25, indicates that it is not necessary to further evaluate the need for a local limit for phenol at the District's seven WRPs relative to water quality. A local limit is not needed to protect water quality at the District's WRPs.

The evaluation of activated sludge inhibition due to phenol, Table 49, indicates that the loadings are not high enough to cause inhibition at any of the Distict's WRPs.

The District will not establish a local limit for phenol at this time, as no environmental problems have been shown in the District's service area. The interference and pass-through potential of phenol will continue to be monitored.

Five-Day Biochemical Oxygen Demand. The POC five-day biochemical oxygen demand (BOD_5), is currently not regulated under a local limit. The pollutant was evaluated at each of the District's seven activated sludge WRPs. The technically based evaluation considered effluent water quality standards. The allowable headwork loadings were determined for each WRP. The effluent derived MAHLs were compared to the average and maximum influent loadings.

The effluent water quality evaluation for cBOD, (Table 26), indicates that it is not necessary to further evaluate the local limit needs for all of the seven District WRPs.

Suspended Solids. Suspended solids are currently not regulated under a local limit. The pollutant was evaluated at all seven WRPs which have daily and/or monthly NPDES permit limits for suspended solids. The allowable headworks loadings were determined for each WRP. The effluent derived MAHLs were compared to the average and maximum influent loadings.

The effluent water quality evaluation for suspended solids, Table 27, indicates that it is not necessary to further evaluate the need for a local limit for any of the seven WRPs.

Total Phosphorus. Total phosphorus is currently not regulated under a local limit. The pollutant was evaluated at the District's Stickney, Calumet and O'Brien WRPs, which have anticipated monthly NPDES permit limits of 1.0 mg/L. The allowable headworks loadings were determined for each area of concern. The effluent derived MAHLs were compared to the average and maximum influent loadings.

The effluent water quality evaluation for total phosphorus, Table 28, indicates that it is necessary to further evaluate the need for a local limit for these three WRPs. The uniform concentration local limit method is used to determine the local limit.

Stickney Water Reclamation Plant Maximum Allowable Headworks Loading Based Local Limit Calculation.

According to Equation 7:

$L_{MAIL} = MAHL\ (1\text{-}SF) - L_{DOM}$

$$L_{MAIL} = 42951 \text{ lbs/day } (1 - 0.20) - 14912 \text{ lbs/day} = 19449 \text{ lbs/day}$$

According to Equation 8:

$$C_{LOCAL\_LIMIT} = \frac{L_{MAIL}}{(Q_{IND})\ (8.34)}$$

$$C_{LOCAL\_LIMIT} = \frac{19449}{(22.56)\ (8.34)} = 103.39 \text{ mg/L}$$

where,

MAHL = 42951 lbs/day (from Table 28)
SF = 0.20

L_{DOM} = 14912 lbs/day (from Table 63)

Q_{IND} = 22.56 MGD (from Table 8)

Calumet Water Reclamation Plant Maximum Allowable Headworks Loading Based Local Limit Calculation.

MAHL = 3602 lbs/day (Table 28)

L_{DOM} = 5170 lbs/day (Table 63)

Since MAHL < L_{DOM}, calculation of local limit is not possible.

Terrence J. O'Brien Water Reclamation Plant Maximum Allowable Headworks Loading Based Local Limit Calculation.

MAHL = 4261 lbs/day (Table 28)

L_{DOM} = 4978 lbs/day (Table 63)

Since MAHL < L_{DOM}, calculation of local limit is not possible.

The District is adopting enhanced biopogical phosphorus removal at its WRPs, recovering phosphorus at the Stickney WRP and evaluating phosphorus source control to meet the NPDES permit limit. At this point the District chose not to adopt a local limit for phosphorus and rather will work with industry in developing best management practices to reduce the industrial P loading.

Fats, Oils, and Grease. The effluent water quality evaluation for FOG, Table 29, indicates that it is not necessary to further evaluate the need for a local limit for FOG at the District's seven WRPs relative to water quality. The District has historically regulated FOG under a local limit. The District will maintain the current local limit of 250.0 mg/L. The interference and pass-through potential of FOG will continue to be monitored.

SUMMARY

The technically based re-evaluation of the pollutants of concern at the District's seven WRPs considered 20 pollutants. The environmental criteria included consideration of water quality, biosolids quality, biological inhibition, air emissions, worker safety, and the collection system. The evaluation maintains the current limits for 11 of the 20 pollutants evaluated. Table 67 summarizes the current and recommended District local limits.

TABLE 67: SUMMARY OF RECOMMENDATIONS

Pollutant	Current Limit (mg/L)	Recommended Limit (mg/L)
Arsenic	None	None
Cadmium	2.0	2.0
Chromium, Trivalent	25.0	25.0
Chromium, Hexavalent	10.0	10.0
Copper	3.0	3.0
Lead	0.5	0.5
Iron	250.0	250.0
Fluoride	None	None
Mercury	0.0005	0.0005
Molybdenum	None	None
Nickel	10.0	10.0
Selenium	None	None
Silver	None	None
Zinc	15.0	15.0
Ammonia	None	None
cBOD	None	None
Cyanide, Total	5.0	5.0
Cyanide, WAD	None	None
FOG	250.0	250.0
Phenol	None	None
Phosphorus, Total	None	None
Suspended Solids, Total	None	None

APPENDIX AI

TABLE AI-1: STATE OF ILLINOIS WATER QUALITY STANDARDS

Pollutant[1]	State Water Quality Standards		
	Indigenous Aquatic Life Use	General Use	
	(mg/L)	Acute Toxicity (mg/L)	Chronic Toxicity (mg/L)
Arsenic	1.0	0.36[2]	0.19[2]
Cadmium	0.15	0.0257 - 0.0323[2,3]	0.00208 - 0.00242[2,3]
Chromium, Trivalent	1.0	1.19 - 1.42[2,3]	0.387 - 0.459[2,3]
Chromium, Hexavalent	0.3	0.016	0.011
Copper	1.0	0.0416 - 0.0506[2,3]	0.0255 - 0.0305[2,3]
Lead	0.1	0.209 - 0.260[2,3]	0.0438 - 0.0545[2,3]
Iron	2.0, 0.5[2]	1.0[4]	n/a
Fluoride	15.0	16.8 - 18.8[3]	4.0
Mercury	0.0005	0.0022[2,3], 0.000012[5]	0.001[2,3]
Nickel	1.0	0.184 - 0.219[2,3]	0.0111 - 0.0133[2,3]
Selenium	1.0	1.0[4]	n/a
Silver	1.1	0.005[4]	n/a
Zinc	1.0	0.267 - 0.318[2,3]	0.0698 - 0.0833[2,3]
Ammonia-nitrogen	0.1[6]	15	3.29 - 4.08[7]
Cyanide (WAD)	n/a	0.022	0.010[8]
Cyanide, Total	0.10	n/a	n/a
Phenol	0.3	0.1[4]	n/a
Fats, oils, and grease	15.0	n/a	n/a
$cBOD_5/BOD_5$	n/a	n/a	n/a
Total Suspended Solids	n/a	n/a	n/a
Total Phosphorus	n/a	n/a	n/a

[1]Standard in total form unless otherwise noted.
[2]Standard in soluble form.
[3]Average hardness from applicable receiving waters during 2010-2011 was used to calculate standard using hardness-based equations presented in 35 IAC Sections 302.208 and 302.407.
[4]Single value standard.
[5]Human health standard.
[6]Standard for un-ionized ammonia.
[7]Average pH and temperature from applicable receiving waters during 2010-2011 was used to calculate total ammonia nitrogen standards using equations presented in 35 IAC Sections 302.212 and 302.412.
[8]Site-specific chronic cyanide standard for Salt Creek, Higgins Creek, and DuPage River.

TABLE AI-2: PARAMETERS USED TO DERIVE WATER QUALITY STANDARDS

WRP	Waterway	Station	2010 – 2011 Averages		
			Hardness (mg/L)	pH	Temperature (°C)
Calumet	Little Calumet River	Halsted Street	249	7.20	15.6
Egan	Salt Creek	Arlington Heights Road	258	7.53	15.2
Hanover Park	West Branch DuPage River	Walnut Lane	276	7.53	16.0
Kirie	Higgins Creek	Willie Road	318	7.63	17.0
Lemont	Chicago San-Ship Canal	Stephen Street	244	7.13	16.2
O'Brien	North Shore Channel	Touhy Avenue	217	7.26	15.7
Stickney	Chicago San-Ship Canal	Harlem Avenue	234	7.19	16.9

TABLE AI-3: CONVERSION FACTOR FOR CONVERTING SOLUBLE METAL CONCENTRATION TO TOTAL METAL CONCENTRATION FOR THE JOHN E. EGAN, JAMES C. KIRIE, AND HANOVER PARK WATER RECLAMATION PLANTS[1]

Pollutant	Egan	Hanover Park	Kirie
Arsenic	0.76	0.87	0.86
Copper	0.86	0.85	0.85
Lead	0.83	0.80	0.75
Nickel	0.76	0.70	0.81
Zinc	0.87	0.92	0.82

[1]A conversion factor is calculated as ratio of soluble to total annual average metal concentration in WRP effluent from 2002 to 2011, data where soluble metal concentration exceeded total metal concentration were not used.

APPENDIX AII

TABLE AII: BIOSOLIDS QUALITY STANDARDS MONTHLY AVERAGE POLLUTANT CONCENTRATION (TABLE 3, 40 CFR PART 503.13)

Pollutant	Standard (mg/Kg)
Arsenic	41
Cadmium	39
Chromium, total	n/a[1]
Hexavalent chromium	n/a
Copper	1,500
Lead	300
Iron, total	n/a
Fluoride	n/a
Mercury	17
Molybdenum[2]	75
Nickel	420
Selenium	100
Silver	n/a
Zinc	2,800

[1]Not applicable.
[2]Ceiling Concentration (Table 1, 40 CFR Part 503.13).

APPENDIX AIII

TABLE AIII: BIOLOGICAL INHIBITION THRESHOLDS[1]

Pollutant	Carbonaceous Inhibition Limit (mg/L)	Nitrogenous Inhibition Limit (mg/L)	Anaerobic Digestion Inhibition Limit (mg/L)
Arsenic	0.1	1.5	1.6
Cadmium	1	5.2	20
Chromium, total	1	0.25	130
Chromium, hexavalent	1	1	110
Copper	1	0.05	40
Lead	1	0.5	340
Iron, total	n/a	n/a	n/a
Fluoride	n/a	n/a	n/a
Mercury	0.1	n/a	n/a
Molybdenum	n/a	n/a	n/a
Nickel	1	0.25	10
Selenium	n/a	n/a	n/a
Silver	n/a	n/a	13
Zinc	0.30	0.08	400
Ammonia	480	n/a	1500
Cyanide	0.1	0.34	4
Phenol	50	4	n/a
Fat, oils, and grease	n/a	n/a	n/a

[1]Sources: USEPA (2004), Local Limits Development Guidance Appendices, EPA 83-R-04-002B.

APPENDIX AIV

TABLE AIV-1: SAMPLING FREQUENCY AND LOCATIONS PER WATER RECLAMATION PLANT INFLUENT SAMPLING SCHEDULE

WRP	Metals[1]	Total Cyanide	WAD Cyanide	Cynnide Available or Amenable	Mercury	Hexavalent Chromium	Ammonia	Phenol	FOG	Fluoride	BOD_5 and $CBOD_5$	SS	Total P
Calumet	weekly	daily	weekly		weekly	weekly	daily	weekly	weekly	weekly	daily	daily	daily
Calumet[2]	weekly			weekly	weekly	weekly	daily	weekly	weekly	weekly	daily	daily	daily
Egan	weekly	weekly	weekly		weekly	weekly	daily	weekly	weekly	weekly	daily	daily	daily
Hanover Park	weekly	weekly	weekly		weekly	weekly	daily	weekly	weekly	weekly	daily[3]	daily	daily
Kirie	weekly	weekly	5 d/wk		weekly	weekly	daily	weekly	weekly	weekly	daily[3]	daily	daily
Lemont	weekly	weekly	weekly		weekly	weekly	daily	weekly	weekly	weekly	5 d/wk	daily	daily
O'Brien	weekly	weekly	weekly		weekly	weekly	daily	weekly	weekly	weekly	daily	daily	daily
O'Brien[2]	weekly	weekly		weekly	weekly	weekly	daily	weekly	weekly	weekly	daily	daily	daily
Stickney	weekly	weekly	weekly		weekly	weekly	daily	weekly	weekly	weekly	daily	daily	daily
Stickney[2]	weekly	weekly		weekly	weekly	weekly	daily	weekly	weekly	weekly	daily	daily	daily

[1]Antimony, arsenic, barium, cadium, beryllium, chromium (total), copper, iron, lead, manganese, nickel, selenium, silver, thallium, zinc.
[2]Based on the NPDES Permits issued in December 2013.
[3]BOD_5 only.
d/wk = days/week.
FOG = fats, oils and grease.
SS = Suspended Solids.
Total P = Total Phosphorus.

TABLE AIV-2: SAMPLING FREQUENCY AND LOCATIONS PER WATER RECLAMATION PLANT EFFLUENT SAMPLING SCHEDULE

WRP	Metals[1]	Hardness	Copper	Total Cyanide	WAD Cyanide	CN Available or Amenable	Mercury
Calumet	daily	daily	daily	daily	weekly		weekly
Calumet[2]	daily	daily	daily	daily		weekly	weekly
Egan	5 d/wk	3 d/wk	5 d/wk	5 d/wk	weekly		weekly
Hanover Park	3 d/wk	3 d/wk	3 d/wk	5 d/wk	weekly		weekly
Kirie	5 d/wk	3 d/wk	5 d/wk	5 d/wk	5 d/wk		weekly
Lemont	daily	daily	daily	weekly			weekly
O'Brien	daily	2 d/wk	daily	daily	weekly		weekly
O'Brien[2]	daily	daily	daily	weekly		weekly	weekly
Stickney	daily	weekly	daily	daily			weekly
Stickney[2]	daily	daily	daily	weekly		weekly	weekly

TABLE AIV-2 (Continued): SAMPLING FREQUENCY AND LOCATIONS PER WATER RECLAMATION PLANT EFFLUENT SAMPLING SCHEDULE

WRP	Mercury	Hexavalent Chromium	Ammonia	Phenol	FOG	Fluoride	$CBOD_5$	SS	Total P
Calumet	weekly	weekly	daily	weekly	weekly	weekly	daily	daily	daily
Calumet[2]	weekly	weekly	daily	weekly	weekly	weekly	daily	daily	daily
Egan	weekly	weekly	5 d/wk	weekly	weekly	weekly	5 d/wk	5 d/wk	5 d/wk
Hanover Park	weekly	weekly	5 d/wk	weekly	weekly	5 d/wk	4 d/wk	4 d/wk	5 d/wk
Kirie	weekly	weekly	5 d/wk	weekly	weekly	weekly	3 d/wk	3 d/wk	5 d/wk
Lemont	weekly	weekly	daily	weekly	weekly	weekly	5 d/wk	daily	daily
O'Brien	weekly	weekly	daily	weekly	weekly	weekly	daily	daily	daily
O'Brien[2]	weekly	weekly	daily	weekly	weekly	weekly	daily	daily	daily
Stickney	weekly	weekly	daily	daily	weekly	weekly	daily	daily	daily
Stickney[2]		weekly	daily	weekly	weekly	weekly	daily	daily	daily

[1]Antimony, arsenic, barium, beryllium, chromium (total), iron, lead, manganese, nickel, selenium, silver, thallium, zinc.
[2]Based on the NPDES permits issued in December 2013.
[3]New permit requires weekly composite, but analysis is run daily.
d/wk = days/week.
FOG = fats, oils and grease.
SS = Suspended Solids.
Total P = Total Phosphorus.

APPENDIX AV

TABLE AV-1: BACKGROUND/DOMESTIC WATER CONCENTRATION

Parameter	Average Concentration[1] (mg/L)
Arsenic	0.001
Cadmium	0.001
Chromium	0.003
Hexavalent Chromium[2]	0.0002
Copper	0.002
Lead	0.001
Iron	0.017
Fluoride	0.675
Mercury	0.0009
Molybdenum	0.002
Nickel	0.002
Selenium	0.002
Silver	0.002
Zinc	0.013
Ammonia	0.033
Cyanide	0.005
Phenol	0.000
Suspended solids[3]	168.00
Total Phosphorus[4]	2.56
FOG	n/a
BOD_5[3]	119.00

[1]The average of composite samples at the south, central and north distribution points. The data was evaluated for 2009, 2010 and 2011 except for those noted. Pollutants not measured in Chicago water are taken to have zero background concentration. Pollutants showing concentrations below non-detectable amounts were evaluated using the value of detection limit.

[2]2011 only.

[3]User Charge Ordinance – 2013, Metropolitan Water Reclamation District of Greater Chicago (MWRDGC).

[4]Report No. 12-44, Monitoring and Research Department, MWRDGC, 2012.

Data Source: City of Chicago, Water Purification Laboratories, Chemistry Unit http://www.cityofchicago.org/city/en/depts/water/supp_info/water_quality_resultsandreports/comprehensive_chemicalanalysis.html.

