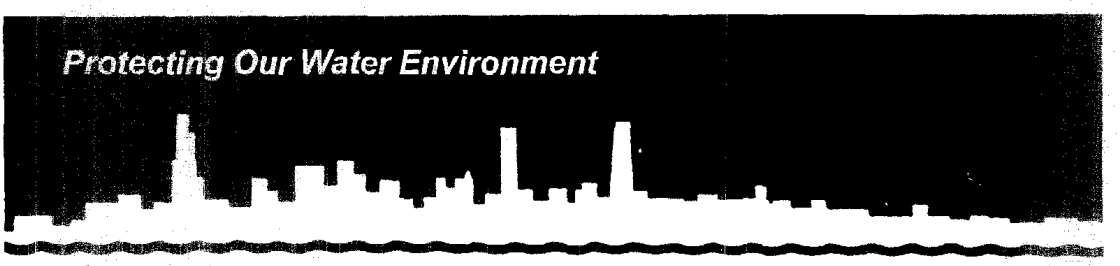

Metropolitan Water Reclamation District of Greater Chicago

RESEARCH AND DEVELOPMENT DEPARTMENT

REPORT NO. 03-11

RE-EVALUATION OF LOCAL PRETREATMENT LIMITS

April 2003

Metropolitan Water Reclamation District of Greater Chicago

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RE-EVALUATION OF LOCAL PRETREATMENT LIMITS

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DISCLAIMER

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

INTRODUCTION

The 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 District's WRPs are the Calumet WRP, John Egan WRP (Egan WRP), Hanover Park WRP, James C. Kirie WRP (Kirie WRP), Lemont WRP, North Side WRP and Stickney WRP.

The District operates anaerobic sludge digestion at four WRPs (Calumet, Egan, Hanover Park and Stickney). The Calumet WRP and Hanover Park WRP process the sludge from their own primary and secondary treatment. The primary and secondary

sludge from the North Side WRP is piped to the Stickney WRP digesters. Lemont WRP sends its primary and secondary sludge to the Stickney WRP digesters via truck. 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, 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 one local limit throughout its jurisdiction, so the most stringent limit for each pollutant at any single WRP is used as the limiting concentration for each pollutant throughout the District. This review is a comprehensive evaluation of each of the District's seven WRPs. The pollutants of concern (POC) are identified for each WRP. The data collection strategy, as well as an analysis of data quality is detailed. The District takes into account site-specific conditions including National Pollutant Discharge Elimination System (NPDES) compliance, receiving water quality, air emissions and potential biological inhibition. The technically based local limits are based on the Guidance Manual for the Development and Implementation of Local Discharge Limitations Under the Pretreatment Program (1987 USEPA Guidance) methodology using maximum allowable

headworks loading (MAHL). The historical influent and effluent loading data is evaluated and compared to the MAHL. In each case, the POC, 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

District WRPs are required to prohibit industrial user discharges in amounts that result in violation of water quality based NPDES permit limits. In addition, the District utilizes a toxicity-based approach based on State of Illinois Water Quality Standards in the cases where there are no applicable NPDES permit limits. The District prohibits industrial user discharges in amounts that cause violation of sludge disposal regulations. The evaluation for biological process inhibition is considered, although the District has not experienced biological process inhibition at any of 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 ten national POCs.

National Pollutants of Concern

The 1987 USEPA Guidance recommends screening for ten pollutants of national concern. Six metals are POCs to all WRPs because of their widespread occurrence in WRP influents and

effluents and their possible adverse effects on water and sludge quality. These are cadmium, chromium, copper, lead, nickel and zinc. The screening of four additional pollutants is due to their low biological process inhibition values or aquatic toxicity values. They are arsenic, cyanide, silver and mercury. The ten POCs are screened at each of the District's WRPs.

National Pollutant Discharge Elimination System (NPDES) Permit Conditions

The NPDES permits issued to WRPs contain specific effluent limitations and water quality based toxic 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 toxic pollutant limits (as of December 2001). All units are in milligrams per liter (mg/L).

CALUMET WRP

NPDES Permit Daily Maximum Limit (mg/L):

1.	Chromium, total	1.4
2.	Copper	1.0
3.	Cyanide, total	0.11
4.	Lead	0.1

5. Phenol 0.3

6. Zinc 1.1

NPDES Permit Monthly Maximum Limit (mg/L):

1. Ammonia 13.0

2. Chromium, total 1.0

3. Copper 0.5

4. Zinc 1.0

EGAN WRP

NPDES Permit Daily Maximum Limit (mg/L):

1. Ammonia 3.0

NPDES Permit Monthly Maximum Limit (mg/L):

1. Ammonia 1.5

HANOVER PARK WRP

NPDES Permit Daily Maximum Limit (mg/L):

1. Copper 0.044

2. Cyanide, total 0.2

3. Cyanide, weak-acid dissociable (WAD) 0.02

4. Ammonia, un-ionized 0.04

NPDES Permit Monthly Maximum Limit (mg/L):

1.	Copper	0.027
2.	Cyanide, total	0.1
3.	Cyanide, WAD	0.01
4.	Fluoride	1.4

KIRIE WRP

NPDES Permit Daily Maximum Limit (mg/L):

1.	Copper	0.048
2.	Ammonia, un-ionized	0.04
3.	Cyanide, WAD	0.02

NPDES Permit Monthly Maximum Limit (mg/L):

1.	Copper	0.029
2	Cyanide, WAD	0.01

LEMONT WRP

The Lemont WRP NPDES permit does not have limitations on any toxic pollutants.

NORTH SIDE WRP

NPDES Permit Daily Maximum Limit (mg/L):

1.	Chromium, total	1.3
2.	Copper	1.0

3.	Cyanide, total	0.1
4.	Phenol	0.3
5.	Zinc	1.0

NPDES Permit Monthly Maximum Limit (mg/L):

1.	Ammonia	2.5
2.	Chromium, total	1.0
3.	Copper	0.5

STICKNEY WRP

NPDES Permit Daily Maximum Limit (mg/L):

1.	Cyanide, total	0.12
2.	Lead	0.1
3.	Ammonia, un-ionized	0.1

NPDES Permit Monthly Maximum Limit (mg/L):

1.	Ammonia	2.5
2.	Cyanide, total	0.12
3.	Lead	0.1

Water Quality Standards

The State of Illinois Water Quality Standards are used to evaluate the POCs in cases where there are no NPDES permit limits. The District discharges to three waterways designated as General Use. The General Use dischargers (Egan, Kirie and

Hanover Park WRPs) are evaluated on both acute and chronic toxicity standards. The toxicity standards for cadmium, copper, lead and total trivalent chromium are dependent on hardness. The annual average hardness of the effluent is used for evaluations. The other four District WRPs (Calumet, North Side, Lemont and Stickney) discharge to waters designated as Secondary Contact and Indigenous Aquatic Life. The water quality standards are detailed in Appendix AI.

Sludge Quality Standards

Standards for the Use or Disposal of Sewage Sludge (40 CFR Part 503.13) are used to determine the POCs for sludge quality. The POCs are arsenic, cadmium, copper, lead, mercury, molybdenum, nickel, selenium and zinc. The District's sludges 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 AII for the maximum allowable concentration for each pollutant. The District's sludge 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 10 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 guidance, National Emission Standards for Hazardous Air Pollutants (NESHAP): Publicly Owned Treatment Works - Background Information for Final Standards, October 1999, 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 than 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 software models. The District has found all potential pollutants to be below the threshold of concern.

Biological Inhibition of WRPs

WRP biological inhibition is evaluated based on the 1987 USEPA Guidance. The District's WRPs do not experience biological inhibition. See Appendix AIII for the inhibition thresholds used in 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 AIII. The four District WRPs utilizing anaerobic digestion are evaluated for disruption to the biological process.

Summary of Screening Process

The following tables summarize the pollutants of concern 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.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 1

POLLUTANTS OF CONCERN FOR CALUMET WRP

Pollutant	National Concern	NPDES Permit		State Water Quality Secondary Contact	Sludge Quality	Biological Inhibition		
		Daily	Monthly			Anaerobic Digestion	Activated Sludge	
							Nitrogenous	Carbonaceous
Arsenic	X			X	X	X		X
Cadmium	X	X	X	X	X	X	X	X
Chromium	X	X	X	X		X	X	X
Copper	X	X	X	X	X	X	X	X
Lead	X	X		X	X	X	X	X
Iron				X				
Fluoride				X	X	X		X
Mercury	X			X	X			
Molybdenum				X	X	X	X	X
Nickel	X			X	X			
Selenium				X				X
Silver	X			X				X
Zinc	X	X	X	X	X	X	X	X
Ammonia			X	X				X
Cyanide	X	X		X		X	X	X
Phenol		X		X				
Fats, oil and grease (FOG)				X				

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 2

POLLUTANTS OF CONCERN FOR EGAN WRP

Pollutant	National Concern	NPDES Permit		State Water Quality General Use		Sludge Quality	Biological Inhibition		
		Daily	Monthly	Chronic Toxicity	Acute Toxicity		Anaerobic Digestion	Activated Sludge	
								Nitrogenous	Carbonaceous
Arsenic	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									
Fluoride									
Mercury	X			X	X	X	X		X
Molybdenum					X	X			
Nickel	X			X	X	X	X	X	X
Selenium					X	X			
Silver	X			X	X				X
Zinc	X			X	X	X	X	X	X
Ammonia		X	X	X	X				X
Cyanide	X			X	X		X	X	X
Phenol								X	
FOG									

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 3

POLLUTANTS OF CONCERN FOR HANOVER PARK WRP

Pollutant	National Concern	NPDES Permit		State Water Quality General Use		Sludge Quality	Biological Inhibition		
		Daily	Monthly	Chronic Toxicity	Acute Toxicity		Anaerobic Digestion	Activated Sludge	
								Nitrogenous	Carbonaceous
Arsenic	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									
Fluoride			X						
Mercury	X			X	X	X	X		X
Molybdenum				X	X	X			
Nickel	X			X	X	X	X	X	X
Selenium				X	X	X			
Silver	X			X	X				X
Zinc	X			X	X	X	X	X	X
Ammonia		X							X
Cyanide	X	X	X	X	X		X	X	X
Phenol								X	
FOG									

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 4

POLLUTANTS OF CONCERN FOR KIRIE WRP

Pollutant	National Concern	NPDES Permit		State Water Quality General Use		Sludge Quality	Biological Inhibition		
		Daily	Monthly	Chronic Toxicity	Acute Toxicity		Anaerobic Digestion	Activated Sludge	
								Nitrogenous	Carbonaceous
Arsenic	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									
Fluoride									
Mercury	X			X	X	X	X		X
Molybdenum				X	X	X			
Nickel	X			X	X	X	X	X	X
Selenium				X	X	X			
Silver	X			X	X				X
Zinc	X			X	X	X	X	X	X
Ammonia		X							X
Cyanide	X	X	X	X	X		X	X	X
Phenol								X	X
FOG									

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 5

POLLUTANTS OF CONCERN FOR LEMONT WRP

Pollutant	National Concern	NPDES Permit		State Water Quality Secondary Contact	Sludge Quality	Biological Inhibition		
		Daily	Monthly			Anaerobic Digestion	Activated Sludge Nitrogenous	Activated Sludge Carbonaceous
Arsenic	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		X
Molybdenum				X	X			
Nickel	X			X	X	X	X	X
Selenium				X	X			
Silver	X			X				X
Zinc	X			X	X	X	X	X
Ammonia								X
Cyanide	X			X		X	X	X
Phenol							X	X
FOG				X				

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 6

POLLUTANTS OF CONCERN FOR NORTH SIDE WRP

Pollutant	National Concern	NPDES Permit		State Water Quality Secondary Contact	Sludge Quality	Biological Inhibition		
		Daily	Monthly			Anaerobic Digestion	Activated Sludge	
							Nitrogenous	Carbonaceous
Arsenic	X			X	X	X		X
Cadmium	X			X	X	X	X	X
Chromium	X	X	X	X		X	X	X
Copper	X	X	X	X	X	X	X	X
Lead	X	X		X	X	X	X	X
Iron				X				
Fluoride								
Mercury	X			X	X	X		X
Molybdenum				X	X			
Nickel	X			X	X	X	X	X
Selenium				X	X			
Silver	X			X				X
Zinc	X	X		X	X	X	X	X
Ammonia			X	X				X
Cyanide	X	X	X	X		X	X	X
Phenol		X		X			X	X
FOG				X				

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 7

POLLUTANTS OF CONCERN FOR STICKNEY WRP

Pollutant	National Concern	NPDES Permit		State Water Quality Secondary Contact	Sludge Quality	Biological Inhibition		
		Daily	Monthly			Anaerobic Digestion	Activated Sludge	
							Nitrogenous	Carbonaceous
Arsenic	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	X	X
Iron				X				
Fluoride								
Mercury	X			X	X	X		X
Molybdenum				X	X			
Nickel	X			X	X	X	X	X
Selenium				X	X			
Silver	X			X				X
Zinc	X			X	X	X	X	X
Ammonia		X	X	X				X
Cyanide	X	X	X	X		X	X	X
Phenol							X	X
FOG				X				

SAMPLE COLLECTION AND DATA ANALYSIS

The necessary data, including sampling and analysis is collected on a scheduled basis by District personnel. Site-specific data is used to determine influent and effluent loading; the analysis was conducted using year 2000 data in all cases unless otherwise noted. The data analysis is used to identify the presence of individual pollutants, determine influent loadings, calculate pollutant-removal efficiencies and evaluate site-specific inhibition thresholds. The sludges at the Calumet, Egan, Hanover Park and Stickney WRP digesters 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.

WRP influent flows, digester feed flows and digester draw-off flows are continuously monitored. Receiving stream flows are based on the most current Illinois Geological Survey

data. Industrial flows from Significant Industrial Users (SIU) are reported annually under the District's Pretreatment Program. See Table 8 for the summary of the average daily flow data for the year 2000. 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, effluent and receiving stream pollutant concentrations are analyzed as detailed in Appendix AIV. The activated sludge inhibition evaluations are based on the pollutant concentrations entering the activated sludge unit. The primary treatment effluents are not currently sampled at the District's WRPs. The 1987 USEPA Guidance literature values are used to determine estimated pollutant removal of the primary clarifiers. The exception is the Kirie WRP, which does not have primary clarifiers. The percent solids of the sludge draw-offs and the metals concentrations of the sludges are also monitored.

Pollutant Removal Efficiency

District WRP removal efficiencies are needed to calculate allowable headworks loading from effluent and sludge criteria.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 8

FLOW DATA FOR YEAR 2000 AT DISTRICT WRPs

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
	MGD						
WRP influent	255.2	26.4	8.3	32.0	2.1	252.3	731.0
Industrial	45.9	1.7	0.5	4.3	0.0	11.3	68.5
Domestic[1]	209.3	24.7	7.8	27.6	2.1	241.1	662.5
Receiving stream 7Q10[2]	21	0	0	0	1,135	0	259
Primary and secondary effluent to digesters	0.89	0.19	0.03	n/a	n/a	n/a	2.59
Digester draw-off	0.88	0.20	0.03	n/a	n/a	n/a	2.59

[1]Domestic = WRP influent - Industrial

[2]7Q10, refers to the lowest consecutive 7 day streamflow that is likely to occur in a ten year period.

Source: Illinois Geological Survey, 1990.

Site-specific data collected over a period of one year (2000) was used. The removal efficiency is the fraction or percent of the influent pollutant loading which is removed from the liquid wastestream 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 1987 USEPA Guidance is used. 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 accurate estimate, since all of the District's WRPs are activated sludge WRPs and operate in the same climate. In the cases where there is not enough data for any removal efficiency determination, the literature values from the 1987 USEPA Guidance are used. The influent and effluent concentrations along with the corresponding flow data are used to determine the removal efficiency for each pollutant at each WRP. Table 9 summarizes the removal efficiencies for each WRP. The removal across primary treatment (R_{PRI}) is estimated to be the same as the mean literature values in the 1987 USEPA Guidance.

Estimated Loadings from Commercial and Domestic Sources

Loadings from commercial and domestic sources are considered together as an estimated background loading. The data used for the background loading is the discharge load of the City of Chicago 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

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 9

REMOVAL EFFICIENCIES FOR POLLUTANTS THROUGH SECONDARY TREATMENT AT DISTRICT WRPs

Pollutant	District WRP						
	Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Arsenic	0.05*	0.06	0.06	0.01	0.05*	0.07	0.05*
Cadmium	0.59*	0.59*	0.59*	0.59*	0.59*	0.59	0.59*
Chromium, total	0.94*	0.94*	0.94*	0.94*	0.94*	1.00	0.89
Hexavalent chromium	0.76*	0.76	0.76*	0.76*	0.76*	0.76*	0.76*
Copper	0.79	0.90	0.91	0.94	0.93	0.87	0.87
Lead	0.96*	0.96*	0.96*	0.96*	0.96*	0.96	0.96*
Iron, total	0.95*	0.95*	0.95*	0.95*	0.95*	0.94	0.96
Fluoride	0.04*	0.04	0.03	0.02	0.04*	0.03	0.09
Mercury	0.92*	0.92*	0.97	0.78	0.99	0.92*	0.92*
Nickel	0.52*	0.53	0.64	0.50	0.52*	0.40	0.52*
Selenium	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Silver	0.92*	0.93	0.92	0.96	0.92*	0.88	0.92*
Zinc	0.75	0.67	0.68	0.62	0.83	0.62	0.83
Ammonia	0.98	0.99	0.96	0.97	0.92	0.96	0.95
Cyanide	0.93	0.50	0.41	0.61	0.67	0.60	0.69
Phenol	0.99	0.99	0.99	0.99	0.97	0.98	0.99
FOG	0.91	0.91*	0.91*	0.91*	0.91	0.93	0.91*

[1]The value is the average removal efficiency for the WRPs which had at least 30% of the samples with pollutant concentrations above the detection limit.

concentrations below detection. The concentration and minimum detection values for the background levels are detailed in Appendix AV. The background flow for each WRP is the difference between the 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 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.

Sludge Pollutant Concentrations

The concentrations of metals in sludge solids are monitored at all District digesters. See Appendix AVI for the annual average metals concentrations (2000) at each of the four District digester operations.

Receiving Stream Pollutant Concentration and Flow Data

The State of Illinois requires that pollutant concentrations in the receiving streams meet state standards. The flow data for all of the receiving streams is determined from the most current Illinois Geological Survey data (1990). The pollutant concentrations in the receiving waters are monitored by the District. The average annual (2000) pollutant concentration data is detailed in Appendix AVII.

CALCULATION AND EVALUATION OF 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 headworks loading (MAHL). The MAHL of a WRP is the maximum pollutant load 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

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

Equation 4: AHL Based on Sludge Criteria

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

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,

AHL = 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 Digester Inhibition Concentration, mg/L

Q_{WRP} = WRP Flow, MGD

Q_{STREAM} = Receiving Stream Flow, MGD

Q_{SLUDGE} = Sludge Flow to Disposal, 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 ≅ 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 of the discharge is considered in the State of Illinois General Use 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 USEPA, Local Limits Development Guidance Draft, August 2001 (2001 USEPA Guidance) was used. The 2001 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 loadings exceed 60 percent of the MAHLs. The second compares the highest daily influent loadings to the MAHLs, establishing local limits where the loadings exceed 80 percent of the MAHLs. Table 10 through Table 26 present the evaluations for each POC based on water quality AHL.

Equivalent Total Cyanide Standards Derived from Weak-Acid Dissociable Cyanide Standards

The District currently has a local limit for total cyanide, which is a POC. However for the data in Table 24, it is also necessary to evaluate weak-acid dissociable (WAD) cyanide, which is the chemical fraction of total cyanide that is toxic to aquatic life. At the Egan, Hanover Park and Kirie WRPs WAD cyanide, not total cyanide, is the regulated parameter in the NPDES permits for these WRPs, as well as in the General Use water quality standards. Due to the complexity of cyanide chemistry, it is not feasible to establish a separate local limit for WAD cyanide, so an empirical

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 10

EFFLUENT WATER QUALITY EVALUATION FOR ARSENIC

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Concentration Limit, mg/L[1]	NPDES Permit	Daily Limit	n/a[2]	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	0.19	0.19	0.19	n/a	n/a	n/a
		Acute Toxicity	n/a	0.36	0.36	0.36	n/a	n/a	n/a
		Secondary Contact	1.00	n/a	n/a	n/a	1.00	1.00	1.00
Allowable Headworks Loading, lbs/day	NPDES Permit	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	44.33	13.97	51.00	n/a	n/a	n/a
		Acute Toxicity	n/a	84.00	26.47	96.63	n/a	n/a	n/a
		Secondary Contact	2,418.42	n/a	n/a	n/a	9,981.77	2,264.77	8,687.00
Maximum Allowable Headworks Loading (MAHL), lbs/day[4]			2,418.42	44.33	13.97	51.00	9,981.77	2,264.77	8,687.00
Actual Average Influent Loading (L_{avg}), lbs/day[5]			0.07	4.35	1.34	5.14	0.00	40.58	22.35
Actual Maximum Influent Loading (L_{max}), lbs/day[5]			14.01	7.56	4.77	15.76	0.10	104.73	997.63

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 10 (Continued)

EFFLUENT WATER QUALITY EVALUATION FOR ARSENIC

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Actual Loading vs. MAHL							
% L_{avg}/MAHL[6]	0.00	9.81	9.59	10.09	0.00	1.79	0.26
% L_{max}/MAHL[7]	0.58	17.05	34.14	30.90	0.00	4.62	11.48
Further Local Limit Evaluation	none	none	none	none	none	none	none

[1]Concentration limit determined from State of Illinois NPDES permit for each WRP and State of Illinois water quality criteria.
[2]Not applicable when there is not a NPDES Permit or water quality standard for this pollutant.
[3]Allowable headworks Loading see Equation 2 and Equation 3.
[4]MAHL is the calculated minimum, or most stringent, of allowable headworks loading for each WRP.
[5]Year 2000 data used.
[6]When % L_{avg}/MAHL is greater than 60% further local limit evaluation is needed, otherwise none.
[7]When % L_{max}/MAHL is greater than 80% further local limit evaluation is needed, otherwise none.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 11

EFFLUENT WATER QUALITY EVALUATION FOR CADMIUM

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Concentration Limit, mg/L[1]	NPDES Permit	Daily Limit	n/a[2]	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	0.03	0.02	0.03	n/a	n/a	n/a
		Secondary Contact	0.15	n/a	n/a	n/a	0.15	0.15	0.15
Allowable Headworks Loading, lbs/day	NPDES Permit	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	13.47	4.02	17.52	n/a	n/a	n/a
		Secondary Contact	843.12	n/a	n/a	n/a	3,475.21	771.48	3,024.43
Maximum Allowable Headworks Loading (MAHL), lbs/day[4]			843.12	13.74	4.02	17.52	3,475.21	771.48	3,024.43
Actual Average Influent Loading (L_{avg}), lbs/day[5]			0.34	0.19	0.04	0.19	0.01	1.83	3.10
Actual Maximum Influent Loading (L_{max}), lbs/day[5]			77.41	30.4	0.81	2.04	0.53	33.36	51.92

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 11 (Continued)

EFFLUENT WATER QUALITY EVALUATION FOR CADMIUM

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Actual Loading vs. MAHL							
% L_{avg}/MAHL[6]	0.04	1.38	1.05	1.09	0.00	0.23	0.10
% L_{max}/MAHL[7]	9.18	22.14	20.25	11.65	0.02	4.32	1.72
Further Local Limit Evaluation	none	none	none	none	none	none	none

[1]Concentration limit determined from State of Illinois NPDES Permit for each WRP and State of Illinois water quality criteria.
[2]Not applicable when there is not a NPDES Permit or water quality standard for this pollutant.
[3]Allowable headworks Loading see Equation 2 and Equation 3.
[4]MAHL is the calculated minimum, or most stringent, of allowable headworks loading for each WRP.
[5]Year 2000 data used.
[6]When % L_{avg}/MAHL is greater than 60% further local limit evaluation is needed, otherwise none.
[7]When % L_{max}/MAHL is greater than 80% further local limit evaluation is needed, otherwise none.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 12

EFFLUENT WATER QUALITY EVALUATION FOR TOTAL CHROMIUM

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Concentration Limit, mg/L[1]	NPDES Permit	Daily Limit	1.40	n/a[2]	n/a	n/a	n/a	1.30	n/a
		Monthly Limit	1.00	n/a	n/a	n/a	n/a	1.00	n/a
	State Water	Chronic Toxicity	n/a	0.42	0.40	0.43	n/a	n/a	n/a
		Acute Toxicity	n/a	3.50	3.32	3.63	n/a	n/a	n/a
		Secondary Contact	1.00	n/a	n/a	n/a	1.00	1.00	1.00
Allowable Headworks Loading, lbs/day	NPDES Permit	Daily Limit	51,590.73	n/a	n/a	n/a	n/a	911,884.48	n/a
		Monthly Limit	36,850.52	n/a	n/a	n/a	n/a	701,449.60	n/a
	State Water	Chronic Toxicity	n/a	1,586.17	473.84	1,993.48	n/a	n/a	n/a
		Acute Toxicity	n/a	13,329.09	3,975.39	16,752.31	n/a	n/a	n/a
		Secondary Contact	39,827.89	n/a	n/a	n/a	163,084.83	701,449.60	73,256.30
Maximum Allowable Headworks Loading (MAHL), lbs/day[4]			36,850.52	1,586.17	473.84	1,993.48	163,084.83	701,449.60	73,256.30
Actual Average Influent Loading (L_{avg}), lbs/day[5]			16.55	2.58	0.41	8.11	0.09	18.09	395.49
Actual Maximum Influent Loading (L_{max}), lbs/day[5]			545.84	13.28	32.11	73.89	1.78	89.25	2,315.00
Actual Loading vs. MAHL									
% L_{avg}/MAHL[6]			0.04	0.16	0.09	0.41	0.00	0.00	0.53
% L_{max}/MAHL[7]			1.48	0.83	6.77	3.70	0.00	0.01	3.16
Further Local Limit Evaluation			none	none	none	none	none	none	none

[1]Concentration limit determined from State of Illinois NPDES Permit for each WRP and State of Illinois water quality criteria. The trivalent chromium state standards are used.
[2]Not applicable when there is not a NPDES Permit or water quality standard for this pollutant.
[3]Allowable headworks Loading see Equation 2 and Equation 3.
[4]MAHL is the calculated minimum, or most stringent, of allowable headworks loading for each WRP.
[5]Year 2000 data used.
[6]When % L_{avg}/MAHL is greater than 60% further local limit evaluation is needed, otherwise none.
[7]When % L_{max}/MAHL is greater than 80% further local limit evaluation is needed, otherwise none.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 13

EFFLUENT WATER QUALITY EVALUATION FOR HEXAVALENT CHROMIUM

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Concentration Limit, mg/L[1]	NPDES Permit	Daily Limit	n/a[2]	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	0.01	0.01	0.01	n/a	n/a	n/a
		Acute Toxicity	n/a	0.02	0.02	0.02	n/a	n/a	n/a
		Secondary Contact	0.30	n/a	n/a	n/a	0.30	0.30	0.30
Allowable Headworks Loading, lbs/day	NPDES Permit	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	10.00	3.13	12.10	n/a	n/a	n/a
		Acute Toxicity	n/a	14.54	4.56	17.60	n/a	n/a	n/a
		Secondary Contact	2,848.46	n/a	n/a	n/a	11,740.84	2,606.40	10,217.90

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 13 (Continued)

EFFLUENT WATER QUALITY EVALUATION FOR HEXAVALENT CHROMIUM

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Maximum Allowable Headworks Loading (MAHL), lbs/day[4]	2,848.46	10.00	3.13	12.10	11,740.84	2,606.40	10,217.90
Actual Average Influent Loading (L_{avg}), lbs/day[5]	0.00	0.12	0.04	0.11	0.00	0.68	1.17
Actual Maximum Influent Loading (L_{max}), lbs/day[5]	0.00	1.29	0.52	2.26	0.00	12.15	38.72
Actual Loading vs. MAHL							
% L_{avg}/MAHL[6]	0.00	1.23	1.37	0.89	0.00	0.03	0.01
% L_{max}/MAHL[7]	0.00	12.88	16.50	18.69	0.00	0.47	0.38
Further Local Limit Evaluation	none	none	none	none	none	none	none

[1]Concentration limit determined from State of Illinois NPDES Permit for each WRP and State of Illinois water quality criteria.
[2]Not applicable when there is not a NPDES Permit or water quality standard for this pollutant.
[3]Allowable headworks Loading see Equation 2 and Equation 3.
[4]MAHL is the calculated minimum, or most stringent, of allowable headworks loading for each WRP.
[5]Year 2000 data used.
[6]When % L_{avg}/MAHL is greater than 60% further local limit evaluation is needed, otherwise none.
[7]When % L_{max}/MAHL is greater than 80% further local limit evaluation is needed, otherwise none.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 14

EFFLUENT WATER QUALITY EVALUATION FOR COPPER

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Concentration Limit, mg/L[1]	NPDES Permit	Daily Limit	1.00	n/a[2]	0.04	0.05	n/a	1.00	n/a
		Monthly Limit	0.50	n/a	0.03	0.03	n/a	0.50	n/a
	State Water	Chronic Toxicity	n/a	0.09	0.09	0.10	n/a	n/a	n/a
		Acute Toxicity	n/a	0.04	0.04	0.04	n/a	n/a	n/a
		Secondary Contact	1.00	n/a	n/a	n/a	1.00	1.00	1.00
Allowable Headworks Loading, lbs/day	NPDES Permit	Daily Limit	10,169.90	n/a	33.44	199.91	n/a	16,423.40	n/a
		Monthly Limit	5,084.95	n/a	20.52	120.78	n/a	8,211.70	n/a
	State Water	Chronic Toxicity	n/a	206.21	66.13	396.52	n/a	n/a	n/a
		Acute Toxicity	n/a	89.29	28.43	172.40	n/a	n/a	n/a
		Secondary Contact	10,986.59	n/a	n/a	n/a	143,402.22	16,429.25	61,463.96
Maximum Allowable Headworks Loading (MAHL), lbs/day[4]			5,084.95	89.29	20.52	120.78	143,402.22	8,211.70	61,463.96
Actual Average Influent Loading (L_{avg}), lbs/day[5]			107.17	19.14	6.66	30.95	2.94	116.32	515.57
Actual Maximum Influent Loading (L_{max}), lbs/day[5]			423.34	58.82	173.15	124.63	32.87	287.23	2,800.79
Actual Loading vs. MAHL									
% L_{avg}/MAHL[6]			2.10	21.74	32.48	25.62	0.00	1.41	0.84
% L_{max}/MAHL[7]			8.32	65.87	843.93	103.19	0.02	3.49	4.56
Further Local Limit Evaluation			none	none	Needed	Needed	none	none	none

[1]Concentration limit determined from State of Illinois NPDES Permit for each WRP and State of Illinois water quality criteria.
[2]Not applicable when there is not a NPDES Permit or water quality standard for this pollutant.
[3]Allowable headworks Loading see Equation 2 and Equation 3.
[4]MAHL is the calculated minimum, or most stringent, of allowable headworks loading for each WRP.
[5]Year 2000 data used.
[6]When % L_{avg}/MAHL is greater than 60% further local limit evaluation is needed, otherwise none.
[7]When % L_{max}/MAHL is greater than 80% further local limit evaluation is needed, otherwise none.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 15

EFFLUENT WATER QUALITY EVALUATION FOR LEAD

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Concentration Limit, mg/L[1]	NPDES Permit	Daily Limit	0.10	n/a[2]	n/a	n/a	n/a	0.10	0.10
		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	0.28	0.26	0.30	n/a	n/a	n/a
		Secondary Contact	0.10	n/a	n/a	n/a	0.10	0.10	0.10
Allowable Headworks Loading, lbs/day	NPDES Permit	Daily Limit	5,720.75	n/a	n/a	n/a	n/a	5,656.85	16,388.55
		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	1,681.04	487.58	2,157.11	n/a	n/a	n/a
		Secondary Contact	6,172.84	n/a	n/a	n/a	24,384.81	5,658.88	21,846.45
Maximum Allowable Headworks Loading (MAHL), lbs/day[4]			5,720.75	1,681.04	487.58	2,157.11	24,384.81	5,656.85	16,388.55
Actual Average Influent Loading (L_{avg}), lbs/day[5]			11.77	2.36	0.26	1.04	0.09	11.56	167.93
Actual Maximum Influent Loading (L_{max}), lbs/day[5]			634.46	8.94	17.10	30.62	2.71	83.48	1,969.49
Actual Loading vs. MAHL									
% L_{avg}/MAHL[6]			0.21	0.14	0.05	0.05	0.00	0.20	1.02
% L_{max}/MAHL[7]			11.09	0.53	3.51	1.42	0.01	1.48	12.02
Further Local Limit Evaluation			none	none	none	none	none	none	none

[1]Concentration limit determined from State of Illinois NPDES Permit for each WRP and State of Illinois water quality criteria.
[2]Not applicable when there is not a NPDES Permit or water quality standard for this pollutant.
[3]Allowable headworks Loading see Equation 2 and Equation 3.
[4]MAHL is the calculated minimum, or most stringent, of allowable headworks loading for each WRP.
[5]Year 2000 data used.
[6]When % L_{avg}/MAHL is greater than 60% further local limit evaluation is needed, otherwise none.
[7]When % L_{max}/MAHL is greater than 80% further local limit evaluation is needed, otherwise none.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 16

EFFLUENT WATER QUALITY EVALUATION FOR IRON

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Concentration Limit, mg/L[1]	NPDES Permit	Daily Limit	n/a[2]	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
		Secondary Contact	2.00	n/a	n/a	n/a	2.00	2.00	2.00
Allowable Headworks Loading, lbs/day	NPDES Permit	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
		Secondary Contact	92,153.80	n/a	n/a	n/a	281,322.61	68,678.71	426,298.39
Maximum Allowable Headworks Loading (MAHL), lbs/day[4]			92,153.80	n/a	n/a	n/a	281,322.61	68,678.71	426,298.39
Actual Average Influent Loading (L_{avg}), lbs/day[5]			6,723.26	n/a	n/a	n/a	n/a	2,399.15	18,230.10
Actual Maximum Influent Loading (L_{max}), lbs/day[5]			24,195.59	n/a	n/a	n/a	n/a	11,829.54	98,005.43
Actual Loading vs. MAHL									
% L_{avg}/MAHL[6]			7.30	n/a	n/a	n/a	n/a	3.49	4.28
% L_{max}/MAHL[7]			26.26	n/a	n/a	n/a	n/a	17.22	22.99
Further Local Limit Evaluation			none	none	none	none	none	none	none

[1]Concentration limit determined from State of Illinois NPDES Permit for each WRP and State of Illinois water quality criteria.
[2]Not applicable when there is not a NPDES Permit or water quality standard for this pollutant.
[3]Allowable headworks Loading see Equation 2 and Equation 3.
[4]MAHL is the calculated minimum, or most stringent, of allowable headworks loading for each WRP.
[5]Year 2000 data used.
[6]When % L_{avg}/MAHL is greater than 60% further local limit evaluation is needed, otherwise none.
[7]When % L_{max}/MAHL is greater than 80% further local limit evaluation is needed, otherwise none.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 17

EFFLUENT WATER QUALITY EVALUATION FOR FLUORIDE

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Concentration Limit, mg/L[1]	NPDES Permit	Daily Limit	n/a[2]	n/a	n/a	n/a	n/a	n/a	n/a
		Monthly Limit	n/a	n/a	1.40	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity	n/a	n/a	1.40	n/a	n/a	n/a	n/a
		Acute Toxicity	n/a	n/a	1.40	n/a	n/a	n/a	n/a
		Secondary Contact	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Allowable Headworks Loading, lbs/day	NPDES Permit	Daily Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Monthly Limit	n/a	n/a	100.11	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity	n/a	n/a	100.11	n/a	n/a	n/a	n/a
		Acute Toxicity	n/a	n/a	100.11	n/a	n/a	n/a	n/a
		Secondary Contact	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Maximum Allowable Headworks Loading (MAHL), lbs/day[4]			n/a	n/a	100.11	n/a	n/a	n/a	n/a
Actual Average Influent Loading (L_{avg}), lbs/day[5]			n/a	n/a	61.54	n/a	n/a	n/a	n/a
Actual Maximum Influent Loading (L_{max}), lbs/day[5]			n/a	n/a	181.19	n/a	n/a	n/a	n/a

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 17 (Continued)

EFFLUENT WATER QUALITY EVALUATION FOR FLUORIDE

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Actual Loading vs. MAHL							
% L_{avg}/MAHL[6]	n/a	n/a	61.47	n/a	n/a	n/a	n/a
% L_{max}/MAHL[7]	n/a	n/a	180.99	n/a	n/a	n/a	n/a
Further Local Limit Evaluation	none	none	Needed	none	none	none	none

[1]Concentration limit determined from State of Illinois NPDES Permit for each WRP and State of Illinois water quality criteria.
[2]Not applicable when there is not a NPDES Permit and this is not a national POC.
[3]Allowable headworks Loading see Equation 2 and Equation 3.
[4]MAHL is the calculated minimum, or most stringent, of allowable headworks loading for each WRP.
[5]Year 2000 data used.
[6]When % L_{avg}/MAHL is greater than 60% further local limit evaluation is needed, otherwise none.
[7]When % L_{max}/MAHL is greater than 80% further local limit evaluation is needed, otherwise none.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 18

EFFLUENT WATER QUALITY EVALUATION FOR MERCURY

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Concentration Limit, mg/L[1]	NPDES Permit	Daily Limit	n/a[2]	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	0.0013	0.0013	0.0013	n/a	n/a	n/a
		Acute Toxicity	n/a	0.0026	0.0026	0.0026	n/a	n/a	n/a
		Secondary Contact	0.0005	n/a	n/a	n/a	0.0005	0.0005	0.0005
Allowable Headworks Loading, lbs/day	NPDES Permit	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	3.37	2.99	1.58	n/a	n/a	n/a
		Acute Toxicity	n/a	6.74	5.98	3.16	n/a	n/a	n/a
		Secondary Contact	13.53	n/a	n/a	n/a	852.53	12.39	47.86
Maximum Allowable Headworks Loading (MAHL), lbs/day[4]			13.53	3.37	2.99	1.58	852.53	12.39	47.86
Actual Average Influent Loading (L_{avg}), lbs/day[5]			0.1446	0.0488	0.0204	0.0216	0.0067	0.24	1.5811
Actual Maximum Influent Loading (L_{max}), lbs/day[5]			0.7446	0.4834	0.3737	0.1623	0.0783	1.10	10.5743
Actual Loading vs. MAHL									
% L_{avg}/MAHL[6]			1.0691	1.4491	0.6832	1.3698	0.0008	1.94	3.3033
% L_{max}/MAHL[7]			5.5046	14.3436	12.4894	10.2791	0.0092	8.88	22.0924
Further Local Limit Evaluation			none	none	none	none	none	none	none

[1]Concentration limit determined from State of Illinois NPDES Permit for each WRP and State of Illinois water quality criteria.
[2]Not applicable when there is not a NPDES Permit or water quality standard for this pollutant.
[3]Allowable headworks Loading see Equation 2 and Equation 3.
[4]MAHL is the calculated minimum, or most stringent, of allowable headworks loading for each WRP.
[5]Year 2000 data used.
[6]When % L_{avg}/MAHL is greater than 60% further local limit evaluation is needed, otherwise none.
[7]When % L_{max}/MAHL is greater than 80% further local limit evaluation is needed, otherwise none.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 19

EFFLUENT WATER QUALITY EVALUATION FOR NICKEL

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Concentration Limit, mg/L[1]	NPDES Permit	Daily Limit	n/a[2]	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	1.00	1.00	1.00	n/a	n/a	n/a
		Acute Toxicity	n/a	1.00	1.00	1.00	n/a	n/a	n/a
		Secondary Contact	1.00	n/a	n/a	n/a	1.00	1.00	1.00
Allowable Headworks Loading, lbs/day	NPDES Permit	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	467.76	193.22	536.30	n/a	n/a	n/a
		Acute Toxicity	n/a	467.76	193.22	536.30	n/a	n/a	n/a
		Secondary Contact	4,773.60	n/a	n/a	n/a	19,646.87	3,494.53	17,104.53
Maximum Allowable Headworks Loading (MAHL), lbs/day[4]			4,773.60	467.76	193.22	36,513.21	19,646.87	3,494.53	17,104.53
Actual Average Influent Loading (L_{avg}), lbs/day[5]			3.47	2.34	0.79	6.08	0.00	27.46	86.19
Actual Maximum Influent Loading (L_{max}), lbs/day[5]			177.78	8.94	26.99	62.64	0.07	230.81	431.34
Actual Loading vs. MAHL									
% L_{avg}/MAHL[6]			0.07	0.50	0.41	1.13	0.00	0.79	0.50
% L_{max}/MAHL[7]			3.72	1.91	13.97	11.68	0.00	6.60	2.52
Further Local Limit Evaluation			none	none	none	none	none	none	none

[1]Concentration limit determined from State of Illinois NPDES Permit for each WRP and State of Illinois water quality criteria.
[2]Not applicable when there is not a NPDES Permit or water quality standard for this pollutant.
[3]Allowable headworks Loading see Equation 2 and Equation 3.
[4]MAHL is the calculated minimum, or most stringent, of allowable headworks loading for each WRP.
[5]Year 2000 data used.
[6]When % L_{avg}/MAHL is greater than 60% further local limit evaluation is needed, otherwise none.
[7]When % L_{max}/MAHL is greater than 80% further local limit evaluation is needed, otherwise none.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 20

EFFLUENT WATER QUALITY EVALUATION FOR SELENIUM

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Concentration Limit, mg/L[1]	NPDES Permit	Daily Limit	n/a[2]	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	1.00	1.00	1.00	n/a	n/a	n/a
		Acute Toxicity	n/a	1.00	1.00	1.00	n/a	n/a	n/a
		Secondary Contact	1.00	n/a	n/a	n/a	1.00	1.00	1.00
Allowable Headworks Loading, lbs/day	NPDES Permit	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	440.35	138.11	533.09	n/a	n/a	n/a
		Acute Toxicity	n/a	440.35	138.11	533.09	n/a	n/a	n/a
		Secondary Contact	4,601.21	n/a	n/a	n/a	18,965.37	4,210.21	16,505.31
Maximum Allowable Headworks Loading (MAHL), lbs/day[4]			4,601.21	440.35	138.11	533.09	18,965.37	4,210.21	16,505.31
Actual Average Influent Loading (L_{avg}), lbs/day[5]			1.94	1.65	0.04	0.11	0.00	0.80	2.35
Actual Maximum Influent Loading (L_{max}), lbs/day[5]			148.25	4.17	2.07	3.93	0.28	18.31	413.66
Actual Loading vs. MAHL									
% L_{avg}/MAHL[6]			0.04	0.37	0.03	0.02	0.00	1.02	0.01
% L_{max}/MAHL[7]			3.22	0.95	1.50	0.74	0.00	0.43	2.51
Further Local Limit Evaluation			none	none	none	none	none	none	none

[1]Concentration limit determined from State of Illinois NPDES Permit for each WRP and State of Illinois water quality criteria.
[2]Not applicable when there is not a NPDES Permit or water quality standard for this pollutant.
[3]Allowable headworks Loading see Equation 2 and Equation 3.
[4]MAHL is the calculated minimum, or most stringent, of allowable headworks loading for each WRP.
[5]Year 2000 data used.
[6]When % L_{avg}/MAHL is greater than 60% further local limit evaluation is needed, otherwise none.
[7]When % L_{max}/MAHL is greater than 80% further local limit evaluation is needed, otherwise none.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 21

EFFLUENT WATER QUALITY EVALUATION FOR SILVER

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Concentration Limit, mg/L[1]	NPDES Permit	Daily Limit	n/a[2]	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	0.005	0.005	0.005	n/a	n/a	n/a
		Acute Toxicity	n/a	0.005	0.005	0.005	n/a	n/a	n/a
		Secondary Contact	0.10	n/a	n/a	n/a	0.10	0.10	0.10
Allowable Headworks Loading, lbs/day	NPDES Permit	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	16.58	4.47	31.96	n/a	n/a	n/a
		Acute Toxicity	n/a	16.58	4.47	31.96	n/a	n/a	n/a
		Secondary Contact	2,988.85	n/a	n/a	n/a	12,282.44	1,719.86	10,714.17
Maximum Allowable Headworks Loading (MAHL), lbs/day[4]			2,988.85	16.58	4.47	31.96	12,282.44	1,719.86	10,714.17
Actual Average Influent Loading (L_{avg}), lbs/day[5]			3.03	1.54	0.29	2.14	0.00	9.15	161.91
Actual Maximum Influent Loading (L_{max}), lbs/day[5]			33.90	4.20	5.00	31.21	0.06	48.44	
Actual Loading vs. MAHL									
% L_{avg}/MAHL[6]			0.10	9.29	6.46	6.69	0.00	0.53	0.28
% L_{max}/MAHL[7]			1.13	25.34	111.86	97.67	0.00	2.18	1.51
Further Local Limit Evaluation			none	none	needed	needed	none	none	none

[1]Concentration limit determined from State of Illinois NPDES Permit for each WRP and State of Illinois water quality criteria.
[2]Not applicable when there is not a NPDES Permit or water quality standard for this pollutant.
[3]Allowable headworks Loading see Equation 2 and Equation 3.
[4]MAHL is the calculated minimum, or most stringent, of allowable headworks loading for each WRP.
[5]Year 2000 data used.
[6]When % L_{avg}/MAHL is greater than 60% further local limit evaluation is needed, otherwise none.
[7]When % L_{max}/MAHL is greater than 80% further local limit evaluation is needed, otherwise none.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 22

EFFLUENT WATER QUALITY EVALUATION FOR ZINC

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Concentration Limit, mg/L[1]	NPDES Permit	Daily Limit	1.10	n/a[2]	n/a	n/a	n/a	1.00	n/a
		Monthly Limit	1.00	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity	n/a	1.00	1.00	1.00	n/a	n/a	n/a
		Acute Toxicity	n/a	1.00	1.00	1.00	n/a	n/a	n/a
		Secondary Contact	1.00	n/a	n/a	n/a	1.00	1.00	1.00
Allowable Headworks Loading, lbs/day	NPDES Permit	Daily Limit	9,333.85	n/a	n/a	n/a	n/a	5,601.14	n/a
		Monthly Limit	8,485.32	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity	n/a	663.98	214.92	693.59	n/a	n/a	n/a
		Acute Toxicity	n/a	663.98	214.92	693.59	n/a	n/a	n/a
		Secondary Contact	9,145.33	n/a	n/a	n/a	52,594.69	5,603.12	49,299.82
Maximum Allowable Headworks Loading (MAHL), lbs/day[4]			8,485.32	663.98	214.92	693.59	52,594.69	5,601.14	49,299.82
Actual Average Influent Loading (L_{avg}), lbs/day[5]			510.89	26.05	7.93	41.42	4.66	233.63	1,656.14
Actual Maximum Influent Loading (L_{max}), lbs/day[5]			3,259.97	87.28	202.32	440.49	52.80	1,046.18	21,053.91
Actual Loading vs. MAHL									
% L_{avg}/MAHL[6]			15.67	3.92	3.69	5.97	0.01	4.17	3.36
% L_{max}/MAHL[7]			38.42	13.14	94.14	63.51	0.10	18.68	42.71
Further Local Limit Evaluation			none	none	needed	none	none	none	none

[1]Concentration limit determined from State of Illinois NPDES Permit for each WRP and State of Illinois water quality criteria.
[2]Not applicable when there is not a NPDES Permit or water quality standard for this pollutant.
[3]Allowable headworks Loading see Equation 2 and Equation 3.
[4]MAHL is the calculated minimum, or most stringent, of allowable headworks loading for each WRP.
[5]Year 2000 data used.
[6]When % L_{avg}/MAHL is greater than 60% further local limit evaluation is needed, otherwise none.
[7]When % L_{max}/MAHL is greater than 80% further local limit evaluation is needed, otherwise none.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 23

EFFLUENT WATER QUALITY EVALUATION FOR AMMONIA

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Concentration Limit, mg/L[1]	NPDES Permit	Daily Limit	n/a[2]	3.00	10.97	5.9	n/a	n/a	15.00[3]
		Monthly Limit	13.00	1.50	n/a	13.00	n/a	2.50	2.50
	State Water	Chronic Toxicity	n/a	6.25	9.38	6.09	n/a	n/a	n/a
		Acute Toxicity	n/a	15.00[3]	15.00[3]	15.00[3]	n/a	n/a	n/a
		Secondary Contact	15.00[3]	n/a	n/a	n/a	15.00[3]	15.00[3]	15.00[3]
Allowable Headworks Loading, lbs/day[4]	NPDES Permit	Daily Limit	n/a	89,260.54	18,938.39	48,388.42	n/a	n/a	1,988,002.17
		Monthly Limit	1,536,973.97	44,630.27	n/a	106,618.56	n/a	129,578.13	331,333.70
	State Water	Chronic Toxicity	n/a	185,959.50	17,942.87	49,946.69	n/a	n/a	n/a
		Acute Toxicity	n/a	446,302.70	28,693.30	123,021.42	n/a	n/a	n/a
		Secondary Contact	7,894,533.47	n/a	n/a	n/a	1,663,415.15	777,741.99	2,651,553.92
Maximum Allowable Headworks Loading (MAHL), lbs/day[5]			1,536,973.97	44,630.27	17,942.87	48,388.42	1,663,415.15	129,578.13	331,333.70
Actual Average Influent Loading (L_{avg}), lbs/day[6]			22,375.77	3,167.92	619.53	3,191.67	229.88	20,329.78	81,517.08
Actual Maximum Influent Loading (L_{max}), lbs/day[6]			40,635.82	5,559.49	3,443.61	5,634.28	343.67	34,641.69	164,447.45

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 23 (Continued)

EFFLUENT WATER QUALITY EVALUATION FOR AMMONIA

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Actual Loading vs. MAHL							
% L_{avg}/MAHL[7]	1.46	7.10	3.45	6.60	0.01	15.69	24.60
% L_{max}/MAHL [8]	2.64	12.46	9.19	11.64	0.02	26.73	49.63
Further Local Limit Evaluation	none	none	none	none	none	none	none

[1]Concentration limit determined from State of Illinois NPDES Permit for each WRP and State of Illinois water quality criteria. Un-ionized ammonia standards are converted to total ammonia. See Appendix XI.
[2]Not applicable when there is not a NPDES Permit or water quality standard for this pollutant.
[3]The maximum concentration allowed is 15.00 mg/L. The values calculated from unionized ammonia standards in mg/L are: Secondary Contact Waters; Calumet WRP 61.79, Lemont WRP 18.13, North Side WRP 27.39, Stickney WRP 28.15; General Use Waters; Egan WRP 47.08, Hanover Park WRP 65.95, Kirie WRP 34.14 for the acute standards and the Hanover Park WRP Daily NPDES Permit is 18.84.
[4]Allowable headworks Loading see Equation 2 and Equation 3.
[5]MAHL is the calculated minimum, or most stringent, of allowable headworks loading for each WRP.
[6]Year 2000 data used.
[7]When % L_{avg}/MAHL is greater than 60% further local limit evaluation is needed, otherwise none.
[8]When % L_{max}/MAHL is greater than 80% further local limit evaluation is needed, otherwise none.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 24

EFFLUENT WATER QUALITY EVALUATION FOR CYANIDE (WAD CYANIDE[1])

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Concentration Limit, mg/L[2]	NPDES PERMIT	Daily Limit	0.11	n/a[3]	0.13 (0.02[1])	0.11 (0.02[1])	n/a	0.10	0.12
		Monthly Limit	n/a	n/a	0.06 (0.01[1])	0.05 (0.01[1])	n/a	0.10	0.10
	State Water	Chronic Toxicity	n/a	0.04 (0.010[1])	0.06 (0.010[1])	0.05 (0.010[1])	n/a	n/a	n/a
		Acute Toxicity	n/a	0.09 (0.0220[1])	0.14 (0.0220[1])	0.12 (0.0220[1])	n/a	n/a	n/a
		Secondary Contact	0.10	n/a	n/a	n/a	0.10	0.10	0.10
Allowable Headworks Loading, lbs/day[4]	NPDES PERMIT	Daily Limit	3,311.07	n/a	15.16	75.14	n/a	522.04	2,332.12
		Monthly Limit	n/a	n/a	7.00	34.16	n/a	522.04	1,943.43
	State Water	Chronic Toxicity	n/a	17.64	7.02	34.16	n/a	n/a	n/a
		Acute Toxicity	n/a	39.70	16.32	81.97	n/a	n/a	n/a
		Secondary Contact	3,246.52	n/a	n/a	n/a	2,717.13	522.23	2,605.55
Maximum Allowable Headworks Loading (MAHL), lbs/day[5]			3,246.52	17.64	7.00	34.16	2,717.13	522.04	1,943.43
Actual Average Influent Loading (L_{avg}), lbs/day[6]			407.30	5.30	1.12	5.59	0.49	39.70	167.03
Actual Maximum Influent Loading (L_{max}), lbs/day[6]			8,980.41	26.88	2.77	12.30	1.16	166.6	360.12
Actual Loading vs. MAHL									
% L_{avg}/MAHL[7]			12.55	30.04	16.00	16.34	0.02	7.60	5.59
% L_{max}/MAHL[8]			27.43	152.38	39.57	36.01	0.04	31.91	18.53
Further Local Limit Evaluation			none	needed	none	none	none	none	none

[1]The WAD cyanide standard is converted to total cyanide concentrations for use in Equation 2 and Equation 3. The most stringent value is used in the cases where both total cyanide and WAD cyanide standards exist. The WRP specific conversions of WAD cyanide standards to equivalent total cyanide standards.

[2]Concentration limit determined from State of Illinois NPDES Permit for each WRP and State of Illinois water quality criteria.

[3]Not applicable when there is not a NPDES Permit or water quality standard for this pollutant.

[4]Allowable headworks Loading see Equation 2 and Equation 3.

[5]MAHL is the calculated minimum, or most stringent, of allowable headworks loading for each WRP.

[6]Year 2000 data used.

[7]When % L_{avg}/MAHL is greater than 60% further local limit evaluation is needed, otherwise none.

[8]When % L_{max}/MAHL is greater than 80% further local limit evaluation is needed, otherwise none.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 25

EFFLUENT WATER QUALITY EVALUATION FOR PHENOL

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Concentration Limit, mg/L[1]	NPDES PERMIT	Daily Limit	0.30	n/a[2]	n/a	n/a	n/a	0.30	n/a
		Monthly Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity	n/a	0.10	0.10	0.10	n/a	n/a	n/a
		Acute Toxicity	n/a	0.10	0.10	0.10	n/a	n/a	n/a
		Secondary Contact	0.30	n/a	n/a	n/a	0.30	0.30	0.03
Allowable Headworks Loading, lbs/day	NPDES PERMIT	Daily Limit	43,137.52	n/a	n/a	n/a	n/a	28,565.82	n/a
		Monthly Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity	n/a	1,865.90	863.19	2,149.57	n/a	n/a	n/a
		Acute Toxicity	n/a	1,865.90	863.19	2,149.57	n/a	n/a	n/a
		Secondary Contact	46,481.44	n/a	n/a	n/a	57,153.64	28,575.61	399,682.63
Maximum Allowable Headworks Loading (MAHL), lbs/day[4]			43,137.52	n/a	n/a	n/a	57,153.64	28,565.82	399,682.63
Actual Average Influent Loading (L_{avg}), lbs/day[5]			520.88	23.00	8.55	7.80	1.63	181.66	671.39
Actual Maximum Influent Loading (L_{max}), lbs/day[5]			7,319.48	69.06	21.21	18.07	3.40	413.12	1,233.99
Actual Loading vs. MAHL									
% L_{avg}/MAHL[6]			1.21	n/a	n/a	n/a	0.00	0.64	0.17
% L_{max}/MAHL[7]			16.97	n/a	n/a	n/a	0.01	1.44	0.31
Further Local Limit Evaluation			none	none	none	none	none	none	none

[1]Concentration limit determined from State of Illinois NPDES Permit for each WRP and State of Illinois water quality criteria.
[2]Not applicable when there is not a NPDES Permit or water quality standard for this pollutant.
[3]Allowable headworks Loading see Equation 2 and Equation 3.
[4]MAHL is the calculated minimum, or most stringent, of allowable headworks loading for each WRP.
[5]Year 2000 data used.
[6]When % L_{avg}/MAHL is greater than 60% further local limit evaluation is needed, otherwise none.
[7]When % L_{max}/MAHL is greater than 80% further local limit evaluation is needed, otherwise none.

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TABLE 26

EFFLUENT WATER QUALITY EVALUATION FOR FATS, OIL, AND GREASE (FOG)

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Concentration Limit, mg/L[1]	NPDES PERMIT	Daily Limit	n/a[2]	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
		Secondary Contact	15.00	n/a	n/a	n/a	15.00	15.00	15.00
Allowable Headworks Loading, lbs/day	NPDES PERMIT	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
		Secondary Contact	365,562.53	n/a	n/a	n/a	1,503,597.07	455,650.10	1,437,744.51
Maximum Allowable Headworks Loading (MAHL), lbs/day[4]			365,562.53	0.00	0.00	0.00	1,503,597.07	455,650.10	1,437,744.51
Actual Average Influent Loading (L_{avg}), lbs/day[5]			40,733.68	0.00	0.00	0.00	326.71	50,153.14	93,762.73
Actual Maximum Influent Loading (L_{max}), lbs/day[5]			99,529.56	0.00	0.00	0.00	977.11	148,318.56	272,642.94
Actual Loading vs. MAHL									
% L_{avg}/MAHL[6]			11.14	n/a	n/a	n/a	0.02	11.01	6.52
% L_{max}/MAHL[7]			27.23	n/a	n/a	n/a	0.06	32.55	18.96
Further Local Limit Evaluation			none	n/a	n/a	n/a	none	none	none

[1]Concentration limit determined from State of Illinois NPDES Permit for each WRP and State of Illinois water quality criteria.
[2]Not applicable when there is not a NPDES Permit or water quality standard for this pollutant.
[3]Allowable headworks Loading see Equation 2 and Equation 3.
[4]MAHL is the calculated minimum, or most stringent, of allowable headworks loading for each WRP.
[5]Year 2000 data used.
[6]When % L_{avg}/MAHL is greater than 60% further local limit evaluation is needed, otherwise none.
[7]When % L_{max}/MAHL is greater than 80% further local limit evaluation is needed, otherwise none.

relationship is established to relate the allowable WRP effluent WAD cyanide concentrations to equivalent total cyanide loadings at each of these three WRPs. The equivalent total cyanide calculations are based on average WAD cyanide loads and average total cyanide loads in the WRP effluents. All of the calculations are based on year 2000 data. The WAD cyanide standards are converted to the equivalent total cyanide standards. The calculation is shown in Equation 7. The calculated total cyanide standards are used in the allowable headworks loading calculations.

Equation 7: Conversion of WAD Cyanide Standard to Total Cyanide Standard

$$CN_{tot}\ \text{Standard} = \frac{CN_{WAD}\ \text{Standard}}{CN_{WAD}\ \text{Effluent} / CN_{tot}\ \text{Effluent}}$$

Where:

CN_{tot} Standard = Total Cyanide Standard

CN_{WAD} S tandard = WAD Cyanide Standard

CN_{tot} Effluent = Total Cyanide Effluent Load

CN_{WAD} Effluent = WAD Cyanide Effluent Load

EGAN WRP

At the Egan WRP, WAD cyanide was 24.21 percent of the total cyanide in the effluent, on average, for year 2000. The equivalent total cyanide standards for the site-specific State of Illinois General Use Water Quality Standards for WAD cyanide are:

1. The Chronic General Use standard is 0.010 mg/L for WAD cyanide; the equivalent total cyanide standard is 0.04 mg/L.
2. The Acute General Use standard is 0.022 mg/L for WAD cyanide; the equivalent total cyanide standard is 0.09 mg/L.

HANOVER PARK WRP

At the Hanover Park WRP, WAD cyanide was 15.64 percent of the total cyanide in the effluent, on average, for 2000. The equivalent total cyanide standards for the site-specific State of Illinois General Use Water Quality Standards and NPDES permits are:

1. The Chronic General Use standard is 0.010 mg/L for WAD cyanide; the equivalent total cyanide standard is 0.06 mg/L.

2. The Acute General Use standard is 0.022 mg/L for WAD cyanide; the equivalent total cyanide standard is 0.14 mg/L.
3. The Monthly NPDES Permit standard is 0.01 mg/L for WAD cyanide; the equivalent total cyanide standard is 0.06 mg/L.
4. The Daily NPDES Permit standard is 0.02 mg/L for WAD cyanide; the equivalent total cyanide standard is 0.13 mg/L.

KIRIE WRP

At the Kirie WRP, WAD cyanide was 18.66 percent of the total cyanide in the effluent, on average, for 2000. The equivalent total cyanide standards for the site-specific State of Illinois General Use Water Quality Standards and NPDES permits are:

1. The Chronic General Use standard is 0.010 mg/L for WAD cyanide; the equivalent total cyanide standard is 0.05 mg/L.
2. The Acute General Use standard is 0.022 mg/L for WAD cyanide; the equivalent total cyanide standard is 0.12 mg/L.

3. The Monthly NPDES Permit standard is 0.01 mg/L for WAD cyanide; the equivalent total cyanide standard is 0.05 mg/L.

4. The Daily NPDES Permit standard is 0.02 mg/L for WAD cyanide; the equivalent total cyanide standard is 0.11 mg/L.

Evaluation of Sludge Quality Based Allowable Headworks Loadings

Allowable pollutant concentrations in sludge disposed by a WRP depend on the final use or disposal destination of the solids. The allowable pollutant concentrations for sludge are based on 40 CFR Part 503. The pollutant concentration values from Table 3, 40 CFR Part 503.13 are used in the AHL calculations for all sludge POCs except molybdenum. Molybdenum does not have a criterion in Table 3, 40 CFR Part 503.13; therefore it is evaluated against the ceiling concentration in Table 1, 40 CFR Part 503.13.

As stated previously, the District processes sludge at four separate anaerobic digestion facilities. Three of the District's WRPs do not process their own sludge. 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 2001 USEPA Guidance is used. Table 27 through Table 35 present an evaluation for each POC based on sludge quality AHL. The evaluation compares the AHL to the actual loading at the respective WRPs. Further evaluation for local limit determination is necessary when the average influent load is greater than 60 percent of the AHL.

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 1987 USEPA Guidance and are summarized in Appendix AIII. These inhibition concentrations are not well established and may vary widely from WRP to WRP. An evaluation method presented in the 2001 USEPA Guidance is used. The evaluation compares the AHL 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 influent load is greater than 80 percent of the AHL. The activated sludge inhibition of carbonaceous and nitrogenous organisms is evaluated in Table 36 through Table 47. The anaerobic

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TABLE 27

SLUDGE QUALITY EVALUATION FOR ARSENIC

	District Sludge Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
40 CFR Part 503.13 Sudge Limit (C_{503}), mg/dry Kg[1]	41	41	41	41
Actual Average Concentration (C_{avg}), mg/ dry Kg	8	4	4	6
Actual Maximum Concentration (C_{max}), mg/ dry Kg	10	5	5	13
Allowable Headworks Loading (AHL), lbs/day[2]	142.52	33.37	3.53	449.59
Actual Average Influent Loading (L_{avg}), lbs/day[3]	0.07	9.49	1.34	27.21
Actual Concentration vs. 40 CFR Part 503.13 Sludge Limit				
% C_{avg}/C_{503}	20	10	10	15
% C_{max}/C_{503}	24	12	12	32
Actual Loading vs. AHL				
% L_{avg}/AHL	0.04	28.45	38.01	5.83
Further Local Limit Evaluation[4]	none	none	none	none

[1]Monthly average pollutant concentration from Table 3, 40 CFR Part 503.13.
[2] Allowable headworks loading, see Equation 4.
[3]Year 2000 data used.
[4]When % L_{avg}/AHL is greater than 60% further local limit evaluation is needed, otherwise none.