TABLE AV-2: REMOVAL EFFICIENCIES[1] FOR POLLUTANTS THROUGH PRIMARY TREATMENT (R_{PRI}) AT METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO WATER RECLAMATION PLANTS

	District Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
Arsenic	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cadmium	0.15	0.15	0.10	0.00	0.15	0.04	0.25
Chromium, Total	0.20	0.16	0.22	0.00	0.11	0.11	0.25
Chromium, Hexavalent	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Copper	0.25	0.22	0.21	0.00	0.20	0.21	0.23
Lead	0.24	0.24	0.39	0.00	0.24	0.34	0.25
Mercury	0.10	0.09	0.08	0.00	0.09	0.09	0.04
Nickel	0.09	0.13	0.08	0.00	0.06	0.08	0.16
Silver	0.07	0.14	0.17	0.00	0.06	0.09	0.08
Zinc	0.32	0.29	0.30	0.00	0.22	0.27	0.28
Cyanide	0.09	0.16	0.25	0.00	0.09	0.17	0.19
Phenol	0.08	0.07	0.07	0.00	0.07	0.07	0.05
Selenium	0.25	0.10	0.22	0.00	0.25	0.07	0.07

[1]The values estimated from previous re-evaluation of local pretreatment limits report (Report No 03-11).

APPENDIX AVI

TABLE AVI: METAL CONCENTRATIONS IN BIOSOLIDS (AVERAGE OF 2010 and 2011 DATA)

Pollutant	Limit[1]	Calumet WRP	Egan WRP	Hanover Park WRP	Stickney WRP
	mg/kg				
Arsenic	41	7	13	12	10
Cadmium	39	2	4	1	2
Chromium	75	58	76	35	108
Copper	1,500	373	774	876	259
Lead	300	73	37	33	76
Mercury	17	1	1	2	1
Molybdenum	75	13	14	13	8
Nickel	420	31	64	38	28
Selenium	100	3	2	5	8
Zinc	2,800	986	1,029	884	568

[1]Limits referenced are based on the 40 CFR Part 503 Regulation.

APPENDIX AVII

TABLE AVII: POLLUTANT CONCENTRATIONS IN RECEIVING WATERS

Pollutant	Calumet WRP Receiving Water[1] (mg/L)	Lemont WRP Receiving Water[1] (mg/L)	Stickney WRP Receiving Water[1] (mg/L)
Arsenic	0.03	0.03	0.03
Cadmium	0.001	0.001	0.001
Chromium, total	0.01	0.012	0.006
Chromium, hexavalent	0.01	0.01	0.01
Copper	0.01	0.01	0.01
Lead	0.02	0.02	0.02
Iron, total	0.252	0.485	0.229
Fluoride	0.293	0.585	0.487
Mercury[2]	0.000	0.000	0.000
Nickel	0.004	0.008	0.004
Selenium	0.003	0.003	0.003
Silver	0.002	0.002	0.002
Zinc	0.034	0.038	0.038
Ammonia	0.002	0.004	0.004
Cyanide (WAD)	0.003	0.004	0.003
Phenol	0.003	0.003	0.003
Fat, oils, and grease	2.50	3.00	2.50
cBOD/BOD_5	n/a[3]	n/a	n/a
Suspended solids	12.40	11.35	18.05
Total phosphorus	0.38	0.921	0.640

[1]Average of 2010 and 2011 data.
[2]Based on 2010 data.
[3]Data not available.

APPENDIX AVIII

TABLE AVIII: INDUSTRIAL METAL LOADING BY INDUSTRY

Facility ID	Facility Name	Treatment Area	CFR[1]	Cd (lbs/yr)	Cr (lbs/yr)	Cu (lbs/yr)	Ni (lbs/yr)	Pb (lbs/yr)	Zn (lbs/yr)	TMC (lbs/yr)
25900	Rogers Custom Trims, Inc.	O'Brien	410	0.00	0.00	0.01	0.01	0.01	0.17	0.20
23833	Theodore Merwitz Textiles, Inc.	Stickney	410	0.03	0.03	1.80	0.11	0.12	0.63	2.70
11375	A T A Finishing Corp	O'Brien	413	0.25	2.67	3.60	3.86	2.28	2.51	15.16
13583	Accent Metal Finishing Co.	Stickney	413	0.08	0.08	0.15	0.29	0.38	4.13	5.10
11340	Accurate Anodizing	Stickney	413	0.22	62.82	19.73	14.80	2.82	5.34	105.72
11166	Ace Anodizing & Impregnating Inc	Stickney	413	0.71	17.73	10.16	11.83	3.57	8.26	52.26
11901	Acme Finishing Company	Kirie	413	0.46	0.81	1.23	0.62	2.30	34.52	39.94
11047	Advance Enameling Co.	Stickney	413	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13505	Al Bar-Wilmette Platers	O'Brien	413	0.05	0.04	4.98	5.59	0.19	3.19	14.03
13207	American Nickel Works, Inc	Stickney	413	0.24	7.23	1.03	11.67	3.90	2.38	26.44
13103	Anodizing Specialists Ltd	Kirie	413	0.03	1.32	1.23	2.83	0.14	0.78	6.33
12920	Arlington Plating Co.	Egan	413	1.88	114.04	113.22	133.76	9.38	18.77	391.05
26054	Art Metal Finishers	O'Brien	413	0.01	0.01	0.26	0.31	0.04	0.23	0.86
12238	Automatic Anodizing Corporation	O'Brien	413	0.55	22.81	44.12	12.37	7.63	19.23	106.71
13254	Bellwood Industrial Inc.	Stickney	413	0.23	38.08	1.98	6.44	1.13	323.90	371.75
11138	Belmont Plating Works, Inc.	Stickney	413	44.40	202.94	248.78	96.20	8.81	419.94	1021.08
10958	Berteau-Lowell Plating Works, Inc.	O'Brien	413	3.72	28.02	51.19	22.19	6.25	50.14	161.51
11186	Bright Metals Finishing Co	O'Brien	413	0.15	0.33	1.11	3.20	0.74	13.48	19.01
11807	Calco Plating, Inc.	Stickney	413	0.23	26.46	4.89	15.74	0.87	4.35	52.54
11576	Castle Metal Finishing Corp	Stickney	413	7.19	37.46	9.37	52.92	2.22	100.91	210.07
11548	Century Plating Company, Inc.	O'Brien	413	1.55	101.73	13.39	103.29	9.45	40.76	270.16
12925	Chem-Plate Industries, Inc.	Kirie	413	1.19	32.39	3.11	3.67	5.93	105.45	151.74
11084	Chicago Anodizing Co.	Stickney	413	0.79	53.74	108.11	680.44	30.77	90.14	963.99
12340	Cody Metal Finishing Inc.	Stickney	413	0.32	6.29	2.70	0.59	1.16	49.88	60.95
10814	Craftsman Plating & Tinning	O'Brien	413	7.95	269.10	327.18	324.82	16.91	350.20	1296.17
12996	Cro-Mat Company	O'Brien	413	0.02	0.72	0.11	0.10	0.08	0.48	1.51

TABLE AVIII (Continued): INDUSTRIAL METAL LOADING BY INDUSTRY

Facility ID	Facility Name	Treatment Area	CFR[1]	Cd (lbs/yr)	Cr (lbs/yr)	Cu (lbs/yr)	Ni (lbs/yr)	Pb (lbs/yr)	Zn (lbs/yr)	TMC (lbs/yr)
12929	Dover Industrial Chrome	O'Brien	413	0.15	9.83	0.58	1.04	0.77	2.72	15.09
12058	Dyna-Burr Chicago, Inc.	Stickney	413	0.74	0.91	0.73	0.50	1.88	19.33	24.08
11977	Empire Hard Chrome	Stickney	413	1.22	63.84	10.30	3.16	7.85	33.12	119.50
10427	Enameled Steel & Sign Co.	O'Brien	413	0.09	0.08	0.51	4.86	0.44	1.83	7.80
11905	Forest Plating Co.	Stickney	413	0.16	7.24	5.14	4.59	2.21	99.07	118.40
11990	Gem Coat, Inc.	O'Brien	413	0.39	1.20	0.72	0.15	0.55	12.37	15.39
11724	Griffin Plating Co., Inc.	Stickney	413	0.08	71.93	11.67	38.63	0.93	19.10	142.33
12184	Hausner Hard-Chrome Inc.	Kirie	413	0.04	1.64	0.58	0.14	0.29	0.71	3.39
12402	International Processing Company of America	Kirie	413	0.06	11.21	0.60	0.10	0.31	0.64	12.93
12718	International Silver Plating, Inc.	O'Brien	413	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13724	Jonas Enterprises Inc.	Stickney	413	0.06	7.04	0.31	0.08	0.29	0.75	8.53
11882	Krel Laboratories Inc	Stickney	413	0.74	20.81	54.35	129.03	3.79	35.48	244.20
11883	Krel Laboratories Inc	Stickney	413	0.67	0.78	4.75	32.91	1.74	13.25	54.10
12394	LBH Industries, Inc. d/b/a Scott Plating	O'Brien	413	0.03	6.22	0.13	0.25	0.16	6.85	13.64
11064	Mech-Tronics	Stickney	413	0.40	38.53	2.50	0.71	1.95	5.13	49.23
10760	Midwestern Rust Proof, Inc.	O'Brien	413	1.81	156.80	10.74	7.88	9.07	892.92	1079.22
13289	Mike's Anodizing	Stickney	413	0.30	2.54	9.62	2.15	2.79	5.72	23.11
19614	Nobert Plating Co-Plant 1	Stickney	413	0.86	2.99	196.56	144.84	4.32	41.83	391.39
12622	Nobert Plating Co-Plant 2	Stickney	413	0.50	3.80	3.18	26.18	1.17	3.78	38.61
12126	Perfection Plating, Inc.	Kirie	413	0.58	3.84	50.13	64.99	3.11	7.03	129.68
11920	Petersen Finishing Corp	Stickney	413	1.78	26.18	32.14	14.21	8.91	17.81	101.03
13721	Precise Finishing Company, Inc.	Stickney	413	0.37	0.45	41.04	82.09	1.84	8.28	134.06
12127	Precision Plating Company, Inc.	O'Brien	413	1.97	1.41	74.82	105.43	7.94	28.57	220.15
13115	R C Industries Inc.	Stickney	413	0.35	1.45	3.60	1.64	1.51	5.37	13.92
11241	Reliable Plating Corp	Stickney	413	24.22	158.77	63.30	149.94	4.66	48.46	449.35

TABLE AVIII (Continued): INDUSTRIAL METAL LOADING BY INDUSTRY

Facility ID	Facility Name	Treatment Area	CFR[1]	Cd (lbs/yr)	Cr (lbs/yr)	Cu (lbs/yr)	Ni (lbs/yr)	Pb (lbs/yr)	Zn (lbs/yr)	TMC (lbs/yr)
12929	Dover Industrial Chrome	O'Brien	413	0.15	9.83	0.58	1.04	0.77	2.72	15.09
12058	Dyna-Burr Chicago, Inc.	Stickney	413	0.74	0.91	0.73	0.50	1.88	19.33	24.08
11977	Empire Hard Chrome	Stickney	413	1.22	63.84	10.30	3.16	7.85	33.12	119.50
10427	Enameled Steel & Sign Co.	O'Brien	413	0.09	0.08	0.51	4.86	0.44	1.83	7.80
11905	Forest Plating Co.	Stickney	413	0.16	7.24	5.14	4.59	2.21	99.07	118.40
11990	Gem Coat, Inc.	O'Brien	413	0.39	1.20	0.72	0.15	0.55	12.37	15.39
11724	Griffin Plating Co., Inc.	Stickney	413	0.08	71.93	11.67	38.63	0.93	19.10	142.33
12184	Hausner Hard-Chrome Inc.	Kirie	413	0.04	1.64	0.58	0.14	0.29	0.71	3.39
12402	International Processing Company of America	Kirie	413	0.06	11.21	0.60	0.10	0.31	0.64	12.93
12718	International Silver Plating, Inc.	O'Brien	413	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13724	Jonas Enterprises Inc.	Stickney	413	0.06	7.04	0.31	0.08	0.29	0.75	8.53
11882	Krel Laboratories Inc	Stickney	413	0.74	20.81	54.35	129.03	3.79	35.48	244.20
11883	Krel Laboratories Inc	Stickney	413	0.67	0.78	4.75	32.91	1.74	13.25	54.10
12394	LBH Industries, Inc. d/b/a Scott Plating	O'Brien	413	0.03	6.22	0.13	0.25	0.16	6.85	13.64
11064	Mech-Tronics	Stickney	413	0.40	38.53	2.50	0.71	1.95	5.13	49.23
10760	Midwestern Rust Proof, Inc.	O'Brien	413	1.81	156.80	10.74	7.88	9.07	892.92	1079.22
13289	Mike's Anodizing	Stickney	413	0.30	2.54	9.62	2.15	2.79	5.72	23.11
19614	Nobert Plating Co-Plant 1	Stickney	413	0.86	2.99	196.56	144.84	4.32	41.83	391.39
12622	Nobert Plating Co-Plant 2	Stickney	413	0.50	3.80	3.18	26.18	1.17	3.78	38.61
12126	Perfection Plating, Inc.	Kirie	413	0.58	3.84	50.13	64.99	3.11	7.03	129.68
11920	Petersen Finishing Corp	Stickney	413	1.78	26.18	32.14	14.21	8.91	17.81	101.03
13721	Precise Finishing Company, Inc.	Stickney	413	0.37	0.45	41.04	82.09	1.84	8.28	134.06
12127	Precision Plating Company, Inc.	O'Brien	413	1.97	1.41	74.82	105.43	7.94	28.57	220.15
13115	R C Industries Inc.	Stickney	413	0.35	1.45	3.60	1.64	1.51	5.37	13.92
11241	Reliable Plating Corp	Stickney	413	24.22	158.77	63.30	149.94	4.66	48.46	449.35

TABLE AVIII (Continued): INDUSTRIAL METAL LOADING BY INDUSTRY

Facility ID	Facility Name	Treatment Area	CFR[1]	Cd (lbs/yr)	Cr (lbs/yr)	Cu (lbs/yr)	Ni (lbs/yr)	Pb (lbs/yr)	Zn (lbs/yr)	TMC (lbs/yr)
12929	Dover Industrial Chrome	O'Brien	413	0.15	9.83	0.58	1.04	0.77	2.72	15.09
12058	Dyna-Burr Chicago, Inc.	Stickney	413	0.74	0.91	0.73	0.50	1.88	19.33	24.08
11977	Empire Hard Chrome	Stickney	413	1.22	63.84	10.30	3.16	7.85	33.12	119.50
10427	Enameled Steel & Sign Co.	O'Brien	413	0.09	0.08	0.51	4.86	0.44	1.83	7.80
11905	Forest Plating Co.	Stickney	413	0.16	7.24	5.14	4.59	2.21	99.07	118.40
11990	Gem Coat, Inc.	O'Brien	413	0.39	1.20	0.72	0.15	0.55	12.37	15.39
11724	Griffin Plating Co., Inc.	Stickney	413	0.08	71.93	11.67	38.63	0.93	19.10	142.33
12184	Hausner Hard-Chrome Inc.	Kirie	413	0.04	1.64	0.58	0.14	0.29	0.71	3.39
12402	International Processing Company of America	Kirie	413	0.06	11.21	0.60	0.10	0.31	0.64	12.93
12718	International Silver Plating, Inc.	O'Brien	413	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13724	Jonas Enterprises Inc.	Stickney	413	0.06	7.04	0.31	0.08	0.29	0.75	8.53
11882	Krel Laboratories Inc	Stickney	413	0.74	20.81	54.35	129.03	3.79	35.48	244.20
11883	Krel Laboratories Inc	Stickney	413	0.67	0.78	4.75	32.91	1.74	13.25	54.10
12394	LBH Industries, Inc. d/b/a Scott Plating	O'Brien	413	0.03	6.22	0.13	0.25	0.16	6.85	13.64
11064	Mech-Tronics	Stickney	413	0.40	38.53	2.50	0.71	1.95	5.13	49.23
10760	Midwestern Rust Proof, Inc.	O'Brien	413	1.81	156.80	10.74	7.88	9.07	892.92	1079.22
13289	Mike's Anodizing	Stickney	413	0.30	2.54	9.62	2.15	2.79	5.72	23.11
19614	Nobert Plating Co-Plant 1	Stickney	413	0.86	2.99	196.56	144.84	4.32	41.83	391.39
12622	Nobert Plating Co-Plant 2	Stickney	413	0.50	3.80	3.18	26.18	1.17	3.78	38.61
12126	Perfection Plating, Inc.	Kirie	413	0.58	3.84	50.13	64.99	3.11	7.03	129.68
11920	Petersen Finishing Corp	Stickney	413	1.78	26.18	32.14	14.21	8.91	17.81	101.03
13721	Precise Finishing Company, Inc.	Stickney	413	0.37	0.45	41.04	82.09	1.84	8.28	134.06
12127	Precision Plating Company, Inc.	O'Brien	413	1.97	1.41	74.82	105.43	7.94	28.57	220.15
13115	R C Industries Inc.	Stickney	413	0.35	1.45	3.60	1.64	1.51	5.37	13.92
11241	Reliable Plating Corp	Stickney	413	24.22	158.77	63.30	149.94	4.66	48.46	449.35