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TABLE 28

SLUDGE QUALITY EVALUATION FOR CADMIUM

	District Sludge Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
40 CFR Part 503.13 Sludge Limit (C_{503}), mg/dry Kg[1]	39	39	39	39
Actual Average Concentration (C_{avg}), mg/ dry Kg	4	4	3	4
Actual Maximum Concentration (C_{max}), mg/ dry Kg	7	6	3	6
Allowable Headworks Loading (AHL), lbs/day[2]	11.48	3.16	0.35	39.99
Actual Average Influent Loading (L_{avg}), lbs/day[3]	0.34	0.38	0.04	3.32
Actual Concentration vs. 40 CFR Part 503.13 Sludge Limit				
% C_{avg}/C_{503}	10	10	8	10
% C_{max}/C_{503}	18	15	8	15
Actual Loading vs. AHL				
% L_{avg}/AHL	2.93	12.02	12.18	8.31
Further Local Limit Evaluation[4]	none	none	none	none

[1]Monthly average pollutant concentration from Table 3, 40 CFR Part 503.13.
[2]Allowable headworks loading, see Equation 4.
[3]Year 2000 data used.
[4]When % L_{avg}/AHL is greater than 60% further local limit evaluation is needed, otherwise none.

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TABLE 29

SLUDGE QUALITY EVALUATION FOR COPPER

	District Sludge Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
40 CFR Part 503.13 Sludge Limit (C_{503}), mg/dry Kg[1]	1,500	1,500	1,500	1,500
Actual Average Concentration (C_{avg}), mg/ dry Kg	330	825	793	387
Actual Maximum Concentration (C_{max}), mg/ dry Kg	416	923	925	471
Allowable Headworks Loading (AHL), lbs/day[2]	329.70	79.33	8.64	1,047.08
Actual Average Influent Loading (L_{avg}), lbs/day[3]	107.17	50.36	6.66	532.46
Actual Concentration vs. 40 CFR Part 503.13 Sludge Limit				
% C_{avg}/C_{503}	22	55	53	26
% C_{max}/C_{503}	28	62	62	31
Actual Loading vs. AHL				
% L_{avg}/AHL	32.51	63.48	77.12	50.85
Further Local Limit Evaluation[4]	none	needed	needed	none

[1]Monthly average pollutant concentration from Table 3, 40 CFR Part 503.13.
[2]Allowable headworks loading, see Equation 4.
[3]Year 2000 data used.
[4]When % L_{avg}/AHL is greater than 60% further local limit evaluation is needed, otherwise none.

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TABLE 30

SLUDGE QUALITY EVALUATION FOR LEAD

	District Sludge Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
40 CFR Part 503.13 Sludge Limit (C_{503}), mg/dry Kg[1]	300	300	300	300
Actual Average Concentration (C_{avg}), mg/ dry Kg	108	46	42	139
Actual Maximum Concentration (C_{max}), mg/ dry Kg	135	54	103	187
Allowable Headworks Loading (AHL), lbs/day[2]	54.16	14.93	1.63	188.75
Actual Average Influent Loading (L_{avg}), lbs/day[3]	11.77	3.40	0.26	169.41
Actual Concentration vs. 40 CFR Part 503.13 Sludge Limit				
% C_{avg}/C_{503}	36	15	14	46
% C_{max}/C_{503}	45	18	34	62
Actual Loading vs. AHL				
% L_{avg}/AHL	21.73	22.79	15.75	89.75
Further Local Limit Evaluation[4]	none	none	none	needed

[1]Monthly average pollutant concentration from Table 3, 40 CFR Part 503.13.
[2]Allowable headworks loading, see Equation 4.
[3]Year 2000 data used.
[4]When % L_{avg}/AHL is greater than 60% further local limit evaluation is needed, otherwise none.

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TABLE 31

SLUDGE QUALITY EVALUATION FOR MERCURY

	District Sludge Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
40 CFR Part 503.13 Sludge Limit (C_{503}), mg/dry Kg[1]	17	17	17	17
Actual Average Concentration (C_{avg}), mg/ dry Kg	1	1	2	1
Actual Maximum Concentration (C_{max}), mg/ dry Kg	1	1	3	1
Allowable Headworks Loading (AHL), lbs/day[2]	3.23	0.86	0.09	11.25
Actual Average Influent Loading (L_{avg}), lbs/day[3]	0.14	0.07	0.02	1.62
Actual Concentration vs. 40 CFR Part 503.13 Sludge Limit				
% C_{avg}/C_{503}	4	5	10	4
% C_{max}/C_{503}	6	8	17	8
Actual Loading vs. AHL				
% L_{avg}/AHL	4.48	8.18	22.27	14.36
Further Local Limit Evaluation[4]	none	none	none	none

[1]Monthly average pollutant concentration from Table 3, 40 CFR Part 503.13.
[2]Allowable headworks loading, see Equation 4.
[3]Year 2000 data used.
[4]When % L_{avg}/AHL is greater than 60% further local limit evaluation is needed, otherwise none.

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TABLE 32

SLUDGE QUALITY EVALUATION FOR MOLYBDENUM

	District Sludge Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
40 CFR Part 503.13 Sludge Limit (C_{503}), mg/dry Kg[1]	75	75	75	75
Actual Average Concentration (C_{avg}), mg/ dry Kg	11	20	11	14
Actual Maximum Concentration (C_{max}), mg/ dry Kg	16	26	16	20
Allowable Headworks Loading (AHL), lbs/day[2]	n/a	n/a	n/a	n/a
Actual Average Influent Loading (L_{avg}), lbs/day[3]	n/a	n/a	n/a	n/a
Actual Concentration vs. 40 CFR Part 503.13 Sludge Limit				
% C_{avg}/C_{503}	15	27	15	19
% C_{max}/C_{503}	21	35	21	27
Actual Loading vs. AHL				
% L_{avg}/AHL	n/a	n/a	n/a	n/a
Further Local Limit Evaluation[4]	none	none	none	none

[1]Daily Maximum ceiling concentration from Table 1, 40 CFR Part 503.13.
[2]Allowable headworks loading, see Equation 4.
[3]Year 2000 data used.
[4]When % L_{avg}/AHL is greater than 60% further local limit evaluation is needed, otherwise none.

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TABLE 33

SLUDGE QUALITY EVALUATION FOR NICKEL

	District Sludge Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
40 CFR Part 503.13 Sludge Limit (C_{503}), mg/dry Kg[1]	420	420	420	420
Actual Average Concentration (C_{avg}), mg/ dry Kg	39	62	31	54
Actual Maximum Concentration (C_{max}), mg/ dry Kg	39	102	57	66
Allowable Headworks Loading (AHL), lbs/day[2]	140.88	34.03	3.42	522.11
Actual Average Influent Loading (L_{avg}), lbs/day[3]	3.47	8.42	0.79	89.49
Actual Concentration vs. 40 CFR Part 503.13 Sludge Limit				
% C_{avg}/C_{503}	9	15	7	13
% C_{max}/C_{503}	9	24	14	16
Actual Loading vs. AHL				
% L_{avg}/AHL	2.46	24.74	23.22	21.77
Further Local Limit Evaluation[4]	none	none	none	none

[1]Monthly average pollutant concentration from Table 3, 40 CFR Part 503.13.
[2]Allowable headworks loading, see Equation 4.
[3]Year 2000 data used.
[4]When % L_{avg}/AHL is greater than 60% further local limit evaluation is needed, otherwise none.

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TABLE 34

SLUDGE QUALITY EVALUATION FOR SELENIUM

	District Sludge Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
40 CFR Part 503.13 Sludge Limit (C_{503}), mg/dry Kg[1]	100	100	100	100
Actual Average Concentration (C_{avg}), mg/ dry Kg	12	4	5	3
Actual Maximum Concentration (C_{max}), mg/ dry Kg	21	5	6	4
Allowable Headworks Loading (AHL), lbs/day[2]	34.76	9.58	1.05	121.15
Actual Average Influent Loading (L_{avg}), lbs/day[3]	1.94	1.76	0.04	2.45
Actual Concentration vs. 40 CFR Part 503.13 Sludge Limit				
% C_{avg}/C_{503}	12	4	5	3
% C_{max}/C_{503}	21	5	6	4
Actual Loading vs. AHL				
% L_{avg}/AHL	5.59	18.37	3.54	2.02
Further Local Limit Evaluation[4]	none	none	none	none

[1]Monthly average pollutant concentration from Table 3, 40 CFR Part 503.13.
[2]Allowable headworks loading, see Equation 4.
[3]Year 2000 data used.
[4]When % L_{avg}/AHL is greater than 60% further local limit evaluation is needed, otherwise none.

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TABLE 35

SLUDGE QUALITY EVALUATION FOR ZINC

	District Sludge Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
40 CFR Part 503.13 Sludge Limit (C_{503}), mg/dry Kg[1]	2,800	2,800	2,800	2,800
Actual Average Concentration (C_{avg}), mg/ dry Kg	1,125	744	610	872
Actual Maximum Concentration (C_{max}), mg/ dry Kg	1,406	913	709	998
Allowable Headworks Loading (AHL), lbs/day[2]	649.56	199.11	21.62	2,175.54
Actual Average Influent Loading (L_{avg}), lbs/day[3]	510.89	67.47	7.93	1,689.08
Actual Concentration vs. 40 CFR Part 503.13 Sludge Limit				
% C_{avg}/C_{503}	40	27	22	31
% C_{max}/C_{503}	50	33	25	36
Actual Loading vs. AHL				
% L_{avg}/AHL	78.65	33.89	36.69	77.64
Further Local Limit Evaluation[4]	needed	none	none	needed

[1]Monthly average pollutant concentration from Table 3, 40 CFR Part 503.13.
[2]Allowable headworks loading, see Equation 4.
[3]Year 2000 data used.
[4]When % L_{avg}/AHL is greater than 60% further local limit evaluation is needed, otherwise none.

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TABLE 36

ACTIVATED SLUDGE TOXIC POLLUTANT INHIBITION EVALUATION FOR ARSENIC

	District WRP						
	Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Threshold Limit for Carbonaceous Microorganism Inhibition, mg/L[1]	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Threshold Limit for Nitrogenous Microorganism Inhibition, mg/L[1]	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Allowable Headworks Loading for Carbonaceous Microorganism Inhibition, lbs/day[2]	212.81	22.02	6.91	26.65	1.73	210.43	609.65
Allowable Headworks Loading for Nitrogenous Inhibition, lbs/day[2]	3,192.18	330.26	103.58	399.82	26.02	3,156.52	9,144.81
Maximum Allowable Headworks Loading (MAHL), lbs/day[3]	212.81	22.02	6.91	26.65	1.73	210.43	609.65
Actual Average Influent Loading (L_{avg}), lbs/day[4]	0.07	4.35	1.34	5.14	0.00	40.58	22.35
Actual Maximum Influent Loading (L_{max}), lbs/day[4]	14.01	7.56	4.77	15.76	0.10	104.73	997.63
Actual Loading vs. MAHL							
% L_{avg}/MAHL[5]	0.03	19.76	19.41	19.30	0.02	19.28	3.67
% L_{max}/MAHL[6]	6.58	34.33	69.08	59.12	5.71	49.77	163.64
Further Local Limit Evaluation	none	none	none	none	none	none	needed

[1]Source: EPA 883/B-87-202, EPA Office of Water, December 1987.
[2]Allowable headworks loading, see Equation 5.
[3]MAHL is the calculated minimum, or most stringent, of allowable headworks loading for each WRP.
[4]Year 2000 District data used.
[5]When % L_{avg}/MAHL is greater than 60% further local limit evaluation is needed, otherwise none.
[6]When % L_{max}/MAHL is greater than 80% further local limit evaluation is needed, otherwise none.

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TABLE 37

ACTIVATED SLUDGE TOXIC POLLUTANT INHIBITION EVALUATION FOR CADMIUM

	District WRP						
	Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Threshold Limit for Carbonaceous Microorganism Inhibition, mg/L[1]	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Threshold Limit for Nitrogenous Microorganism Inhibition, mg/L[1]	5.20	5.20	5.20	5.20	5.20	5.20	5.20
Allowable Headworks Loading for Carbonaceous Microorganism Inhibition, lbs/day[2]	25,036.68	2,590.31	812.41	2,665.46	204.08	24,757.04	71,724.00
Allowable Headworks Loading for Nitrogenous Inhibition, lbs/day[2]	13,019.07	1,346.96	422.46	1,386.04	106.12	12,873.66	37,296.48
Maximum Allowable Headworks Loading (MAHL), lbs/day[3]	13,019.07	1,346.96	422.46	1,386.04	106.12	12,873.66	37,296.48
Actual Average Influent Loading (L_{avg}), lbs/day[4]	0.34	0.19	0.04	0.19	0.01	1.83	3.10
Actual Maximum Influent Loading (L_{max}), lbs/day[4]	77.41	3.04	0.81	2.04	0.53	33.36	51.92
Actual Loading vs. MAHL							
% L_{avg}/MAHL[5]	0.00	0.01	0.01	0.01	0.00	0.01	0.01
% L_{max}/MAHL[6]	0.59	0.23	0.19	0.15	0.50	0.26	0.14
Further Local Limit Evaluation	none	none	none	none	none	none	none

[1]Source: EPA 883/B-87-202, EPA Office of Water, December 1987.
[2]Allowable headworks loading, see Equation 5.
[3]MAHL is the calculated minimum, or most stringent, of allowable headworks loading for each WRP.
[4]Year 2000 District data used.
[5]When % Lavg/MAHL is greater than 60% further local limit evaluation is needed, otherwise none.
[6]When % Lmax/MAHL is greater than 80% further local limit evaluation is needed, otherwise none.

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TABLE 38

ACTIVATED SLUDGE TOXIC POLLUTANT INHIBITION EVALUATION FOR CHROMIUM

	District WRP						
	Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Threshold Limit for Carbonaceous Microorganism Inhibition, mg/L[1]	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Threshold Limit for Nitrogenous Microorganism Inhibition, mg/L[1]	1.90	1.90	1.90	1.90	1.90	1.90	1.90
Allowable Headworks Loading for Carbonaceous Microorganism Inhibition, lbs/day[2]	291,522.99	30,161.10	9,459.62	26,654.64	2,376.33	288,266.96	835,142.47
Allowable Headworks Loading for Nitrogenous Inhibition, lbs/day[2]	5,538.94	573.06	179.73	506.44	45.15	5,477.07	15,867.71
Maximum Allowable Headworks Loading (MAHL), lbs/day[3]	5,538.94	573.06	179.73	506.44	45.15	5,477.07	15,867.71
Actual Average Influent Loading (L_{avg}), lbs/day[4]	16.55	2.58	0.41	8.11	0.09	18.09	395.49
Actual Maximum Influent Loading (L_{max}), lbs/day[4]	545.84	13.28	32.11	73.89	1.78	89.25	2,315.00
Actual Loading vs. MAHL							
% L_{avg}/MAHL[5]	0.30	0.45	0.23	1.60	0.19	0.33	2.49
% L_{max}/MAHL[6]	9.85	2.32	17.87	14.59	3.93	1.63	14.59
Further Local Limit Evaluation	none	none	none	none	none	none	none

[1]Source: EPA 883/B-87-202, EPA Office of Water, December 1987.
[2]Allowable headworks loading, see Equation 5.
[3]MAHL is the calculated minimum, or most stringent, of allowable headworks loading for each WRP.
[4]Year 2000 District data used.
[5]When % L_{avg}/MAHL is greater than 60% further local limit evaluation is needed, otherwise none.
[6]When % L_{max}/MAHL is greater than 80% further local limit evaluation is needed, otherwise none.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 39

ACTIVATED SLUDGE TOXIC POLLUTANT INHIBITION EVALUATION FOR HEXAVALENT CHROMIUM

	District WRP						
	Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Threshold Limit for Carbonaceous Microorganism Inhibition, mg/L[1]	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Threshold Limit for Nitrogenous Microorganism Inhibition, mg/L[1]	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Allowable Headworks Loading for Carbonaceous Microorganism Inhibition, lbs/day[2]	2,128.12	220.18	69.06	266.55	17.35	2,104.35	6,096.54
Allowable Headworks Loading for Nitrogenous Inhibition, lbs/day[2]	21,281.18	2,201.76	690.55	2,665.46	173.47	21,043.49	60,965.40
Maximum Allowable Headworks Loading (MAHL), lbs/day[3]	2,128.12	220.18	69.06	266.55	17.35	2,104.35	6,096.54
Actual Average Influent Loading (L_{avg}), lbs/day[4]	0.00	0.12	0.04	0.11	0.00	0.08	1.17
Actual Maximum Influent Loading (L_{max}), lbs/day[4]	0.00	1.29	0.52	2.26	0.00	1.46	38.72
Actual Loading vs. MAHL							
% L_{avg}/MAHL[5]	0.00	0.06	0.06	0.04	0.00	0.00	0.02
% L_{max}/MAHL[6]	0.00	0.58	0.75	0.85	0.00	0.07	0.64
Further Local Limit Evaluation	none	none	none	none	none	none	none

[1]Source: EPA 883/B-87-202, EPA Office of Water, December 1987.
[2]Allowable headworks loading, see Equation 5.
[3]MAHL is the calculated minimum, or most stringent, of allowable headworks loading for each WRP.
[4]Year 2000 District data used.
[5]When % L_{avg}/MAHL is greater than 60% further local limit evaluation is needed, otherwise none.
[6]When % L_{max}/MAHL is greater than 80% further local limit evaluation is needed, otherwise none.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 40

ACTIVATED SLUDGE TOXIC POLLUTANT INHIBITION EVALUATION FOR COPPER

	District WRP						
	Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Threshold Limit for Carbonaceous Microorganism Inhibition, mg/L[1]	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Threshold Limit for Nitrogenous Microorganism Inhibition, mg/L[1]	0.48	0.48	0.48	0.48	0.48	0.48	0.48
Allowable Headworks Loading for Carbonaceous Microorganism Inhibition, lbs/day[2]	2,728.36	282.28	88.53	266.55	22.24	2,697.88	7,816.08
Allowable Headworks Loading for Nitrogenous Inhibition, lbs/day[2]	1,309.61	135.49	42.50	127.94	10.68	1,294.98	3,751.72
Maximum Allowable Headworks Loading (MAHL), lbs/day[3]	1,309.61	135.49	42.50	127.94	10.68	1,294.98	3,751.72
Actual Average Influent Loading (L_{avg}), lbs/day[4]	107.17	19.41	6.66	30.95	2.94	116.32	515.57
Actual Maximum Influent Loading (L_{max}), lbs/day[4]	423.34	58.82	173.15	124.63	32.87	287.23	2,800.79
Actual Loading vs. MAHL							
% L_{avg}/MAHL[5]	8.18	14.33	15.68	24.19	27.50	8.98	13.74
% L_{max}/MAHL[6]	32.33	43.41	407.46	97.41	307.90	22.18	74.65
Further Local Limit Evaluation	none	none	needed	needed	needed	none	none

[1]Source: EPA 883/B-87-202, EPA Office of Water, December 1987.
[2]Allowable headworks loading, see Equation 5.
[3]MAHL is the calculated minimum, or most stringent, of allowable headworks loading for each WRP.
[4]Year 2000 District data used.
[5]When % L_{avg}/MAHL is greater than 60% further local limit evaluation is needed, otherwise none.
[6]When % L_{max}/MAHL is greater than 80% further local limit evaluation is needed, otherwise none.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 41

ACTIVATED SLUDGE TOXIC POLLUTANT INHIBITION EVALUATION FOR LEAD

	District WRP						
	Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Threshold Limit for Carbonaceous Microorganism Inhibition, mg/L[1]	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Threshold Limit for Nitrogenous Microorganism Inhibition, mg/L[1]	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Allowable Headworks Loading for Carbonaceous Microorganism Inhibition, lbs/day[2]	494,911.12	51,203.72	16,059.35	26,654.64	4,034.23	489,383.44	1,417,800.00
Allowable Headworks Loading for Nitrogenous Inhibition, lbs/day[2]	7,423.67	768.06	240.89	399.82	60.51	7,340.75	21,267.00
Maximum Allowable Headworks Loading (MAHL), lbs/day[3]	7,423.67	768.06	240.89	399.82	60.51	7,340.75	21,267.00
Actual Average Influent Loading (L_{avg}), lbs/day[4]	11.77	2.36	0.26	1.04	0.09	11.56	167.93
Actual Maximum Influent Loading (L_{max}), lbs/day[4]	634.46	8.94	17.10	30.62	2.71	83.48	1,969.49
Actual Loading vs. MAHL							
% L_{avg}/MAHL[5]	0.16	0.31	0.11	0.26	0.14	0.18	0.79
% L_{max}/MAHL[6]	8.55	1.16	7.10	7.66	4.47	0.13	9.26
Further Local Limit Evaluation	none	none	none	none	none	none	none

[1]Source: EPA 883/B-87-202, EPA Office of Water, December 1987.
[2]Allowable headworks loading, see Equation 5.
[3]MAHL is the calculated minimum, or most stringent, of allowable headworks loading for each WRP.
[4]Year 2000 District data used.
[5]When % L_{avg}/MAHL is greater than 60% further local limit evaluation is needed, otherwise none.
[6]When % L_{max}/MAHL is greater than 80% further local limit evaluation is needed, otherwise none.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 42

ACTIVATED SLUDGE TOXIC POLLUTANT INHIBITION EVALUATION FOR MERCURY

	District WRP						
	Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Threshold Limit for Carbonaceous Microorganism Inhibition, mg/L[1]	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Threshold Limit for Nitrogenous Microorganism Inhibition, mg/L[1]	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Allowable Headworks Loading for Carbonaceous Microorganism Inhibition, lbs/day[2]	2,364.58	244.64	76.73	266.55	19.27	2,338.17	6,773.93
Allowable Headworks Loading for Nitrogenous Inhibition, lbs/day[2]	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Maximum Allowable Headworks Loading (MAHL), lbs/day[3]	2,364.58	244.64	76.73	266.55	19.27	2,338.17	6,773.93
Actual Average Influent Loading (L_{avg}), lbs/day[4]	0.1446	0.0488	0.0204	0.0216	0.0067	0.0283	1.5811
Actual Maximum Influent Loading (L_{max}), lbs/day[4]	0.7446	0.4834	0.3737	0.1623	0.0783	0.1322	10.5743
Actual Loading vs. MAHL							
% L_{avg}/MAHL[5]	0.0061	0.0200	0.0266	0.0081	0.0348	0.0012	0.0233
% L_{max}/MAHL[6]	0.0315	0.1976	0.4871	0.0609	0.4064	0.0057	0.1561
Further Local Limit Evaluation	none	none	none	none	none	none	none

[1]Source: EPA 883/B-87-202, EPA Office of Water, December 1987.
[2]Allowable headworks loading, see Equation 5.
[3]MAHL is the calculated minimum, or most stringent, of allowable headworks loading for each WRP.
[4]Year 2000 District data used.
[5]When % L_{avg}/MAHL is greater than 60% further local limit evaluation is needed, otherwise none.
[6]When % L_{max}/MAHL is greater than 80% further local limit evaluation is needed, otherwise none.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 43

ACTIVATED SLUDGE TOXIC POLLUTANT INHIBITION EVALUATION FOR NICKEL

	District WRP						
	Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Threshold Limit for Carbonaceous Microorganism Inhibition, mg/L[1]	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Threshold Limit for Nitrogenous Microorganism Inhibition, mg/L[1]	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Allowable Headworks Loading for Carbonaceous Microorganism Inhibition, lbs/day[2]	12,372.78	1,280.09	401.48	1,332.73	100.86	12,234.59	35,445.00
Allowable Headworks Loading for Nitrogenous Inhibition, lbs/day[2]	12,372.78	1,280.09	401.48	1,332.73	100.86	24,469.17	77,979.00
Maximum Allowable Headworks Loading (MAHL), lbs/day[3]	12,372.78	1,280.09	401.48	1,332.73	100.86	12,234.59	35,445.00
Actual Average Influent Loading (L_{avg}), lbs/day[4]	3.47	2.34	0.79	6.08	0.01	27.46	86.19
Actual Maximum Influent Loading (L_{max}), lbs/day[4]	177.78	8.94	26.99	62.64	0.57	230.81	431.34
Actual Loading vs. MAHL							
% L_{avg}/MAHL[5]	0.03	0.18	0.20	0.46	0.00	0.22	0.24
% L_{max}/MAHL[6]	1.44	0.70	6.72	4.70	0.56	1.89	1.22
Further Local Limit Evaluation	none	none	none	none	none	none	none

[1]Source: EPA 883/B-87-202, EPA Office of Water, December 1987.
[2]Allowable headworks loading, see Equation 5.
[3]MAHL is the calculated minimum, or most stringent, of allowable headworks loading for each WRP.
[4]Year 2000 District data used.
[5]When % L_{avg}/MAHL is greater than 60% further local limit evaluation is needed, otherwise none.
[6]When % L_{max}/MAHL is greater than 80% further local limit evaluation is needed, otherwise none.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 44

ACTIVATED SLUDGE TOXIC POLLUTANT INHIBITION EVALUATION FOR SILVER

	District WRP						
	Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Threshold Limit for Carbonaceous Microorganism Inhibition, mg/L[1]	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Threshold Limit for Nitrogenous Microorganism Inhibition, mg/L[1]	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Allowable Headworks Loading for Carbonaceous Microorganism Inhibition, lbs/day[2]	13,300.74	1,376.10	431.60	1,332.73	108.42	13,152.18	38,103.38
Allowable Headworks Loading for Nitrogenous Inhibition, lbs/day[2]	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Maximum Allowable Headworks Loading (MAHL), lbs/day[3]	13,300.74	1,376.10	431.60	1,332.73	108.42	13,152.18	38,103.38
Actual Average Influent Loading (L_{avg}), lbs/day[4]	3.03	1.54	0.29	2.14	0.03	9.15	30.30
Actual Maximum Influent Loading (L_{max}), lbs/day[4]	33.90	4.20	5.00	31.21	0.47	48.44	161.91
Actual Loading vs. MAHL							
% L_{avg}/MAHL[5]	0.02	0.11	0.07	0.16	0.03	0.06	0.08
% L_{max}/MAHL[6]	0.25	0.31	1.16	2.34	0.43	0.37	0.42
Further Local Limit Evaluation	none	none	none	none	none	none	none

[1]Source: EPA 883/B-87-202, EPA Office of Water, December 1987.
[2]Allowable headworks loading, see Equation 5.
[3]MAHL is the calculated minimum, or most stringent, of allowable headworks loading for each WRP.
[4]Year 2000 District data used.
[5]When % L_{avg}/MAHL is greater than 60% further local limit evaluation is needed, otherwise none.
[6]When % L_{max}/MAHL is greater than 80% further local limit evaluation is needed, otherwise none.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 45

ACTIVATED SLUDGE TOXIC POLLUTANT INHIBITION EVALUATION FOR ZINC

	District WRP						
	Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Threshold Limit for Carbonaceous Microorganism Inhibition, mg/L[1]	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Threshold Limit for Nitrogenous Microorganism Inhibition, mg/L[1]	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Allowable Headworks Loading for Carbonaceous Microorganism Inhibition, lbs/day[2]	29,152.30	3,016.11	945.96	2,665.46	237.63	28,826.70	83,514.25
Allowable Headworks Loading for Nitrogenous Inhibition, lbs/day[2]	1,457.61	150.81	47.30	133.27	11.88	1,441.33	4,175.71
Maximum Allowable Headworks Loading (MAHL), lbs/day[3]	1,457.61	150.81	47.30	133.27	11.88	1,441.33	4,175.71
Actual Average Influent Loading (L_{avg}), lbs/day[4]	510.89	26.05	7.93	41.42	4.66	233.63	1,656.41
Actual Maximum Influent Loading (L_{max}), lbs/day[4]	3,259.97	87.28	202.32	440.49	52.80	1,046.18	21,053.91
Actual Loading vs. MAHL							
% L_{avg}/MAHL[5]	15.67	17.27	16.77	31.08	39.20	16.20	39.67
% L_{max}/MAHL[6]	223.65	57.87	427.76	330.52	444.37	72.58	504.20
Further Local Limit Evaluation	needed	none	needed	needed	needed	none	needed

[1]Source: EPA 883/B-87-202, EPA Office of Water, December 1987.
[2]Allowable headworks loading, see Equation 5.
[3]MAHL is the calculated minimum, or most stringent, of allowable headworks loading for each WRP.
[4]Year 2000 District data used.
[5]When % L_{avg}/MAHL is greater than 60% further local limit evaluation is needed, otherwise none.
[6]When % L_{max}/MAHL is greater than 80% further local limit evaluation is needed, otherwise none.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 46

ACTIVATED SLUDGE TOXIC POLLUTANT INHIBITION EVALUATION FOR CYANIDE

	District WRP						
	Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Threshold Limit for Carbonaceous Microorganism Inhibition, mg/L[1]	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Threshold Limit for Nitrogenous Microorganism Inhibition, mg/L[1]	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Allowable Headworks Loading for Carbonaceous Microorganism Inhibition, lbs/day[2]	14,576.15	1,508.05	472.98	1,332.73	118.82	14,413.35	41,757.12
Allowable Headworks Loading for Nitrogenous Inhibition, lbs/day[2]	1,457.61	150.81	47.30	133.27	11.88	15,854.68	54,284.26
Maximum Allowable Headworks Loading (MAHL), lbs/day[3]	1,457.61	n/a	47.30	n/a	11.88	14,413.35	41,757.12
Actual Average Influent Loading (L_{avg}), lbs/day[4]	407.30	5.30	1.12	5.59	0.49	39.70	167.03
Actual Maximum Influent Loading (L_{max}), lbs/day[4]	890.41	26.88	2.77	12.30	1.16	487.26	360.12
Actual Loading vs. MAHL							
% L_{avg}/MAHL[5]	27.94	n/a	2.37	n/a	4.15	0.03	0.40
% L_{max}/MAHL[6]	61.09	n/a	5.86	n/a	9.79	0.41	0.86
Further Local Limit Evaluation	none	none	none	none	none	none	none

[1]Source: EPA 883/B-87-202, EPA Office of Water, December 1987.
[2]Allowable headworks loading, see Equation 5.
[3]MAHL is the calculated minimum, or most stringent, of allowable headworks loading for each WRP.
[4]Year 2000 District data used.
[5]When % L_{avg}/MAHL is greater than 60% further local limit evaluation is needed, otherwise none.
[6]When % L_{max}/MAHL is greater than 80% further local limit evaluation is needed, otherwise none.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 47

ACTIVATED SLUDGE TOXIC POLLUTANT INHIBITION EVALUATION FOR PHENOL

	District WRP						
	Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Threshold Limit for Carbonaceous Microorganism Inhibition, mg/L[1]	200.00	200.00	200.00	200.00	200.00	200.00	200.00
Threshold Limit for Nitrogenous Microorganism Inhibition, mg/L[1]	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Allowable Headworks Loading for Carbonaceous Microorganism Inhibition, lbs/day[2]	462,634.30	47,864.35	15,012.00	53,309.28	3,771.13	457,467.13	1,325,334.78
Allowable Headworks Loading for Nitrogenous Inhibition, lbs/day[2]	23,131.72	2,393.22	750.60	2,665.46	188.56	22,873.36	66,266.74
Maximum Allowable Headworks Loading (MAHL), lbs/day[3]	23,131.72	2,393.22	750.60	2,665.46	188.56	22,873.36	66,266.74
Actual Average Influent Loading (L_{avg}), lbs/day[4]	520.88	23.00	8.55	7.80	1.63	181.66	671.39
Actual Maximum Influent Loading (L_{max}), lbs/day[4]	7,319.48	69.06	21.21	18.07	3.40	413.12	1,233.99
Actual Loading vs. MAHL							
% L_{avg}/MAHL[5]	2.25	0.96	1.14	0.29	0.86	0.79	1.01
% L_{max}/MAHL[6]	31.64	2.89	2.83	0.68	1.80	1.81	1.86
Further Local Limit Evaluation	none	none	none	none	none	none	none

[1]Source: EPA 883/B-87-202, EPA Office of Water, December 1987.
[2]Allowable headworks loading, see Equation 5.
[3]MAHL is the calculated minimum, or most stringent, of allowable headworks loading for each WRP.
[4]Year *2000 District* data used.
[5]When % L_{avg}/MAHL is greater than 60% further local limit evaluation is needed, otherwise none.
[6]When % L_{max}/MAHL is greater than 80% further local limit evaluation is needed, otherwise none.

digestion inhibition is evaluated in Table 48 through Table 56.