TABLE AVIII (Continued): INDUSTRIAL METAL LOADING BY INDUSTRY

Facility ID	Facility Name	Treatment Area	CFR[1]	Cd (lbs/yr)	Cr (lbs/yr)	Cu (lbs/yr)	Ni (lbs/yr)	Pb (lbs/yr)	Zn (lbs/yr)	TMC (lbs/yr)
12929	Dover Industrial Chrome	O'Brien	413	0.15	9.83	0.58	1.04	0.77	2.72	15.09
12058	Dyna-Burr Chicago, Inc.	Stickney	413	0.74	0.91	0.73	0.50	1.88	19.33	24.08
11977	Empire Hard Chrome	Stickney	413	1.22	63.84	10.30	3.16	7.85	33.12	119.50
10427	Enameled Steel & Sign Co.	O'Brien	413	0.09	0.08	0.51	4.86	0.44	1.83	7.80
11905	Forest Plating Co.	Stickney	413	0.16	7.24	5.14	4.59	2.21	99.07	118.40
11990	Gem Coat, Inc.	O'Brien	413	0.39	1.20	0.72	0.15	0.55	12.37	15.39
11724	Griffin Plating Co., Inc.	Stickney	413	0.08	71.93	11.67	38.63	0.93	19.10	142.33
12184	Hausner Hard-Chrome Inc.	Kirie	413	0.04	1.64	0.58	0.14	0.29	0.71	3.39
12402	International Processing Company of America	Kirie	413	0.06	11.21	0.60	0.10	0.31	0.64	12.93
12718	International Silver Plating, Inc.	O'Brien	413	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13724	Jonas Enterprises Inc.	Stickney	413	0.06	7.04	0.31	0.08	0.29	0.75	8.53
11882	Krel Laboratories Inc	Stickney	413	0.74	20.81	54.35	129.03	3.79	35.48	244.20
11883	Krel Laboratories Inc	Stickney	413	0.67	0.78	4.75	32.91	1.74	13.25	54.10
12394	LBH Industries, Inc. d/b/a Scott Plating	O'Brien	413	0.03	6.22	0.13	0.25	0.16	6.85	13.64
11064	Mech-Tronics	Stickney	413	0.40	38.53	2.50	0.71	1.95	5.13	49.23
10760	Midwestern Rust Proof, Inc.	O'Brien	413	1.81	156.80	10.74	7.88	9.07	892.92	1079.22
13289	Mike's Anodizing	Stickney	413	0.30	2.54	9.62	2.15	2.79	5.72	23.11
19614	Nobert Plating Co-Plant 1	Stickney	413	0.86	2.99	196.56	144.84	4.32	41.83	391.39
12622	Nobert Plating Co-Plant 2	Stickney	413	0.50	3.80	3.18	26.18	1.17	3.78	38.61
12126	Perfection Plating, Inc.	Kirie	413	0.58	3.84	50.13	64.99	3.11	7.03	129.68
11920	Petersen Finishing Corp	Stickney	413	1.78	26.18	32.14	14.21	8.91	17.81	101.03
13721	Precise Finishing Company, Inc.	Stickney	413	0.37	0.45	41.04	82.09	1.84	8.28	134.06
12127	Precision Plating Company, Inc.	O'Brien	413	1.97	1.41	74.82	105.43	7.94	28.57	220.15
13115	R C Industries Inc.	Stickney	413	0.35	1.45	3.60	1.64	1.51	5.37	13.92
11241	Reliable Plating Corp	Stickney	413	24.22	158.77	63.30	149.94	4.66	48.46	449.35

TABLE AVIII (Continued): INDUSTRIAL METAL LOADING BY INDUSTRY

Facility ID	Facility Name	Treatment Area	CFR[1]	Cd (lbs/yr)	Cr (lbs/yr)	Cu (lbs/yr)	Ni (lbs/yr)	Pb (lbs/yr)	Zn (lbs/yr)	TMC (lbs/yr)
26811	Riverdale Plating and Heat Treating, LLC	Calumet	413	1.65	21.02	3.16	2.54	8.01	673.37	709.74
11339	Saporito Finishing Company	Stickney	413	1.88	34.92	14.06	91.29	5.56	378.47	526.17
12968	Scientific Plating	Stickney	413	1.12	0.93	21.39	4.52	5.60	17.00	50.57
11951	Skild Plating Corp	Stickney	413	0.04	4.23	0.71	2.81	0.21	31.74	39.75
11487	Specified Plating Co.	Stickney	413	1.33	1.09	7.22	0.89	2.38	292.60	305.51
13233	U S Plating Co.	Stickney	413	23.20	291.41	432.54	712.95	8.51	432.61	1901.22
13053	V P Plating & Pariso Inc	Stickney	413	0.06	4.05	1.91	0.57	0.27	1.94	8.79
13340	West Town Plating Inc.	Stickney	413	0.38	6.60	7.79	18.79	1.88	3.75	39.18
26753	Arkema Emulsion Systems	Calumet	414	0.63	1.02	1.51	1.14	3.13	17.13	24.56
13513	Ashland Specialty Chemical Co.	Calumet	414	1.76	1.47	3.37	2.34	8.78	45.91	63.63
11422	Cedar Concepts Corporation	Stickney	414	1.05	0.88	1.77	1.40	5.25	13.18	23.52
10204	Ester Solutions	Stickney	414	0.62	0.52	4.62	0.99	3.10	44.71	54.55
10157	Koppers Incorporated	Stickney	414	6.61	5.71	11.42	8.81	33.05	66.52	132.12
10888	Pelron Corp	Stickney	414	0.83	2.19	2.37	1.53	4.14	12.06	23.12
11429	Regis Technologies Inc.	O'Brien	414	1.00	0.99	2.84	1.62	5.01	12.39	23.85
11464	UOP LLC	Stickney	414	4.30	38.89	18.83	187.61	21.52	63.48	334.63
10182	PVS Chemical Solutions, Inc.	Calumet	415	2.13	5.32	9.01	6.20	16.49	833.04	872.20
25700	Solvay USA Inc.	Calumet	417	1.25	7.27	22.47	10.40	8.29	84.08	133.76
13468	Premcor Alsip Distribution Center	Calumet	419	3.13	2.61	5.21	4.17	15.64	31.93	62.68
26836	Alliance Tubular Holdings LLC	Calumet	420	0.03	0.03	0.05	0.04	0.16	0.62	0.94
25378	Allied Tube & Conduit	Calumet	420	1.01	3.17	3.13	2.25	4.94	42.66	57.17
11535	Allied Tube & Conduit Corp	Calumet	420	12.85	173.30	189.58	45.52	64.26	901.84	1387.35
25896	ArcelorMittal Riverdale LLC	Calumet	420	14.47	36.47	78.57	40.82	76.43	252.83	499.59
24771	Metal-Matic Inc.	Stickney	420	0.58	0.48	8.74	0.80	2.88	9.82	23.30
25052	NACME Steel Processing, LLC	Calumet	420	1.23	110.66	20.96	24.07	7.29	22.70	186.91

TABLE AVIII (Continued): INDUSTRIAL METAL LOADING BY INDUSTRY

Facility ID	Facility Name	Treatment Area	CFR[1]	Cd (lbs/yr)	Cr (lbs/yr)	Cu (lbs/yr)	Ni (lbs/yr)	Pb (lbs/yr)	Zn (lbs/yr)	TMC (lbs/yr)
10766	O & K American Corporation	Stickney	420	2.18	4.11	8.20	7.92	11.11	90.23	123.75
13141	S & D Wire Co. Inc	Calumet	420	0.02	0.02	1.97	0.12	0.09	1.36	3.57
10132	Wheatland Tube Division of JMC Steel Group	Stickney	420	3.77	33.16	202.26	7.26	18.86	508.42	773.73
10536	Kramer, H & Co.	Stickney	421	3.37	6.72	369.37	32.09	119.50	930.89	1461.95
10680	Sipi Metals Corporation	Stickney	421	0.46	0.39	1.73	0.97	2.35	6.44	12.34
10487	Horween Leather Co.	Stickney	425	3.23	210.59	6.46	5.61	16.14	32.29	274.32
26761	FutureMark Paper Company	Calumet	430	43.97	87.58	135.58	59.18	219.86	668.75	1214.93
24781	Able Electropolishing Company	Stickney	433	1.07	152.27	1.78	2.54	5.34	10.68	173.67
25290	Above & Beyond Black Oxide Inc	Stickney	433	0.09	14.66	1.20	10.26	0.28	8.86	35.35
15025	Accellent Endoscopy WHL	Kirie	433	0.38	20.51	19.88	2.92	1.88	6.90	52.48
12749	Alanson Mfg Co.	Stickney	433	0.76	1.97	0.77	0.64	0.21	26.70	31.05
26150	All-Brite Anodizing Company	Stickney	433	0.24	3.32	5.98	6.19	0.94	6.96	23.63
13351	American Nameplate Co.	Stickney	433	0.17	7.83	23.48	4.22	0.83	10.52	47.05
25577	American Plating & Manufacturing	Stickney	433	0.31	3.54	5.58	4.79	1.56	4.20	19.98
26736	American Wheel Corporation	Stickney	433	0.07	0.06	0.34	0.10	0.33	1.18	2.06
25846	American/Jebco Corporation	Stickney	433	1.64	3.32	13.41	19.41	3.44	45.36	86.59
15689	Amitron Corporation	Kirie	433	2.27	2.22	191.77	180.46	11.77	28.14	416.62
25379	Ampel Inc	Kirie	433	0.46	0.38	56.37	3.44	2.28	4.74	67.67
25757	Angiotech	Kirie	433	0.42	25.90	6.91	5.53	2.12	4.68	45.57
25999	Automotion	Calumet	433	0.07	0.13	0.88	0.11	0.36	2.41	3.97
26440	A-Wire Corporation	Stickney	433	0.01	0.01	0.11	0.10	0.06	0.46	0.75
12831	B & T Polishing, Inc.	Stickney	433	0.20	39.04	4.26	859.61	1.48	9.08	913.67
26545	B.L. Downey Company, LLC.	Stickney	433	0.40	2.21	0.70	39.48	2.00	58.36	103.15
25667	Baroque Silversmith	O'Brien	433	0.00	0.00	0.03	0.05	0.02	0.06	0.16
25323	Best Cutting Die Co., Etch-A-Die Division	O'Brien	433	0.07	1.55	0.78	0.30	0.34	0.85	3.89

TABLE AVIII (Continued): INDUSTRIAL METAL LOADING BY INDUSTRY

Facility ID	Facility Name	Treatment Area	CFR[1]	Cd (lbs/yr)	Cr (lbs/yr)	Cu (lbs/yr)	Ni (lbs/yr)	Pb (lbs/yr)	Zn (lbs/yr)	TMC (lbs/yr)
11203	Block & Company Inc	Kirie	433	0.18	0.23	2.10	4.51	0.91	4.52	12.45
26369	Bluewater Thermal Services, LLC	Stickney	433	0.18	0.31	3.45	0.65	0.89	5.13	10.60
10311	Borg Warner Automotive	Stickney	433	1.47	3.65	2.44	8.02	6.44	15.47	37.50
11260	Bretford Manufacturing, Inc.	Stickney	433	0.89	1.18	4.29	7.16	4.44	13.97	31.93
11898	Bretford Manufacturing, Inc.	Stickney	433	0.13	0.12	0.77	0.61	0.63	4.44	6.69
25289	C M P Anodizing	Kirie	433	0.56	10.43	7.30	14.87	1.41	6.66	41.25
26040	Chem-Plate Industries	Kirie	433	1.42	17.29	175.31	113.24	7.19	242.22	556.67
26254	Chicago American Manufacturing, LLC	Stickney	433	0.40	0.42	1.17	0.68	2.01	24.46	29.14
12988	Chicago Magnesium Casting Co.	Calumet	433	0.03	0.06	0.10	0.04	0.15	0.60	0.97
26425	Circuit Engineering, LLC	Kirie	433	0.32	0.30	21.83	0.53	1.60	3.58	28.16
15230	Commercial Finishes Company, Ltd.	Kirie	433	0.02	0.02	0.22	0.04	0.11	0.53	0.94
24089	Dehler Manufacturing Company, Inc.	O'Brien	433	0.14	0.30	0.71	7.33	0.69	37.82	46.99
13627	Eagle Electronics Incorporated	Hanover Park	433	0.99	0.96	74.45	14.82	5.11	11.17	107.51
26601	ECMC Incorporated	Hanover Park	433	0.48	0.58	60.17	2.26	2.50	5.01	71.00
11406	Edsal Manufacturing Company, Inc.	Stickney	433	0.32	1.07	2.14	1.22	2.14	39.63	46.52
24378	Edsal Manufacturing Company, Inc.	Stickney	433	0.94	0.78	1.88	1.42	4.69	28.85	38.55
26740	Eklind Tool Company	Stickney	433	0.08	0.31	0.41	0.64	0.42	1.79	3.65
13393	Electro-Motive Diesel, Inc.	Stickney	433	5.94	5.40	23.52	7.92	29.71	100.52	173.02
24756	Electronic Interconnect Corp	Kirie	433	0.99	0.83	80.96	3.37	4.97	12.28	103.42
12222	Electronic Plating Company	Stickney	433	12.40	69.46	19.46	15.34	4.80	281.60	403.06
25521	Electroplated Metal Solutions, Inc.	Kirie	433	0.19	3.85	22.06	28.57	0.94	8.15	63.75
25146	Empire Hard Chrome Plant 2	Stickney	433	0.41	56.06	1.78	3.45	3.83	6.32	71.86
15546	En-Chro Plating, Ltd.	Stickney	433	0.10	0.08	0.18	1.71	0.48	0.98	3.51
14287	Engis Corporation, Inc.	Kirie	433	0.12	4.30	1.98	31.81	0.58	2.01	40.79
26499	Ex-Cell Kaiser, LLC	Stickney	433	0.12	0.22	0.41	0.86	0.67	1.56	3.84

TABLE AVIII (Continued): INDUSTRIAL METAL LOADING BY INDUSTRY

Facility ID	Facility Name	Treatment Area	CFR[1]	Cd (lbs/yr)	Cr (lbs/yr)	Cu (lbs/yr)	Ni (lbs/yr)	Pb (lbs/yr)	Zn (lbs/yr)	TMC (lbs/yr)
26759	Expert Metal Finishing, Inc.	Stickney	433	0.37	1.30	1.33	0.89	0.95	12.83	17.67
25367	Fluid Management, Inc.	Kirie	433	0.09	0.08	0.36	0.12	0.47	1.75	2.88
25554	Focal Point LLC	Stickney	433	0.31	0.30	0.61	0.79	1.56	6.02	9.59
26788	Focal Point LLC	Stickney	433	0.10	0.09	0.18	0.83	0.50	1.00	2.71
13389	Ford Motor Company - Chicago Assembly Plant	Calumet	433	7.71	13.53	19.71	250.55	38.53	274.93	604.97
26914	Fotofab, LLC	O'Brien	433	0.24	0.63	7.84	1.32	1.21	5.68	16.93
12719	Gatto Industrial Platers, Inc.	Stickney	433	1.53	81.66	514.93	200.55	7.62	349.98	1156.26
25242	General Circuits d/b/a Delta Precision Circuits, Inc	Kirie	433	0.50	0.71	31.98	1.32	2.52	5.65	42.69
26280	Greenlee Diamond Tool Company	Kirie	433	0.02	0.03	0.79	2.00	0.10	0.33	3.28
10439	H. A. Framburg & Company	Stickney	433	0.77	0.45	13.89	4.29	1.06	18.70	39.16
12711	Helms Performance Group	O'Brien	433	0.00	0.01	0.23	0.03	0.05	0.31	0.64
11474	Hu-Friedy Mfg. Co. LLC	O'Brien	433	0.64	16.09	7.25	7.98	3.19	12.88	48.03
13717	Imperial Plating Company, Inc.	Stickney	433	0.48	36.06	35.43	32.40	2.54	118.43	225.33
26338	IMS Engineered Products, LLC	Stickney	433	0.31	0.38	1.09	0.61	1.56	3.45	7.41
25768	Interlake Mecalux, Inc.	Stickney	433	0.56	1.07	23.24	4.04	2.81	31.02	62.74
11062	James Precious Metals Plating	O'Brien	433	0.07	0.11	16.52	1.79	0.39	1.33	20.22
11396	Jensen Plating Works, Inc.	O'Brien	433	0.15	0.85	5.95	5.51	0.77	15.12	28.36
26140	Jet Finishers, Inc.	Kirie	433	0.10	0.23	0.27	0.25	0.31	1.93	3.10
25539	Keystone Automotive	Stickney	433	0.04	0.07	0.07	0.07	0.19	1.15	1.58
11653	Klein Tools, Inc.	O'Brien	433	0.90	13.04	8.98	3.65	4.51	137.09	168.18
15505	Komet of America Inc.	Hanover Park	433	0.09	0.25	0.40	0.25	0.44	1.29	2.72
13923	Magnetic Inspection Laboratory Inc	Kirie	433	1.14	23.86	1.90	4.46	5.70	15.24	52.31
26618	Marathon Cutting Die, Inc.	Kirie	433	0.00	0.01	0.04	0.01	0.01	0.06	0.13
25836	Mech-Tronics Corporation	Stickney	433	0.08	10.45	0.91	2.46	0.41	1.14	15.45