Historical WRP Pollutant Loadings

The average and maximum loading for each POC at each District WRP is compared to the environmental criteria for the POC as delineated in the previous tables. The loading is determined from daily data for all days on which samples are taken for a particular pollutant.

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 SIUs, once identified, to apply for 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.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 48

ANAEROBIC DIGESTION TOXIC POLLUTANT INHIBITION EVALUATION FOR ARSENIC

	District Sludge Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
Anaerobic Digestion Inhibition Level, mg/L[1]	1.60	1.60	1.60	1.60
Allowable Headworks Loading (AHL), lbs/day[2]	237.42	42.47	6.78	626.65
Actual Average Influent Loading (L_{avg}), lbs/day[3]	0.07	9.49	1.34	27.21
Actual Loading Vs. AHL				
% L_{avg}/AHL[4]	0.02	22.36	19.77	4.34
Further Local Limit Evaluation	none	none	none	none

[1]Estimated inhibition threshold from literature values, 1987 USEPA Guidance.
[2]Allowable headworks loading, see Equation 6.
[3]Year 2000 data used.
[4]When % L_{avg}/AHL is greater than 60% further local limit evaluation is needed, otherwise none.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 49

ANAEROBIC DIGESTION TOXIC POLLUTANT INHIBITION EVALUATION FOR CADMIUM

	District Sludge Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digestrs
Anaerobic Digestion Inhibition Level, mg/L[1]	20.0	20.0	20.0	20.0
Allowable Headworks Loading (AHL), lbs/day[2]	251.20	52.90	8.74	732.53
Actual Average Influent Loading (L_{avg}), lbs/day[3]	0.34	0.38	0.04	3.32
Actual Loading Vs. AHL				
% L_{avg}/AHL[4]	0.13	0.72	0.48	0.45
Further Local Limit Evaluation	none	none	none	none

[1]Estimated inhibition threshold from literature values, 1987 USEPA Guidance.
[2]Allowable headworks loading, see Equation 6.
[3]Year 2000 data used.
[4]When % L_{avg}/AHL is greater than 60% further local limit evaluation is needed, otherwise none.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 50

ANAEROBIC DIGESTION TOXIC POLLUTANT INHIBITION EVALUATION FOR HEXAVALENT CHROMIUM

	District Sludge Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
Anaerobic Digestion Inhibition Level, mg/L[1]	110.0	110.0	110.0	110.0
Allowable Headworks Loading (AHL), lbs/day[2]	1,077.10	226.82	37.46	3,140.94
Actual Average Influent Loading (L_{avg}), lbs/day[3]	0.00	0.23	0.04	1.25
Actual Loading Vs. AHL				
% L_{avg}/AHL[4]	0.00	0.10	0.11	0.04
Further Local Limit Evaluation	none	none	none	none

[1]Estimated inhibition threshold from literature values, 1987 USEPA Guidance.
[2]Allowable headworks loading, see Equation 6.
[3]Year 2000 data used.
[4]When % L_{avg}/AHL is greater than 60% further local limit evaluation is needed, otherwise none.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 51

ANAEROBIC DIGESTION TOXIC POLLUTANT INHIBITION EVALUATION FOR COPPER

	District Sludge Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
Anaerobic Digestion Inhibition Level, mg/L[1]	40.0	40.0	40.0	40.0
Allowable Headworks Loading (AHL), lbs/day[2]	375.31	68.98	11.35	997.29
Actual Average Influent Loading (L_{avg}), lbs/day[3]	107.17	50.36	6.66	532.46
Actual Loading Vs. AHL				
% L_{avg}/AHL[4]	28.55	73.01	58.70	53.39
Further Local Limit Evaluation	none	needed	none	none

[1]Estimated inhibition threshold from literature values, 1987 USEPA Guidance.
[2]Allowable headworks loading, see Equation 6.
[3]Year 2000 data used.
[4]When % L_{avg}/AHL is greater than 60% further local limit evaluation is needed, otherwise none.

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TABLE 52

ANAEROBIC DIGESTION TOXIC POLLUTANT INHIBITION EVALUATION FOR LEAD

	District Sludge Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
Anaerobic Digestion Inhibition Level, mg/L[1]	340.0	340.0	340.0	340.0
Allowable Headworks Loading (AHL), lbs/day[2]	2,620.01	551.73	91.12	7,640.24
Actual Average Influent Loading (L_{avg}), lbs/day[3]	11.77	3.40	0.26	169.41
Actual Loading Vs. AHL				
% L_{avg}/AHL[4]	0.45	0.62	0.28	2.22
Further Local Limit Evaluation	none	none	none	none

[1]Estimated inhibition threshold from literature values, 1987 USEPA Guidance.
[2]Allowable headworks loading, see Equation 6.
[3]Year 2000 data used.
[4]When % L_{avg}/AHL is greater than 60% further local limit evaluation is needed, otherwise none.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 53

ANAEROBIC DIGESTION TOXIC POLLUTANT INHIBITION EVALUATION FOR MERCURY

	District Sludge Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
Anaerobic Digestion Inhibition Level, mg/L[1]	13.00	13.00	13.00	13.00
Allowable Headworks Loading (AHL), lbs/day[2]	105.40	21.49	3.46	307.31
Actual Average Influent Loading (L_{avg}), lbs/day[3]	0.14	0.07	0.02	1.62
Actual Loading Vs. AHL				
% L_{avg}/AHL[4]	0.14	0.33	0.59	0.53
Further Local Limit Evaluation	none	none	none	none

[1]Estimated inhibition threshold from literature values, 1987 USEPA Guidance.
[2]Allowable headworks loading, see Equation 6.
[3]Year 2000 data used.
[4]When % L_{avg}/AHL is greater than 60% further local limit evaluation is needed, otherwise none.

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TABLE 54

ANAEROBIC DIGESTION TOXIC POLLUTANT INHIBITION EVALUATION FOR NICKEL

	District Sludge Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
Anaerobic Digestion Inhibition Level, mg/L[1]	136.00	136.00	136.00	136.00
Allowable Headworks Loading (AHL), lbs/day[2]	1,947.36	359.32	54.61	6,038.34
Actual Average Influent Loading (L_{avg}), lbs/day[3]	3.47	8.42	0.79	113.66
Actual Loading Vs. AHL				
% L_{avg}/AHL[4]	0.18	2.34	1.46	1.88
Further Local Limit Evaluation	none	none	none	none

[1]Estimated inhibition threshold from literature values, 1987 USEPA Guidance.
[2]Allowable headworks loading, see Equation 6.
[3]Year 2000 data used.
[4]When % L_{avg}/AHL is greater than 60% further local limit evaluation is needed, otherwise none.

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TABLE 55

ANAEROBIC DIGESTION TOXIC POLLUTANT INHIBITION EVALUATION FOR SILVER

	District Sludge Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
Anaerobic Digestion Inhibition Level, mg/L[1]	65.0	65.0	65.0	65.0
Allowable Headworks Loading (AHL), lbs/day[2]	522.44	109.47	18.18	1542.96
Actual Average Influent Loading (L_{avg}), lbs/day[3]	3.03	3.68	0.29	31.40
Actual Loading Vs. AHL				
% L_{avg}/AHL[4]	0.58	3.36	1.59	2.04
Further Local Limit Evaluation	none	none	none	none

[1]Estimated inhibition threshold from literature values, 1987 USEPA Guidance.
[2]Allowable headworks loading, see Equation 6.
[3]Year 2000 data used.
[4]When % L_{avg}/AHL is greater than 60% further local limit evaluation is needed, otherwise none.

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TABLE 56

ANAEROBIC DIGESTION TOXIC POLLUTANT INHIBITION EVALUATION FOR ZINC

	District Sludge Processing WRP			
	Calumet Digesters	Egan Digesters	Hanover Park Digesters	Stickney Digesters
Anaerobic Digestion Inhibition Level, mg/L[1]	400.00	400.00	400.00	400.00
Allowable Headworks Loading (AHL), lbs/day[2]	3,961.17	927.16	152.07	11,084.59
Actual Average Influent Loading (L_{avg}), lbs/day[3]	510.89	67.47	7.93	1,689.08
Actual Loading Vs. AHL				
% L_{avg}/AHL[4]	12.89	7.28	5.22	15.24
Further Local Limit Evaluation	none	none	none	none

[1]Estimated inhibition threshold from literature values, 1987 USEPA Guidance.
[2]Allowable headworks loading, see Equation 6.
[3]Year 2000 data used.
[4]When % L_{avg}/AHL is greater than 60% further local limit evaluation is needed, otherwise none.

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 person who:

1. Is subject to the 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). A 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, 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 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 denial. The District's 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; and
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 Ordinance, during the review and until a

final administrative decision by the District. Table 57 lists the current SIUs by category.

Detailed in Appendix AVIII are the 1998 industrial metal loadings from the SIUs under each point source category. Detailed in Appendix AIX are the 1998 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 discharges to the collection system to protect the health and safety of workers at the District's WRPs. Specifically, Appendix AII, 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 their nature are sufficient to cause fire or explosion or are injurious in any other way to the sewerage system or the operation of the WRPs.
2. Any wastestream having a closed cup flash point less than 140 degrees Fahrenheit (60 degrees Centigrade) using the test methods specified in 40 CFR Part 261.21.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 57

SIGNIFICANT INDUSTRIAL USERS BY CATEGORY

Category	Description	SIUs per Category
410	Textile Mills	3
413	Electroplating	83
414	Organic Chemicals	12
415	Inorganic Chemicals	14
420	Iron & Steel	17
421	Nonferrous Metal Manufacturing	1
425	Leather Tanning And Finishing	2
430	Pulp & Paper	2
433	Metal Finishing	170
437	Centralized Waste Treatment	5
439	Pharmaceuticals	3
442	Transportation Equipment Cleaning	11
455	Pesticides	1
463	Plastics Molding & Forming	19
464	Metal Molding & Casting	2
465	Coil Coating-Can Making	10
466	Porcelain Enameling	1
467	Aluminum Forming	3
468	Copper Forming	3
471	Nonferrous Metal Forming	4
SIU	NON-CATEGORICAL SIUs	156
TOTAL (AS OF 3/18/02):		507

3. Noxious or malodorous liquids, gases or substances which 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 process of the WRPs.

5. Garbage not ground or comminuted to 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 Part 20 and 32 Illinois Administrative Code Part 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 WRPs.

8. Waters or wastes containing substances which are not amenable to treatment or reduction by

the sewage treatment process to such degree that the WRP's effluent cannot meet the requirements of other agencies having jurisdiction over discharge to the receiving waters.

9. Excessive discoloration which threatens District operations.

10. Pollutants which 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.

DESIGNATION AND IMPLEMENTATION OF LOCAL LIMITS

Local limits are calculated as site-specific for each WRP. Variations are caused by differences in treatment processes, pollutant removal efficiencies, receiving water discharge standards, sludge disposal methods and domestic wastewater pollutant background concentrations. The MAHL is calculated for each pollutant using the applicable standards and criteria to be met by the WRP, and its pollutant removal efficiencies. Only a portion of the MAHL for each pollutant 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 in most cases. The background contributions, Table 58, of pollutants are subtracted from the MAHL to determine the maximum allowable industrial loading (MAIL) for each POC (Equation 8). Local limits in milligrams per liter are then calculated by dividing the MAIL by the total industrial flow into the WRP (Equation 9).

Equation 8: Maximum Allowable Industrial Load Calculation

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

where,

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TABLE 58

BACKGROUND/DOMESTIC LOADING

Pollutant	Chicago Water Pollutant Concentration, (mg/L)	Load at District WRP (lbs/day)						
		Calumet	Egan	Hanover Park	Kirie	Lemont	North Side	Stickney
Arsenic	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cadmium	0.001	1.746	0.206	0.065	0.230	0.017	2.010	5.525
Chromium, total	0.034	59.349	7.015	2.200	7.832	0.590	68.355	187.850
Hexavalant chromium	0.002	3.125	0.369	0.116	0.412	0.031	3.599	9.890
Copper	0.002	2.618	0.309	0.097	0.346	0.026	3.016	8.287
Lead	0.003	5.237	0.619	0.194	0.691	0.052	6.031	16.575
Iron, total	0.003	5.237	0.619	0.194	0.691	0.052	6.031	16.575
Fluoride	0.994	1735.089	205.094	64.330	228.969	17.243	1998.378	5491.850
Mercury	0.000	0.698	0.083	0.026	0.092	0.007	0.804	2.210
Molybdenum	0.008	13.964	1.651	0.518	1.843	0.139	16.084	44.200
Nickel	0.003	4.364	0.516	0.162	0.576	0.043	5.026	13.812
Selenium	0.003	4.713	0.557	0.175	0.622	0.047	5.428	14.917
Silver	0.001	1.746	0.206	0.065	0.230	0.017	2.010	5.525
Zinc	0.015	26.183	3.095	0.971	3.455	0.260	30.157	82.875
Ammonia[1]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cyanide	0.002	3.491	0.413	0.129	0.461	0.035	4.021	11.050
Phenol	0.002	3.655	0.432	0.136	0.482	0.036	4.210	11.569
FOG[1]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Average WRP Flow, MGD		255.17	26.4	8.28	31.96	2.08	252.32	731.00
Average Industrial Flow, MGD		45.87	1.66	0.52	4.34	0.00	11.26	68.53
Average Domestic Flow, MGD[2]		209.3	24.74	7.76	27.62	2.08	241.06	662.47

[1]Non-Detectable amounts were evaluated as if they were the value of the detection limit.

[2]Domestic flow is the difference between the WRP influent flow and the industrial flow.

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 9: 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 Loading, lbs/day

Q_{IND} = Total Flow from Industrial Sources, MGD

8.34 = Unit Conversion Factor

Compliance History

Table 59 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

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TABLE 59

ANNUAL ENFORCEMENT ACTIONS

Year	Cease & Desist Orders/Amendments	Board Orders	Legal Action
1996	657	6	139
1997	618	8	110
1998	512	4	70
1999	595	6	58
2000	463	8	0
2001	462	2	0

discharges which were determined to be significant violators of applicable pretreatment standards or other requirements.

The following table, Table 60, lists the number of users which were published locally in 2000 and 2001 by the District to identify a user's compliance status with the District's Sewage and Waste Control Ordinance in 1999 and 2000. A user's compliance status was identified as exemplary (no violations), consistent (minor violations), or in significant noncompliance (significant, chronic or acute violations). The Table indicates an annual increase in the number of users listed in compliance and a decrease 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.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 60

COMPLIANCE STATUS

Compliance Status	Users Published in 2000	Users Published in 2001
Exemplary	256	267
Consistent	212	208
Significant Noncompliance	82	74

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). 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 obtained and analyzed and data is accessed by the Enforcement Section to determine compliance with the Septic Tank, Cesspool and Chemical Toilet Wastes Disposal Ordinance pollutant loading limits. The

current sampling protocol attempts collection from at least 30 percent of loads from each waste hauler per calendar year.

Expansion and Growth Allowance

The industrial base within the District's jurisdiction has shown a steady decline since the early 1990's. Since 1996 the number of SIUs has declined 13 percent. Table 61 reflects the actual number of SIUs under the District's jurisdiction from 1996 through 2001.

The industrial decline as a result of closure 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 U. S. Census Bureau, the population of the Chicago metropolitan area grew by 869,000 (11.6 percent) between 1990 and 2000, the largest decade of growth in 30 years. A gain of 112,000 in the City of Chicago was the first in more than 50 years.

Evaluation of Pollutants

ARSENIC

Arsenic is currently not regulated under a local limit. Arsenic is evaluated at each of the District's seven activated sludge WRPs. The technically based evaluation considers water

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TABLE 61

SIGNIFICANT INDUSTRIAL USERS

Year	Number of SIUs
1996	588
1997	554
1998	535
1999	534
2000	533
2001	511

quality, sludge quality and biological inhibition. The allowable headworks loadings are determined for each environmental criterion. The effluent derived MAHLs are compared to the average and maximum historical influent loadings. The sludge arsenic concentrations are compared to the 40 CFR Part 503.13 sludge standard.

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 sludge quality evaluation, Table 27, indicates that the arsenic loadings and arsenic concentrations in the sludges are low enough that no local limit is needed based on sludge quality.

The evaluation of activated sludge inhibition due to arsenic, Table 36, indicates that further evaluation is needed at the Stickney WRP, based upon the methodology of the 2001 USEPA Guidance. However, the historical operations of the Stickney WRP 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 are not high enough to cause anaerobic digestion

inhibition at any of the District digesters, based on the 2001 USEPA Guidance. The summary evaluation is shown on Table 48.

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

CADMIUM

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

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

The sludge quality evaluation, Table 28, indicates that the historical cadmium loadings and cadmium concentrations in the sludges are low enough that no local limit is needed based on sludge quality.

The evaluation of activated sludge inhibition due to cadmium, Table 37, indicates that the loadings are not high enough to cause inhibition at any of the District's WRPs. The headworks loadings of cadmium are not high enough to cause anaerobic digestion inhibition at any of the District digesters, see Table 49.

Based on this evaluation, the District has determined that a 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.

TOTAL CHROMIUM

Total chromium is currently regulated under a local limit. The pollutant is evaluated at each of the District's seven activated sludge WRPs. The technically based evaluation considers water quality and biological inhibition. The allowable headworks loadings are determined for each area of

concern. The effluent derived MAHLs are compared to the average and maximum influent loadings.

The effluent water quality evaluation for total chromium, Table 12, indicates that it is not necessary to further evaluate the local limit for total chromium at the District's seven WRPs relative to water quality. A local limit is not needed for total chromium to protect water quality at the District's WRPs.

The evaluation of activated sludge inhibition due to total chromium, Table 38, indicates that the loadings are not high enough to cause inhibition at any of the District's WRPs. The screening indicates that no further evaluation of the total chromium local limit is needed.

Based on this evaluation, the District has determined that a local limit for total chromium is not needed. However, because the District has historically regulated total chromium under a local limit, the District will maintain the current local 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 is evaluated at each of the District's

seven activated sludge WRPs. The technically based evaluation considers water quality and biological inhibition. The allowable headworks loadings are determined for each area of concern. The effluent derived MAHLs are 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 local limit for hexavalent chromium at the District's seven WRPs relative to water quality. A local limit for hexavalent chromium is not needed to protect water quality at the District's WRPs.

The evaluation of activated sludge inhibition due to hexavalent chromium, Table 39, 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 digesters, see Table 50.

Based on this evaluation, the District has determined that a 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 is evaluated at each of the District's seven activated sludge WRPs. The technically based evaluation considers water quality, sludge quality and biological inhibition. The allowable headworks loadings are determined for each area of concern. The effluent derived MAHLs are compared to the average and maximum influent loadings. The sludge copper concentrations are compared to the 40 CFR Part 503.13 sludge standard.

The sludge quality evaluation, Table 29, indicates that the average copper loadings at the Egan and Hanover Park WRP's digesters exceed 60 percent of the allowed headworks loadings, based upon the methodology of the 2001 USEPA Guidance. However, the post-digestion maximum copper concentrations in the sludges are well below the 40 CFR Part 503.13 sludge standard at all District sludge processing facilities. The historical operations data suggest that no limit is necessary to protect sludge quality at this time.

The evaluation of activated sludge inhibition due to copper, Table 40, indicates that further evaluation is needed at the Hanover Park, Kirie and Lemont WRPs based upon the methodology of the 2001 USEPA Guidance. However, the historical operations of the Hanover Park, Kirie and Lemont WRPs indicate that copper is not responsible for any biological inhibition. Therefore, no local limit based on activated sludge inhibition is needed. The headworks loadings of copper, Table 51, indicate that further evaluation is needed at the Egan WRP, based upon the methodology of the 2001 USEPA Guidance. However, the historical operations of the Egan WRP digesters indicate that copper is not responsible for any biological inhibition. Therefore, no local limit based on anaerobic digestion inhibition is needed.

The effluent water quality evaluation for copper, Table 14, indicates that further evaluation for both the Hanover Park and Kirie WRPs is needed. The limiting parameter is the NPDES permit monthly average limit in both cases. The uniform concentration local limit method is used to determine the local limit.

Hanover Park WRP MAHL Based Limit Calculation:

Equation 8: $L_{MAIL} = MAHI(1 - SF) - L_{DOM}$

L_{MAIL} = 20.52 lbs / day (1 – 0.10) – 0.19 lbs / day = 18.28 lbs / day

Equation 9: $C_{LOCAL\_LIMIT} = \frac{L_{MAIL}}{(Q_{IND})\ (8.34)}$

$C_{LOCAL\_LIMIT} = \frac{18.28 \text{ lbs / day}}{(0.5 \text{ MGD})\ (8.34)} = 4.38 \text{ mg / L}$

where,

MAHL = 20.52 lbs/day (from Table 14)

SF = 0.10

L_{DOM} = 0.19 lbs / day (from Table 58)

Q_{IND} = 0.5 MGD (from Table 8)

Kirie WRP MAHL Based Local Limit Calculation:

Equation 8: $L_{MAIL} = MAHL(1 - SF) - L_{DOM}$

L_{MAIL} = 120.78 lbs / day (1 – 1.10) – 0.69 lbs / day = 108.01 lbs / day

Equation 9: $C_{LOCAL\_LIMIT} = \frac{L_{MAIL}}{(Q_{IND})\ (8.34)}$

$C_{LOCAL\_LIMIT} = \frac{108.01 \text{ lbs / day}}{(4.3 \text{ MGD})\ (8.34)} = 3.01 \text{ mg / L}$

where,

MAHL = 120.78 lbs / day (from Table 14)

SF = 0.10

L_{DOM} = 0.69 lbs / day (from Table 58)

Q_{IND} = 4.3 MGD (from Table 8)

The District prefers to continue to use the same local limit throughout the seven WRP service areas. The lowest or most stringent limit will be used. The uniform allocation of the copper loading at the Kirie WRP is the most stringent.

Based on this evaluation, the District has determined that a local limit for copper is not needed. However, because the District has historically regulated copper under a local limit, the District will maintain the current local limit of 3.0 mg/L. The interference and pass-through potential of copper will continue to be monitored.

LEAD

Lead is currently regulated under a local limit. The pollutant is evaluated at each of the District's seven activated sludge WRPs, as well as the four anaerobic sludge digestion facilities. The technically based evaluation considers water quality, sludge quality and biological inhibition. The allowable headworks loadings are determined for each area of concern. The effluent derived MAHLs are compared to the average and maximum influent loadings. The sludge lead concentrations are compared to the 40 CFR Part 503.13 sludge standard.

The effluent water quality evaluation for lead, Table 15, indicates that it is not necessary to further evaluate the local limit for lead 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 sludge quality evaluation, Table 30, indicates that the lead loading at the Stickney WRP digesters exceeds 60 percent of the allowed headworks loading, based upon the methodology of the 2001 USEPA Guidance. However, the post-digestion maximum lead concentrations in the sludges are well below the 40 CFR Part 503.13 sludge standard at all District sludge processing facilities. The historical operations data suggest that no local limit is needed to protect sludge quality at this time.

The evaluation of activated sludge inhibition due to lead, Table 41, indicates that the loadings are not high enough to cause inhibition at any of the District's WRPs. The headworks loadings of lead are not high enough to cause anaerobic digestion inhibition at any of the District digesters, see Table 52.

Based on this evaluation, the District has determined that a local limit for lead is not needed. However, because 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 is evaluated at each of the District's seven activated sludge WRPs. The technically based evaluation considers water quality standards. The allowable headworks loading is determined for secondary contact water quality standards. There is no General Use standard for total iron. The effluent derived MAHLs are compared to the average and maximum influent loadings.

The effluent water quality evaluation for iron, Table 16, indicates that it is not necessary to further evaluate the local limit for iron 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.

Based on this evaluation, the District has determined that a local limit for iron is not needed. However, because the District has historically regulated iron under a local limit, the District will maintain the current local limit of

250.0 mg/L. The interference and pass-through potential of iron will continue to be monitored.

FLUORIDE

Fluoride is not currently regulated under a local limit. Fluoride is regulated by the Hanover Park WRP NPDES permit. The technically based evaluation considers the NPDES permit. The allowable headworks loading is determined for the Hanover Park WRP. The effluent derived MAHLs are compared to the average and maximum historical influent loadings.

The effluent water quality evaluation for fluoride, Table 17, indicates that further evaluation is needed for local limit consideration. The limiting parameter is the NPDES permit monthly average limit. The uniform concentration local limit method is used to determine the local limit.

Hanover Park WRP MAHL Based Limit Calculation:

Equation 8: $L_{MAIL} = MAHL(1 - SF) - L_{DOM}$

$L_{MAIL} = 100.11 \text{ lbs / day } (1 - 0.20) - 64.33 \text{ lbs / day} = 15.67 \text{ lbs / day}$

Equation 9: $C_{LOCAL\_LIMIT} = \frac{L_{MAIL}}{(Q_{IND})(8.34)}$

$$C_{LOCAL\_LIMIT} = \frac{15.67 \text{ lbs / day}}{(0.5 \text{ MGD})(8.34)} = 3.76 \text{ mg / L}$$

where,

MAHL = 100.11 lbs / day (from Table 17)

SF = 0.20

L_{DOM} = 64.33 lbs / day (from Table 58)

Q_{IND} = 0.5 MGD (from Table 8)

The recently issued NPDES permit for the Egan WRP includes an effluent fluoride discharge limit of 1.4 mg/L. However, since fluoride has never caused any operational problems at the Hanover Park WRP or at any other District WRPs, the District has appealed the Egan WRP NPDES permit fluoride limit.

As part of the appeal, the District will undertake a study encompassing WRP operations, point source contributions, commercial contributions and non-point source contributions (potable water) to develop a pollutant reduction strategy. An outline of the study plan is shown in Appendix AX. Depending upon the results of this study and the Egan WRP NPDES permit appeal, a local limit for fluoride may be considered in the future.

MERCURY

Mercury is currently regulated under a local limit. The pollutant is evaluated at each of the District's seven activated sludge WRPs. The technically based evaluation considers

water quality, sludge quality and biological inhibition. The allowable headworks loadings are determined for each area of concern. The effluent derived MAHLs are compared to the average and maximum influent loadings. The sludge mercury concentrations are compared to the 40 CFR Part 503.13 sludge standard.

The effluent water quality evaluation for mercury, Table 18, indicates that it is not necessary to further evaluate the local limit for mercury 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 sludge quality evaluation, Table 31, indicates that the mercury loadings and mercury concentrations in the sludges are low enough that no local limit is needed to protect sludge quality.

The evaluation of activated sludge inhibition due to mercury, Table 42, indicates that the loadings are not high enough to cause inhibition at any of the District's WRPs. The historical headworks loadings of mercury are not high enough to cause anaerobic digestion inhibition at any of the District digesters, see Table 53.

Based on this evaluation, the District has determined that a local limit for mercury is not needed. However,

because the District has historically regulated mercury under a local limit, the District will maintain the current local limit of 0.005 mg/L. The interference and pass-through potential of mercury will continue to be monitored.

MOLYBDENUM

Molybdenum is not currently regulated under a local limit. The pollutant is evaluated at the four anaerobic sludge digestion WRPs. The technically based evaluation considers sludge quality. The allowable headworks loadings are determined for each area of concern. The sludge molybdenum concentrations are compared to the 40 CFR Part 503.13 sludge standard.

The sludge quality evaluation, Table 32, indicates that the molybdenum concentrations in sludges are low enough that no local limit is needed to protect sludge 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 interference and pass-through potential of molybdenum will continue to be monitored.

NICKEL

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

The effluent water quality evaluation for nickel Table 19, indicates that it is not necessary to further evaluate the local limit for nickel 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 sludge quality evaluation, Table 33, indicates that the nickel loadings and nickel concentrations in the sludges are low enough that no local limit is needed to protect sludge quality.

The evaluation of activated sludge inhibition due to nickel, Table 43, indicates that the loadings are not high enough to cause inhibition at any of the District's WRPs The headworks loadings of nickel are not high enough to cause

anaerobic digestion inhibition at any of the District digesters, see Table 54.

Based on this evaluation, the District has determined that a local limit for nickel is not needed. However, because the District has historically regulated nickel under a local limit, the District will maintain the current local limit of 10.0 mg/L. 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 is evaluated at each of the District's seven activated sludge WRPs. The technically based evaluation considers water quality, sludge quality and biological inhibition. The allowable headworks loadings are determined for each area of concern. The effluent derived MAHLs are compared to the average and maximum influent loadings. The sludge selenium concentrations are 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 local limit for selenium 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 sludge quality evaluation, Table 34, indicates that the selenium loadings and selenium concentrations in the sludges are low enough that no local limit is needed to protect sludge quality.

The District will not establish a local limit for selenium at this time, as no environmental problems have been shown in the District 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 is evaluated at each of the District's seven activated sludge WRPs. The technically based evaluation considers water quality and biological inhibition. The allowable headworks loadings are determined for each area of concern. The effluent derived MAHLs are compared to the average and maximum influent loadings.

The evaluation of activated sludge inhibition due to silver, Table 44, indicates that the loadings are not high enough to cause inhibition at any of the District's WRPs. The

headworks loadings of silver are not high enough to cause anaerobic digestion inhibition at any of the District digesters, see Table 55.

The effluent water quality evaluation for silver, Table 21, indicates that further evaluation for both the Hanover Park and Kirie WRPs is necessary. The limiting parameter is the General Use water quality standard in both cases. The uniform concentration local limit method is used to determine the local limit.

Hanover Park WRP MAHL Based Limit Calculation

Equation 8: $L_{MAIL} = MAHL(1 - SF) - L_{DOM}$

$L_{MAIL} = 4.47 \text{ lbs / day} (1 - 0.10) - 0.06 \text{ lbs / day} = 3.96 \text{ lbs / day}$

Equation 9: $C_{LOCAL\_LIMIT} = \frac{L_{MAIL}}{(Q_{IND})(8.34)}$

$$C_{LOCAL\_LIMIT} = \frac{3.96 \text{ lbs / day}}{(0.5 \text{ MGD})(8.34)} = 0.94 \text{ mg / L}$$

where,

MAHL = 4.47 lbs / day (from Table 21)

SF = 0.10

L_{DOM} = 0.06 lbs / day (from Table 58)

Q_{IND} = 0.5 MGD (from Table 8)

Kirie WRP MAHL Based Limit Calculation

Equation 8: $L_{MAIL} = MAHL(1 - SF) - L_{DOM}$

$L_{MAIL} = 31.96 \text{ lbs / day} (1 - 0.10) - 0.23 \text{ lbs / day} = 28.53 \text{ lbs / day}$

Equation 9: $C_{LOCAL\_LIMIT} = \frac{L_{MAIL}}{(Q_{IND})(8.34)}$

$C_{LOCAL\_LIMIT} = \frac{28.53 \text{ lbs / day}}{(4.3 \text{ MGD})(8.34)} = 0.80 \text{ mg / L}$

where,

MAHL = 31.96 lbs / day (from Table 21)

SF = 0.10

L_{DOM} = 0.23 lbs / day (from Table 58)

Q_{IND} = 4.3 MGD (from Table 8)

The District prefers to continue to use uniform local limits throughout the seven WRP service areas. The lowest or most stringent limit is used. The uniform allocation of the silver loading at the Kirie WRP is the most stringent and would indicate the need for a local limit for silver District-wide. Since silver has never caused a problem with the operation of any of the District's WRPs, the District has determined that imposition of a local limit for silver is not warranted at the present time.

The recently issued NPDES permit for the Egan WRP includes an effluent discharge limit for silver (0.005 mg/L). The District has appealed the silver limit contained in the Egan WRP NPDES permit and has committed to a study encompassing WRP operations, point source contributions, commercial contributions and non-point source contributions to develop a pollutant reduction strategy. An outline of the study plan is shown in Appendix AX.

To address the silver issue raised by the MAHL based limit calculations for the Hanover Park and Kirie WRPs, the District is designing a Code of Management Practices (CMP) for potential silver dischargers in the Hanover Park and Kirie WRP discharge basins. The CMP is designed to reduce silver discharges without an increase in regulatory burden. The CMP relies on the principles of pollution prevention by controlling silver at the source, rather than the traditional end-of-pipe approach. The CMP is currently in the development stage.

ZINC

Zinc is currently regulated under a local limit. The pollutant is evaluated at each of the District's seven activated sludge WRPs. The technically based evaluation considers water quality, sludge quality and biological inhibition. The

allowable headworks loadings are determined for each area of concern. The effluent derived MAHLs are compared to the average and maximum influent loadings. The sludge zinc concentrations are compared to the 40 CFR Part 503.13 sludge standard.

The sludge quality evaluation, Table 35, indicates that further evaluation is needed for the Calumet and Stickney WRP digesters. The zinc loading at both WRPs exceeds 60 percent of the allowed headworks loadings. However, the post-digestion maximum zinc concentrations in the sludges are well below the 40 CFR Part 503.13 sludge standard at all District sludge processing facilities. The historical operations data suggest that no limit is necessary to protect sludge quality at this time.

The evaluation of activated sludge inhibition due to zinc, Table 45, indicates that further evaluation is needed at five of the WRPs (Calumet, Hanover Park, Kirie, Lemont and Stickney), based upon the methodology of the 2001 USEPA Guidance. However, the historical operations of the Calumet, Hanover Park, Kirie, Lemont and Stickney WRPs indicate that zinc is not responsible for any biological inhibition. Therefore, no 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 digesters, see Table 56.

The effluent water quality evaluation for zinc, Table 22, indicates that further evaluation is needed at the Hanover Park and Kirie WRPs. The limiting criteria is the General Use water quality standard. The uniform concentration local limit method is used to determine the local limit.

Hanover Park WRP MAHL Based Limit Calculation

Equation 8: $L_{MAIL} = MAHL(1 - SF) - L_{DOM}$

$L_{MAIL} = 214.92 \text{ lbs / day} (1 - 0.20) - 0.97 \text{ lbs / day} = 170.97 \text{ lbs / day}$

Equation 9: $C_{LOCAL\_LIMIT} = \frac{L_{MAIL}}{(Q_{IND})(8.34)}$

$C_{LOCAL\_LIMIT} = \frac{170.97 \text{ lbs/day}}{(0.5 \text{ MGD})(8.34)} = 41.0 \text{ mg/L}$

where,

MAHL = 214.92 lbs / day (from Table 22)

SF = 0.20

L_{DOM} = 0.97 lbs / day (from Table 58)

Q_{IND} = 0.5 MGD (from Table 8)

Kirie WRP MAHL Based Limit Calculation

Equation 8: $L_{MAIL} = MAHL(1 - SF) - L_{DOM}$

L_{MAIL} = 693.59 lbs/day(1 - 0.20) - 3.45 lbs/da y = 551.42 lbs/day

Equation 9: $C_{LOCAL\_LIMIT} = \frac{L_{MAIL}}{(Q_{IND})(8.34)}$

$$C_{LOCAL\_LIMIT} = \frac{551.42 \text{ lbs / day}}{(4.3 \text{ MGD})(8.34)} = 41.0 \text{ mg / L}$$

where,

MAHL = 6933.592 lbs./day (from Table 22)

SF = 0.20

L_{DOM} = 3.45 lbs./day (from Table 58)

Q_{IND} = 4.3 MGD (from Table 8)

Based on this evaluation, the District has determined that a local limit for zinc is not needed. 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 is evaluated at each of the District's seven activated sludge WRPs. The technically based evaluation considers water quality and biological inhibition. The allowable headworks loadings are determined for each area of concern.

The effluent derived MAHLs are 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 effluent water quality evaluation for ammonia considers both total and un-ionized ammonia. In the cases where the NPDES permit or state water quality standard is for the un-ionized form of ammonia, the standard is converted to the equivalent total ammonia standard, see Appendix AXI. In the cases where there are both un-ionized and total ammonia standards, the more stringent is used. A local limit is not needed to protect water quality at the District's WRPs.

The District will not establish a local limit for ammonia at this time, as no environmental problems have been shown in the District 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 is evaluated at each of the District's seven activated sludge WRPs. The technically based evaluation considers

water quality and biological inhibition. The complex chemistry of cyanide requires an alternate method to determine a local limit due to WAD cyanide water quality standards. Influent WAD cyanide concentrations, as well as industrial discharge loadings, do not predict effluent concentrations of the pollutant. 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. An alternative method to determine the need for a cyanide local limit based on WAD cyanide standards is used. The methodology is based on a predictable effluent WAD cyanide concentration at each WRP with respect to its effluent total cyanide concentration. The WAD cyanide effluent standards are converted into equivalent total cyanide effluent standards. This equivalent total cyanide effluent value is then used to calculate an allowable headworks loading.

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

The effluent water quality evaluation for cyanide, Table 24, indicates further evaluation is needed for the Egan WRP, based upon the methodology of the 2001 USEPA Guidance. The limiting parameter is the General Use Chronic water quality

standard. The uniform concentration local limit method is used to calculate a local limit.

Egan WRP MAHL Based Limit Calculation

Equation 8: $L_{MAIL} = MAHL(1 - SF) - L_{DOM}$

$L_{MAIL} = 17.64 \text{ lbs / day } (1 - 0.10) - 0.41 \text{ lbs / day} = 15.47 \text{ lbs / day}$

Equation 9: $C_{LOCAL\_LIMIT} = \frac{L_{MAIL}}{(Q_{IND})(8.34)}$

$C_{LOCAL\_LIMIT} = \frac{15.47 \text{ lbs / day}}{(1.66 \text{ MGD})(8.34)} = 1.12 \text{ mg / L}$

where,

MAHL = 17.64 lbs / day (from Table 24)

SF = 0.10

L_{DOM} = 0.41 lbs / day (from Table 58)

Q_{IND} = 1.66 MGD (from Table 8)

The Egan WRP maximum final effluent WAD cyanide concentration was below the site-specific NPDES permit limit for WAD cyanide at the Egan WRP. As previously discussed, the complex nature of cyanide chemistry indicates that a reduction in influent total cyanide loadings will not necessarily result in a corresponding decrease in effluent WAD cyanide concentrations. For this reason the District will maintain the current 5.0 mg/L total cyanide local limit, as this has been protective of

District operations and receiving water quality. Total cyanide and WAD cyanide concentrations in the raw sewage and final effluent will continue to be closely monitored.

PHENOL

Phenol is not currently regulated under a local limit. The pollutant is evaluated at each of the District's seven activated sludge WRPs. The technically based evaluation considers water quality and biological inhibition. The allowable headworks loadings are determined for each area of concern. The effluent derived MAHLs are 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 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 47, indicates that the loadings are not high enough to cause inhibition at any of the District'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 service area. The interference and pass-through potential of phenol will continue to be monitored.

FATS, OILS AND GREASE (FOG)

FOG is currently regulated under a local limit. The pollutant is evaluated at each of the District's seven activated sludge WRPs. The technically based evaluation considers water quality and biological inhibition. The allowable headworks loadings are determined for each area of concern. The effluent derived MAHLs are compared to the average and maximum influent loadings.

The effluent water quality evaluation for FOG, Table 26, indicates that it is not necessary to further evaluate the local limit for FOG 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.

Based on this evaluation, the District has determined that a local limit for FOG is not needed. However, because the District has historically regulated FOG under a local limit, the District will maintain the current local limit of 250 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 18 pollutants. The environmental criteria included consideration of water quality, sludge quality, biological inhibition, air emissions, worker safety and the collection system. The evaluation maintains the current limits for 16 of the pollutants evaluated and initiates study plans for 2 pollutants, silver and fluoride. Table 62 summarizes the current and recommended District local limits.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 62

SUMMARY OF RECOMMENDATIONS

Pollutant	Current Limit (mg/L)	Recommended Limit (mg/L)
Arsenic	None	None
Cadmium	2.0	2.0
Chromium, total	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	0.005	0.005
Molybdenum	None	None
Nickel	10.0	10.0
Selenium	None	None
Silver	None	None*
Zinc	15.0	15.0
Ammonia	None	None
Cyanide	5.0	5.0
Phenol	None	None
FOG	250.0	250.0

*Study of these pollutants currently in progress.

APPENDIX AI

STATE OF ILLINOIS WATER QUALITY STANDARDS

APPENDIX AI

STATE OF ILLINOIS WATER QUALITY STANDARDS

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AI-1

STATE OF ILLINOIS WATER QUALITY STANDARDS

Pollutant	State Water Quality, Secondary Contact (mg/L)	State Water Quality, General Use Acute Toxicity (mg/L)	State Water Quality, General Use Chronic Toxicity (mg/L)
Arsenic	1	0.36	0.19
Cadmium	0.15	0.02-0.03[1]	0.002
Chromium, total	n/a[2]	3.32 -3.63[1]	0.39-0.43[1]
Chromium, hexavalent	0.3	0.02	0.011
Copper	1	0.04	0.02
Lead	0.1	0.26-0.30[1]	0.06
Iron, total	2	n/a	n/a
Fluoride	n/a	1.40	1.40
Mercury	0.0005	0.0026	0.0013
Molybdenum	n/a	n/a	n/a
Nickel	1	1.00	1
Selenium	1	1.00	1
Silver	0.1	0.01	0.005
Zinc	1	1.00	1
Ammonia (un-ionized)	(0.1[3])	15.00 (0.14[3])	15 (0.025[3])
Cyanide (WAD Cyanide)	0.1	(0.022[4])	(0.010[5])
Phenol	0.3	0.10	0.1
Fats, Oils, and Greases	15	n/a	n/a

[1]Range dependent on the hardness at the specific location.
[2]Not applicable.
[3]Un-ionized ammonia standards in parenthesis.
[4]WAD cyanide standards in parenthesis.
[5]Site specific variance.

APPENDIX AII

SLUDGE QUALITY STANDARDS

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-1

SLUDGE 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]
Hexavalant 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

BIOLOGICAL INHIBITION THRESHOLDS

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AIII-1

BIOLOGICAL INHIBITION THRESHOLDS

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	10	5.2	20
Chromium, total	100	1.9	n/a[1]
Chromium, hexavalent	1	10	110
Copper	1	0.48	40
Lead	100	1.5	340
Iron, total	n/a	0.5	n/a
Fluoride	n/a	n/a	n/a
Mercury	1	n/a	13
Molybdenum	n/a	n/a	n/a
Nickel	5	5	136
Selenium	n/a	n/a	n/a
Silver	5	n/a	65
Zinc	10	0.5	400
Ammonia	480	n/a	8000
Cyanide	5	0.5	100
Phenol	200	10	n/a
Fats, Oils, and Greases	n/a	n/a	n/a

[1]Not applicable.

Source: USEPA Guidance Manual for the Development and Implementation of Local Discharge Limitations under the Pretreatment Program, December 1987.

APPENDIX AIV

SAMPLING FREQUENCY AND LOCATIONS

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AIV-1

SAMPLING FREQUENCY AND LOCATIONS

WATER RECLAMATION PLANT (WRP) INFLUENT SAMPLING SCHEDULE

WRP	Metals[1]	Copper	Total Cyanide	Mercury	Hexavalent Chromium	Ammonia	Phenol	FOG[2]	Fluoride
Calumet	daily	daily	daily	weekly	weekly	daily	daily	weekly	none
Egan	weekly	weekly	daily	weekly	weekly	daily	daily	weekly	weekly
Hanover Park	weekly	daily	daily	weekly	weekly	daily	daily	weekly	daily
Kirie	weekly	daily	daily	weekly	weekly	daily	daily	weekly	weekly
Lemont	daily	daily	weekly	weekly	weekly	daily	weekly	weekly	none
North Side	daily	daily	daily	weekly	weekly	daily	daily	weekly	weekly
Stickney	daily	daily	weekly	weekly	weekly	daily	weekly	weekly	weekly

[1]Silver, arsenic, cadmium, chromium, iron, nickel, lead, selenium, zinc.
[2]Fats, oils and greases.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AIV-2

SAMPLING FREQUENCY AND LOCATIONS

WATER RECLAMATION PLANT (WRP) EFFLUENT SAMPLING SCHEDULE

WRP	Metals[1]	Copper	Total Cyanide	Mercury	Hexavalent Chromium	Ammonia	Phenol	FOG[2]	Fluoride
Calumet	daily	daily	daily	weekly	weekly	daily	daily	weekly	none
Egan	daily	daily	daily	weekly	weekly	daily	weekly	weekly	weekly
Hanover Park	5 days/ week	5 days/ week	5 days/ week	weekly	weekly	5 days/ week	weekly	weekly	5 days/ week
Kirie	5 days/ week	5 days/ week	5 days/ week	weekly	weekly	5 days/ week	weekly	weekly	weekly
Lemont	daily	daily	weekly	weekly	weekly	daily	weekly	weekly	weekly
North Side	daily	daily	daily	weekly	weekly	daily	daily	weekly	weekly
Stickney	daily	daily	daily	weekly	weekly	daily	daily	weekly	weekly

[1]Silver, arsenic, cadmium, chromium, iron, nickel, lead, selenium, zinc.
[2]Fats, oils and greases.

APPENDIX AV

DOMESTIC/BACKGROUND WATER CONCENTRATIONS

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AV-1

DOMESTIC/BACKGROUND WATER CONCENTRATION

Parameter	Average Concentration[1] (mg/L)
Arsenic	0.004
Cadmium	0.001
Chromium	0.002
Copper	0.003
Lead	0.003
Iron	0.022
Fluoride	0.994
Mercury	0.0004
Molybdenum	0.008
Nickel	0.003
Selenium	0.003
Silver	0.001
Zinc	0.015
Cyanide	0.002
Phenol	0.002

[1]The average of composite samples at the south, central and north distribution points. The data was evaluated for 1998 and 1999. The non-detectable amounts were evaluated as if they were the value of the detection limit. Pollutants not measured in Chicago water are taken to have zero background concentration.

Data source: City of Chicago, Water Purification Laboratories, Chemistry Unit

APPENDIX AVI

METAL CONCENTRATIONS IN SLUDGE

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AVI-1

METAL CONCENTRATIONS IN SLUDGE

Pollutant	Limit	Calumet WRP			Egan WRP			Hanover Park WRP			Stickney WRP		
		2000	1999	1998	2000	1999	1998	2000	1999	1998	2000	1999	1998
Arsenic	41	8	7	7	4	4	3	4	3	3	6	4	6
Cadmium	39	4	5	4	4	4	3	3	3	2	4	5	6
Copper	1,500	330	356	331	825	778	679	793	874	830	387	390	377
Lead	300	108	119	135	46	55	55	42	48	45	139	144	163
Mercury	17	0.699	0.526	0.688	0.852	1.316	0.832	1.738	2.195	2.208	0.734	0.681	1.036
Molybdenum	75	11	13	14	20	17	14	11	10	8	14	13	22
Nickel	420	30	30	34	62	45	48	31	30	30	54	52	55
Selenium	100	12	10	13	4	4	4	5	5	4	3	3	3
Zinc	2,800	1,125	1,077	1,429	744	734	713	610	754	620	872	902	840

Average of monthly samples for each year, mg/Kg.

APPENDIX AVII

POLLUTANT CONCENTRATIONS IN RECEIVING WATERS

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AVII-1

POLLUTANT CONCENTRATIONS IN RECEIVING WATERS

Pollutant	Calumet WRP Receiving Water[1]	Lemont WRP Receiving Water[1]	Stickney WRP Receiving Water[1]
	---------Concentrations in mg/L---------		
Arsenic	0.018	0.000	0.000
Cadmium	0.000	0.000	0.000
Chromium, total	0.003	0.007	0.005
Copper	0.009	0.007	0.012
Lead	0.003	0.004	0.006
Iron, total	0.470	0.546	0.379
Fluoride	0.382	0.827	0.617
Mercury	0.00001	0.00001	0.00003
Nickel	0.003	0.002	0.005
Selenium	0.000	0.000	0.000
Silver	0.001	0.000	0.001
Zinc	0.040	0.044	0.046
Ammonia	0.307	0.336	0.843
Cyanide	0.003	0.005	0.004
Phenol	0.013	0.095	0.018

[1]The average concentration for 2000 year data in mg/L for each of the receiving waters.
The 7Q10 flow in MGD for Calumet WRP receiving water is 20.68, 1,134.93 for Lemont WRP receiving water, and 258.52 for Stickney WRP receiving water. The other District WRPs have receiving water flow of zero.

APPENDIX AVIII

INDUSTRIAL METAL LOADING BY INDUSTRY

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AVIII-1

INDUSTRIAL METAL LOADING BY INDUSTRY

USER-NO	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
10519	INDUSTRIAL COATINGS GROUP, INC	S	410	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23833	MERWITZ THEO TEXTILES INC	S	410	0.00	0.03	0.68	0.23	0.00	0.65	1.60
10654	RUBENS & MARBLE INC	N	410	0.00	0.03	0.39	0.03	0.18	1.17	1.79
10759	WESTERN PIECE DYERS/FINISHERS	S	410	0.00	1.52	129.24	7.60	0.00	117.08	255.44
TEXTILE MILLS		4 IUs		0.00	1.57	130.31	7.86	0.18	118.90	258.82
11375	A T A FINISHING CORP	N	413	0.00	14.17	6.09	9.65	0.00	2.84	32.75
13583	ACCENT METAL FINISHING CO	S	413	0.00	0.24	0.68	1.10	0.26	74.24	76.53
11340	ACCURATE ANODIZING	S	413	0.18	48.18	35.20	52.23	3.42	24.41	163.62
11166	ACE ANODIZING & IMPREGNATING INC	S	413	0.00	41.13	4.13	2.27	1.54	4.45	53.52
12145	ACE PLATING	S	413	0.21	0.01	3.73	6.03	0.00	1.67	11.65
11901	ACME FINISHING CO	K	413	0.07	0.59	2.21	0.93	0.48	25.92	30.21
11644	ACTION PLATING CO	S	413	0.00	0.00	0.02	0.01	0.00	0.05	0.08
11047	ADVANCE ENAMELING CO	S	413	0.00	0.00	0.00	0.00	0.00	0.00	0.01
13505	AL BAR - WILMETTE PLATERS	N	413	0.00	0.23	5.17	3.21	0.00	1.81	10.42
12371	ALL BRITE ANODIZING CO	S	413	0.04	15.01	22.44	15.26	1.45	3.80	58.01
13950	ALLOY CHROME INC	S	413	0.00	0.17	0.08	0.01	0.02	0.15	0.43
12006	AMBER PLATING WORKS, INC	N	413	25.97	2,011.74	1,073.80	1,716.08	4.00	2,483.22	7,314.80
13207	AMERICAN NICKEL WORKS	S	413	0.05	25.53	3.89	16.68	0.60	3.74	50.48
13103	ANODIZING SPECIALISTS LTD	K	413	0.04	13.63	4.65	4.80	0.75	15.37	39.23
12940	AQUARIUS METAL PRODUCTS CO	K	413	0.02	0.28	0.72	0.06	0.37	1.38	2.83
12920	ARLINGTON PLATING CO	EG	413	8.32	49.44	62.52	167.35	3.80	55.62	347.06
12238	AUTOMATIC ANODIZING	N	413	0.14	144.13	32.47	8.48	9.25	9.12	203.59
12961	AVIS COMMERCIAL ANODIZING	S	413	0.01	0.13	0.57	0.21	0.07	0.74	1.73
12823	BARNES PLATING CORP	S	413	0.01	0.32	2.35	7.66	0.01	1.93	12.27
13254	BELLWOOD INDUSTRIAL INC	S	413	0.05	48.88	2.29	0.76	0.00	44.47	96.45
11138	BELMONT PLATING WORKS, INC	S	413	248.96	730.34	271.00	773.42	1.00	674.74	2,699.46
10958	BERTEAU-LOWELL PLATING WORKS, INC	N	413	15.00	71.23	40.90	78.38	0.00	160.86	366.36

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AVIII-1 (Continued)

INDUSTRIAL METAL LOADING BY INDUSTRY

USER-NO	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
11892	BOBCO ENTERPRISES INC	S	413	0.12	0.37	5.16	2.52	0.04	3.06	11.27
11186	BRIGHT METALS FINISHING CO	N	413	0.04	7.35	9.50	7.14	0.99	4.09	29.11
13195	C P SYSTEMS	S	413	0.12	0.62	7.28	5.06	0.99	28.13	42.19
11807	CALCO PLATING	S	413	0.00	21.27	5.93	17.37	0.00	7.71	52.27
11576	CASTLE METAL FINISHING CORP	S	413	8.19	44.98	22.83	14.23	0.00	167.58	257.82
11548	CENTURY PLATING CO	N	413	1.24	135.63	17.08	108.42	0.00	18.01	280.38
12925	CHEM-PLATE INDUSTRIES	K	413	0.00	62.38	22.24	2.68	0.00	134.29	221.58
11084	CHICAGO ANODIZING CO	S	413	0.13	49.29	9.43	21.68	0.40	10.51	91.45
12340	CODY METAL FINISHING INC	S	413	0.16	19.44	10.05	0.85	0.03	116.15	146.68
10814	CRAFTSMAN PLATING & TINNING	N	413	101.19	128.66	306.87	63.39	21.60	233.85	855.57
11603	CRESCENT PLATING WORKS, INC	N	413	0.69	257.82	31.28	135.99	0.17	89.86	515.81
12996	CRO-MAT CO	N	413	0.00	6.11	0.14	0.02	0.00	0.16	6.43
13702	DASSINGER HARD CHROME	S	413	0.00	10.32	0.70	0.02	0.23	0.35	11.62
12929	DOVER INDUSTRIAL CHROME	N	413	0.03	9.93	3.36	2.26	3.97	5.18	24.72
12058	DYNA BURR CHICAGO INC	S	413	1.25	7.67	2.05	0.20	0.00	57.86	69.03
11852	DYNACIRCUITS MFG CO	S	413	0.29	1.17	52.35	4.68	0.00	26.03	84.52
12469	ELK GROVE PLATING	K	413	0.13	155.04	12.92	4.18	0.25	326.67	499.19
11977	EMPIRE HARD CHROME	S	413	0.21	451.55	10.98	3.38	0.84	10.13	477.10
10427	ENAMELED STEEL & SIGN CO	N	413	0.05	0.26	0.61	0.53	0.00	2.41	3.86
11855	FINISHING CO, THE	S	413	0.18	1,382.37	148.13	160.13	1.33	41.85	1,733.98
11905	FOREST PLATING CO	S	413	0.00	33.99	4.76	9.61	1.88	69.95	120.19
11990	GEM COAT INC	N	413	3.93	20.65	4.20	0.20	0.29	43.65	72.93
12648	GRAHAM PLATING WORKS	S	413	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11724	GRIFFIN PLATING CO	S	413	0.01	59.36	12.23	37.67	0.33	15.01	124.62
12184	HAUSNER HARD-CHROME INC	K	413	0.09	15.96	2.45	0.14	0.00	1.86	20.50
13308	HI-TEMP INC	S	413	0.38	14.23	48.19	29.32	0.00	200.46	292.59
10501	ILLINOIS TOOL WORKS - CHRONOMATIC	N	413	0.02	0.06	11.51	0.22	0.00	1.02	12.83
12402	INTERNATIONAL PROCESSING CO OF AMERICA	K	413	0.01	10.42	0.82	0.00	0.00	0.66	11.92

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AVIII-1 (Continued)

INDUSTRIAL METAL LOADING BY INDUSTRY

USER-NO	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
12718	INTERNATIONAL SILVER PLATING	N	413	0.00	0.03	0.51	0.05	0.00	1.24	1.84
13267	JACOB ANODIZING	N	413	0.11	22.91	26.74	3.27	3.10	17.87	74.00
11396	JENSEN PLATING WORKS INC	N	413	0.02	52.68	6.49	7.46	0.00	8.62	75.27
11397	JENSEN PLATING WORKS INC	N	413	0.04	1.25	4.17	39.20	0.00	8.23	52.89
13724	JONAS ENTERPRISES INC	S	413	0.05	28.77	2.21	0.58	0.58	4.32	36.49
11099	KALMUS & ASSOC INC	S	413	0.63	1.59	202.25	234.91	2.85	15.53	457.77
11882	KREL LABORATORIES INC	S	413	0.81	1.24	64.73	74.65	0.00	17.84	159.26
11883	KREL LABORATORIES INC	S	413	0.24	1.19	1.48	44.74	0.00	3.73	51.38
10797	LAKE CITY PLATING WORKS	S	413	0.00	0.76	0.20	0.39	0.00	1.27	2.63
11064	MECH-TRONICS	S	413	0.24	26.33	21.17	4.89	1.97	34.45	89.05
13483	MEISEL PLATING CO	S	413	0.00	1.17	3.52	7.16	0.27	3.36	15.49
12951	MIDWEST METAL FINISHING	S	413	0.03	0.18	3.22	2.36	0.34	2.16	8.28
13289	MIKE'S ANODIZING	S	413	0.05	3.65	9.13	1.83	0.00	6.39	21.06
19614	NOBERT PLATING CO	S	413	0.00	1.06	170.15	149.93	3.04	56.06	380.24
12622	NOBERT PLATING CO	S	413	0.03	1.16	14.48	24.72	4.11	5.44	49.94
12461	NORTHWESTERN PLATING WORKS	S	413	0.13	47.67	51.87	9.71	0.60	87.82	197.80
12979	OMNI-CIRCUITS INC	N	413	0.00	4.55	333.07	2.88	0.00	12.70	353.19
11140	P & H PLATING CO INC	N	413	0.47	46.79	78.22	64.28	1.89	127.14	318.81
12126	PERFECTION PLATING INC	K	413	0.08	1.84	53.54	29.78	0.92	6.78	92.94
11920	PETERSEN FINISHING CORP	S	413	0.00	5.29	20.40	9.32	0.00	12.34	47.36
13153	PIONEER PLATING CO INC	S	413	0.63	41.90	8.04	5.36	0.18	174.29	230.39
10799	PLATING SERVICE CO	N	413	0.05	19.46	8.54	60.10	0.15	86.69	174.99
13721	PRECISE FINISHING CO INC	S	413	0.96	0.75	11.85	12.97	0.00	4.00	30.53
13110	PRECISION FINISHING	N	413	0.01	0.70	3.76	4.09	0.13	1.48	10.17
12127	PRECISION PLATING CO	N	413	0.25	12.98	134.55	332.10	13.01	23.78	516.66
13115	R C INDUSTRIES INC	S	413	0.21	1.04	7.18	5.39	0.00	9.74	23.55
12599	REINEWALD PLATING	N	413	0.48	1.83	34.23	145.23	0.55	18.88	201.19
11241	RELIABLE PLATING CORP	S	413	21.56	173.72	51.36	64.16	0.00	17.35	328.16
11031	RIVERDALE PLATING & HEAT TREATING, INC	C	413	0.96	123.19	8.64	4.48	0.32	909.02	1,046.60

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AVIII-1 (Continued)

INDUSTRIAL METAL LOADING BY INDUSTRY

USER-NO	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
11339	SAPORITO C J PLATING CO	S	413	78.80	128.80	52.76	45.87	5.17	191.22	502.63
12968	SCIENTIFIC PLATING	S	413	0.00	12.03	89.75	34.41	14.20	9.87	160.25
12394	SCOTT PLATING INC	N	413	0.04	15.02	0.34	3.28	0.01	15.85	34.54
11951	SKILD PLATING CORP	S	413	0.03	0.80	1.43	4.88	0.00	24.40	31.55
13063	SOUTHWESTERN POLISHING & PLATING	S	413	0.00	0.17	3.34	4.16	0.02	2.44	10.13
11487	SPECIFIED PLATING CO	S	413	0.20	34.10	4.67	1.62	0.10	134.57	175.26
11799	STERLING LABS INC	S	413	0.04	0.60	22.83	57.77	0.10	11.05	92.39
11014	SUPERIOR FINISHERS INC	N	413	0.00	0.30	0.32	0.10	0.00	0.89	1.61
12778	T W R SERVICE CORP	S	413	0.23	1.30	20.50	26.50	1.53	61.83	111.88
13233	U S PLATING CO	S	413	105.74	121.00	171.61	245.97	0.00	269.15	913.47
11380	UNITED METAL FINISHERS INC	S	413	0.15	18.60	15.76	1.49	0.22	71.11	107.33
13003	UNIVERSAL METAL FINISHING	S	413	0.06	9.72	89.96	7.32	0.00	13.38	120.46
13053	V P PLATING & PARISO INC	S	413	1.41	22.44	34.43	45.46	4.07	32.31	140.12
13340	WEST TOWN PLATING INC	S	413	0.21	256.90	47.49	80.82	2.33	28.13	415.88
10760	WESTERN RUST-PROOF CO	N	413	0.29	134.99	14.01	14.01	4.86	53.77	221.94
11701	YALE POLISHERS & PLATERS INC	S	413	0.04	4.77	6.30	13.91	0.00	3.84	28.86
ELECTROPLATING		95 IUs		632.83	7,509.53	4,249.17	5,430.01	126.98	7,809.35	25,757.87
12320	AKZO NOBEL CHEMICALS, INC	S	414	1.40	16.78	61.54	62.94	8.39	195.81	346.87
13513	ASHLAND CHEMICAL INC	C	414	0.00	0.18	4.94	0.35	0.00	67.93	73.40
13603	CHICAGO SPECIALTIES INC	C	414	7.25	115.11	103.69	114.98	10.49	494.52	846.03
10204	HALL CO THE C P	S	414	0.15	0.59	5.60	0.88	0.00	11.06	18.28
10157	KOPPERS INDUSTRIES INC	S	414	0.00	3.41	72.92	11.57	0.10	228.77	316.77
10593	NALCO CHEMICAL CO. - 66TH PLACE	S	414	8.21	36.95	271.00	45.17	0.00	1,133.26	1,494.59
10888	PELRON CORP	S	414	0.38	0.00	6.70	0.00	0.00	15.51	22.59
11429	REGIS TECHNOLOGIES INC	N	414	0.00	2.37	3.06	0.92	0.00	8.71	15.05
25293	SUN CHEMICAL CORP	N	414	0.00	0.00	2.80	0.12	0.00	15.20	18.11
11464	U O P CO.	S	414	0.00	4.30	28.78	119.43	0.00	62.72	215.23
USER-NO	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
10720	UNION CARBIDE CORP - UCAR EMULSION	C	414	0.08	0.42	3.14	0.51	0.25	16.44	20.85