TABLE AVIII (Continued): INDUSTRIAL METAL LOADING BY INDUSTRY

Facility ID	Facility Name	Treatment Area	CFR[1]	Cd (lbs/yr)	Cr (lbs/yr)	Cu (lbs/yr)	Ni (lbs/yr)	Pb (lbs/yr)	Zn (lbs/yr)	TMC (lbs/yr)
26759	Expert Metal Finishing, Inc.	Stickney	433	0.37	1.30	1.33	0.89	0.95	12.83	17.67
25367	Fluid Management, Inc.	Kirie	433	0.09	0.08	0.36	0.12	0.47	1.75	2.88
25554	Focal Point LLC	Stickney	433	0.31	0.30	0.61	0.79	1.56	6.02	9.59
26788	Focal Point LLC	Stickney	433	0.10	0.09	0.18	0.83	0.50	1.00	2.71
13389	Ford Motor Company - Chicago Assembly Plant	Calumet	433	7.71	13.53	19.71	250.55	38.53	274.93	604.97
26914	Fotofab, LLC	O'Brien	433	0.24	0.63	7.84	1.32	1.21	5.68	16.93
12719	Gatto Industrial Platers, Inc.	Stickney	433	1.53	81.66	514.93	200.55	7.62	349.98	1156.26
25242	General Circuits d/b/a Delta Precision Circuits, Inc	Kirie	433	0.50	0.71	31.98	1.32	2.52	5.65	42.69
26280	Greenlee Diamond Tool Company	Kirie	433	0.02	0.03	0.79	2.00	0.10	0.33	3.28
10439	H. A. Framburg & Company	Stickney	433	0.77	0.45	13.89	4.29	1.06	18.70	39.16
12711	Helms Performance Group	O'Brien	433	0.00	0.01	0.23	0.03	0.05	0.31	0.64
11474	Hu-Friedy Mfg. Co. LLC	O'Brien	433	0.64	16.09	7.25	7.98	3.19	12.88	48.03
13717	Imperial Plating Company, Inc.	Stickney	433	0.48	36.06	35.43	32.40	2.54	118.43	225.33
26338	IMS Engineered Products, LLC	Stickney	433	0.31	0.38	1.09	0.61	1.56	3.45	7.41
25768	Interlake Mecalux, Inc.	Stickney	433	0.56	1.07	23.24	4.04	2.81	31.02	62.74
11062	James Precious Metals Plating	O'Brien	433	0.07	0.11	16.52	1.79	0.39	1.33	20.22
11396	Jensen Plating Works, Inc.	O'Brien	433	0.15	0.85	5.95	5.51	0.77	15.12	28.36
26140	Jet Finishers, Inc.	Kirie	433	0.10	0.23	0.27	0.25	0.31	1.93	3.10
25539	Keystone Automotive	Stickney	433	0.04	0.07	0.07	0.07	0.19	1.15	1.58
11653	Klein Tools, Inc.	O'Brien	433	0.90	13.04	8.98	3.65	4.51	137.09	168.18
15505	Komet of America Inc.	Hanover Park	433	0.09	0.25	0.40	0.25	0.44	1.29	2.72
13923	Magnetic Inspection Laboratory Inc	Kirie	433	1.14	23.86	1.90	4.46	5.70	15.24	52.31
26618	Marathon Cutting Die, Inc.	Kirie	433	0.00	0.01	0.04	0.01	0.01	0.06	0.13
25836	Mech-Tronics Corporation	Stickney	433	0.08	10.45	0.91	2.46	0.41	1.14	15.45

TABLE AVIII (Continued): INDUSTRIAL METAL LOADING BY INDUSTRY

Facility ID	Facility Name	Treatment Area	CFR[1]	Cd (lbs/yr)	Cr (lbs/yr)	Cu (lbs/yr)	Ni (lbs/yr)	Pb (lbs/yr)	Zn (lbs/yr)	TMC (lbs/yr)
24882	Metal Box International, Inc.	Stickney	433	0.18	0.54	1.87	1.02	0.91	68.63	73.15
25253	Metal Impact Corporation	Stickney	433	0.55	1.14	10.23	1.19	2.75	45.83	61.69
26676	Micron Metal Finishing, LLC	Stickney	433	0.04	0.04	0.32	0.08	0.18	1.37	2.03
25498	Montana Metal Products	Stickney	433	0.12	0.35	0.46	0.15	0.38	1.20	2.66
10448	Motorola Solutions, Inc.	Egan	433	1.64	1.37	20.58	2.19	8.20	55.30	89.27
24395	National Technology Inc	Egan	433	1.34	3.32	200.50	5.52	6.84	19.61	237.13
25910	Nickel Composite Coatings, Inc.	Stickney	433	0.10	0.17	0.86	7.42	0.48	1.02	10.04
10987	Nina Enterprises, Inc.	Stickney	433	0.10	0.25	0.48	0.36	0.58	3.38	5.15
26295	North American Electroless Nickel	Kirie	433	0.24	1.33	1.19	68.69	1.22	2.73	75.40
13547	Northrop Grumman Systems Corporation	Egan	433	1.29	1.10	11.45	2.03	6.46	104.68	127.01
25942	Northrop Grumman Systems Corporation	Egan	433	0.08	0.16	0.53	0.09	0.30	2.14	3.30
25686	Northstar Aerospace (Chicago), Inc.	Stickney	433	0.34	1.23	5.24	2.45	1.19	15.33	25.78
24696	Nu-Way Industries, Inc.	Stickney	433	0.85	17.28	8.61	9.77	4.25	57.63	98.39
13124	Omega Plating Inc.	Calumet	433	0.16	0.13	4.11	6.17	1.01	2.98	14.54
10635	Precision Instruments Inc.	Stickney	433	0.15	7.72	0.89	5.64	0.73	1.76	16.89
26627	Progressive Coating	Stickney	433	0.03	0.06	0.39	0.23	0.16	0.83	1.71
21463	Pro-Tec Metal Finishing Corp	Stickney	433	0.03	0.05	0.10	0.21	0.13	6.06	6.57
25324	Pulsar, Inc.	Stickney	433	0.19	0.16	2.30	0.25	0.94	1.88	5.71
13277	Q.C. Finishers, Inc.	Stickney	433	0.08	0.06	0.19	0.10	0.38	2.33	3.15
10639	Quam Nichols Co.	Stickney	433	0.26	0.21	0.43	0.51	1.29	56.32	59.02
25523	R & B Powder Coatings	Stickney	433	0.09	0.08	0.15	0.12	0.46	1.12	2.02
15043	R & R Research d/b/a E J Somerville Co.	Stickney	433	0.04	2.30	0.13	0.06	0.20	0.61	3.34
11531	R S Owens & Company	O'Brien	433	0.70	0.58	11.51	8.52	3.48	10.43	35.22
26368	RoHS Compliance Services, Inc.	Kirie	433	0.09	0.08	0.69	2.16	1.67	0.91	5.60
15773	S & B Finishing Co, Inc	Stickney	433	0.20	0.60	3.82	1.59	1.02	10.65	17.88

TABLE AVIII (Continued): INDUSTRIAL METAL LOADING BY INDUSTRY

Facility ID	Facility Name	Treatment Area	CFR[1]	Cd (lbs/yr)	Cr (lbs/yr)	Cu (lbs/yr)	Ni (lbs/yr)	Pb (lbs/yr)	Zn (lbs/yr)	TMC (lbs/yr)
10670	S & C Electric Co.	O'Brien	433	5.89	5.06	116.26	41.69	29.45	106.11	304.45
13574	Senior Flexonics	Hanover Park	433	1.88	28.81	14.52	31.24	9.38	26.96	112.79
14372	Skolnik Industries	Stickney	433	0.38	0.63	6.18	3.21	1.88	24.60	36.87
10683	Sloan Valve Co.	Stickney	433	1.35	54.93	5.60	88.20	6.88	19.11	176.07
24585	Sorini Ring Manufacturing Co. Inc	Stickney	433	0.09	0.07	0.32	0.14	0.44	0.96	2.02
14635	Star Electronics, Inc.	Kirie	433	0.19	0.21	27.47	0.64	1.02	2.04	31.57
24847	Sterling Plating	Stickney	433	0.31	4.48	27.89	106.46	1.56	58.20	198.91
25279	Sunrise Electronics	Kirie	433	0.39	0.33	27.76	0.63	1.95	3.91	34.97
10847	Switchcraft Inc	O'Brien	433	0.25	0.22	5.39	13.74	1.25	7.09	27.94
14260	Three J's Industries Inc	Kirie	433	1.55	166.67	5.66	0.87	2.85	20.31	197.91
24397	U.S. Standard Sign Company	Stickney	433	0.01	0.03	0.05	0.02	0.06	0.26	0.43
25321	Unitech Industries	Kirie	433	0.07	0.05	2.24	11.29	0.33	0.65	14.63
25231	United Displaycraft	Stickney	433	0.22	0.33	18.23	1.05	1.20	6.86	27.89
26725	United Electronics Corporation	Stickney	433	1.32	1.10	207.27	8.59	6.61	24.96	249.86
13676	United Re-Manufacturing Company Inc.	Stickney	433	0.08	1.96	0.69	0.15	0.39	2.98	6.25
10735	Unity Manufacturing Co.	Stickney	433	0.60	42.89	28.41	81.93	2.98	55.48	212.27
13714	V P Anodizing Inc	Stickney	433	0.20	1.69	4.97	4.48	0.86	20.04	32.25
11395	Waltz Brothers Inc	Kirie	433	0.06	0.14	0.49	0.14	0.25	0.92	1.99
11664	Water Saver Faucet Co.	Stickney	433	0.35	17.12	96.37	17.26	7.50	47.49	186.10
26892	Weber-Stephen Products LLC	Egan	433	1.15	3.05	21.40	30.26	6.30	49.57	111.73
11938	Zenith Fabricating Company	Stickney	433	0.01	0.01	0.04	0.03	0.06	0.19	0.35
15872	Beaver Oil Co., Inc.	Stickney	437	1.32	11.37	4.88	78.57	6.59	33.54	136.26
12114	CID Recycling and Disposal Facility	Calumet	437	16.70	68.13	15.49	53.93	31.43	422.99	608.68
10142	Clean Harbors Services Inc.	Calumet	437	1.82	2.54	4.81	8.53	9.11	89.00	115.82
25246	Envirite of Illinois, Inc.	Calumet	437	0.72	2.53	4.71	19.78	3.55	15.57	46.87

TABLE AVIII (Continued): INDUSTRIAL METAL LOADING BY INDUSTRY

Facility ID	Facility Name	Treatment Area	CFR[1]	Cd (lbs/yr)	Cr (lbs/yr)	Cu (lbs/yr)	Ni (lbs/yr)	Pb (lbs/yr)	Zn (lbs/yr)	TMC (lbs/yr)
26726	Liquid Environmental Solutions	Calumet	437	1.18	3.75	86.05	78.32	8.47	135.57	313.35
25248	Ortek Inc.	Stickney	437	0.30	0.25	0.50	0.40	1.50	3.00	5.95
26960	Active BioMaterials LLC	Kirie	439	0.42	0.54	3.41	0.82	2.11	8.04	15.34
26791	Fresenius Kabi USA, LLC	Stickney	439	2.49	2.07	6.65	3.32	12.45	26.27	53.24
13568	Medi-Physics Inc. d/b/a GE Healthcare	Kirie	439	0.25	0.36	5.17	0.38	1.16	6.24	13.55
14298	Morton Grove Pharmaceuticals	O'Brien	439	0.41	0.53	1.40	0.55	2.05	6.05	11.00
13774	Calumet Tank & Equipment Co.	Calumet	442	0.22	8.24	1.22	6.14	1.61	17.57	35.00
10001	CBSL Transportation Services, Inc.	Stickney	442	0.30	14.05	2.31	1.19	1.50	7.66	27.01
17261	Dana Container Inc.	Stickney	442	0.19	0.72	1.06	0.38	1.28	19.05	22.68
26410	Dedicated Trailer Cleaning Services, Inc.	Calumet	442	0.34	0.29	1.38	0.46	1.72	9.27	13.47
20191	Heniff Transportation Systems, Inc.	Calumet	442	0.33	0.27	0.58	0.43	1.63	9.39	12.62
14999	Quala Services, LLC	Calumet	442	0.99	1.07	7.50	2.46	4.94	111.25	128.22
15905	Superior Carriers Inc	Calumet	442	0.00	0.00	0.02	0.01	0.02	0.12	0.17
24828	T.A.C., Inc.	Stickney	442	0.69	1.79	8.66	2.95	10.25	39.45	63.79
10543	Avon Products Inc	O'Brien	455	1.89	1.62	18.85	2.52	9.45	49.23	83.56
10593	Nalco Company	Stickney	455	13.97	19.33	35.51	18.63	69.86	153.70	311.00
10002	Aallied Die Casting Co. of Illinois	Stickney	464	0.13	0.15	1.59	1.26	0.61	4.90	8.64
26039	Berkshire Investments, LLC d/b/a Chicago Extruded Metals	Stickney	464	0.58	0.55	13.62	0.91	2.16	89.08	106.91
10012	Inland Die Casting Company	Kirie	464	0.29	0.28	1.37	0.81	1.44	7.75	11.93
11177	Material Sciences Corporation-Plant 2	Kirie	465	0.65	2.04	2.05	9.29	3.24	9.53	26.80
11136	Rexam Beverage Can Company	Stickney	465	1.73	1.45	2.88	5.34	8.63	17.26	37.30
10679	Signode Corporation	Stickney	465	2.14	1.79	3.73	3.13	10.71	21.96	43.47
10770	Zegers Inc.	Calumet	465	0.21	0.60	1.60	0.32	1.06	2.88	6.67
12424	JLO Metal Products, Inc.	Stickney	467	0.71	1.70	12.53	2.40	3.42	25.82	46.57
13810	Wieland Metals, Inc	Kirie	468	0.13	0.11	14.73	0.30	0.66	3.98	19.90

TABLE AVIII (Continued): INDUSTRIAL METAL LOADING BY INDUSTRY

Facility ID	Facility Name	Treatment Area	CFR[1]	Cd (lbs/yr)	Cr (lbs/yr)	Cu (lbs/yr)	Ni (lbs/yr)	Pb (lbs/yr)	Zn (lbs/yr)	TMC (lbs/yr)
25861	Chicago Powdered Metal Products Company	Stickney	471	0.04	0.12	1.83	0.46	0.23	1.15	3.82
26197	Abbott Molecular, Inc.	Stickney	SIU[2]	0.22	0.72	3.91	0.58	1.44	6.16	13.02
13258	Agri-Fine Corporation	Calumet	SIU[2]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11184	Alberto Culver	Stickney	SIU[2]	3.57	3.02	14.02	4.77	17.87	49.77	93.02
25867	Alsco-American Linen Division	Stickney	SIU[2]	2.46	2.36	11.39	3.28	12.29	36.23	67.99
25497	American Bottling	Stickney	SIU[2]	6.57	9.26	19.34	9.67	32.84	97.00	174.68
26390	American Sweetener Corporation	Calumet	SIU[2]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14454	Angelica Textile Services	Stickney	SIU[2]	3.44	2.87	39.98	4.59	17.20	112.49	180.56
25805	Anthony Marano Company	Stickney	SIU[2]	0.61	1.13	10.28	0.87	3.03	29.81	45.74
25954	Aramark Uniform and Career Apparel, LLC	Stickney	SIU[2]	2.28	10.44	118.27	5.53	12.40	180.99	329.91
25055	Ardagh Glass Inc.	Calumet	SIU[2]	2.48	2.06	22.60	8.79	12.38	57.18	105.50
14734	Aspen Foods A Division of Koch Foods Company, Inc	Stickney	SIU[2]	0.57	1.08	3.55	0.81	2.86	108.67	117.55
12302	Azteca Foods, Inc.	Stickney	SIU[2]	0.70	5.78	8.76	4.04	3.48	33.30	56.05
25758	B & B Pullman Properties, LP	Calumet	SIU[2]	1.42	9.71	18.71	4.32	7.11	334.44	375.71
26372	BBJ Rentals, Inc.	O'Brien	SIU[2]	0.73	0.68	6.45	2.41	3.67	13.24	27.19
25873	Belmont Sausage Company	Kirie	SIU[2]	0.97	2.49	14.64	1.58	4.83	25.52	50.02
26543	Blue Island Phenol LLC	Calumet	SIU[2]	2.94	9.91	73.79	4.33	14.70	80.75	186.42
13454	BNSF Railway Company	Stickney	SIU[2]	3.13	5.28	31.54	5.03	19.55	97.47	161.99
13586	Bridgford Foods	Stickney	SIU[2]	1.06	1.26	3.74	1.80	5.32	85.52	98.71
15827	Caravan Ingredients	Calumet	SIU[2]	2.40	2.06	6.71	3.20	12.01	27.62	54.00
11058	Carl Buddig and Company	Calumet	SIU[2]	3.06	25.52	39.61	13.07	15.32	374.92	471.51
24522	Chicago Hospitality Division of Tyson Foods	Stickney	SIU[2]	5.00	12.66	59.84	12.74	25.02	223.72	338.98
10180	Cintas Corporation	O'Brien	SIU[2]	1.12	4.28	35.55	3.86	9.90	82.89	137.59
15985	Cintas Corporation	Stickney	SIU[2]	1.53	10.09	78.86	10.22	15.13	262.88	378.72
26070	Cintas Corporation	Stickney	SIU[2]	1.31	1.42	6.95	1.82	6.57	35.36	53.43

TABLE AVIII (Continued): INDUSTRIAL METAL LOADING BY INDUSTRY

Facility ID	Facility Name	Treatment Area	CFR[1]	Cd (lbs/yr)	Cr (lbs/yr)	Cu (lbs/yr)	Ni (lbs/yr)	Pb (lbs/yr)	Zn (lbs/yr)	TMC (lbs/yr)
13787	City of Chicago-Jardine Water Purification Plant	Stickney	SIU[2]	14.16	60.90	98.29	47.03	70.68	274.47	565.52
13958	City of Chicago-South Water Purification Plant	Calumet	SIU[2]	12.78	128.93	115.90	104.46	87.69	336.80	786.56
26549	Clean Harbors Recycling Services of Chicago, LLC	Stickney	SIU[2]	4.40	65.01	7.26	44.31	20.92	41.85	183.76
24708	Cloverhill Pastry-Vend LLC	O'Brien	SIU[2]	1.35	1.13	16.61	1.80	6.76	759.48	787.12
11606	Coca-Cola Refreshments USA, Inc. (Niles)	O'Brien	SIU[2]	8.13	12.93	46.73	11.44	40.66	287.96	407.84
14315	Coca-Cola Refreshments, Inc.	Calumet	SIU[2]	3.33	3.48	7.07	4.56	16.64	51.16	86.24
23995	Congress Development Company	Stickney	SIU[2]	5.82	117.91	5.15	28.60	15.45	62.59	235.52
26638	CPC Laboratories, Inc.	Calumet	SIU[2]	1.24	1.69	7.74	1.77	7.88	28.66	48.97
25387	Darling Restaurant Services d/b/a Torvac	Calumet	SIU[2]	0.28	0.48	0.78	1.31	1.40	3.80	8.06
13477	DeLaval Manufacturing	Stickney	SIU[2]	0.44	0.39	1.33	0.80	2.19	6.86	12.02
15912	DeNormandie Towel & Linen, Inc.	Stickney	SIU[2]	1.47	3.45	12.68	1.96	7.35	40.06	66.97
13770	Des Plaines Landfill	Stickney	SIU[2]	2.70	18.55	20.38	27.04	14.52	42.22	125.43
13688	Domestic Uniform Rental Company	O'Brien	SIU[2]	1.06	1.07	11.30	4.24	5.32	32.74	55.72
26233	Ebro Foods, Inc.	Stickney	SIU[2]	1.00	0.84	2.59	1.34	5.02	11.95	22.74
24896	Ed Miniat, Inc.	Calumet	SIU[2]	2.00	9.09	26.19	4.44	10.01	106.59	158.31
14249	El Milagro, Inc.	Stickney	SIU[2]	1.13	8.43	10.51	9.77	6.10	47.10	83.03
26088	El Milagro, Inc. - Plant No. 4	Stickney	SIU[2]	0.66	1.97	5.69	5.90	3.28	10.51	28.01
10425	Elkay Manufacturing Company	Stickney	SIU[2]	1.25	14.90	5.94	7.51	6.26	24.03	59.88
12240	Ferrara Candy Company	Stickney	SIU[2]	2.40	12.79	171.67	8.82	16.58	314.75	527.00
25938	Five Star Laundry - Chicago, LLC	Stickney	SIU[2]	2.45	2.04	14.57	3.26	12.23	24.46	59.00
26570	Fontanini Italian Meats	Stickney	SIU[2]	2.07	2.18	3.90	2.76	10.35	49.82	71.08
14279	Foodliner, Inc.	Stickney	SIU[2]	0.59	0.49	0.98	0.78	2.94	6.61	12.40
24639	Fresh Express-Addison	Stickney	SIU[2]	1.62	5.67	7.23	3.37	8.11	40.83	66.84

TABLE AVIII (Continued): INDUSTRIAL METAL LOADING BY INDUSTRY

Facility ID	Facility Name	Treatment Area	CFR[1]	Cd (lbs/yr)	Cr (lbs/yr)	Cu (lbs/yr)	Ni (lbs/yr)	Pb (lbs/yr)	Zn (lbs/yr)	TMC (lbs/yr)
25760	Fresh Express-Edgington	Stickney	SIU[2]	2.19	6.67	13.59	4.50	10.95	49.53	87.42
24111	Fresh Express-Nevada	Stickney	SIU[2]	5.90	8.00	108.66	8.08	29.52	311.51	471.68
10101	FUJIFILM Hunt Chemicals, USA, Inc.	Egan	SIU[2]	0.91	1.58	3.36	1.76	4.55	21.51	33.66
21831	G & K Services	Stickney	SIU[2]	1.56	3.05	68.41	10.61	9.51	192.86	286.01
25695	Gate Gourmet Unit 239	Stickney	SIU[2]	1.21	1.31	15.78	1.62	6.07	13.65	39.63
25694	Gate Gourmet Unit 240	Stickney	SIU[2]	1.44	1.81	37.48	3.20	7.19	36.61	87.74
13228	Gelita USA, Inc.	Calumet	SIU[2]	4.50	3.75	106.21	6.00	22.52	47.29	190.28
26297	Geneva Energy, LLC	Calumet	SIU[2]	1.34	1.13	5.58	3.07	6.72	34.84	52.68
24817	Goose Island Beer Company	Stickney	SIU[2]	1.00	1.28	4.63	1.67	5.02	31.56	45.16
25657	Grace Davison	Stickney	SIU[2]	15.24	12.70	25.40	1452.32	76.19	152.37	1734.21
13021	Griffith Laboratories U.S.A., Inc.	Stickney	SIU[2]	1.42	3.98	3.96	4.71	7.11	109.56	130.74
13032	Griffith Laboratories U.S.A., Inc.	Calumet	SIU[2]	0.72	1.34	3.24	1.39	3.62	36.92	47.23
14265	Harbor View	Calumet	SIU[2]	1.80	10.97	3.00	13.51	9.01	18.01	56.31
25136	Hinckley Springs	Stickney	SIU[2]	1.48	1.23	2.53	1.97	7.38	15.42	30.01
25137	Hinckley Springs	Stickney	SIU[2]	0.69	0.59	1.47	0.92	3.45	7.67	14.79
26683	HLS Wheeling, LLC	Kirie	SIU[2]	4.99	11.60	117.88	11.28	40.20	418.27	604.22
25341	Hop Kee Inc d/b/a Oriental Delicacies Inc. Hong Kong Market	Stickney	SIU[2]	1.06	0.88	3.53	1.41	5.30	11.83	24.02
15962	HV Manufacturing Company	Kirie	SIU[2]	0.69	0.57	5.04	0.95	3.44	11.42	22.11
12417	Illinois Central Railroad - Woodcrest	Calumet	SIU[2]	0.54	0.91	4.19	0.73	2.72	7.46	16.56
25417	Ingredion Incorporated - Argo Plant	Stickney	SIU[2]	157.93	227.70	464.20	243.45	789.63	7151.09	9034.01
10851	Innophos, Inc.	Calumet	SIU[2]	1.38	2.78	2.81	2.04	6.88	16.91	32.79
25090	Interstate Brands Corporation	Stickney	SIU[2]	0.93	4.26	9.94	3.63	4.66	38.44	61.87
26286	Jernberg Industries, Inc.	Stickney	SIU[2]	2.06	2.42	10.45	3.33	10.29	23.20	51.75
10518	Jewel Food Stores	Stickney	SIU[2]	1.84	1.83	9.71	3.54	9.25	117.54	143.71
25810	Kellogg Company	Stickney	SIU[2]	1.13	1.98	6.33	1.79	5.64	26.58	43.45

TABLE AVIII (Continued): INDUSTRIAL METAL LOADING BY INDUSTRY

Facility ID	Facility Name	Treatment Area	CFR[1]	Cd (lbs/yr)	Cr (lbs/yr)	Cu (lbs/yr)	Ni (lbs/yr)	Pb (lbs/yr)	Zn (lbs/yr)	TMC (lbs/yr)
25839	Kinder Morgan Liquids Terminals, LLC	Calumet	SIU[2]	2.48	2.37	4.28	3.31	12.42	214.10	238.97
25773	Kinder Morgan Liquids Terminals, LLC-Argo	Stickney	SIU[2]	0.11	0.10	0.20	0.15	0.55	1.31	2.41
24048	Koch Foods, Inc.	O'Brien	SIU[2]	2.46	6.65	7.59	3.28	12.31	85.63	117.92
25811	Kraft Foods Group, Inc.	Stickney	SIU[2]	4.22	3.52	12.77	5.62	21.09	61.85	109.07
12115	Lake Landfill Gas Recovery	O'Brien	SIU[2]	0.39	1.01	2.59	2.96	1.93	5.05	13.92
11206	Land O'Frost	Calumet	SIU[2]	1.84	11.83	14.65	5.60	9.18	163.31	206.40
10926	Lawrence Foods	Kirie	SIU[2]	1.34	1.13	5.54	1.86	6.71	24.61	41.18
26019	Lechner and Sons Uniform Rental	Kirie	SIU[2]	0.46	5.33	22.66	3.08	7.12	77.70	116.34
26484	Mars Chocolate North America, LLC	Stickney	SIU[2]	5.10	7.86	43.35	6.80	25.50	150.25	238.87
13772	Mickey's Linen & Towel Supply Inc.	O'Brien	SIU[2]	1.94	9.45	42.75	5.56	9.70	131.35	200.74
25991	Morgan Services, Inc.	Stickney	SIU[2]	0.74	2.56	8.70	1.68	3.70	44.31	61.69
14095	Mullins Food Products, Inc.	Stickney	SIU[2]	2.13	1.77	11.52	2.84	10.63	38.55	67.43
24711	Nation Pizza and Foods	Egan	SIU[2]	2.25	11.12	43.49	7.23	11.25	107.22	182.54
15958	National Container Group, LLC	Stickney	SIU[2]	0.58	10.58	20.85	41.52	2.76	138.37	214.66
15940	National Railroad Passenger Corporation	Stickney	SIU[2]	2.32	2.13	17.13	3.10	16.19	46.09	86.97
10509	Navistar, Inc.	Stickney	SIU[2]	2.68	3.64	23.54	3.57	13.39	229.12	275.92
10698	Nestle Chocolate & Confections	Stickney	SIU[2]	3.75	3.13	8.29	5.00	18.77	37.53	76.47
25677	Nestle Professional Beverages	Stickney	SIU[2]	12.99	8.53	43.62	58.72	6.38	133.43	263.67
26550	Optimum Food Group, LLC	O'Brien	SIU[2]	0.76	0.76	4.74	1.83	3.82	29.50	41.42
24078	OSI Industries, LLC	Stickney	SIU[2]	4.18	3.48	17.24	5.57	20.89	86.70	138.06
26424	Otis Spunkmeyer LLC	Stickney	SIU[2]	0.66	10.61	12.51	7.44	3.32	107.19	141.73
10219	Owens Corning Roofing and Asphalt, LLC	Stickney	SIU[2]	3.48	3.76	6.96	4.64	17.40	48.15	84.39
15106	Paxton Landfill-IEPA Remediation Section	Calumet	SIU[2]	0.63	8.57	1.79	4.43	3.13	11.94	30.48
26796	Pepsi Beverages Company	Stickney	SIU[2]	3.59	3.45	11.08	6.47	17.95	83.25	125.78
24778	Rich Products Manufacturing Corporation	O'Brien	SIU[2]	1.46	1.29	6.71	7.87	7.32	195.89	220.54

TABLE AVIII (Continued): INDUSTRIAL METAL LOADING BY INDUSTRY

Facility ID	Facility Name	Treatment Area	CFR[1]	Cd (lbs/yr)	Cr (lbs/yr)	Cu (lbs/yr)	Ni (lbs/yr)	Pb (lbs/yr)	Zn (lbs/yr)	TMC (lbs/yr)
24610	River Bend Prairie	Calumet	SIU[2]	1.40	108.35	5.60	321.94	7.01	56.63	500.94
25857	RNA Corporation	Calumet	SIU[2]	1.85	1.54	3.08	2.47	9.24	18.49	36.67
14138	Roman Decorating Products LLC	Calumet	SIU[2]	0.78	0.68	3.05	1.03	3.88	28.40	37.82
26680	Roscoe Company	Stickney	SIU[2]	2.12	4.00	57.10	9.10	22.22	222.18	316.73
10651	Rose Packing Co., Inc.	Stickney	SIU[2]	4.35	4.34	12.52	5.80	21.77	100.86	149.63
26246	Rupari Food Service, Inc.	Calumet	SIU[2]	0.60	1.05	5.83	0.82	3.00	73.68	84.99
25960	S B Boron Corp	Stickney	SIU[2]	0.20	1.96	6.84	1.36	1.11	4.79	16.25
13429	Safety-Kleen Systems, Inc.	Calumet	SIU[2]	0.45	0.39	0.77	0.60	2.25	4.62	9.08
13729	South Chicago Packing Co.	Stickney	SIU[2]	1.52	2.05	4.80	4.64	7.58	15.17	35.77
13828	Specialty Foods Group, Inc.	Stickney	SIU[2]	1.89	6.69	7.86	3.58	9.43	108.24	137.69
26008	Stampede Meat, Inc.	Stickney	SIU[2]	1.69	4.68	16.18	2.39	8.44	152.98	186.36
23963	T A C Inc	Stickney	SIU[2]	0.85	0.91	6.50	4.77	4.26	38.30	55.59
10098	Tootsie Roll Industries, LLC	Stickney	SIU[2]	0.89	1.81	7.55	2.39	4.44	95.48	112.56
25479	Tru-Vue, Inc.	Stickney	SIU	0.84	0.97	4.28	6.32	4.21	11.25	27.87
20636	Underwriters Laboratories, Inc.	O'Brien	SIU[2]	1.67	1.43	45.21	7.47	8.37	44.20	108.36
26387	Unifirst Corporation	Stickney	SIU[2]	1.39	16.92	57.08	13.11	36.12	214.62	339.23
11443	Unilever Illinois Mfg., LLC	Stickney	SIU[2]	3.71	4.70	17.62	5.32	18.55	61.20	111.09
25395	United Feather and Down	O'Brien	SIU[2]	2.28	4.11	18.23	3.04	11.40	68.75	107.80
25855	Vanee Foods Company	Stickney	SIU[2]	1.85	6.17	15.74	14.34	12.35	113.90	164.36
12167	Vanee Foods Company, Inc.	Stickney	SIU[2]	2.43	2.02	7.89	3.24	12.14	24.28	52.00
26573	Vantage Oleochemicals	Stickney	SIU[2]	7.81	9.42	14.42	1432.86	39.07	95.91	1599.50
26095	Vee-Pak, Inc.	Stickney	SIU[2]	1.64	1.37	2.83	2.19	8.19	18.88	35.09
25859	Vegetable Juices, Inc.	Stickney	SIU[2]	1.25	4.65	13.25	3.32	6.26	20.26	48.98
26385	Ventura Foods, LLC d/b/a Marie's Salad Dressings	Calumet	SIU[2]	0.84	0.70	4.95	1.12	4.22	18.90	30.74
10745	Vienna Sausage Manufacturing Company	O'Brien	SIU[2]	4.01	15.20	23.52	9.44	19.73	368.87	440.77

TABLE AVIII (Continued): INDUSTRIAL METAL LOADING BY INDUSTRY

Facility ID	Facility Name	Treatment Area	CFR[1]	Cd (lbs/yr)	Cr (lbs/yr)	Cu (lbs/yr)	Ni (lbs/yr)	Pb (lbs/yr)	Zn (lbs/yr)	TMC (lbs/yr)
10394	Vita Food Products Inc	Stickney	SIU[2]	1.12	3.93	15.63	2.23	5.59	53.59	82.08
13985	Western Springs Water Plant	Stickney	SIU[2]	2.28	20.48	3.69	13.82	11.07	72.21	123.55
14105	Winnetka Landfill	O'Brien	SIU[2]	0.05	0.06	0.44	0.13	0.25	2.06	2.99

[1]The Value is the Part Number in the 40 CFR (Code of Federal Regulation), unless otherwise noted .
[2]SIU = Non-Categorical Significant Industrial User.