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AVIII-1 (Continued)

INDUSTRIAL METAL LOADING BY INDUSTRY

10918	WITCO CORP	S	414	1.47	2.95	7.37	22.10	0.00	41.25	75.13
24955	J L M CHEMICALS INC	C	414D	0.96	44.06	103.93	10.54	5.75	538.31	703.54
ORGANIC CHEMICALS		13 IUs		19.91	227.11	675.46	389.50	24.98	2,829.49	4,166.44
10182	P V S CHEMICALS INC (ILLINOIS)	C	415	0.00	0.79	0.00	0.00	0.00	0.00	0.79
INORGANIC CHEMICALS		1 IU		0.00	0.79	0.00	0.00	0.00	0.00	0.79
13468	CLARK REFINING & MARKETING	C	419	5.57	50.11	233.86	94.66	33.41	779.53	1,197.13
PETROLEUM REFINING		1 IU		5.57	50.11	233.86	94.66	33.41	779.53	1,197.13
12254	ACME STEEL - CHICAGO FURNACE PLANT	C	420	8.04	8.04	172.86	76.38	249.24	1,230.10	1,744.65
12255	ACME STEEL - COKE PLANT	C	420	0.75	0.75	15.01	4.50	0.00	39.78	60.80
12253	ACME STEEL - RIVERDALE PLANT	C	420	0.00	19.00	97.38	68.88	0.00	406.14	591.39
25378	ALLIED TUBE & CONDUIT	C	420	0.18	1.96	6.95	3.56	0.00	27.09	39.75
11535	ALLIED TUBE & CONDUIT CORP	C	420	1.86	65.09	310.55	44.63	5.58	1,231.06	1,658.77
11641	GENERAL TUBE CORPORATION	C	420	0.02	0.17	0.84	0.26	0.00	2.27	3.56
10208	L T V STEEL CO	C	420	6.33	25.31	70.08	25.51	14.87	679.60	821.70
24771	METAL-MATIC INC	S	420	0.09	0.09	6.60	0.95	0.00	6.55	14.28
10766	MIDWAY WIRE INC	S	420	0.90	5.41	27.03	10.81	69.38	436.99	550.51
25052	NACME STEEL PROCESSING LLC	C	420	0.32	6.92	3.70	4.99	0.00	23.02	38.95
24508	RELIANT BOLT	S	420	2.74	0.98	3.53	0.78	0.00	7.25	15.28
15095	REPUBLIC ENGINEERED STEELS INC	C	420	0.00	0.00	0.00	0.00	0.00	26.90	26.90
14438	RYERSON COIL PICKLING DIV	C	420	0.66	7.28	10.70	9.71	2.43	49.20	79.98
13141	S & D WIRE CO INC	C	420	0.00	0.00	0.66	0.08	0.00	0.69	1.43

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AVIII-1 (Continued)

INDUSTRIAL METAL LOADING BY INDUSTRY

USER-NO	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
12451	STEEL COMPANY	C	420	0.00	2.06	9.03	3.87	0.00	9.37	24.33
10134	THOMPSON STEEL CO	S	420	0.03	0.00	0.75	0.14	0.00	2.99	3.91
10132	WHEATLAND TUBE CO	S	420	0.20	1.88	17.93	3.27	25.11	332.50	380.88
IRON & STEEL		17 IUs		22.13	144.94	753.59	258.31	366.60	4,511.51	6,057.08
10536	KRAMER, H & CO	S	421D	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NONFERROUS METAL MANUFACTURING		1 IU		0.00	0.00	0.00	0.00	0.00	0.00	0.00
11837	GUTMANN LEATHER CO, INC	S	425	0.54	7,767.51	31.95	16.25	0.00	61.20	7,877.46
10487	HORWEEN LEATHER CO	S	425	1.55	2,096.44	49.67	21.73	0.00	71.41	2,240.81
LEATHER TANNING & FINISHING		2 IUs		2.09	9,863.95	81.63	37.98	0.00	132.61	10,118.26
13242	CHICAGO PAPERBOARD	S	430	0.86	5.15	34.32	9.01	1.29	187.05	237.67
24943	F S C CORP	C	430	15.06	60.25	436.80	150.62	15.06	4,337.83	5,015.62
25044	WISCONSIN TISSUE MILLS; CHGO OPERATION	C	430	7.50	44.98	239.88	67.47	7.50	554.71	922.02
PULP & PAPER		3 IUs		23.42	110.37	710.99	227.09	23.85	5,079.60	6,175.32

USER-NO	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
25290	ABOVE & BEYOND BLACK OXIDE INC	S	433	0.00	0.13	0.23	0.12	0.20	0.81	1.49
13350	ACCO BRANDS, INC	K	433	0.00	0.00	2.48	0.00	0.00	3.91	6.39
11427	ALAMO GROUP (IL) INC	S	433	0.03	0.09	0.55	0.08	0.00	1.92	2.67
12749	ALANSON MFG CO	S	433	1.68	3.15	0.42	0.09	0.02	9.41	14.76
25314	AMCO CORP DIV OF LEGGETT & PLATT	S	433	0.06	1.67	2.38	0.60	0.00	34.07	38.77
15939	AMCO ENGINEERING CO	S	433	0.03	0.06	1.81	0.06	0.00	2.65	4.60
13351	AMERICAN NAMEPLATE CO	S	433	0.04	3.37	8.81	2.18	0.29	12.41	27.10
10273	AMERICAN PLATING	S	433	0.13	0.05	24.26	28.17	0.00	12.37	64.98
11364	AMERICAN PRECISION CASTINGS	S	433	0.04	0.03	0.47	0.08	0.00	3.49	4.12
11172	AMERICAN RIVET CO	S	433	0.46	5.47	4.98	1.90	1.98	34.06	48.85

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AVIII-1 (Continued)

INDUSTRIAL METAL LOADING BY INDUSTRY

24468	AMERICAN STANDARD CIRCUITS INC	S	433	0.11	0.00	123.50	8.24	10.04	9.51	151.39
15689	AMITRON CORP	K	433	0.45	8.10	679.16	13.04	35.98	33.73	770.46
25379	AMPEL INC.	K	433	0.03	0.39	5.81	0.19	1.54	0.90	8.85
13090	ANCHOR METAL FINISHING CO	S	433	0.00	0.14	1.47	0.19	0.30	9.12	11.22
10988	ANDREW CORP	C	433	0.00	0.00	108.74	3.96	18.05	83.20	213.95
24886	ANDREW CORP	C	433	0.00	0.26	43.97	0.52	8.01	32.66	85.42
10283	ARMSTRONG TOOLS, INC	N	433	0.00	0.18	1.00	4.01	0.00	1.84	7.04
12831	B & T POLISHING INC	S	433	0.04	2.29	11.18	18.30	0.00	18.93	50.75
13048	BLACKSTONE MFG CO	S	433	0.00	6.53	8.63	0.47	0.00	48.50	64.13
11203	BLOCK & COMPANY INC	N	433	0.03	0.05	0.63	0.09	0.00	0.59	1.39
15980	BODINE ELECTRIC CO	N	433	0.16	2.30	67.63	3.45	0.00	86.02	159.56
25009	BOEING PRECISION GEAR INC	S	433	0.17	0.95	5.24	0.43	0.00	15.30	22.08
10311	BORG WARNER AUTOMOTIVE INC	S	433	0.43	3.54	7.12	4.04	0.22	19.51	34.86
10312	BOYE NEEDLE CO	N	433	0.00	0.01	0.98	12.23	0.18	2.35	15.75
11898	BRETFORD MFG INC	S	433	0.06	0.75	2.80	0.69	0.69	13.18	18.17
11260	BRETFORD MFG INC	S	433	0.00	0.00	1.85	0.33	0.00	1.52	3.70
10314	BREUER ELECTRIC MFG CO	S	433	0.00	0.02	0.37	0.09	0.00	1.35	1.82
25265	BRIJEN ELECTRONICS	K	433	0.01	0.03	3.54	0.06	0.03	0.30	3.96
15695	BRISKIN MFG CO	S	433	0.06	0.56	3.57	0.56	73.62	133.70	212.09
10870	BRISKIN MFG. CO.	S	433	0.06	0.95	5.52	1.01	12.88	37.17	57.59

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AVIII-1 (Continued)

INDUSTRIAL METAL LOADING BY INDUSTRY

USER-NO	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
25289	C M P ANODIZING	K	433	0.04	8.03	4.21	1.13	0.19	2.85	16.45
12027	CAST PRODUCTS	N	433	0.02	19.17	2.40	8.53	0.00	5.14	35.27
21828	CENTRAL STEEL FABRICATORS INC	S	433	0.01	0.00	1.04	0.17	0.00	1.76	2.98
11256	CHICAGO ALLIS MFG	S	433	0.00	1.01	6.45	10.88	3.22	65.47	87.02
10342	CHICAGO FAUCET CO	S	433	0.33	337.78	237.59	536.87	3.72	149.21	1,265.50
10347	CHICAGO HARDWARE & FIXTURE	S	433	0.00	0.26	0.94	0.29	0.03	7.54	9.07
12808	CHICAGO NAME PLATE CO	K	433	0.00	3.63	6.07	2.20	0.00	4.30	16.20
13354	CHILO MFG & PLATING CO INC	S	433	0.36	0.12	36.35	33.13	0.00	21.65	91.60
12711	CHRIS INDUSTRIES INC	N	433	0.00	0.23	1.27	0.17	0.06	1.30	3.03
14522	CIRCUIT ETCHING TECHNICS INC	K	433	0.03	0.21	109.85	0.23	1.56	1.90	113.78
12128	CIRCUIT SYSTEMS, INC.-PLANT 1	K	433	0.01	1.39	267.87	34.54	8.39	182.34	494.53
14472	CIRCUIT SYSTEMS, INC.-PLANT 2	K	433	0.62	1.24	166.05	70.63	0.00	71.87	310.41
10279	CLAD-REX INC	S	433	0.10	0.31	1.02	0.44	0.00	5.74	7.61
15230	COMMERCIAL FINISHES CO INC	K	433	0.02	0.03	0.22	0.17	0.00	0.93	1.38
16977	COOPER FREDERICK LAMPS INC	N	433	0.00	0.47	68.05	0.53	0.00	19.87	88.93
10397	DAUBERT CHEMICAL CO INC	S	433	0.00	0.03	0.90	12.91	0.00	4.47	18.31
24089	DEHLER MFG CO INC	N	433	0.02	6.71	0.82	0.00	0.00	2.63	10.19
10844	DEMUTH STEEL PRODUCTS CO	S	433	0.00	0.05	0.18	0.04	0.00	0.40	0.67
14650	DOWNEY B L CO INC	S	433	0.00	0.51	3.71	53.43	0.19	87.92	145.76
13627	EAGLE ELECTRONICS	H	433	0.00	0.45	30.22	4.49	4.19	6.28	45.64
24378	EDSAL MANUFACTURING CO	S	433	0.00	0.00	2.22	0.00	0.00	5.08	7.30
11406	EDSAL MFG CO	S	433	0.14	0.14	5.11	1.42	2.27	11.21	20.30
23655	ELECTRO-CIRCUITS INC	H	433	0.13	0.13	88.23	4.58	0.88	5.52	99.48
24756	ELECTRONIC INTERCONNECT CORP	K	433	0.13	1.28	157.05	1.53	3.19	6.77	169.95
12222	ELECTRONIC PLATING CO	S	433	4.02	44.17	27.38	49.28	0.00	159.52	284.36
25451	ELECTROPLATED METAL SOLUTIONS	N	433	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11495	ENAMELERS & JAPANNERS INC - ELSTON	N	433	0.00	0.00	0.43	0.11	0.00	4.00	4.54
15546	EN-CHRO PLATING INC	S	433	0.03	49.77	3.27	11.08	0.52	2.47	67.14
14287	ENGIS CORP	K	433	0.00	0.00	1.40	12.28	0.00	2.12	15.81

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AVIII-1 (Continued)

INDUSTRIAL METAL LOADING BY INDUSTRY

USER-NO	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
25323	ETCH-A-DIE	N	433	0.00	1.32	0.45	0.05	0.00	0.98	2.80
25365	EX-CELL METAL PRODUCTS	S	433	0.00	0.00	0.00	0.00	0.00	0.58	0.58
15525	FAIL SAFE LIGHTING SYSTEMS INC	S	433	0.00	0.11	1.59	0.85	0.00	3.71	6.25
11212	FILMCOTE INC	S	433	0.00	1.04	0.66	5.51	0.00	0.41	7.62
24826	FINISHING CO, INC, THE	S	433	0.06	0.09	1.70	0.41	0.00	4.40	6.66
25367	FLUID MANAGEMENT	K	433	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24805	FOCAL POINT LLC	C	433	0.00	1.32	2.34	1.65	0.00	22.99	28.30
13389	FORD MOTOR CO - CHICAGO ASSEMBLY PLANT	C	433	1.79	7.64	31.17	185.95	80.96	610.78	918.29
11350	FORMWELL CORP	S	433	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13338	FOTO FABRICATION CORP	N	433	0.00	0.83	26.19	6.15	0.45	14.13	47.75
10439	FRAMBURG AND CO	S	433	0.03	0.16	32.62	25.65	0.03	10.83	69.32
12719	GATTO INDUSTRIAL PLATING	S	433	0.22	8.68	59.67	10.69	0.00	119.12	198.38
25242	GENERAL CIRCUIT D/B/A DELTA PRECISION	K	433	0.05	0.21	72.43	0.31	0.52	3.84	77.36
25221	GENERAL FASHION ENTERPRISES INC	N	433	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13401	GENERAL FIRE EXTINGUISHER CO	N	433	0.04	0.93	4.24	2.59	0.00	4.92	12.72
13393	GENERAL MOTORS - ELECTRO MOTIVE	S	433	0.00	0.72	25.24	3.61	0.00	81.49	111.06
12197	GEO-RAE CORP	S	433	0.01	0.08	0.21	0.14	0.05	2.09	2.57
11632	GRAPH-ON INC	S	433	0.01	0.02	0.09	0.02	0.01	0.16	0.31
23696	GREENLEE DIAMOND TOOL CO	S	433	0.00	0.01	1.78	8.01	0.38	5.62	15.81
10471	HANDY BUTTON MACHINE CO	S	433	0.22	28.26	17.52	8.26	0.00	82.43	136.70
11903	HAYDOCK CASTER CO	N	433	0.05	0.55	12.40	0.38	0.33	28.98	42.70
24944	HOMAK MANUFACTURING CO	S	433	0.00	0.32	4.31	0.88	0.40	16.35	22.25
11474	HU-FRIEDY MFG CO INC	N	433	0.06	29.64	11.80	11.68	0.97	5.87	60.01
25176	IDEAL CIRCUITS INC	K	433	0.00	0.03	7.24	0.19	0.05	1.02	8.54
25431	IDEAL-GERIT DRUM RING	S	433	0.00	0.00	0.39	0.50	0.00	11.10	11.98
13717	IMPERIAL PLATING CO INC	S	433	0.09	83.28	69.00	84.84	0.00	95.82	333.03
15918	INTER CONNECT SYSTEMS INC	N	433	0.00	0.01	6.62	0.08	0.00	0.43	7.14
10512	INTERMATIC INC.	N	433	0.00	0.00	0.00	0.00	0.00	0.00	0.00

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AVIII-1 (Continued)

INDUSTRIAL METAL LOADING BY INDUSTRY

USER-NO	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
10678	ITW SIGNODE	N	433	0.00	0.91	27.83	2.27	3.02	83.18	117.20
25525	J G METAL FINISHING	S	433	0.00	0.23	2.92	2.59	0.03	2.48	8.26
12424	J L O METAL PRODUCTS CO	S	433	0.28	4.54	5.74	2.13	0.00	57.21	69.90
11062	JAMES PRECIOUS METALS PLATING	N	433	0.04	0.11	29.54	2.74	0.19	1.89	34.50
11653	KLEIN TOOLS INC	N	433	0.36	40.14	9.59	3.20	0.00	254.72	308.00
24431	KNOWLES ELECTRONICS IC GROUP	N	433	0.00	0.79	2.26	0.43	0.00	7.92	11.40
15505	KOMET OF AMERICA INC	H	433	0.00	2.92	0.98	0.81	0.00	2.66	7.38
10885	LAKEWOOD ENGINEERING & MFG	S	433	0.00	1.36	7.71	0.45	0.00	55.55	65.07
12068	LITTELFUSE INC	N	433	4.77	86.62	185.95	350.44	0.00	526.84	1,154.61
12475	M P C PRODUCTS CORP	N	433	0.03	2.47	2.22	1.65	0.00	6.40	12.77
13923	MAGNETIC INSPECTION LABORATORY INC	K	433	0.07	19.71	7.06	29.49	0.00	14.26	70.59
13502	MAJOR REFLECTOR PRODUCTS CO	N	433	0.47	18.87	127.34	12.26	8.49	81.59	249.02
25413	MECO METAL FINISHING ILLINOIS LLC	K	433	0.00	5.48	15.76	3.65	0.00	5.73	30.62
24882	METAL BOX INTERNATIONAL	S	433	0.37	0.00	1.52	0.91	0.00	1.96	4.76
25253	METAL IMPACT CORP	K	433	0.05	0.23	8.55	0.36	0.00	115.39	124.58
10838	METHODE ELECTRONICS	EG	433	0.01	0.04	2.28	0.15	0.00	0.87	3.35
24154	MILTON ENTERPRISES	K	433	0.01	0.06	0.42	0.18	0.00	0.70	1.38
25498	MONTANA METAL PRODUCTS INC	K	433	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24946	MORSE AUTOMOTIVE CORP	S	433	0.00	0.06	1.54	0.60	0.00	7.63	9.82
13712	MOTOROLA INC	N	433	0.35	1.91	18.90	1.91	0.00	53.61	76.69
10448	MOTOROLA INC COMMUNICATIONS BUILDING	EG	433	0.00	5.72	50.63	1.51	5.75	176.75	240.36
10201	MULTIGRAPHICS INC	K	433	0.05	0.00	1.54	0.05	0.00	4.29	5.93
14912	NATIONAL COATING TECHNOLOGY	N	433	0.00	0.06	0.18	0.03	0.15	0.34	0.76
24395	NATIONAL TECHNOLOGY INC	EG	433	0.44	4.38	418.14	43.78	7.44	22.77	496.96
21811	NEW METAL CRAFTS INC	S	433	0.00	0.11	1.03	0.10	0.29	3.51	5.03
10987	NINA ENTERPRISES, INC	S	433	0.00	1.35	1.65	0.28	0.00	10.31	13.59
25406	NORTH AMERICAN ELECTROLESS	K	433	0.00	0.56	0.65	40.82	0.00	6.46	48.48
13548	NORTHROP CORP - GRUMMAN	EG	433	0.00	0.03	0.14	0.02	0.00	0.19	0.38

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AVIII-1 (Continued)

INDUSTRIAL METAL LOADING BY INDUSTRY

USER-NO	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
13547	NORTHROP GRUMMAN CORP	EG	433	0.00	0.73	37.81	7.18	0.00	39.15	84.86
24696	NUWAY INDUSTRIES INC	S	433	0.08	0.67	3.25	0.51	0.00	6.95	11.47
11861	OHMITE MFG CO	N	433	3.56	0.00	13.26	0.49	0.00	30.74	48.04
13124	OMEGA PLATING INC	C	433	0.00	0.14	6.17	0.33	0.47	2.05	9.16
10635	PRECISION INSTRUMENT	S	433	0.00	0.05	1.96	1.79	0.03	3.27	7.10
25159	PRINTECH CORCUIT CORP	K	433	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21463	PRO-TEC METAL FINISHING CORP	S	433	0.01	0.03	0.16	0.07	0.00	0.78	1.06
25324	PULSAR INC	S	433	0.00	0.00	0.28	0.01	0.00	0.05	0.34
13277	Q C FINISHERS INC	S	433	0.04	2.35	0.33	0.28	0.00	3.61	6.61
24330	QMA INC	K	433	0.06	0.55	123.47	1.03	0.00	4.97	130.07
10639	QUAM NICHOLS CO	S	433	0.00	0.00	1.96	0.00	0.00	10.05	12.01
15043	R & R RESEARCH D/B/A E J SOMERVILLE	S	433	0.02	15.89	0.35	0.08	0.07	0.68	17.09
11531	R S OWENS & CO	N	433	0.14	0.00	32.69	17.65	0.00	80.08	130.57
11244	READY METAL MFG CO	S	433	0.00	0.28	5.27	0.94	0.00	13.17	19.66
10645	REFLECTOR HARDWARE CORP	S	433	0.07	0.73	1.67	1.37	0.10	8.94	12.88
13232	REGENCY METAL FINISHING	K	433	0.06	11.02	2.11	1.74	0.23	13.31	28.47
12285	REHBERGER A C CO	N	433	0.02	0.02	4.59	0.36	0.21	2.75	7.95
24347	RIPPEL ARCHITECTURAL METALS INC	S	433	0.00	0.86	13.83	0.43	32.77	12.96	60.86
13581	RIXSON-FIREMARK DIV	S	433	0.04	0.14	3.74	0.20	1.62	5.37	11.11
15773	S & B FINISHING CO, INC	S	433	0.10	0.34	5.74	0.86	0.00	16.38	23.42
10670	S & C ELECTRIC CO	N	433	3.90	92.21	231.27	200.72	24.69	330.25	883.05
13202	S K HAND TOOL CORP	S	433	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10658	SAFETY SOCKET SCREW CORP	N	433	0.05	0.36	2.00	0.34	0.10	4.49	7.35
12272	SATE-LITE MFG CO	N	433	0.62	0.24	3.89	5.17	0.00	10.06	19.97
14590	SATURN PAINT & SCREEN, INC	H	433	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13574	SENIOR FLEXONICS INC	H	433	0.00	7.22	102.11	15.47	0.00	99.02	223.83
10877	SHURE BROTHERS, INC	N	433	0.05	0.00	1.85	0.18	0.00	5.03	7.10
13767	SIEMENS MEDICAL SYSTEMS INC	EG	433	0.00	0.23	5.66	0.00	0.00	9.85	15.73
25445	SKY ELECTRONICS	S	433	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10683	SLOAN VALVE CO	S	433	0.52	77.08	17.76	52.60	2.41	7.76	158.14

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AVIII-1 (Continued)

INDUSTRIAL METAL LOADING BY INDUSTRY

USER-NO	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
24585	SORINI RING MANUFACTURING CO INC	S	433	0.00	0.03	0.43	0.16	0.00	0.89	1.51
13009	SOUTH HOLLAND METAL FINISHING	C	433	3.37	7.86	22.03	0.42	0.00	19.93	53.61
14635	STAR ELECTRONICS INC	K	433	0.14	0.98	161.43	1.27	4.92	8.02	176.76
24847	STERLING LABORATORIES INC	N	433	0.03	52.33	32.84	52.52	0.06	83.56	221.33
25449	STIFFEL CO	S	433	0.25	1.76	63.92	1.76	0.00	119.54	187.23
10413	STROMBECKER CORP	S	433	0.05	0.00	0.94	0.00	0.00	7.87	8.86
10378	SUNBEAM HEALTH DIV	C	433	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25279	SUNRISE ELECTRONICS	K	433	0.04	0.11	27.41	0.19	0.61	1.95	30.31
10847	SWITCHCRAFT INC	N	433	0.29	75.59	109.98	39.13	2.88	75.80	303.67
14260	THREE J'S INDUSTRIES INC	K	433	0.89	42.72	4.21	0.18	0.35	10.09	58.44
11473	TIARA CORP	N	433	0.00	0.00	0.79	0.03	0.00	0.95	1.77
25018	TINGSTOL COMPANY	K	433	0.20	0.82	246.26	19.37	4.69	10.60	281.93
10855	TRIANGLE PACKAGE MACHINERY CORP	N	433	0.00	0.09	1.05	0.17	0.00	2.83	4.15
11616	TRILLA STEEL DRUM CORP	S	433	0.08	0.70	5.32	0.78	0.00	12.28	19.16
13992	TRI-POWDERCOATING INC	S	433	0.06	0.28	2.04	1.71	0.00	18.42	22.50
10126	TRIUMPH INDUSTRIES	S	433	0.07	3.51	3.03	1.35	0.00	72.54	80.50
24397	U S STANDARD SIGN CORP	S	433	0.01	1.23	0.42	0.12	0.00	1.37	3.15
25321	UNITECH INDUSTRIES	K	433	0.01	0.04	1.89	7.71	0.00	1.79	11.44
25231	UNITED DISPLAY CRAFT	K	433	0.06	0.24	8.88	1.47	0.00	8.02	18.68
24950	UNITED ELECTRONICS CORP	S	433	0.00	0.28	96.08	8.82	2.48	6.62	114.28
13676	UNITED RE-MANUFACTURING CO INC	S	433	0.02	9.37	1.18	0.20	0.00	4.48	15.25
10735	UNITY MANUFACTURING CO	S	433	0.13	12.07	20.39	55.41	0.00	16.10	104.11
10231	UNIVERSAL SCIENTIFIC OF ILLINOIS	K	433	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13714	V P ANODIZING INC	S	433	0.14	7.97	6.14	8.99	0.92	7.09	31.25
25294	VAPOR CORP	N	433	0.18	2.01	16.71	2.65	3.81	25.20	50.56
11522	VERTIFLEX CO	S	433	0.04	0.70	3.57	0.16	5.13	16.01	25.61
11664	WATER SAVER FAUCET CO	S	433	0.08	4.73	40.48	7.36	32.26	42.02	126.93
24597	WEB ASSEMBLY	K	433	0.07	0.56	4.13	0.39	0.30	47.01	52.46
25267	WEBER-STEPHEN PRODUCTS	EG	433	0.55	34.04	6.45	2.61	0.00	15.21	58.87
10899	WESTERN CHAIN CO	N	433	1.01	130.89	11.36	1.50	0.12	559.67	704.56

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AVIII-1 (Continued)

INDUSTRIAL METAL LOADING BY INDUSTRY

USER-NO	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
24918	WHEELING PLAZA/SUPERIOR PRINTED CIRCUITS	K	433	0.09	0.25	54.76	0.29	0.31	2.34	58.05
METAL FINISHING		182 IUs		38.16	1,770.69	5,359.73	2,418.68	435.52	6,328.37	16,351.14
25443	AMERICAN PHARMACEUTICAL	S	439	0.39	4.92	91.58	5.47	1.71	292.87	396.94
14298	MORTON GROVE PHARMACEUTICALS INC	N	439	0.49	0.33	10.13	1.52	0.00	10.62	23.08
14415	NORTHFIELD LABORATORIES INC	K	439	0.00	0.12	1.82	0.33	0.00	3.83	6.10
10671	SEARLE, G. D., A MONSANTO COMPANY	N	439	8.12	3.99	80.36	18.46	0.00	250.59	361.52
PHARMACEUTICALS		4 IUs		9.00	9.35	183.89	25.79	1.71	557.91	787.64
15126	ADVANCED PLASTIC CORP	N	463	0.00	0.10	0.37	0.10	0.00	2.43	2.99
10914	BELTONE ELECTRONICS CORP	N	463	0.00	2.51	4.16	0.46	0.00	12.67	19.80
12485	BROADVIEW INJECTION MOLDING CO	S	463	0.01	0.01	0.49	0.13	0.00	1.47	2.11
11278	CELL-PARTS MANUFACTURING CO	S	463	0.01	0.04	1.32	0.08	0.00	0.79	2.24
23932	CUSTOM PLASTICS INC	K	463	0.06	0.67	5.17	0.67	1.29	17.36	25.22
15870	EAGLEBROOK PLASTICS INC	S	463	0.07	0.29	2.98	0.29	0.00	8.49	12.12
13657	HYDRO COMPONENTS R&D CORP	S	463	0.03	0.16	0.64	0.23	0.00	2.14	3.20
12976	INPLEX INC	S	463	0.04	1.58	1.97	0.11	0.00	13.71	17.41
25342	KENTILE OPERATING CO	S	463	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13489	LIFE-LIKE PRODUCTS INC	S	463	0.00	0.08	2.16	0.00	0.00	13.13	15.37
11659	M A HANNA COLOR	K	463	0.04	0.09	2.12	0.09	0.82	3.81	6.97
11141	NORTON PERFORMANCE PLASTICS	K	463	0.32	1.75	7.78	1.73	0.00	4.15	15.75
14482	PORTH PLASTIC CO	S	463	0.03	0.36	1.17	0.06	0.06	2.27	3.94
15862	SUPERIOR AMERICAN PLASTICS	N	463	0.00	0.00	2.41	0.05	0.00	2.82	5.29
10854	SWEETHEART CUP CO	S	463	0.30	1.27	134.36	1.93	3.35	75.20	216.42
11838	TENEX CORP	K	463	1.18	0.24	5.01	0.14	0.76	12.48	19.80
15290	TIGERFLEX CORP	K	463	0.00	0.00	3.72	0.00	0.00	7.59	11.30

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AVIII-1 (Continued)

INDUSTRIAL METAL LOADING BY INDUSTRY

USER-NO	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
23899	TRIM-TEX CO	N	463	0.09	0.38	0.88	0.40	0.00	2.85	4.60
15749	WESLEY-JESSEN CORP	S	463	0.58	0.81	9.94	0.09	0.00	10.53	21.96
PLASTIC MOLDING & FORMING		19 IUs		2.76	10.35	186.64	6.57	6.28	193.91	406.52
10276	A D C LIMITED PARTNERSHIP	K	464	0.00	0.03	0.69	0.03	0.00	2.79	3.54
13268	NATIONAL CASTINGS, INC	S	464	0.01	0.51	6.27	0.81	1.09	25.44	34.13
METAL MOLDING & CASTING		2 IUs		0.01	0.54	6.96	0.84	1.09	28.24	37.67
11136	AMERICAN NATIONAL CAN CO	S	465	0.00	0.00	23.51	2.52	0.00	6.72	32.75
13330	CHICAGO FINISHED METALS	C	465	0.00	0.43	1.77	0.43	0.00	24.63	27.26
11177	LAMINATES & COMPOSITES	K	465	0.00	3.26	5.43	0.30	0.00	14.22	23.20
12353	NATIONAL MATERIAL CORP	K	465	0.16	0.25	1.64	0.98	0.51	2.91	6.45
25099	PRE FINISH METALS	K	465	0.21	253.36	9.46	489.52	0.00	695.17	1,447.71
11176	PRE FINISH METALS INC	K	465	0.38	113.09	1.67	5.67	0.00	91.08	211.88
10995	PRECOAT METALS	S	465	0.00	103.31	2.14	2.05	0.94	21.29	129.73
10679	SIGNODE CORPORATION	S	465	0.00	0.00	6.29	0.03	1.60	9.12	17.05
10770	ZEGERS INC	C	465	0.00	25.74	1.59	0.15	0.77	12.12	40.38
COIL COATING-CANMAKING		9 IUs		0.75	499.43	53.50	501.66	3.82	877.26	1,936.42
13255	DOLTON ALUMINUM CO INC	C	467	0.00	0.00	10.47	2.09	0.00	43.47	56.04
10158	WERNER CO	S	467	0.05	0.10	8.37	0.55	0.00	34.27	43.34
ALUMINUM FORMING		2 IUs		0.05	0.10	18.85	2.65	0.00	77.73	99.38
10341	CHICAGO EXTRUDED METALS	S	468	0.15	0.27	105.94	1.67	13.68	192.32	314.04
14380	CYPRUS ROD	S	468	0.11	0.64	142.38	1.29	0.00	32.44	176.86

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AVIII-1 (Continued)

INDUSTRIAL METAL LOADING BY INDUSTRY

USER-NO	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
13810	WIELAND METALS SERVICE CENTER INC	K	468	0.02	0.05	0.38	0.05	0.00	3.06	3.56
COPPER FORMING		3 IUs		0.27	0.96	248.70	3.01	13.68	227.82	494.45
10774	ZENITH ELECTRONICS CORP (RAULAND)	S	469	0.00	235.39	98.97	2.67	165.84	853.28	1,356.15
ELECTRIC & ELECTRIC PRODUCTS		1 IU		0.00	235.39	98.97	2.67	165.84	853.28	1,356.15
24910	KILOBAR COMPACTING CORP	S	471	0.15	0.01	0.01	0.00	0.00	0.08	0.24
13590	LITTON / KESTER SOLDER	S	471	0.03	0.34	0.81	0.11	1.03	12.62	14.95
25203	SINTER METALS INC	C	471	0.03	0.46	5.33	0.82	0.00	7.82	14.47
NONFERROUS METAL FORMING & METAL POWDERS		3 IUs		0.21	0.81	6.15	0.93	1.03	20.52	29.66
12223	ALBERTO CULVER FOODS	S	SIU	0.07	0.39	2.56	0.72	0.00	17.03	20.78
25369	ALBRIGHT & WILSON AMERICAS	C	SIU	0.00	5.25	30.52	5.72	0.00	94.89	136.38
15999	ALLIED HASTINGS BARREL	S	SIU	0.00	0.11	2.99	0.59	0.00	11.53	15.21
14999	ALLWASTE CONTAINER SERVICES	C	SIU	0.35	1.17	5.26	9.24	0.35	44.66	61.02
25497	AMERICAN BOTTLING	S	SIU	0.54	26.77	2.68	4.28	4.28	87.27	125.81
13544	AMERICAN INDUSTRIAL	N	SIU	0.42	5.71	31.50	2.75	0.00	47.78	88.16
15827	AMERICAN INGREDIENTS CO	C	SIU	0.00	0.00	24.97	1.00	7.66	40.62	74.24
10270	AMERICAN LICORICE CO	C	SIU	0.68	1.09	4.64	1.00	0.00	29.79	37.20
13543	AMERICAN LINEN	S	SIU	0.29	3.45	22.98	5.75	0.00	58.31	90.77
11529	AMERICAN MEAT PACKING CORP	S	SIU	0.00	0.00	23.74	2.30	0.00	85.78	111.82
14454	ANGELICA TEXTILE SVCS	S	SIU	0.29	0.00	14.94	1.44	0.00	56.88	73.54
14306	ARAMARK UNIFORM SERVICE	S	SIU	2.71	216.91	14.01	13.56	18.08	167.65	432.92
10281	ARCHIBALD CANDY CORP	S	SIU	0.39	0.49	12.68	2.35	0.14	51.34	67.39

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AVIII-1 (Continued)

INDUSTRIAL METAL LOADING BY INDUSTRY

USER-NO	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
10543	AVON PRODUCTS INC	N	SIU	0.33	0.35	31.54	1.66	2.65	189.19	225.71
12302	AZTECA FOODS INC	S	SIU	0.00	1.20	4.64	1.06	0.00	17.02	23.91
25055	BALL-FOSTER GLASS CONTAINER CO LLC	C	SIU	0.95	2.85	34.21	28.82	5.07	159.64	231.54
15872	BEAVER OIL CO INC	S	SIU	0.34	29.77	27.88	220.25	7.05	893.04	1,178.33
13079	BESSIN CORP	S	SIU	0.66	2.43	11.64	2.10	2.43	149.44	168.70
11443	BEST FOODS (CPC INTERNATIONAL)	S	SIU	1.09	8.69	54.30	11.95	5.43	194.40	275.85
23708	BLUE ISLAND GOLF COURSE/LANDFILL	C	SIU	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14065	BORDEN, INC	N	SIU	0.22	1.08	13.39	1.51	0.00	30.89	47.09
10027	BRACH & BROCK CONFECTIONS	S	SIU	10.96	21.93	274.12	27.41	8.22	2,404.07	2,746.73
13586	BRIDGFORD FOODS	S	SIU	0.00	1.19	15.02	2.14	4.00	273.43	295.78
12114	C I D RECYCLING & DISPOSAL FACILITY	C	SIU	5.31	7.84	18.72	45.02	13.40	85.49	175.78
24170	C P C FOODSERVICE	S	SIU	0.00	4.23	61.97	8.45	7.04	176.06	257.75
13774	CALUMET TANK & EQUIPMENT CO	C	SIU	0.38	2.87	9.56	4.29	0.33	76.46	93.90
11196	CAPITOL WHOLESALE MEATS	S	SIU	0.32	5.39	12.75	5.79	4.74	73.25	102.24
24684	CARGILL, INC	S	SIU	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11058	CARL BUDDIG	C	SIU	1.60	1.61	30.56	3.22	0.00	185.90	222.90
11059	CARL BUDDIG	C	SIU	0.25	0.00	9.62	0.00	0.00	56.97	66.85
13031	CARRY COMPANIES OF ILLINOIS	S	SIU	0.11	1.24	4.67	1.52	3.02	23.54	34.10
10001	CBSL TRANSPORTATION SERVICES INC	S	SIU	0.06	0.86	2.04	1.30	0.00	29.26	33.52
24258	CCL CUSTOM MFG CO	N	SIU	0.36	1.93	17.02	3.19	1.91	36.23	60.63
25272	CHICAGO BAKING CO	S	SIU	0.00	0.73	26.59	0.73	0.00	29.71	57.77
10180	CINTAS CORP	EG	SIU	1.33	8.00	98.11	5.33	25.86	212.49	351.13
15985	CINTAS CORP	S	SIU	9.12	26.74	206.03	32.40	86.50	577.84	938.63
13787	CITY OF CHICAGO - JARDINE WATER PLANT	S	SIU	28.98	1,253.22	507.08	507.08	362.20	2,716.52	5,375.08
13958	CITY OF CHICAGO-CHELTENHAM WTR FLT PLT	S	SIU	9.27	101.99	361.59	83.44	27.81	695.36	1,279.45
10142	CLEAN HARBORS SERVICES INC	C	SIU	0.62	58.87	30.89	958.70	2.69	610.88	1,662.65
24941	CLEAN HARBORS SERVICES INC	C	SIU	0.38	3.42	17.88	26.64	0.38	63.55	112.25

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AVIII-1 (Continued)

INDUSTRIAL METAL LOADING BY INDUSTRY

USER-NO	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
10168	CLOROX PRODUCTS MFG	S	SIU	0.36	0.00	11.72	3.55	0.00	28.06	43.68
14315	COCA COLA BOTTLERS, CANNERS -ALSIP	C	SIU	0.77	4.59	21.81	5.74	0.00	169.48	202.38
11606	COCA COLA BOTTLING CO - NILES	N	SIU	2.84	21.31	73.87	22.73	0.00	164.80	285.55
25417	CORN PRODUCTS INTL	S	SIU	1.12	98.41	562.56	143.43	2.79	2,209.68	3,018.00
15916	COSMOPOLITAN TEXTILE	S	SIU	0.67	2.00	16.31	10.32	0.00	42.94	72.23
15035	CROSFIELD CATALYSTS	S	SIU	2.16	32.48	55.28	248.25	42.16	109.49	489.83
24522	CULINARY FOODS	S	SIU	0.00	10.59	48.86	10.59	8.14	101.79	179.97
10809	CULLIGAN INTERNATIONAL	N	SIU	0.38	7.67	105.62	2.68	7.09	98.15	221.60
17261	DANA CONTAINER INC	S	SIU	0.35	4.77	2.02	1.96	0.66	41.81	51.57
25387	DARLING RESTAURANT SVCS DBA TORVAC	C	SIU	0.16	2.77	25.99	9.86	4.72	86.43	129.93
13681	DEN FRANCO CORP	S	SIU	0.00	0.00	3.46	0.27	0.00	15.38	19.11
15912	DENORMANDIE TOWEL & LINEN	C	SIU	0.00	3.30	23.31	3.30	0.00	598.70	628.60
24638	DOBBS INTERNATIONAL	S	SIU	0.00	0.92	19.79	1.38	0.00	40.96	63.05
24647	DOBBS INTERNATIONAL	S	SIU	0.19	0.00	21.89	0.57	0.00	18.64	41.30
13688	DOMESTIC UNIFORM RENTAL CO	N	SIU	1.48	1.73	22.88	0.87	11.01	15.09	53.06
13228	DYNAGEL INC	C	SIU	0.00	1.11	27.80	2.22	0.00	157.88	189.01
15609	ELGIN DAIRY FOODS, INC	S	SIU	0.00	0.28	5.92	0.85	0.00	14.22	21.27
10425	ELKAY MFG CO	S	SIU	0.38	7.67	19.55	6.71	0.00	47.72	82.02
10106	ENTENMANNS BAKERY	S	SIU	0.00	0.47	5.42	1.41	0.71	13.21	21.22
25246	ENVIRITE OF ILLINOIS INC	C	SIU	2.69	5.47	21.40	63.43	2.88	69.47	165.33
12837	ERICKSON COMPANY	S	SIU	0.18	7.24	28.25	5.12	29.13	321.34	391.25
11126	EVANS FOOD PRODUCTS	S	SIU	0.00	0.64	12.71	6.36	6.36	24.79	50.85
25311	FAVORITE BRANDS INTL - FARLEY DIV	N	SIU	0.40	2.02	16.60	1.62	0.81	33.20	54.67
25309	FAVORITE BRANDS INTL - FARLEY DIV	S	SIU	0.26	2.05	12.81	0.00	0.00	21.52	36.63
25310	FAVORITE BRANDS INTL - FARLEY DIV	S	SIU	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12240	FERRARA PAN CANDY CO	S	SIU	0.35	3.02	219.37	3.96	1.64	76.23	304.58
24639	FRESH EXPRESS - CHICAGO	S	SIU	0.00	1.54	9.71	1.23	0.00	28.20	40.68
13443	FROEDTERT MALT	S	SIU	0.00	14.97	82.32	24.95	0.00	376.51	498.75

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AVIII-1 (Continued)

INDUSTRIAL METAL LOADING BY INDUSTRY

USER-NO	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
10101	FUJI HUNT PHOTOGRAPHIC CHEMICALS, INC	EG	SIU	1.23	1.10	23.91	4.29	1.96	78.46	110.95
21831	G & K SERVICES	S	SIU	1.12	15.39	70.37	6.89	21.32	117.34	232.43
24783	GAMMA PHOTO LABS L L C	S	SIU	0.23	49.37	33.14	45.54	2.37	19.39	150.04
12782	GATX TERMINALS, ARGO TERMINAL	S	SIU	0.04	0.00	5.25	0.48	0.33	12.06	18.16
14573	GENERAL HEALTH CARE SERVICES	N	SIU	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25200	GLASS CRAFTERS INC	S	SIU	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13021	GRIFFITH LABORATORIES USA	S	SIU	0.00	5.74	12.92	6.60	0.00	45.63	70.89
13032	GRIFFITH LABORATORIES USA, INC	C	SIU	0.00	0.46	8.96	1.21	0.00	34.15	44.78
11133	GUERNSEY BEL INC	S	SIU	0.15	0.00	26.94	1.22	0.00	17.76	46.08
14265	HARBOR VIEW	C	SIU	0.00	1.26	0.84	1.60	1.40	2.67	7.78
10183	HARPER LEATHER GOODS	S	SIU	0.29	0.88	3.66	1.90	0.00	16.24	22.98
10597	HELENE CURTIS INC	S	SIU	0.83	9.18	23.21	5.54	1.12	53.07	92.95
13913	HENDRICKSON SPRING	S	SIU	0.29	5.21	13.62	4.06	0.00	160.51	183.68
15962	HIDDEN VALLEY RANCH	K	SIU	2.61	13.54	14.73	13.30	0.00	42.99	87.17
25136	HINCKLEY & SCHMITT	S	SIU	0.00	2.14	12.86	9.16	10.13	69.74	104.03
25137	HINCKLEY & SCHMITT	S	SIU	0.30	0.92	12.22	1.53	0.00	28.51	43.48
11319	HOME JUICE COMPANY	S	SIU	0.43	3.43	16.21	2.37	1.48	48.09	72.02
15385	HOSPITAL LAUNDRY SERVICES	N	SIU	1.47	10.31	41.88	12.52	0.00	311.68	377.87
13920	INOLEX CHEMICAL CO	S	SIU	0.00	28.27	2.19	0.36	0.00	6.75	37.58
25090	INTERSTATE BRANDS	S	SIU	0.00	0.67	10.67	1.67	5.67	16.33	35.00
11169	JAYS FOODS LLC	C	SIU	0.00	7.47	39.24	6.85	0.00	127.67	181.23
10824	JERNBERG INDUSTRIES	S	SIU	0.00	10.75	48.48	12.71	0.00	94.92	166.87
10518	JEWEL FOOD STORES	S	SIU	0.58	6.04	25.51	5.78	14.71	186.20	238.82
11414	JOHNSON PRODUCTS	C	SIU	0.44	1.32	17.61	13.21	0.00	111.41	144.00
10529	KARP'S INC	K	SIU	0.28	1.54	5.88	2.24	0.00	25.04	34.98
10577	KRAFT GENERAL FOODS, CHICAGO PLANT	S	SIU	0.00	2.59	35.74	2.59	0.00	151.79	192.71
13793	KRONOS-CENTRAL PRODUCTS, INC	S	SIU	0.00	0.40	6.80	1.47	0.00	41.84	50.50
12115	LAKE LANDFILL GAS RECOVERY	N	SIU	0.02	0.00	1.23	0.50	0.27	3.91	5.93

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AVIII-1 (Continued)

INDUSTRIAL METAL LOADING BY INDUSTRY

USER-NO	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
25416	LAND & LAKES LIQUID RECOVERY SYSTEMS	C	SIU	0.07	0.23	6.71	0.80	0.44	13.03	21.28
10926	LAWRENCE FOODS	K	SIU	0.00	0.00	9.29	0.40	0.00	23.84	33.54
13844	LSG LUFTHANSA SERVICE/SKY CHEFS, INC	S	SIU	0.61	6.05	84.15	3.63	0.00	123.50	217.94
10103	M & M MARS	S	SIU	0.00	25.96	81.14	5.41	0.00	147.13	259.64
10135	MATLACK INC	C	SIU	0.09	97.20	4.57	12.55	1.40	44.59	160.40
14086	MCCAIN CITRUS INC	S	SIU	0.00	1.36	13.55	2.26	0.00	46.98	64.15
13772	MICKEY'S LINEN & TOWEL SUPPLY INC	N	SIU	0.00	1.49	21.57	3.22	0.00	130.90	157.18
24896	MINIAT ED INC	C	SIU	0.24	1.94	18.17	1.94	0.00	140.02	162.31
15996	MORGAN SERVICES, INC	S	SIU	0.00	1.69	19.20	1.90	0.00	44.74	67.53
14095	MULLINS FOOD PRODS/PACKAGING SER	S	SIU	0.30	1.52	14.60	2.43	0.00	35.89	54.75
25079	NABISCO	N	SIU	0.21	2.68	16.07	0.62	0.00	42.65	62.22
10873	NABISCO BRANDS - CHICAGO BAKERY	S	SIU	2.38	12.79	115.50	14.17	15.56	424.15	584.56
24711	NATION PIZZA	N	SIU	0.20	2.15	31.28	3.91	3.91	139.21	180.66
15958	NATIONAL CONTAINER SERVICES	S	SIU	0.11	8.78	29.13	75.43	8.88	88.18	210.50
10753	NATIONAL STARCH & CHEMICAL CORP	S	SIU	0.26	1.58	17.10	2.10	0.00	791.65	812.69
10509	NAVISTAR INTERNATIONAL TRANS CORP	S	SIU	2.82	8.47	151.83	12.71	10.59	327.67	514.10
10698	NESTLE CHOCOLATE & CONFECTIONS	S	SIU	0.00	0.00	38.59	1.46	0.00	58.97	99.02
10672	NUTRASWEET - KELCO	K	SIU	0.17	7.81	1.53	1.02	0.00	2.72	13.24
24078	O S I INDUSTRIES INC	S	SIU	0.74	2.21	25.03	5.15	0.00	216.41	249.54
24001	OAK LAWN PARK DISTRICT	S	SIU	0.00	0.30	1.99	1.00	3.98	21.31	28.58
11716	ON-COR FROZEN FOODS INC	S	SIU	0.00	0.38	4.75	1.61	0.00	27.78	34.52
25248	ORTEK INC	S	SIU	0.15	1.50	5.85	8.24	14.84	49.17	79.75
12084	ORVAL KENT FOOD CO INC	K	SIU	0.00	0.00	42.38	0.00	0.00	215.98	258.35
10219	OWENS CORNING SUMMIT ROOFING	S	SIU	0.00	4.99	22.73	4.43	13.30	81.49	126.95
10316	PEER FOOD PRODUCTS CO	S	SIU	0.00	0.94	4.83	1.25	0.00	50.37	57.38
10453	PEPSI-COLA GENERAL BOTTLERS INC	S	SIU	0.42	4.56	18.23	3.56	0.00	86.09	112.86
23636	PRAIRIE/LANSING LANDFILL	C	SIU	0.04	0.63	0.38	0.92	2.06	26.39	30.41

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AVIII-1 (Continued)

INDUSTRIAL METAL LOADING BY INDUSTRY

USER-NO	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
15073	QUALA SYSTEMS INC	C	SIU	0.09	2.55	4.22	1.63	0.57	31.49	40.56
15957	QUALATEX SERVICES	N	SIU	1.40	5.42	71.51	4.51	26.38	152.95	262.16
24111	REDI-CUT FOODS INC	S	SIU	2.74	8.88	50.11	15.02	1.56	191.82	270.11
10851	RHONE-POULENC BASIC CHEMICALS CO	C	SIU	0.00	46.08	23.40	10.63	0.00	114.85	194.96
24778	RICH PRODUCTS CORP	N	SIU	0.19	3.97	8.19	1.98	0.22	16.67	31.22
24610	RIVER BEND PRAIRIE LANDFILL	C	SIU	0.00	10.50	1.05	11.90	6.42	6.54	36.41
24644	ROBBINS RESOURCE RECOVERY FACILITY	C	SIU	3.31	9.92	469.40	9.37	220.38	347.64	1,060.00
14138	ROMAN ADHESIVES	C	SIU	0.00	0.00	3.64	0.32	0.00	44.14	48.10
13839	ROSCOE CO	S	SIU	0.00	1.54	20.68	1.54	0.00	40.74	64.51
10651	ROSE PACKING CO, INC	S	SIU	4.57	5.71	49.12	5.14	0.00	192.50	257.04
12963	ROYAL CONTINENTAL BOX CO INC	S	SIU	0.00	0.98	61.89	0.68	1.27	17.96	82.78
12520	ROYAL CROWN BOTTLING COMPANY OF CHICAGO	S	SIU	0.53	2.66	17.31	3.20	0.00	28.76	52.47
13429	SAFETY-KLEEN SYSTEMS	C	SIU	1.02	4.97	5.42	5.19	0.00	40.19	56.79
13427	SAFETY-KLEEN SYSTEMS	S	SIU	0.95	14.72	170.71	16.29	2.39	98.98	304.04
14374	SANI-WASH OF ILLINOIS INC	C	SIU	0.31	27.73	17.01	6.36	23.60	70.75	145.75
13828	SCOTT PETERSEN & CO	S	SIU	0.26	1.30	26.56	1.56	0.00	107.02	136.70
24098	SELECT BEVERAGES, INC	S	SIU	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23995	SEXTON/CONGRESS DEVELOPMENT COMPANY	S	SIU	0.13	5.07	0.99	4.64	1.25	6.11	18.18
20191	SIBR FRANK J & SONS INC	C	SIU	0.18	1.40	4.55	0.91	0.42	51.07	58.53
13729	SOUTH CHICAGO PACKING CO	S	SIU	0.00	0.57	11.98	8.56	1.43	44.50	67.04
10290	STANDARD REFRIGERATION CO	S	SIU	0.00	0.11	8.57	1.07	0.00	13.60	23.35
11964	STOLTHAVEN CHICAGO INC	C	SIU	0.00	1.21	6.03	0.00	3.02	25.93	36.19
15905	SUPERIOR CARRIERS INC	C	SIU	2.30	0.33	2.39	0.64	0.11	13.07	18.83
15471	SWISS VALLEY FARMS	S	SIU	1.78	8.30	24.30	9.48	2.37	97.22	143.46
15891	T A C INC	S	SIU	2.35	151.54	11.54	9.85	2.72	78.82	256.82
23963	T A C INC	S	SIU	0.49	1.83	11.57	3.65	0.85	44.19	62.58

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AVIII-1 (Continued)

INDUSTRIAL METAL LOADING BY INDUSTRY

USER-NO	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
24828	T A C INC	S	SIU	0.80	6.26	7.83	2.37	0.95	22.31	40.51
25256	T A C MCCOOK INC	S	SIU	0.11	4.50	4.93	5.04	0.86	28.63	44.06
10098	TOOTSIE ROLL IND INC	S	SIU	0.00	0.00	78.65	0.00	0.00	46.80	125.45
10014	TRIPLE A SERVICES, INC	S	SIU	0.00	0.21	7.21	0.42	0.00	34.97	42.81
13788	TRU VUE, INC	S	SIU	1.58	11.74	18.75	19.86	0.00	90.67	142.59
20636	UNDERWRITERS LABORATORIES	N	SIU	0.00	1.34	36.18	2.68	0.00	304.18	344.37
25414	UNIFIRST CORP	N	SIU	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10050	UNIQEMA	S	SIU	0.00	13.07	41.14	358.54	0.00	262.83	675.58
25395	UNITED FEATHER & DOWN	K	SIU	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11770	UNITED STATES FILTER CORP	S	SIU	0.90	2.51	35.16	3.05	0.00	34.98	76.59
25430	VAN DYNE CROTTY INC	C	SIU	7.84	37.25	216.01	23.86	267.89	1,015.10	1,567.96
12167	VANEE FOODS CO	S	SIU	0.67	4.04	17.83	7.74	0.00	79.41	109.69
10739	VEGETABLE JUICES INC	S	SIU	0.00	0.00	2.60	0.22	0.01	9.03	11.85
13673	VICOM / BAKERS SQUARE	C	SIU	0.00	0.00	2.35	0.00	0.00	10.70	13.04
10745	VIENNA SAUSAGE MANUFACTURING COMPANY	N	SIU	0.78	3.11	28.81	3.89	0.00	200.91	237.51
10709	VISKASE	S	SIU	18.95	94.57	225.68	170.28	0.93	556.38	1,066.78
10394	VITA FOOD PRODUCTS INC	S	SIU	0.00	2.58	33.73	2.58	3.37	47.81	90.07
25193	WEBER-STEPHEN PRODUCTS	EG	SIU	0.56	34.27	8.41	2.93	1.90	25.24	73.31
13477	WEST AGRO	S	SIU	0.23	1.94	4.45	1.60	0.00	14.37	22.58
14268	WHITE BEAR LAUNDRY	S	SIU	0.00	4.30	16.53	5.29	0.00	37.04	63.16
14105	WINNETKA LANDFILL	N	SIU	0.01	0.07	0.37	0.10	0.13	1.88	2.55
10769	WM WRIGLEY JR COMPANY	S	SIU	0.01	1.27	90.63	1.36	0.00	80.93	174.20
14132	ZENGELER, A W UNIFORM RENTAL	N	SIU	0.68	6.62	42.89	17.57	9.13	159.92	236.80
10119	ZINSSER, WILLIAM & CO., INC.	S	SIU	0.00	1.10	11.46	1.76	0.00	30.63	44.95
NONCATEGORICAL SIGNIFICANT INDUSTRIAL USERS		173 IUs		167.91	2,970.00	6,880.42	3,721.01	1,435.23	25,876.99	41,051.62

CATEGORY	CATEGORY DESCRIPTION	NUMBER OF IUs	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
410	TEXTILE MILLS	4	0	2	130	8	0	119	259
413	ELECTROPLATING	95	633	7,510	4,249	5,430	127	7,809	25,758
414	ORGANIC CHEMICALS	13	20	227	675	389	25	2,829	4,166

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AVIII-1 (Continued)

INDUSTRIAL METAL LOADING BY INDUSTRY

415	INORGANIC CHEMICALS	1	0	1	0	0	0	0	1
419	PETROLEUM REFINING	1	6	50	234	95	33	780	1,197
420	IRON & STEEL	17	22	145	754	258	367	4,512	6,057
421	NONFERROUS METAL MANUFACTURING	1	0	0	0	0	0	0	0
425	LEATHER TANNING & FINISHING	2	2	9,864	82	38	0	133	10,118
430	PULP & PAPER	3	23	110	711	227	24	5,080	6,175
433	METAL FINISHING	182	38	1,771	5,360	2,419	436	6,328	16,351
439	PHARMACEUTICALS	4	9	9	184	26	2	558	788
463	PLASTIC MOLDING & FORMING	19	3	10	187	7	6	194	407
464	METAL MOLDING & CASTING	2	0	1	7	1	1	28	38
465	COIL COATING-CANMAKING	9	1	499	54	502	4	877	1,936
467	ALUMINUM FORMING	2	0	0	19	3	0	78	99
468	COPPER FORMING	3	0	1	249	3	14	228	494
469	ELECTRIC & ELECTRIC PRODUCTS	1	0	235	99	3	166	853	1,356
471	NONFERROUS METAL FORMING & METAL POWDERS	3	0	1	6	1	1	21	30
SIU	NONCATEGORICAL SIGNIFICANT INDUSTRIAL USERS	173	168	2,970	6,880	3,721	1,435	25,877	41,052
	TOTALS:	535	925	23,406	19,879	13,129	2,640	56,303	116,282

APPENDIX AIX

INDUSTRIAL METAL LOADING BY WRP

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

APPENDIX IX

1998 METALS LOADING FROM SIUS
SORTED BY WATER RECLAMATION PLANT

USER NO.	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
11031	RIVERDALE PLATING & HEAT TREATING, INC	C	413	0.96	123.19	8.64	4.48	0.32	909.02	1,046.60
13513	ASHLAND CHEMICAL INC	C	414	0.00	0.18	4.94	0.35	0.00	67.93	73.40
13603	CHICAGO SPECIALTIES INC	C	414	7.25	115.11	103.69	114.98	10.49	494.52	846.03
10720	UNION CARBIDE CORP - UCAR EMULSION	C	414	0.08	0.42	3.14	0.51	0.25	16.44	20.85
10182	P V S CHEMICALS INC (ILLINOIS)	C	415	0.00	0.79	0.00	0.00	0.00	0.00	0.79
13468	CLARK REFINING & MARKETING	C	419	5.57	50.11	233.86	94.66	33.41	779.53	1,197.13
12254	ACME STEEL - CHICAGO FURNACE PLANT	C	420	8.04	8.04	172.86	76.38	249.24	1,230.10	1,744.65
12255	ACME STEEL - COKE PLANT	C	420	0.75	0.75	15.01	4.50	0.00	39.78	60.80
12253	ACME STEEL - RIVERDALE PLANT	C	420	0.00	19.00	97.38	68.88	0.00	406.14	591.39
25378	ALLIED TUBE & CONDUIT	C	420	0.18	1.96	6.95	3.56	0.00	27.09	39.75
11535	ALLIED TUBE & CONDUIT CORP	C	420	1.86	65.09	310.55	44.63	5.58	1,231.06	1,658.77
11641	GENERAL TUBE CORPORATION	C	420	0.02	0.17	0.84	0.26	0.00	2.27	3.56
10208	L T V STEEL CO	C	420	6.33	25.31	70.08	25.51	14.87	679.60	821.70
25052	NACME STEEL PROCESSING LLC	C	420	0.32	6.92	3.70	4.99	0.00	23.02	38.95
15095	REPUBLIC ENGINEERED STEELS INC	C	420	0.00	0.00	0.00	0.00	0.00	26.90	26.90
14438	RYERSON COIL PICKLING DIV	C	420	0.66	7.28	10.70	9.71	2.43	49.20	79.98
13141	S & D WIRE CO INC	C	420	0.00	0.00	0.66	0.08	0.00	0.69	1.43
12451	STEEL COMPANY	C	420	0.00	2.06	9.03	3.87	0.00	9.37	24.33
24943	F S C CORP	C	430	15.06	60.25	436.80	150.62	15.06	4,337.83	5,015.62
25044	WISCONSIN TISSUE MILLS; CHGO OPERATION	C	430	7.50	44.98	239.88	67.47	7.50	554.71	922.02
10988	ANDREW CORP	C	433	0.00	0.00	108.74	3.96	18.05	83.20	213.95
USER NO.	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
24886	ANDREW CORP	C	433	0.00	0.26	43.97	0.52	8.01	32.66	85.42
24805	FOCAL POINT LLC	C	433	0.00	1.32	2.34	1.65	0.00	22.99	28.30
13389	FORD MOTOR CO - CHICAGO ASSEMBLY PLANT	C	433	1.79	7.64	31.17	185.95	80.96	610.78	918.29
13124	OMEGA PLATING INC	C	433	0.00	0.14	6.17	0.33	0.47	2.05	9.16
13009	SOUTH HOLLAND METAL FINISHING	C	433	3.37	7.86	22.03	0.42	0.00	19.93	53.61
10378	SUNBEAM HEALTH DIV	C	433	0.00	0.00	0.00	0.00	0.00	0.00	0.00

APPENDIX IX (Continued)

1998 METALS LOADING FROM SIUS
SORTED BY WATER RECLAMATION PLANT

USER NO.	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
13330	CHICAGO FINISHED METALS	C	465	0.00	0.43	1.77	0.43	0.00	24.63	27.26
10770	ZEGERS INC	C	465	0.00	25.74	1.59	0.15	0.77	12.12	40.38
13255	DOLTON ALUMINUM CO INC	C	467	0.00	0.00	10.47	2.09	0.00	43.47	56.04
25203	SINTER METALS INC	C	471	0.03	0.46	5.33	0.82	0.00	7.82	14.47
24955	J L M CHEMICALS INC	C	414D	0.96	44.06	103.93	10.54	5.75	538.31	703.54
25369	ALBRIGHT & WILSON AMERICAS	C	SIU	0.00	5.25	30.52	5.72	0.00	94.89	136.38
14999	ALLWASTE CONTAINER SERVICES	C	SIU	0.35	1.17	5.26	9.24	0.35	44.66	61.02
15827	AMERICAN INGREDIENTS CO	C	SIU	0.00	0.00	24.97	1.00	7.66	40.62	74.24
10270	AMERICAN LICORICE CO	C	SIU	0.68	1.09	4.64	1.00	0.00	29.79	37.20
25055	BALL-FOSTER GLASS CONTAINER CO LLC	C	SIU	0.95	2.85	34.21	28.82	5.07	159.64	231.54
23708	BLUE ISLAND GOLF COURSE/LANDFILL	C	SIU	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12114	C I D RECYCLING & DISPOSAL FACILITY	C	SIU	5.31	7.84	18.72	45.02	13.40	85.49	175.78
13774	CALUMET TANK & EQUIPMENT CO	C	SIU	0.38	2.87	9.56	4.29	0.33	76.46	93.90
11058	CARL BUDDIG	C	SIU	1.60	1.61	30.56	3.22	0.00	185.90	222.90
11059	CARL BUDDIG	C	SIU	0.25	0.00	9.62	0.00	0.00	56.97	66.85
10142	CLEAN HARBORS SERVICES INC	C	SIU	0.62	58.87	30.89	958.70	2.69	610.88	1,662.65
24941	CLEAN HARBORS SERVICES INC	C	SIU	0.38	3.42	17.88	26.64	0.38	63.55	112.25
14315	COCA COLA BOTTLERS, CANNERS - ALSIP	C	SIU	0.77	4.59	21.81	5.74	0.00	169.48	202.38
25387	DARLING RESTAURANT SVCS DBA TORVAC	C	SIU	0.16	2.77	25.99	9.86	4.72	86.43	129.93
15912	DENORMANDIE TOWEL & LINEN	C	SIU	0.00	3.30	23.31	3.30	0.00	598.70	628.60
13228	DYNAGEL INC	C	SIU	0.00	1.11	27.80	2.22	0.00	157.88	189.01
25246	ENVIRITE OF ILLINOIS INC	C	SIU	2.69	5.47	21.40	63.43	2.88	69.47	165.33
13032	GRIFFITH LABORATORIES USA, INC	C	SIU	0.00	0.46	8.96	1.21	0.00	34.15	44.78
14265	HARBOR VIEW	C	SIU	0.00	1.26	0.84	1.60	1.40	2.67	7.78
11169	JAYS FOODS LLC	C	SIU	0.00	7.47	39.24	6.85	0.00	127.67	181.23
11414	JOHNSON PRODUCTS	C	SIU	0.44	1.32	17.61	13.21	0.00	111.41	144.00
25416	LAND & LAKES LIQUID RECOVERY SYSTEMS	C	SIU	0.07	0.23	6.71	0.80	0.44	13.03	21.28
10135	MATLACK INC	C	SIU	0.09	97.20	4.57	12.55	1.40	44.59	160.40
24896	MINIAT ED INC	C	SIU	0.24	1.94	18.17	1.94	0.00	140.02	162.31