APPENDIX AIX

TABLE AIX: 2011 METALS LOADING FROM SIGNIFICANT INDUSTRIAL USERS SORTED BY WATER RECLAMATION PLANT

Facility ID	Facility Name	Treatment Area	CFR[1]	Cd (lbs/yr)	Cr (lbs/yr)	Cu (lbs/yr)	Ni (lbs/yr)	Pb (lbs/yr)	Zn (lbs/yr)	TMC (lbs/yr)
13258	Agri-Fine Corporation	Calumet	SIU[2]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26836	Alliance Tubular Holdings LLC	Calumet	420	0.03	0.03	0.05	0.04	0.16	0.62	0.94
25378	Allied Tube & Conduit	Calumet	420	1.01	3.17	3.13	2.25	4.94	42.66	57.17
11535	Allied Tube & Conduit Corp	Calumet	420	12.85	173.30	189.58	45.52	64.26	901.84	1387.35
26390	American Sweetener Corporation	Calumet	SIU[2]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25896	ArcelorMittal Riverdale LLC	Calumet	420	14.47	36.47	78.57	40.82	76.43	252.83	499.59
25055	Ardagh Glass Inc.	Calumet	SIU[2]	2.48	2.06	22.60	8.79	12.38	57.18	105.50
26753	Arkema Emulsion Systems	Calumet	414	0.63	1.02	1.51	1.14	3.13	17.13	24.56
13513	Ashland Specialty Chemical Co.	Calumet	414	1.76	1.47	3.37	2.34	8.78	45.91	63.63
25999	Automotion	Calumet	433	0.07	0.13	0.88	0.11	0.36	2.41	3.97
25758	B & B Pullman Properties, LP	Calumet	SIU[2]	1.42	9.71	18.71	4.32	7.11	334.44	375.71
26543	Blue Island Phenol LLC	Calumet	SIU[2]	2.94	9.91	73.79	4.33	14.70	80.75	186.42
13774	Calumet Tank & Equipment Co.	Calumet	442	0.22	8.24	1.22	6.14	1.61	17.57	35.00
15827	Caravan Ingredients	Calumet	SIU[2]	2.40	2.06	6.71	3.20	12.01	27.62	54.00
11058	Carl Buddig and Company	Calumet	SIU[2]	3.06	25.52	39.61	13.07	15.32	374.92	471.51
12988	Chicago Magnesium Casting Co.	Calumet	433	0.03	0.06	0.10	0.04	0.15	0.60	0.97
12114	CID Recycling and Disposal Facility	Calumet	437	16.70	68.13	15.49	53.93	31.43	422.99	608.68
13958	City of Chicago-South Water Purification Plant	Calumet	SIU[2]	12.78	128.93	115.90	104.46	87.69	336.80	786.56
10142	Clean Harbors Services Inc.	Calumet	437	1.82	2.54	4.81	8.53	9.11	89.00	115.82
14315	Coca-Cola Refreshments, Inc.	Calumet	SIU[2]	3.33	3.48	7.07	4.56	16.64	51.16	86.24
26638	CPC Laboratories, Inc.	Calumet	SIU[2]	1.24	1.69	7.74	1.77	7.88	28.66	48.97
25387	Darling Restaurant Services d/b/a Torvac	Calumet	SIU[2]	0.28	0.48	0.78	1.31	1.40	3.80	8.06
26410	Dedicated Trailer Cleaning Services, Inc.	Calumet	442	0.34	0.29	1.38	0.46	1.72	9.27	13.47
24896	Ed Miniat, Inc.	Calumet	SIU[2]	2.00	9.09	26.19	4.44	10.01	106.59	158.31

TABLE AIX (Continued): 2011 METALS LOADING FROM SIGNIFICANT INDUSTRIAL USERS SORTED BY WATER RECLAMATION PLANT

Facility ID	Facility Name	Treatment Area	CFR[1]	Cd (lbs/yr)	Cr (lbs/yr)	Cu (lbs/yr)	Ni (lbs/yr)	Pb (lbs/yr)	Zn (lbs/yr)	TMC (lbs/yr)
25246	Envirite of Illinois, Inc.	Calumet	437	0.72	2.53	4.71	19.78	3.55	15.57	46.87
13389	Ford Motor Company - Chicago Assembly Plant	Calumet	433	7.71	13.53	19.71	250.55	38.53	274.93	604.97
26761	FutureMark Paper Company	Calumet	430	43.97	87.58	135.58	59.18	219.86	668.75	1214.93
13228	Gelita USA, Inc.	Calumet	SIU[2]	4.50	3.75	106.21	6.00	22.52	47.29	190.28
26297	Geneva Energy, LLC	Calumet	SIU[2]	1.34	1.13	5.58	3.07	6.72	34.84	52.68
13032	Griffith Laboratories U.S.A., Inc.	Calumet	SIU[2]	0.72	1.34	3.24	1.39	3.62	36.92	47.23
14265	Harbor View	Calumet	SIU[2]	1.80	10.97	3.00	13.51	9.01	18.01	56.31
20191	Heniff Transportation Systems, Inc.	Calumet	442	0.33	0.27	0.58	0.43	1.63	9.39	12.62
12417	Illinois Central Railroad - Woodcrest	Calumet	SIU[2]	0.54	0.91	4.19	0.73	2.72	7.46	16.56
10851	Innophos, Inc.	Calumet	SIU[2]	1.38	2.78	2.81	2.04	6.88	16.91	32.79
25839	Kinder Morgan Liquids Terminals, LLC	Calumet	SIU[2]	2.48	2.37	4.28	3.31	12.42	214.10	238.97
11206	Land O'Frost	Calumet	SIU[2]	1.84	11.83	14.65	5.60	9.18	163.31	206.40
26726	Liquid Environmental Solutions	Calumet	437	1.18	3.75	86.05	78.32	8.47	135.57	313.35
25052	NACME Steel Processing, LLC	Calumet	420	1.23	110.66	20.96	24.07	7.29	22.70	186.91
13124	Omega Plating Inc.	Calumet	433	0.16	0.13	4.11	6.17	1.01	2.98	14.54
15106	Paxton Landfill-IEPA Remediation Section	Calumet	SIU[2]	0.63	8.57	1.79	4.43	3.13	11.94	30.48
13468	Premcor Alsip Distribution Center	Calumet	419	3.13	2.61	5.21	4.17	15.64	31.93	62.68
10182	PVS Chemical Solutions, Inc.	Calumet	415	2.13	5.32	9.01	6.20	16.49	833.04	872.20
14999	Quala Services, LLC	Calumet	442	0.99	1.07	7.50	2.46	4.94	111.25	128.22
24610	River Bend Prairie	Calumet	SIU[2]	1.40	108.35	5.60	321.94	7.01	56.63	500.94
26811	Riverdale Plating and Heat Treating, LLC	Calumet	413	1.65	21.02	3.16	2.54	8.01	673.37	709.74
25857	RNA Corporation	Calumet	SIU[2]	1.85	1.54	3.08	2.47	9.24	18.49	36.67
14138	Roman Decorating Products LLC	Calumet	SIU[2]	0.78	0.68	3.05	1.03	3.88	28.40	37.82

TABLE AIX (Continued): 2011 METALS LOADING FROM SIGNIFICANT INDUSTRIAL USERS SORTED BY WATER RECLAMATION PLANT

Facility ID	Facility Name	Treatment Area	CFR[1]	Cd (lbs/yr)	Cr (lbs/yr)	Cu (lbs/yr)	Ni (lbs/yr)	Pb (lbs/yr)	Zn (lbs/yr)	TMC (lbs/yr)
26246	Rupari Food Service, Inc.	Calumet	SIU[2]	0.60	1.05	5.83	0.82	3.00	73.68	84.99
13141	S & D Wire Co. Inc	Calumet	420	0.02	0.02	1.97	0.12	0.09	1.36	3.57
13429	Safety-Kleen Systems, Inc.	Calumet	SIU[2]	0.45	0.39	0.77	0.60	2.25	4.62	9.08
25700	Solvay USA Inc.	Calumet	417	1.25	7.27	22.47	10.40	8.29	84.08	133.76
15905	Superior Carriers Inc	Calumet	442	0.00	0.00	0.02	0.01	0.02	0.12	0.17
26385	Ventura Foods, LLC d/b/a Marie's Salad Dressings	Calumet	SIU[2]	0.84	0.70	4.95	1.12	4.22	18.90	30.74
10770	Zegers Inc.	Calumet	465	0.21	0.60	1.60	0.32	1.06	2.88	6.67
12920	Arlington Plating Co.	Egan	413	1.88	114.04	113.22	133.76	9.38	18.77	391.05
10101	FUJIFILM Hunt Chemicals, USA, Inc.	Egan	SIU[2]	0.91	1.58	3.36	1.76	4.55	21.51	33.66
10448	Motorola Solutions, Inc.	Egan	433	1.64	1.37	20.58	2.19	8.20	55.30	89.27
24711	Nation Pizza and Foods	Egan	SIU[2]	2.25	11.12	43.49	7.23	11.25	107.22	182.54
24395	National Technology Inc	Egan	433	1.34	3.32	200.50	5.52	6.84	19.61	237.13
25942	Northrop Grumman Systems Corporation	Egan	433	0.08	0.16	0.53	0.09	0.30	2.14	3.30
13547	Northrop Grumman Systems Corporation	Egan	433	1.29	1.10	11.45	2.03	6.46	104.68	127.01
26892	Weber-Stephen Products LLC	Egan	433	1.15	3.05	21.40	30.26	6.30	49.57	111.73
13627	Eagle Electronics Incorporated	Hanover Park	433	0.99	0.96	74.45	14.82	5.11	11.17	107.51
26601	ECMC Incorporated	Hanover Park	433	0.48	0.58	60.17	2.26	2.50	5.01	71.00
15505	Komet of America Inc.	Hanover Park	433	0.09	0.25	0.40	0.25	0.44	1.29	2.72
13574	Senior Flexonics	Hanover Park	433	1.88	28.81	14.52	31.24	9.38	26.96	112.79
15025	Accellent Endoscopy WHL	Kirie	433	0.38	20.51	19.88	2.92	1.88	6.90	52.48
11901	Acme Finishing Company	Kirie	413	0.46	0.81	1.23	0.62	2.30	34.52	39.94

TABLE AIX (Continued): 2011 METALS LOADING FROM SIGNIFICANT INDUSTRIAL USERS SORTED BY WATER RECLAMATION PLANT

Facility ID	Facility Name	Treatment Area	CFR[1]	Cd (lbs/yr)	Cr (lbs/yr)	Cu (lbs/yr)	Ni (lbs/yr)	Pb (lbs/yr)	Zn (lbs/yr)	TMC (lbs/yr)
26960	Active BioMaterials LLC	Kirie	439	0.42	0.54	3.41	0.82	2.11	8.04	15.34
15689	Amitron Corporation	Kirie	433	2.27	2.22	191.77	180.46	11.77	28.14	416.62
25379	Ampel Inc	Kirie	433	0.46	0.38	56.37	3.44	2.28	4.74	67.67
25757	Angiotech	Kirie	433	0.42	25.90	6.91	5.53	2.12	4.68	45.57
13103	Anodizing Specialists Ltd	Kirie	413	0.03	1.32	1.23	2.83	0.14	0.78	6.33
25873	Belmont Sausage Company	Kirie	SIU[2]	0.97	2.49	14.64	1.58	4.83	25.52	50.02
11203	Block & Company Inc	Kirie	433	0.18	0.23	2.10	4.51	0.91	4.52	12.45
25289	C M P Anodizing	Kirie	433	0.56	10.43	7.30	14.87	1.41	6.66	41.25
26040	Chem-Plate Industries	Kirie	433	1.42	17.29	175.31	113.24	7.19	242.22	556.67
12925	Chem-Plate Industries, Inc.	Kirie	413	1.19	32.39	3.11	3.67	5.93	105.45	151.74
26425	Circuit Engineering, LLC	Kirie	433	0.32	0.30	21.83	0.53	1.60	3.58	28.16
15230	Commercial Finishes Company, Ltd.	Kirie	433	0.02	0.02	0.22	0.04	0.11	0.53	0.94
24756	Electronic Interconnect Corp	Kirie	433	0.99	0.83	80.96	3.37	4.97	12.28	103.42
25521	Electroplated Metal Solutions, Inc.	Kirie	433	0.19	3.85	22.06	28.57	0.94	8.15	63.75
14287	Engis Corporation, Inc.	Kirie	433	0.12	4.30	1.98	31.81	0.58	2.01	40.79
25367	Fluid Management, Inc.	Kirie	433	0.09	0.08	0.36	0.12	0.47	1.75	2.88
25242	General Circuits d/b/a Delta Precision Circuits, Inc	Kirie	433	0.50	0.71	31.98	1.32	2.52	5.65	42.69
26280	Greenlee Diamond Tool Company	Kirie	433	0.02	0.03	0.79	2.00	0.10	0.33	3.28
12184	Hausner Hard-Chrome Inc.	Kirie	413	0.04	1.64	0.58	0.14	0.29	0.71	3.39
26683	HLS Wheeling, LLC	Kirie	SIU[2]	4.99	11.60	117.88	11.28	40.20	418.27	604.22
15962	HV Manufacturing Company	Kirie	SIU[2]	0.69	0.57	5.04	0.95	3.44	11.42	22.11
10012	Inland Die Casting Company	Kirie	464	0.29	0.28	1.37	0.81	1.44	7.75	11.93
12402	International Processing Company of America	Kirie	413	0.06	11.21	0.60	0.10	0.31	0.64	12.93

TABLE AIX (Continued): 2011 METALS LOADING FROM SIGNIFICANT INDUSTRIAL USERS SORTED BY WATER RECLAMATION PLANT

Facility ID	Facility Name	Treatment Area	CFR[1]	Cd (lbs/yr)	Cr (lbs/yr)	Cu (lbs/yr)	Ni (lbs/yr)	Pb (lbs/yr)	Zn (lbs/yr)	TMC (lbs/yr)
26140	Jet Finishers, Inc.	Kirie	433	0.10	0.23	0.27	0.25	0.31	1.93	3.10
10926	Lawrence Foods	Kirie	SIU[2]	1.34	1.13	5.54	1.86	6.71	24.61	41.18
26019	Lechner and Sons Uniform Rental	Kirie	SIU[2]	0.46	5.33	22.66	3.08	7.12	77.70	116.34
13923	Magnetic Inspection Laboratory Inc	Kirie	433	1.14	23.86	1.90	4.46	5.70	15.24	52.31
26618	Marathon Cutting Die, Inc.	Kirie	433	0.00	0.01	0.04	0.01	0.01	0.06	0.13
11177	Material Sciences Corporation-Plant 2	Kirie	465	0.65	2.04	2.05	9.29	3.24	9.53	26.80
13568	Medi-Physics Inc. d/b/a GE Healthcare	Kirie	439	0.25	0.36	5.17	0.38	1.16	6.24	13.55
26295	North American Electroless Nickel	Kirie	433	0.24	1.33	1.19	68.69	1.22	2.73	75.40
12126	Perfection Plating, Inc.	Kirie	413	0.58	3.84	50.13	64.99	3.11	7.03	129.68
26368	RoHS Compliance Services, Inc.	Kirie	433	0.09	0.08	0.69	2.16	1.67	0.91	5.60
14635	Star Electronics, Inc.	Kirie	433	0.19	0.21	27.47	0.64	1.02	2.04	31.57
25279	Sunrise Electronics	Kirie	433	0.39	0.33	27.76	0.63	1.95	3.91	34.97
14260	Three J's Industries Inc	Kirie	433	1.55	166.67	5.66	0.87	2.85	20.31	197.91
25321	Unitech Industries	Kirie	433	0.07	0.05	2.24	11.29	0.33	0.65	14.63
11395	Waltz Brothers Inc	Kirie	433	0.06	0.14	0.49	0.14	0.25	0.92	1.99
13810	Wieland Metals, Inc	Kirie	468	0.13	0.11	14.73	0.30	0.66	3.98	19.90
11375	A T A Finishing Corp	O'Brien	413	0.25	2.67	3.60	3.86	2.28	2.51	15.16
13505	Al Bar-Wilmette Platers	O'Brien	413	0.05	0.04	4.98	5.59	0.19	3.19	14.03
26054	Art Metal Finishers	O'Brien	413	0.01	0.01	0.26	0.31	0.04	0.23	0.86
12238	Automatic Anodizing Corporation	O'Brien	413	0.55	22.81	44.12	12.37	7.63	19.23	106.71
10543	Avon Products Inc	O'Brien	455	1.89	1.62	18.85	2.52	9.45	49.23	83.56
25667	Baroque Silversmith	O'Brien	433	0.00	0.00	0.03	0.05	0.02	0.06	0.16
26372	BBJ Rentals, Inc.	O'Brien	SIU[2]	0.73	0.68	6.45	2.41	3.67	13.24	27.19
10958	Berteau-Lowell Plating Works, Inc.	O'Brien	413	3.72	28.02	51.19	22.19	6.25	50.14	161.51

TABLE AIX (Continued): 2011 METALS LOADING FROM SIGNIFICANT INDUSTRIAL USERS SORTED BY WATER RECLAMATION PLANT

Facility ID	Facility Name	Treatment Area	CFR[1]	Cd (lbs/yr)	Cr (lbs/yr)	Cu (lbs/yr)	Ni (lbs/yr)	Pb (lbs/yr)	Zn (lbs/yr)	TMC (lbs/yr)
25323	Best Cutting Die Co., Etch-A-Die Division	O'Brien	433	0.07	1.55	0.78	0.30	0.34	0.85	3.89
11186	Bright Metals Finishing Co	O'Brien	413	0.15	0.33	1.11	3.20	0.74	13.48	19.01
11548	Century Plating Company, Inc.	O'Brien	413	1.55	101.73	13.39	103.29	9.45	40.76	270.16
10180	Cintas Corporation	O'Brien	SIU[2]	1.12	4.28	35.55	3.86	9.90	82.89	137.59
24708	Cloverhill Pastry-Vend LLC	O'Brien	SIU[2]	1.35	1.13	16.61	1.80	6.76	759.48	787.12
11606	Coca-Cola Refreshments USA, Inc. (Niles)	O'Brien	SIU[2]	8.13	12.93	46.73	11.44	40.66	287.96	407.84
10814	Craftsman Plating & Tinning	O'Brien	413	7.95	269.10	327.18	324.82	16.91	350.20	1296.17
12996	Cro-Mat Company	O'Brien	413	0.02	0.72	0.11	0.10	0.08	0.48	1.51
24089	Dehler Manufacturing Company, Inc.	O'Brien	433	0.14	0.30	0.71	7.33	0.69	37.82	46.99
13688	Domestic Uniform Rental Company	O'Brien	SIU[2]	1.06	1.07	11.30	4.24	5.32	32.74	55.72
12929	Dover Industrial Chrome	O'Brien	413	0.15	9.83	0.58	1.04	0.77	2.72	15.09
10427	Enameled Steel & Sign Co.	O'Brien	413	0.09	0.08	0.51	4.86	0.44	1.83	7.80
26914	Fotofab, LLC	O'Brien	433	0.24	0.63	7.84	1.32	1.21	5.68	16.93
11990	Gem Coat, Inc.	O'Brien	413	0.39	1.20	0.72	0.15	0.55	12.37	15.39
12711	Helms Performance Group	O'Brien	433	0.00	0.01	0.23	0.03	0.05	0.31	0.64
11474	Hu-Friedy Mfg. Co. LLC	O'Brien	433	0.64	16.09	7.25	7.98	3.19	12.88	48.03
12718	International Silver Plating, Inc.	O'Brien	413	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11062	James Precious Metals Plating	O'Brien	433	0.07	0.11	16.52	1.79	0.39	1.33	20.22
11396	Jensen Plating Works, Inc.	O'Brien	433	0.15	0.85	5.95	5.51	0.77	15.12	28.36
11653	Klein Tools, Inc.	O'Brien	433	0.90	13.04	8.98	3.65	4.51	137.09	168.18
24048	Koch Foods, Inc.	O'Brien	SIU[2]	2.46	6.65	7.59	3.28	12.31	85.63	117.92
12115	Lake Landfill Gas Recovery	O'Brien	SIU[2]	0.39	1.01	2.59	2.96	1.93	5.05	13.92
12394	LBH Industries, Inc. d/b/a Scott Plating	O'Brien	413	0.03	6.22	0.13	0.25	0.16	6.85	13.64
13772	Mickey's Linen & Towel Supply Inc.	O'Brien	SIU[2]	1.94	9.45	42.75	5.56	9.70	131.35	200.74

TABLE AIX (Continued): 2011 METALS LOADING FROM SIGNIFICANT INDUSTRIAL USERS SORTED BY WATER RECLAMATION PLANT

Facility ID	Facility Name	Treatment Area	CFR[1]	Cd (lbs/yr)	Cr (lbs/yr)	Cu (lbs/yr)	Ni (lbs/yr)	Pb (lbs/yr)	Zn (lbs/yr)	TMC (lbs/yr)
10760	Midwestern Rust Proof, Inc.	O'Brien	413	1.81	156.80	10.74	7.88	9.07	892.92	1079.22
14298	Morton Grove Pharmaceuticals	O'Brien	439	0.41	0.53	1.40	0.55	2.05	6.05	11.00
26550	Optimum Food Group, LLC	O'Brien	SIU[2]	0.76	0.76	4.74	1.83	3.82	29.50	41.42
12127	Precision Plating Company, Inc.	O'Brien	413	1.97	1.41	74.82	105.43	7.94	28.57	220.15
11531	R S Owens & Company	O'Brien	433	0.70	0.58	11.51	8.52	3.48	10.43	35.22
11429	Regis Technologies Inc.	O'Brien	414	1.00	0.99	2.84	1.62	5.01	12.39	23.85
24778	Rich Products Manufacturing Corporation	O'Brien	SIU[2]	1.46	1.29	6.71	7.87	7.32	195.89	220.54
25900	Rogers Custom Trims, Inc.	O'Brien	410	0.00	0.00	0.01	0.01	0.01	0.17	0.20
10670	S & C Electric Co.	O'Brien	433	5.89	5.06	116.26	41.69	29.45	106.11	304.45
10847	Switchcraft Inc	O'Brien	433	0.25	0.22	5.39	13.74	1.25	7.09	27.94
20636	Underwriters Laboratories, Inc.	O'Brien	SIU[2]	1.67	1.43	45.21	7.47	8.37	44.20	108.36
25395	United Feather and Down	O'Brien	SIU[2]	2.28	4.11	18.23	3.04	11.40	68.75	107.80
10745	Vienna Sausage Manufacturing Company	O'Brien	SIU[2]	4.01	15.20	23.52	9.44	19.73	368.87	440.77
14105	Winnetka Landfill	O'Brien	SIU[2]	0.05	0.06	0.44	0.13	0.25	2.06	2.99
10002	Aallied Die Casting Co. of Illinois	Stickney	464	0.13	0.15	1.59	1.26	0.61	4.90	8.64
26197	Abbott Molecular, Inc.	Stickney	SIU[2]	0.22	0.72	3.91	0.58	1.44	6.16	13.02
24781	Able Electropolishing Company	Stickney	433	1.07	152.27	1.78	2.54	5.34	10.68	173.67
25290	Above & Beyond Black Oxide Inc	Stickney	433	0.09	14.66	1.20	10.26	0.28	8.86	35.35
13583	Accent Metal Finishing Co.	Stickney	413	0.08	0.08	0.15	0.29	0.38	4.13	5.10
11340	Accurate Anodizing	Stickney	413	0.22	62.82	19.73	14.80	2.82	5.34	105.72
11166	Ace Anodizing & Impregnating Inc	Stickney	413	0.71	17.73	10.16	11.83	3.57	8.26	52.26
11047	Advance Enameling Co.	Stickney	413	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12749	Alanson Mfg Co.	Stickney	433	0.76	1.97	0.77	0.64	0.21	26.70	31.05
11184	Alberto Culver	Stickney	SIU[2]	3.57	3.02	14.02	4.77	17.87	49.77	93.02

TABLE AIX (Continued): 2011 METALS LOADING FROM SIGNIFICANT INDUSTRIAL USERS SORTED BY WATER RECLAMATION PLANT

Facility ID	Facility Name	Treatment Area	CFR[1]	Cd (lbs/yr)	Cr (lbs/yr)	Cu (lbs/yr)	Ni (lbs/yr)	Pb (lbs/yr)	Zn (lbs/yr)	TMC (lbs/yr)
26150	All-Brite Anodizing Company	Stickney	433	0.24	3.32	5.98	6.19	0.94	6.96	23.63
25867	Alsco-American Linen Division	Stickney	SIU[2]	2.46	2.36	11.39	3.28	12.29	36.23	67.99
25497	American Bottling	Stickney	SIU[2]	6.57	9.26	19.34	9.67	32.84	97.00	174.68
13351	American Nameplate Co.	Stickney	433	0.17	7.83	23.48	4.22	0.83	10.52	47.05
13207	American Nickel Works, Inc	Stickney	413	0.24	7.23	1.03	11.67	3.90	2.38	26.44
25577	American Plating & Manufacturing	Stickney	433	0.31	3.54	5.58	4.79	1.56	4.20	19.98
26736	American Wheel Corporation	Stickney	433	0.07	0.06	0.34	0.10	0.33	1.18	2.06
25846	American/Jebco Corporation	Stickney	433	1.64	3.32	13.41	19.41	3.44	45.36	86.59
14454	Angelica Textile Services	Stickney	SIU[2]	3.44	2.87	39.98	4.59	17.20	112.49	180.56
25805	Anthony Marano Company	Stickney	SIU[2]	0.61	1.13	10.28	0.87	3.03	29.81	45.74
25954	Aramark Uniform and Career Apparel, LLC	Stickney	SIU[2]	2.28	10.44	118.27	5.53	12.40	180.99	329.91
14734	Aspen Foods A Division of Koch Foods Company, Inc	Stickney	SIU[2]	0.57	1.08	3.55	0.81	2.86	108.67	117.55
26440	A-Wire Corporation	Stickney	433	0.01	0.01	0.11	0.10	0.06	0.46	0.75
12302	Azteca Foods, Inc.	Stickney	SIU[2]	0.70	5.78	8.76	4.04	3.48	33.30	56.05
12831	B & T Polishing, Inc.	Stickney	433	0.20	39.04	4.26	859.61	1.48	9.08	913.67
26545	B.L. Downey Company, LLC.	Stickney	433	0.40	2.21	0.70	39.48	2.00	58.36	103.15
15872	Beaver Oil Co., Inc.	Stickney	437	1.32	11.37	4.88	78.57	6.59	33.54	136.26
13254	Bellwood Industrial Inc.	Stickney	413	0.23	38.08	1.98	6.44	1.13	323.90	371.75
11138	Belmont Plating Works, Inc.	Stickney	413	44.40	202.94	248.78	96.20	8.81	419.94	1021.08
26039	Berkshire Investments, LLC d/b/a Chicago Extruded Metals	Stickney	464	0.58	0.55	13.62	0.91	2.16	89.08	106.91
26369	Bluewater Thermal Services, LLC	Stickney	433	0.18	0.31	3.45	0.65	0.89	5.13	10.60
13454	BNSF Railway Company	Stickney	SIU[2]	3.13	5.28	31.54	5.03	19.55	97.47	161.99
10311	Borg Warner Automotive	Stickney	433	1.47	3.65	2.44	8.02	6.44	15.47	37.50

TABLE AIX (Continued): 2011 METALS LOADING FROM SIGNIFICANT INDUSTRIAL USERS SORTED BY WATER RECLAMATION PLANT

Facility ID	Facility Name	Treatment Area	CFR[1]	Cd (lbs/yr)	Cr (lbs/yr)	Cu (lbs/yr)	Ni (lbs/yr)	Pb (lbs/yr)	Zn (lbs/yr)	TMC (lbs/yr)
11898	Bretford Manufacturing, Inc.	Stickney	433	0.13	0.12	0.77	0.61	0.63	4.44	6.69
11260	Bretford Manufacturing, Inc.	Stickney	433	0.89	1.18	4.29	7.16	4.44	13.97	31.93
13586	Bridgford Foods	Stickney	SIU[2]	1.06	1.26	3.74	1.80	5.32	85.52	98.71
11807	Calco Plating, Inc.	Stickney	413	0.23	26.46	4.89	15.74	0.87	4.35	52.54
11576	Castle Metal Finishing Corp	Stickney	413	7.19	37.46	9.37	52.92	2.22	100.91	210.07
10001	CBSL Transportation Services, Inc.	Stickney	442	0.30	14.05	2.31	1.19	1.50	7.66	27.01
11422	Cedar Concepts Corporation	Stickney	414	1.05	0.88	1.77	1.40	5.25	13.18	23.52
26254	Chicago American Manufacturing, LLC	Stickney	433	0.40	0.42	1.17	0.68	2.01	24.46	29.14
11084	Chicago Anodizing Co.	Stickney	413	0.79	53.74	108.11	680.44	30.77	90.14	963.99
24522	Chicago Hospitality Division of Tyson Foods	Stickney	SIU[2]	5.00	12.66	59.84	12.74	25.02	223.72	338.98
25861	Chicago Powdered Metal Products Company	Stickney	471	0.04	0.12	1.83	0.46	0.23	1.15	3.82
26070	Cintas Corporation	Stickney	SIU[2]	1.31	1.42	6.95	1.82	6.57	35.36	53.43
15985	Cintas Corporation	Stickney	SIU[2]	1.53	10.09	78.86	10.22	15.13	262.88	378.72
13787	City of Chicago-Jardine Water Purification Plant	Stickney	SIU[2]	14.16	60.90	98.29	47.03	70.68	274.47	565.52
26549	Clean Harbors Recycling Services of Chicago, LLC	Stickney	SIU[2]	4.40	65.01	7.26	44.31	20.92	41.85	183.76
12340	Cody Metal Finishing Inc.	Stickney	413	0.32	6.29	2.70	0.59	1.16	49.88	60.95
23995	Congress Development Company	Stickney	SIU[2]	5.82	117.91	5.15	28.60	15.45	62.59	235.52
17261	Dana Container Inc.	Stickney	442	0.19	0.72	1.06	0.38	1.28	19.05	22.68
13477	DeLaval Manufacturing	Stickney	SIU[2]	0.44	0.39	1.33	0.80	2.19	6.86	12.02
15912	DeNormandie Towel & Linen, Inc.	Stickney	SIU[2]	1.47	3.45	12.68	1.96	7.35	40.06	66.97
13770	Des Plaines Landfill	Stickney	SIU[2]	2.70	18.55	20.38	27.04	14.52	42.22	125.43
12058	Dyna-Burr Chicago, Inc.	Stickney	413	0.74	0.91	0.73	0.50	1.88	19.33	24.08
26233	Ebro Foods, Inc.	Stickney	SIU[2]	1.00	0.84	2.59	1.34	5.02	11.95	22.74

TABLE AIX (Continued): 2011 METALS LOADING FROM SIGNIFICANT INDUSTRIAL USERS SORTED BY WATER RECLAMATION PLANT

Facility ID	Facility Name	Treatment Area	CFR[1]	Cd (lbs/yr)	Cr (lbs/yr)	Cu (lbs/yr)	Ni (lbs/yr)	Pb (lbs/yr)	Zn (lbs/yr)	TMC (lbs/yr)
11406	Edsal Manufacturing Company, Inc.	Stickney	433	0.32	1.07	2.14	1.22	2.14	39.63	46.52
24378	Edsal Manufacturing Company, Inc.	Stickney	433	0.94	0.78	1.88	1.42	4.69	28.85	38.55
26740	Eklind Tool Company	Stickney	433	0.08	0.31	0.41	0.64	0.42	1.79	3.65
14249	El Milagro, Inc.	Stickney	SIU[2]	1.13	8.43	10.51	9.77	6.10	47.10	83.03
26088	El Milagro, Inc. - Plant No. 4	Stickney	SIU[2]	0.66	1.97	5.69	5.90	3.28	10.51	28.01
13393	Electro-Motive Diesel, Inc.	Stickney	433	5.94	5.40	23.52	7.92	29.71	100.52	173.02
12222	Electronic Plating Company	Stickney	433	12.40	69.46	19.46	15.34	4.80	281.60	403.06
10425	Elkay Manufacturing Company	Stickney	SIU[2]	1.25	14.90	5.94	7.51	6.26	24.03	59.88
11977	Empire Hard Chrome	Stickney	413	1.22	63.84	10.30	3.16	7.85	33.12	119.50
25146	Empire Hard Chrome Plant 2	Stickney	433	0.41	56.06	1.78	3.45	3.83	6.32	71.86
15546	En-Chro Plating, Ltd.	Stickney	433	0.10	0.08	0.18	1.71	0.48	0.98	3.51
10204	Ester Solutions	Stickney	414	0.62	0.52	4.62	0.99	3.10	44.71	54.55
26499	Ex-Cell Kaiser, LLC	Stickney	433	0.12	0.22	0.41	0.86	0.67	1.56	3.84
26759	Expert Metal Finishing, Inc.	Stickney	433	0.37	1.30	1.33	0.89	0.95	12.83	17.67
12240	Ferrara Candy Company	Stickney	SIU[2]	2.40	12.79	171.67	8.82	16.58	314.75	527.00
25938	Five Star Laundry - Chicago, LLC	Stickney	SIU[2]	2.45	2.04	14.57	3.26	12.23	24.46	59.00
26788	Focal Point LLC	Stickney	433	0.10	0.09	0.18	0.83	0.50	1.00	2.71
25554	Focal Point LLC	Stickney	433	0.31	0.30	0.61	0.79	1.56	6.02	9.59
26570	Fontanini Italian Meats	Stickney	SIU[2]	2.07	2.18	3.90	2.76	10.35	49.82	71.08
14279	Foodliner, Inc.	Stickney	SIU[2]	0.59	0.49	0.98	0.78	2.94	6.61	12.40
11905	Forest Plating Co.	Stickney	413	0.16	7.24	5.14	4.59	2.21	99.07	118.40
26791	Fresenius Kabi USA, LLC	Stickney	439	2.49	2.07	6.65	3.32	12.45	26.27	53.24
24639	Fresh Express-Addison	Stickney	SIU[2]	1.62	5.67	7.23	3.37	8.11	40.83	66.84
25760	Fresh Express-Edgington	Stickney	SIU[2]	2.19	6.67	13.59	4.50	10.95	49.53	87.42

TABLE AIX (Continued): 2011 METALS LOADING FROM SIGNIFICANT INDUSTRIAL USERS SORTED BY WATER RECLAMATION PLANT

Facility ID	Facility Name	Treatment Area	CFR[1]	Cd (lbs/yr)	Cr (lbs/yr)	Cu (lbs/yr)	Ni (lbs/yr)	Pb (lbs/yr)	Zn (lbs/yr)	TMC (lbs/yr)
24111	Fresh Express-Nevada	Stickney	SIU[2]	5.90	8.00	108.66	8.08	29.52	311.51	471.68
21831	G & K Services	Stickney	SIU[2]	1.56	3.05	68.41	10.61	9.51	192.86	286.01
25695	Gate Gourmet Unit 239	Stickney	SIU[2]	1.21	1.31	15.78	1.62	6.07	13.65	39.63
25694	Gate Gourmet Unit 240	Stickney	SIU[2]	1.44	1.81	37.48	3.20	7.19	36.61	87.74
12719	Gatto Industrial Platers, Inc.	Stickney	433	1.53	81.66	514.93	200.55	7.62	349.98	1156.26
24817	Goose Island Beer Company	Stickney	SIU[2]	1.00	1.28	4.63	1.67	5.02	31.56	45.16
25657	Grace Davison	Stickney	SIU[2]	15.24	12.70	25.40	1452.32	76.19	152.37	1734.21
11724	Griffin Plating Co., Inc.	Stickney	413	0.08	71.93	11.67	38.63	0.93	19.10	142.33
13021	Griffith Laboratories U.S.A., Inc.	Stickney	SIU[2]	1.42	3.98	3.96	4.71	7.11	109.56	130.74
10439	H. A. Framburg & Company	Stickney	433	0.77	0.45	13.89	4.29	1.06	18.70	39.16
25137	Hinckley Springs	Stickney	SIU[2]	0.69	0.59	1.47	0.92	3.45	7.67	14.79
25136	Hinckley Springs	Stickney	SIU[2]	1.48	1.23	2.53	1.97	7.38	15.42	30.01
25341	Hop Kee Inc d/b/a Oriental Delicacies Inc. Hong Kong Market	Stickney	SIU[2]	1.06	0.88	3.53	1.41	5.30	11.83	24.02
10487	Horween Leather Co.	Stickney	425	3.23	210.59	6.46	5.61	16.14	32.29	274.32
13717	Imperial Plating Company, Inc.	Stickney	433	0.48	36.06	35.43	32.40	2.54	118.43	225.33
26338	IMS Engineered Products, LLC	Stickney	433	0.31	0.38	1.09	0.61	1.56	3.45	7.41
25417	Ingredion Incorporated - Argo Plant	Stickney	SIU[2]	157.93	227.70	464.20	243.45	789.63	7151.09	9034.01
25768	Interlake Mecalux, Inc.	Stickney	433	0.56	1.07	23.24	4.04	2.81	31.02	62.74
25090	Interstate Brands Corporation	Stickney	SIU[2]	0.93	4.26	9.94	3.63	4.66	38.44	61.87
26286	Jernberg Industries, Inc.	Stickney	SIU[2]	2.06	2.42	10.45	3.33	10.29	23.20	51.75
10518	Jewel Food Stores	Stickney	SIU[2]	1.84	1.83	9.71	3.54	9.25	117.54	143.71
12424	JLO Metal Products, Inc.	Stickney	467	0.71	1.70	12.53	2.40	3.42	25.82	46.57
13724	Jonas Enterprises Inc.	Stickney	413	0.06	7.04	0.31	0.08	0.29	0.75	8.53

TABLE AIX (Continued): 2011 METALS LOADING FROM SIGNIFICANT INDUSTRIAL USERS SORTED BY WATER RECLAMATION PLANT

Facility ID	Facility Name	Treatment Area	CFR[1]	Cd (lbs/yr)	Cr (lbs/yr)	Cu (lbs/yr)	Ni (lbs/yr)	Pb (lbs/yr)	Zn (lbs/yr)	TMC (lbs/yr)
25810	Kellogg Company	Stickney	SIU[2]	1.13	1.98	6.33	1.79	5.64	26.58	43.45
25539	Keystone Automotive	Stickney	433	0.04	0.07	0.07	0.07	0.19	1.15	1.58
25773	Kinder Morgan Liquids Terminals, LLC-Argo	Stickney	SIU[2]	0.11	0.10	0.20	0.15	0.55	1.31	2.41
10157	Koppers Incorporated	Stickney	414	6.61	5.71	11.42	8.81	33.05	66.52	132.12
25811	Kraft Foods Group, Inc.	Stickney	SIU[2]	4.22	3.52	12.77	5.62	21.09	61.85	109.07
10536	Kramer, H & Co.	Stickney	421	3.37	6.72	369.37	32.09	119.50	930.89	1461.95
11883	Krel Laboratories Inc	Stickney	413	0.67	0.78	4.75	32.91	1.74	13.25	54.10
11882	Krel Laboratories Inc	Stickney	413	0.74	20.81	54.35	129.03	3.79	35.48	244.20
26484	Mars Chocolate North America, LLC	Stickney	SIU[2]	5.10	7.86	43.35	6.80	25.50	150.25	238.87
11064	Mech-Tronics	Stickney	413	0.40	38.53	2.50	0.71	1.95	5.13	49.23
25836	Mech-Tronics Corporation	Stickney	433	0.08	10.45	0.91	2.46	0.41	1.14	15.45
24882	Metal Box International, Inc.	Stickney	433	0.18	0.54	1.87	1.02	0.91	68.63	73.15
25253	Metal Impact Corporation	Stickney	433	0.55	1.14	10.23	1.19	2.75	45.83	61.69
24771	Metal-Matic Inc.	Stickney	420	0.58	0.48	8.74	0.80	2.88	9.82	23.30
26676	Micron Metal Finishing, LLC	Stickney	433	0.04	0.04	0.32	0.08	0.18	1.37	2.03
13289	Mike's Anodizing	Stickney	413	0.30	2.54	9.62	2.15	2.79	5.72	23.11
25498	Montana Metal Products	Stickney	433	0.12	0.35	0.46	0.15	0.38	1.20	2.66
25991	Morgan Services, Inc.	Stickney	SIU[2]	0.74	2.56	8.70	1.68	3.70	44.31	61.69
14095	Mullins Food Products, Inc.	Stickney	SIU[2]	2.13	1.77	11.52	2.84	10.63	38.55	67.43
10593	Nalco Company	Stickney	455	13.97	19.33	35.51	18.63	69.86	153.70	311.00
15958	National Container Group, LLC	Stickney	SIU[2]	0.58	10.58	20.85	41.52	2.76	138.37	214.66
15940	National Railroad Passenger Corporation	Stickney	SIU[2]	2.32	2.13	17.13	3.10	16.19	46.09	86.97
10509	Navistar, Inc.	Stickney	SIU[2]	2.68	3.64	23.54	3.57	13.39	229.12	275.92
10698	Nestle Chocolate & Confections	Stickney	SIU[2]	3.75	3.13	8.29	5.00	18.77	37.53	76.47

TABLE AIX (Continued): 2011 METALS LOADING FROM SIGNIFICANT INDUSTRIAL USERS SORTED BY WATER RECLAMATION PLANT

Facility ID	Facility Name	Treatment Area	CFR[1]	Cd (lbs/yr)	Cr (lbs/yr)	Cu (lbs/yr)	Ni (lbs/yr)	Pb (lbs/yr)	Zn (lbs/yr)	TMC (lbs/yr)
25677	Nestle Professional Beverages	Stickney	SIU[2]	12.99	8.53	43.62	58.72	6.38	133.43	263.67
25910	Nickel Composite Coatings, Inc.	Stickney	433	0.10	0.17	0.86	7.42	0.48	1.02	10.04
10987	Nina Enterprises, Inc.	Stickney	433	0.10	0.25	0.48	0.36	0.58	3.38	5.15
19614	Nobert Plating Co-Plant 1	Stickney	413	0.86	2.99	196.56	144.84	4.32	41.83	391.39
12622	Nobert Plating Co-Plant 2	Stickney	413	0.50	3.80	3.18	26.18	1.17	3.78	38.61
25686	Northstar Aerospace (Chicago), Inc.	Stickney	433	0.34	1.23	5.24	2.45	1.19	15.33	25.78
24696	Nu-Way Industries, Inc.	Stickney	433	0.85	17.28	8.61	9.77	4.25	57.63	98.39
10766	O & K American Corporation	Stickney	420	2.18	4.11	8.20	7.92	11.11	90.23	123.75
25248	Ortek Inc.	Stickney	437	0.30	0.25	0.50	0.40	1.50	3.00	5.95
24078	OSI Industries, LLC	Stickney	SIU[2]	4.18	3.48	17.24	5.57	20.89	86.70	138.06
26424	Otis Spunkmeyer LLC	Stickney	SIU[2]	0.66	10.61	12.51	7.44	3.32	107.19	141.73
10219	Owens Corning Roofing and Asphalt, LLC	Stickney	SIU[2]	3.48	3.76	6.96	4.64	17.40	48.15	84.39
10888	Pelron Corp	Stickney	414	0.83	2.19	2.37	1.53	4.14	12.06	23.12
26796	Pepsi Beverages Company	Stickney	SIU[2]	3.59	3.45	11.08	6.47	17.95	83.25	125.78
11920	Petersen Finishing Corp	Stickney	413	1.78	26.18	32.14	14.21	8.91	17.81	101.03
13721	Precise Finishing Company, Inc.	Stickney	413	0.37	0.45	41.04	82.09	1.84	8.28	134.06
10635	Precision Instruments Inc.	Stickney	433	0.15	7.72	0.89	5.64	0.73	1.76	16.89
26627	Progressive Coating	Stickney	433	0.03	0.06	0.39	0.23	0.16	0.83	1.71
21463	Pro-Tec Metal Finishing Corp	Stickney	433	0.03	0.05	0.10	0.21	0.13	6.06	6.57
25324	Pulsar, Inc.	Stickney	433	0.19	0.16	2.30	0.25	0.94	1.88	5.71
13277	Q.C. Finishers, Inc.	Stickney	433	0.08	0.06	0.19	0.10	0.38	2.33	3.15
10639	Quam Nichols Co.	Stickney	433	0.26	0.21	0.43	0.51	1.29	56.32	59.02
25523	R & B Powder Coatings	Stickney	433	0.09	0.08	0.15	0.12	0.46	1.12	2.02
15043	R & R Research d/b/a E J Somerville Co.	Stickney	433	0.04	2.30	0.13	0.06	0.20	0.61	3.34

TABLE AIX (Continued): 2011 METALS LOADING FROM SIGNIFICANT INDUSTRIAL USERS SORTED BY WATER RECLAMATION PLANT

Facility ID	Facility Name	Treatment Area	CFR[1]	Cd (lbs/yr)	Cr (lbs/yr)	Cu (lbs/yr)	Ni (lbs/yr)	Pb (lbs/yr)	Zn (lbs/yr)	TMC (lbs/yr)
13115	R C Industries Inc.	Stickney	413	0.35	1.45	3.60	1.64	1.51	5.37	13.92
11241	Reliable Plating Corp	Stickney	413	24.22	158.77	63.30	149.94	4.66	48.46	449.35
11136	Rexam Beverage Can Company	Stickney	465	1.73	1.45	2.88	5.34	8.63	17.26	37.30
26680	Roscoe Company	Stickney	SIU[2]	2.12	4.00	57.10	9.10	22.22	222.18	316.73
10651	Rose Packing Co., Inc.	Stickney	SIU[2]	4.35	4.34	12.52	5.80	21.77	100.86	149.63
15773	S & B Finishing Co, Inc	Stickney	433	0.20	0.60	3.82	1.59	1.02	10.65	17.88
25960	S B Boron Corp	Stickney	SIU[2]	0.20	1.96	6.84	1.36	1.11	4.79	16.25
11339	Saporito Finishing Company	Stickney	413	1.88	34.92	14.06	91.29	5.56	378.47	526.17
12968	Scientific Plating	Stickney	413	1.12	0.93	21.39	4.52	5.60	17.00	50.57
10679	Signode Corporation	Stickney	465	2.14	1.79	3.73	3.13	10.71	21.96	43.47
10680	Sipi Metals Corporation	Stickney	421	0.46	0.39	1.73	0.97	2.35	6.44	12.34
11951	Skild Plating Corp	Stickney	413	0.04	4.23	0.71	2.81	0.21	31.74	39.75
14372	Skolnik Industries	Stickney	433	0.38	0.63	6.18	3.21	1.88	24.60	36.87
10683	Sloan Valve Co.	Stickney	433	1.35	54.93	5.60	88.20	6.88	19.11	176.07
24585	Sorini Ring Manufacturing Co. Inc	Stickney	433	0.09	0.07	0.32	0.14	0.44	0.96	2.02
13729	South Chicago Packing Co.	Stickney	SIU[2]	1.52	2.05	4.80	4.64	7.58	15.17	35.77
13828	Specialty Foods Group, Inc.	Stickney	SIU[2]	1.89	6.69	7.86	3.58	9.43	108.24	137.69
11487	Specified Plating Co.	Stickney	413	1.33	1.09	7.22	0.89	2.38	292.60	305.51
26008	Stampede Meat, Inc.	Stickney	SIU[2]	1.69	4.68	16.18	2.39	8.44	152.98	186.36
24847	Sterling Plating	Stickney	433	0.31	4.48	27.89	106.46	1.56	58.20	198.91
23963	T A C Inc	Stickney	SIU[2]	0.85	0.91	6.50	4.77	4.26	38.30	55.59
24828	T.A.C., Inc.	Stickney	442	0.69	1.79	8.66	2.95	10.25	39.45	63.79
23833	Theodore Merwitz Textiles, Inc.	Stickney	410	0.03	0.03	1.80	0.11	0.12	0.63	2.70
10098	Tootsie Roll Industries, LLC	Stickney	SIU[2]	0.89	1.81	7.55	2.39	4.44	95.48	112.56

TABLE AIX (Continued): 2011 METALS LOADING FROM SIGNIFICANT INDUSTRIAL USERS SORTED BY WATER RECLAMATION PLANT

Facility ID	Facility Name	Treatment Area	CFR[1]	Cd (lbs/yr)	Cr (lbs/yr)	Cu (lbs/yr)	Ni (lbs/yr)	Pb (lbs/yr)	Zn (lbs/yr)	TMC (lbs/yr)
25479	Tru-Vue, Inc.	Stickney	SIU[2]	0.84	0.97	4.28	6.32	4.21	11.25	27.87
13233	U S Plating Co.	Stickney	413	23.20	291.41	432.54	712.95	8.51	432.61	1901.22
24397	U.S. Standard Sign Company	Stickney	433	0.01	0.03	0.05	0.02	0.06	0.26	0.43
26387	Unifirst Corporation	Stickney	SIU[2]	1.39	16.92	57.08	13.11	36.12	214.62	339.23
11443	Unilever Illinois Mfg., LLC	Stickney	SIU[2]	3.71	4.70	17.62	5.32	18.55	61.20	111.09
25231	United Displaycraft	Stickney	433	0.22	0.33	18.23	1.05	1.20	6.86	27.89
26725	United Electronics Corporation	Stickney	433	1.32	1.10	207.27	8.59	6.61	24.96	249.86
13676	United Re-Manufacturing Company Inc.	Stickney	433	0.08	1.96	0.69	0.15	0.39	2.98	6.25
10735	Unity Manufacturing Co.	Stickney	433	0.60	42.89	28.41	81.93	2.98	55.48	212.27
11464	UOP LLC	Stickney	414	4.30	38.89	18.83	187.61	21.52	63.48	334.63
13714	V P Anodizing Inc	Stickney	433	0.20	1.69	4.97	4.48	0.86	20.04	32.25
13053	V P Plating & Pariso Inc	Stickney	413	0.06	4.05	1.91	0.57	0.27	1.94	8.79
25855	Vanee Foods Company	Stickney	SIU[2]	1.85	6.17	15.74	14.34	12.35	113.90	164.36
12167	Vanee Foods Company, Inc.	Stickney	SIU[2]	2.43	2.02	7.89	3.24	12.14	24.28	52.00
26573	Vantage Oleochemicals	Stickney	SIU[2]	7.81	9.42	14.42	1432.86	39.07	95.91	1599.50
26095	Vee-Pak, Inc.	Stickney	SIU[2]	1.64	1.37	2.83	2.19	8.19	18.88	35.09
25859	Vegetable Juices, Inc.	Stickney	SIU[2]	1.25	4.65	13.25	3.32	6.26	20.26	48.98
10394	Vita Food Products Inc	Stickney	SIU[2]	1.12	3.93	15.63	2.23	5.59	53.59	82.08
11664	Water Saver Faucet Co.	Stickney	433	0.35	17.12	96.37	17.26	7.50	47.49	186.10
13340	West Town Plating Inc.	Stickney	413	0.38	6.60	7.79	18.79	1.88	3.75	39.18
13985	Western Springs Water Plant	Stickney	SIU[2]	2.28	20.48	3.69	13.82	11.07	72.21	123.55
10132	Wheatland Tube Division of JMC Steel Group	Stickney	420	3.77	33.16	202.26	7.26	18.86	508.42	773.73
11938	Zenith Fabricating Company	Stickney	433	0.01	0.01	0.04	0.03	0.06	0.19	0.35

[1]The Value is the Part Number in the 40 CFR (Code of Federal Regulation), unless otherwise stated.
[2]SIU = Non-Categorical Significant Industrial User.