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

APPENDIX IX (Continued)

1998 METALS LOADING FROM SIUS
SORTED BY WATER RECLAMATION PLANT

23636	PRAIRIE/LANSING LANDFILL	C	SIU	0.04	0.63	0.38	0.92	2.06	26.39	30.41
15073	QUALA SYSTEMS INC	C	SIU	0.09	2.55	4.22	1.63	0.57	31.49	40.56
10851	RHONE-POULENC BASIC CHEMICALS CO	C	SIU	0.00	46.08	23.40	10.63	0.00	114.85	194.96
24610	RIVER BEND PRAIRIE LANDFILL	C	SIU	0.00	10.50	1.05	11.90	6.42	6.54	36.41
24644	ROBBINS RESOURCE RECOVERY FACILITY	C	SIU	3.31	9.92	469.40	9.37	220.38	347.64	1,060.00
14138	ROMAN ADHESIVES	C	SIU	0.00	0.00	3.64	0.32	0.00	44.14	48.10
13429	SAFETY-KLEEN SYSTEMS	C	SIU	1.02	4.97	5.42	5.19	0.00	40.19	56.79
14374	SANI-WASH OF ILLINOIS INC	C	SIU	0.31	27.73	17.01	6.36	23.60	70.75	145.75
20191	SIBR FRANK J & SONS INC	C	SIU	0.18	1.40	4.55	0.91	0.42	51.07	58.53
USER NO.	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
11964	STOLTHAVEN CHICAGO INC	C	SIU	0.00	1.21	6.03	0.00	3.02	25.93	36.19
15905	SUPERIOR CARRIERS INC	C	SIU	2.30	0.33	2.39	0.64	0.11	13.07	18.83
25430	VAN DYNE CROTTY INC	C	SIU	7.84	37.25	216.01	23.86	267.89	1,015.10	1,567.96
13673	VICOM / BAKERS SQUARE	C	SIU	0.00	0.00	2.35	0.00	0.00	10.70	13.04
	CALUMET WRP TOTALS:		69 SIUs	91	974	3,255	2,160	1,018	17,085	24,584
12920	ARLINGTON PLATING CO	EG	413	8.32	49.44	62.52	167.35	3.80	55.62	347.06
10838	METHODE ELECTRONICS	EG	433	0.01	0.04	2.28	0.15	0.00	0.87	3.35
10448	MOTOROLA INC COMMUNICATIONS BLDG	EG	433	0.00	5.72	50.63	1.51	5.75	176.75	240.36
24395	NATIONAL TECHNOLOGY INC	EG	433	0.44	4.38	418.14	43.78	7.44	22.77	496.96
13548	NORTHROP CORP - GRUMMAN	EG	433	0.00	0.03	0.14	0.02	0.00	0.19	0.38
13547	NORTHROP GRUMMAN CORP	EG	433	0.00	0.73	37.81	7.18	0.00	39.15	84.86
13767	SIEMENS MEDICAL SYSTEMS INC	EG	433	0.00	0.23	5.66	0.00	0.00	9.85	15.73
25267	WEBER-STEPHEN PRODUCTS	EG	433	0.55	34.04	6.45	2.61	0.00	15.21	58.87
10180	CINTAS CORP	EG	SIU	1.33	8.00	98.11	5.33	25.86	212.49	351.13
10101	FUJI HUNT PHOTOGRAPHIC CHEMICALS, INC	EG	SIU	1.23	1.10	23.91	4.29	1.96	78.46	110.95
25193	WEBER-STEPHEN PRODUCTS	EG	SIU	0.56	34.27	8.41	2.93	1.90	25.24	73.31
	EGAN TOTALS:		11 SIUs	12	138	714	235	47	637	1,783

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

APPENDIX IX (Continued)

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13627	EAGLE ELECTRONICS	H	433	0.00	0.45	30.22	4.49	4.19	6.28	45.64
23655	ELECTRO-CIRCUITS INC	H	433	0.13	0.13	88.23	4.58	0.88	5.52	99.48
15505	KOMET OF AMERICA INC	H	433	0.00	2.92	0.98	0.81	0.00	2.66	7.38
USER NO.	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
14590	SATURN PAINT & SCREEN, INC	H	433	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13574	SENIOR FLEXONICS INC	H	433	0.00	7.22	102.11	15.47	0.00	99.02	223.83
	HANOVER PARK PARK WRP TOTALS:	5	SIUs	0	11	222	25	5	113	376
11901	ACME FINISHING CO	K	413	0.07	0.59	2.21	0.93	0.48	25.92	30.21
13103	ANODIZING SPECIALISTS LTD	K	413	0.04	13.63	4.65	4.80	0.75	15.37	39.23
12940	AQUARIUS METAL PRODUCTS CO	K	413	0.02	0.28	0.72	0.06	0.37	1.38	2.83
12925	CHEM-PLATE INDUSTRIES	K	413	0.00	62.38	22.24	2.68	0.00	134.29	221.58
12469	ELK GROVE PLATING	K	413	0.13	155.04	12.92	4.18	0.25	326.67	499.19
12184	HAUSNER HARD-CHROME INC	K	413	0.09	15.96	2.45	0.14	0.00	1.86	20.50
12402	INTERNATIONAL PROCESSING CO OF AMERICA	K	413	0.01	10.42	0.82	0.00	0.00	0.66	11.92
12126	PERFECTION PLATING INC	K	413	0.08	1.84	53.54	29.78	0.92	6.78	92.94
11379	A P I INDUSTRIES INC	K	433	0.46	63.70	57.28	17.87	0.46	203.93	343.70
13350	ACCO BRANDS, INC	K	433	0.00	0.00	2.48	0.00	0.00	3.91	6.39
15689	AMITRON CORP	K	433	0.45	8.10	679.16	13.04	35.98	33.73	770.46
25379	AMPEL INC.	K	433	0.03	0.39	5.81	0.19	1.54	0.90	8.85
25265	BRIJEN ELECTRONICS	K	433	0.01	0.03	3.54	0.06	0.03	0.30	3.96
25289	C M P ANODIZING	K	433	0.04	8.03	4.21	1.13	0.19	2.85	16.45
12808	CHICAGO NAME PLATE CO	K	433	0.00	3.63	6.07	2.20	0.00	4.30	16.20
14522	CIRCUIT ETCHING TECHNICS INC	K	433	0.03	0.21	109.85	0.23	1.56	1.90	113.78
12128	CIRCUIT SYSTEMS, INC.-PLANT 1	K	433	0.01	1.39	267.87	34.54	8.39	182.34	494.53
14472	CIRCUIT SYSTEMS, INC.-PLANT 2	K	433	0.62	1.24	166.05	70.63	0.00	71.87	310.41
15230	COMMERCIAL FINISHES CO INC	K	433	0.02	0.03	0.22	0.17	0.00	0.93	1.38
24756	ELECTRONIC INTERCONNECT CORP	K	433	0.13	1.28	157.05	1.53	3.19	6.77	169.95
14287	ENGIS CORP	K	433	0.00	0.00	1.40	12.28	0.00	2.12	15.81
USER NO.	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
25367	FLUID MANAGEMENT	K	433	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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25242	GENERAL CIRCUIT D/B/A DELTA PRECISION	K	433	0.05	0.21	72.43	0.31	0.52	3.84	77.36
25176	IDEAL CIRCUITS INC	K	433	0.00	0.03	7.24	0.19	0.05	1.02	8.54
13923	MAGNETIC INSPECTION LABORATORY INC	K	433	0.07	19.71	7.06	29.49	0.00	14.26	70.59
25413	MECO METAL FINISHING ILLINOIS LLC	K	433	0.00	5.48	15.76	3.65	0.00	5.73	30.62
25253	METAL IMPACT CORP	K	433	0.05	0.23	8.55	0.36	0.00	115.39	124.58
24154	MILTON ENTERPRISES	K	433	0.01	0.06	0.42	0.18	0.00	0.70	1.38
25498	MONTANA METAL PRODUCTS INC	K	433	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10201	MULTIGRAPHICS INC	K	433	0.05	0.00	1.54	0.05	0.00	4.29	5.93
25406	NORTH AMERICAN ELECTROLESS	K	433	0.00	0.56	0.65	40.82	0.00	6.46	48.48
25159	PRINTECH CORCUIT CORP	K	433	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24330	QMA INC	K	433	0.06	0.55	123.47	1.03	0.00	4.97	130.07
13232	REGENCY METAL FINISHING	K	433	0.06	11.02	2.11	1.74	0.23	13.31	28.47
14635	STAR ELECTRONICS INC	K	433	0.14	0.98	161.43	1.27	4.92	8.02	176.76
25279	SUNRISE ELECTRONICS	K	433	0.04	0.11	27.41	0.19	0.61	1.95	30.31
14260	THREE J'S INDUSTRIES INC	K	433	0.89	42.72	4.21	0.18	0.35	10.09	58.44
25018	TINGSTOL COMPANY	K	433	0.20	0.82	246.26	19.37	4.69	10.60	281.93
25321	UNITECH INDUSTRIES	K	433	0.01	0.04	1.89	7.71	0.00	1.79	11.44
25231	UNITED DISPLAY CRAFT	K	433	0.06	0.24	8.88	1.47	0.00	8.02	18.68
10231	UNIVERSAL SCIENTIFIC OF ILLINOIS	K	433	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24597	WEB ASSEMBLY	K	433	0.07	0.56	4.13	0.39	0.30	47.01	52.46
24918	WHEELING PLAZA/SUPERIOR PRINTED CIRCUITS	K	433	0.09	0.25	54.76	0.29	0.31	2.34	58.05

USER NO.	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
14415	NORTHFIELD LABORATORIES INC	K	439	0.00	0.12	1.82	0.33	0.00	3.83	6.10
23932	CUSTOM PLASTICS INC	K	463	0.06	0.67	5.17	0.67	1.29	17.36	25.22
11659	M A HANNA COLOR	K	463	0.04	0.09	2.12	0.09	0.82	3.81	6.97
11141	NORTON PERFORMANCE PLASTICS	K	463	0.32	1.75	7.78	1.73	0.00	4.15	15.75
11838	TENEX CORP	K	463	1.18	0.24	5.01	0.14	0.76	12.48	19.80
15290	TIGERFLEX CORP	K	463	0.00	0.00	3.72	0.00	0.00	7.59	11.30
10276	A D C LIMITED PARTNERSHIP	K	464	0.00	0.03	0.69	0.03	0.00	2.79	3.54
11177	LAMINATES & COMPOSITES	K	465	0.00	3.26	5.43	0.30	0.00	14.22	23.20
12353	NATIONAL MATERIAL CORP	K	465	0.16	0.25	1.64	0.98	0.51	2.91	6.45

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25099	PRE FINISH METALS	K	465	0.21	253.36	9.46	489.52	0.00	695.17	1,447.71
11176	PRE FINISH METALS INC	K	465	0.38	113.09	1.67	5.67	0.00	91.08	211.88
13810	WIELAND METALS SERVICE CENTER INC	K	468	0.02	0.05	0.38	0.05	0.00	3.06	3.56
15962	HIDDEN VALLEY RANCH	K	SIU	2.61	13.54	14.73	13.30	0.00	42.99	87.17
10529	KARP'S INC	K	SIU	0.28	1.54	5.88	2.24	0.00	25.04	34.98
10926	LAWRENCE FOODS	K	SIU	0.00	0.00	9.29	0.40	0.00	23.84	33.54
10672	NUTRASWEET - KELCO	K	SIU	0.17	7.81	1.53	1.02	0.00	2.72	13.24
12084	ORVAL KENT FOOD CO INC	K	SIU	0.00	0.00	42.38	0.00	0.00	215.98	258.35
25395	UNITED FEATHER & DOWN	K	SIU	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	KIRIE WRP TOTALS:	61 SIUs		10	828	2,427	822	69	2,458	6,613
10654	RUBENS & MARBLE INC	N	410	0.00	0.03	0.39	0.03	0.18	1.17	1.79
11375	A T A FINISHING CORP	N	413	0.00	14.17	6.09	9.65	0.00	2.84	32.75
13505	AL BAR - WILMETTE PLATERS	N	413	0.00	0.23	5.17	3.21	0.00	1.81	10.42
12006	AMBER PLATING WORKS, INC	N	413	25.97	2,011.74	1,073.80	1,716.08	4.00	2,483.22	7,314.80
USER NO.	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
12238	AUTOMATIC ANODIZING	N	413	0.14	144.13	32.47	8.48	9.25	9.12	203.59
10958	BERTEAU-LOWELL PLATING WORKS, INC	N	413	15.00	71.23	40.90	78.38	0.00	160.86	366.36
11186	BRIGHT METALS FINISHING CO	N	413	0.04	7.35	9.50	7.14	0.99	4.09	29.11
11548	CENTURY PLATING CO	N	413	1.24	135.63	17.08	108.42	0.00	18.01	280.38
10814	CRAFTSMAN PLATING & TINNING	N	413	101.19	128.66	306.87	63.39	21.60	233.85	855.57
11603	CRESCENT PLATING WORKS, INC	N	413	0.69	257.82	31.28	135.99	0.17	89.86	515.81
12996	CRO-MAT CO	N	413	0.00	6.11	0.14	0.02	0.00	0.16	6.43
12929	DOVER INDUSTRIAL CHROME	N	413	0.03	9.93	3.36	2.26	3.97	5.18	24.72
10427	ENAMELED STEEL & SIGN CO	N	413	0.05	0.26	0.61	0.53	0.00	2.41	3.86
11990	GEM COAT INC	N	413	3.93	20.65	4.20	0.20	0.29	43.65	72.93
10501	ILLINOIS TOOL WORKS - CHRONOMATIC	N	413	0.02	0.06	11.51	0.22	0.00	1.02	12.83
12718	INTERNATIONAL SILVER PLATING	N	413	0.00	0.03	0.51	0.05	0.00	1.24	1.84
13267	JACOB ANODIZING	N	413	0.11	22.91	26.74	3.27	3.10	17.87	74.00
11396	JENSEN PLATING WORKS INC	N	413	0.02	52.68	6.49	7.46	0.00	8.62	75.27
11397	JENSEN PLATING WORKS INC	N	413	0.04	1.25	4.17	39.20	0.00	8.23	52.89

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12979	OMNI-CIRCUITS INC	N	413	0.00	4.55	333.07	2.88	0.00	12.70	353.19
11140	P & H PLATING CO INC	N	413	0.47	46.79	78.22	64.28	1.89	127.14	318.81
10799	PLATING SERVICE CO	N	413	0.05	19.46	8.54	60.10	0.15	86.69	174.99
13110	PRECISION FINISHING	N	413	0.01	0.70	3.76	4.09	0.13	1.48	10.17
12127	PRECISION PLATING CO	N	413	0.25	12.98	134.55	332.10	13.01	23.78	516.66
12599	REINEWALD PLATING	N	413	0.48	1.83	34.23	145.23	0.55	18.88	201.19
12394	SCOTT PLATING INC	N	413	0.04	15.02	0.34	3.28	0.01	15.85	34.54
11014	SUPERIOR FINISHERS INC	N	413	0.00	0.30	0.32	0.10	0.00	0.89	1.61
10760	WESTERN RUST-PROOF CO	N	413	0.29	134.99	14.01	14.01	4.86	53.77	221.94
11429	REGIS TECHNOLOGIES INC	N	414	0.00	2.37	3.06	0.92	0.00	8.71	15.05
USER NO.	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
25293	SUN CHEMICAL CORP	N	414	0.00	0.00	2.80	0.12	0.00	15.20	18.11
25514	A B DICK CO	N	433	0.27	9.55	30.00	46.37	10.91	43.37	140.46
10283	ARMSTRONG TOOLS, INC	N	433	0.00	0.18	1.00	4.01	0.00	1.84	7.04
11203	BLOCK & COMPANY INC	N	433	0.03	0.05	0.63	0.09	0.00	0.59	1.39
15980	BODINE ELECTRIC CO	N	433	0.16	2.30	67.63	3.45	0.00	86.02	159.56
10312	BOYE NEEDLE CO	N	433	0.00	0.01	0.98	12.23	0.18	2.35	15.75
12027	CAST PRODUCTS	N	433	0.02	19.17	2.40	8.53	0.00	5.14	35.27
12711	CHRIS INDUSTRIES INC	N	433	0.00	0.23	1.27	0.17	0.06	1.30	3.03
16977	COOPER FREDERICK LAMPS INC	N	433	0.00	0.47	68.05	0.53	0.00	19.87	88.93
24089	DEHLER MFG CO INC	N	433	0.02	6.71	0.82	0.00	0.00	2.63	10.19
25451	ELECTROPLATED METAL SOLUTIONS	N	433	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11495	ENAMELERS & JAPANNERS INC - ELSTON	N	433	0.00	0.00	0.43	0.11	0.00	4.00	4.54
25323	ETCH-A-DIE	N	433	0.00	1.32	0.45	0.05	0.00	0.98	2.80
13338	FOTO FABRICATION CORP	N	433	0.00	0.83	26.19	6.15	0.45	14.13	47.75
25221	GENERAL FASHION ENTERPRISES INC	N	433	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13401	GENERAL FIRE EXTINGUISHER CO	N	433	0.04	0.93	4.24	2.59	0.00	4.92	12.72
11903	HAYDOCK CASTER CO	N	433	0.05	0.55	12.40	0.38	0.33	28.98	42.70
11474	HU-FRIEDY MFG CO INC	N	433	0.06	29.64	11.80	11.68	0.97	5.87	60.01
15918	INTER CONNECT SYSTEMS INC	N	433	0.00	0.01	6.62	0.08	0.00	0.43	7.14
10512	INTERMATIC INC.	N	433	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10678	ITW SIGNODE	N	433	0.00	0.91	27.83	2.27	3.02	83.18	117.20
11062	JAMES PRECIOUS METALS PLATING	N	433	0.04	0.11	29.54	2.74	0.19	1.89	34.50
11653	KLEIN TOOLS INC	N	433	0.36	40.14	9.59	3.20	0.00	254.72	308.00

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24431	KNOWLES ELECTRONICS IC GROUP	N	433	0.00	0.79	2.26	0.43	0.00	7.92	11.40
12068	LITTELFUSE INC	N	433	4.77	86.62	185.95	350.44	0.00	526.84	1,154.61
USER NO.	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
12475	M P C PRODUCTS CORP	N	433	0.03	2.47	2.22	1.65	0.00	6.40	12.77
13502	MAJOR REFLECTOR PRODUCTS CO	N	433	0.47	18.87	127.34	12.26	8.49	81.59	249.02
13712	MOTOROLA INC	N	433	0.35	1.91	18.90	1.91	0.00	53.61	76.69
14912	NATIONAL COATING TECHNOLOGY	N	433	0.00	0.06	0.18	0.03	0.15	0.34	0.76
11861	OHMITE MFG CO	N	433	3.56	0.00	13.26	0.49	0.00	30.74	48.04
11531	R S OWENS & CO	N	433	0.14	0.00	32.69	17.65	0.00	80.08	130.57
12285	REHBERGER A C CO	N	433	0.02	0.02	4.59	0.36	0.21	2.75	7.95
10670	S & C ELECTRIC CO	N	433	3.90	92.21	231.27	200.72	24.69	330.25	883.05
10658	SAFETY SOCKET SCREW CORP	N	433	0.05	0.36	2.00	0.34	0.10	4.49	7.35
12272	SATE-LITE MFG CO	N	433	0.62	0.24	3.89	5.17	0.00	10.06	19.97
10877	SHURE BROTHERS, INC	N	433	0.05	0.00	1.85	0.18	0.00	5.03	7.10
24847	STERLING LABORATORIES INC	N	433	0.03	52.33	32.84	52.52	0.06	83.56	221.33
10847	SWITCHCRAFT INC	N	433	0.29	75.59	109.98	39.13	2.88	75.80	303.67
11473	TIARA CORP	N	433	0.00	0.00	0.79	0.03	0.00	0.95	1.77
10855	TRIANGLE PACKAGE MACHINERY CORP	N	433	0.00	0.09	1.05	0.17	0.00	2.83	4.15
25294	VAPOR CORP	N	433	0.18	2.01	16.71	2.65	3.81	25.20	50.56
10899	WESTERN CHAIN CO	N	433	1.01	130.89	11.36	1.50	0.12	559.67	704.56
14298	MORTON GROVE PHARMACEUTICALS INC	N	439	0.49	0.33	10.13	1.52	0.00	10.62	23.08
10671	SEARLE, G. D., A MONSANTO COMPANY	N	439	8.12	3.99	80.36	18.46	0.00	250.59	361.52
15126	ADVANCED PLASTIC CORP	N	463	0.00	0.10	0.37	0.10	0.00	2.43	2.99
10914	BELTONE ELECTRONICS CORP	N	463	0.00	2.51	4.16	0.46	0.00	12.67	19.80
15862	SUPERIOR AMERICAN PLASTICS	N	463	0.00	0.00	2.41	0.05	0.00	2.82	5.29
23899	TRIM-TEX CO	N	463	0.09	0.38	0.88	0.40	0.00	2.85	4.60
13544	AMERICAN INDUSTRIAL	N	SIU	0.42	5.71	31.50	2.75	0.00	47.78	88.16
USER NO.	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
10543	AVON PRODUCTS INC	N	SIU	0.33	0.35	31.54	1.66	2.65	189.19	225.71
14065	BORDEN, INC	N	SIU	0.22	1.08	13.39	1.51	0.00	30.89	47.09
24258	CCL CUSTOM MFG CO	N	SIU	0.36	1.93	17.02	3.19	1.91	36.23	60.63

APPENDIX IX (Continued)

1998 METALS LOADING FROM SIUS
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11606	COCA COLA BOTTLING CO - NILES	N	SIU	2.84	21.31	73.87	22.73	0.00	164.80	285.55
10809	CULLIGAN INTERNATIONAL	N	SIU	0.38	7.67	105.62	2.68	7.09	98.15	221.60
13688	DOMESTIC UNIFORM RENTAL CO	N	SIU	1.48	1.73	22.88	0.87	11.01	15.09	53.06
25311	FAVORITE BRANDS INTL - FARLEY DIV	N	SIU	0.40	2.02	16.60	1.62	0.81	33.20	54.67
14573	GENERAL HEALTH CARE SERVICES	N	SIU	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15385	HOSPITAL LAUNDRY SERVICES	N	SIU	1.47	10.31	41.88	12.52	0.00	311.68	377.87
12115	LAKE LANDFILL GAS RECOVERY	N	SIU	0.02	0.00	1.23	0.50	0.27	3.91	5.93
13772	MICKEY'S LINEN & TOWEL SUPPLY INC	N	SIU	0.00	1.49	21.57	3.22	0.00	130.90	157.18
25079	NABISCO	N	SIU	0.21	2.68	16.07	0.62	0.00	42.65	62.22
24711	NATION PIZZA	N	SIU	0.20	2.15	31.28	3.91	3.91	139.21	180.66
15957	QUALATEX SERVICES	N	SIU	1.40	5.42	71.51	4.51	26.38	152.95	262.16
24778	RICH PRODUCTS CORP	N	SIU	0.19	3.97	8.19	1.98	0.22	16.67	31.22
20636	UNDERWRITERS LABORATORIES	N	SIU	0.00	1.34	36.18	2.68	0.00	304.18	344.37
25414	UNIFIRST CORP	N	SIU	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10745	VIENNA SAUSAGE MANUFACTURING COMPANY	N	SIU	0.78	3.11	28.81	3.89	0.00	200.91	237.51
14105	WINNETKA LANDFILL	N	SIU	0.01	0.07	0.37	0.10	0.13	1.88	2.55
14132	ZENGELER, A W UNIFORM RENTAL	N	SIU	0.68	6.62	42.89	17.57	9.13	159.92	236.80
	NORTH SIDE WRP TOTALS:	98	SIUs	187	3,788	4,006	3,713	184	8,271	20,148

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

APPENDIX IX

1998 METALS LOADING FROM SIUS
SORTED BY WATER RECLAMATION PLANT

USER NO.	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
10519	INDUSTRIAL COATINGS GROUP, INC	S	410	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23833	MERWITZ THEO TEXTILES INC	S	410	0.00	0.03	0.68	0.23	0.00	0.65	1.60
10759	WESTERN PIECE DYERS/FINISHERS	S	410	0.00	1.52	129.24	7.60	0.00	117.08	255.44
13583	ACCENT METAL FINISHING CO	S	413	0.00	0.24	0.68	1.10	0.26	74.24	76.53
11340	ACCURATE ANODIZING	S	413	0.18	48.18	35.20	52.23	3.42	24.41	163.62
11166	ACE ANODIZING & IMPREGNATING INC	S	413	0.00	41.13	4.13	2.27	1.54	4.45	53.52
12145	ACE PLATING	S	413	0.21	0.01	3.73	6.03	0.00	1.67	11.65
11644	ACTION PLATING CO	S	413	0.00	0.00	0.02	0.01	0.00	0.05	0.08
11047	ADVANCE ENAMELING CO	S	413	0.00	0.00	0.00	0.00	0.00	0.00	0.01
12371	ALL BRITE ANODIZING CO	S	413	0.04	15.01	22.44	15.26	1.45	3.80	58.01
13950	ALLOY CHROME INC	S	413	0.00	0.17	0.08	0.01	0.02	0.15	0.43
13207	AMERICAN NICKEL WORKS	S	413	0.05	25.53	3.89	16.68	0.60	3.74	50.48
12961	AVIS COMMERCIAL ANODIZING	S	413	0.01	0.13	0.57	0.21	0.07	0.74	1.73
12823	BARNES PLATING CORP	S	413	0.01	0.32	2.35	7.66	0.01	1.93	12.27
13254	BELLWOOD INDUSTRIAL INC	S	413	0.05	48.88	2.29	0.76	0.00	44.47	96.45
11138	BELMONT PLATING WORKS, INC	S	413	248.96	730.34	271.00	773.42	1.00	674.74	2,699.46
11892	BOBCO ENTERPRISES INC	S	413	0.12	0.37	5.16	2.52	0.04	3.06	11.27
13195	C P SYSTEMS	S	413	0.12	0.62	7.28	5.06	0.99	28.13	42.19
11807	CALCO PLATING	S	413	0.00	21.27	5.93	17.37	0.00	7.71	52.27
11576	CASTLE METAL FINISHING CORP	S	413	8.19	44.98	22.83	14.23	0.00	167.58	257.82
11084	CHICAGO ANODIZING CO	S	413	0.13	49.29	9.43	21.68	0.40	10.51	91.45
12340	CODY METAL FINISHING INC	S	413	0.16	19.44	10.05	0.85	0.03	116.15	146.68
13702	DASSINGER HARD CHROME	S	413	0.00	10.32	0.70	0.02	0.23	0.35	11.62
12058	DYNA BURR CHICAGO INC	S	413	1.25	7.67	2.05	0.20	0.00	57.86	69.03
11852	DYNACIRCUITS MFG CO	S	413	0.29	1.17	52.35	4.68	0.00	26.03	84.52
USER NO.	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
11977	EMPIRE HARD CHROME	S	413	0.21	451.55	10.98	3.38	0.84	10.13	477.10
11855	FINISHING CO, THE	S	413	0.18	1,382.37	148.13	160.13	1.33	41.85	1,733.98
11905	FOREST PLATING CO	S	413	0.00	33.99	4.76	9.61	1.88	69.95	120.19
12648	GRAHAM PLATING WORKS	S	413	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11724	GRIFFIN PLATING CO	S	413	0.01	59.36	12.23	37.67	0.33	15.01	124.62

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

APPENDIX IX (Continued)

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13308	HI-TEMP INC	S	413	0.38	14.23	48.19	29.32	0.00	200.46	292.59
13724	JONAS ENTERPRISES INC	S	413	0.05	28.77	2.21	0.58	0.58	4.32	36.49
11099	KALMUS & ASSOC INC	S	413	0.63	1.59	202.25	234.91	2.85	15.53	457.77
11882	KREL LABORATORIES INC	S	413	0.81	1.24	64.73	74.65	0.00	17.84	159.26
11883	KREL LABORATORIES INC	S	413	0.24	1.19	1.48	44.74	0.00	3.73	51.38
10797	LAKE CITY PLATING WORKS	S	413	0.00	0.76	0.20	0.39	0.00	1.27	2.63
11064	MECH-TRONICS	S	413	0.24	26.33	21.17	4.89	1.97	34.45	89.05
13483	MEISEL PLATING CO	S	413	0.00	1.17	3.52	7.16	0.27	3.36	15.49
12951	MIDWEST METAL FINISHING	S	413	0.03	0.18	3.22	2.36	0.34	2.16	8.28
13289	MIKE'S ANODIZING	S	413	0.05	3.65	9.13	1.83	0.00	6.39	21.06
19614	NOBERT PLATING CO	S	413	0.00	1.06	170.15	149.93	3.04	56.06	380.24
12622	NOBERT PLATING CO	S	413	0.03	1.16	14.48	24.72	4.11	5.44	49.94
12461	NORTHWESTERN PLATING WORKS	S	413	0.13	47.67	51.87	9.71	0.60	87.82	197.80
11920	PETERSEN FINISHING CORP	S	413	0.00	5.29	20.40	9.32	0.00	12.34	47.36
13153	PIONEER PLATING CO INC	S	413	0.63	41.90	8.04	5.36	0.18	174.29	230.39
13721	PRECISE FINISHING CO INC	S	413	0.96	0.75	11.85	12.97	0.00	4.00	30.53
13115	R C INDUSTRIES INC	S	413	0.21	1.04	7.18	5.39	0.00	9.74	23.55
11241	RELIABLE PLATING CORP	S	413	21.56	173.72	51.36	64.16	0.00	17.35	328.16
11339	SAPORITO C J PLATING CO	S	413	78.80	128.80	52.76	45.87	5.17	191.22	502.63
12968	SCIENTIFIC PLATING	S	413	0.00	12.03	89.75	34.41	14.20	9.87	160.25
11951	SKILD PLATING CORP	S	413	0.03	0.80	1.43	4.88	0.00	24.40	31.55
USER NO.	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
13063	SOUTHWESTERN POLISHING & PLATING	S	413	0.00	0.17	3.34	4.16	0.02	2.44	10.13
11487	SPECIFIED PLATING CO	S	413	0.20	34.10	4.67	1.62	0.10	134.57	175.26
11799	STERLING LABS INC	S	413	0.04	0.60	22.83	57.77	0.10	11.05	92.39
12778	T W R SERVICE CORP	S	413	0.23	1.30	20.50	26.50	1.53	61.83	111.88
13233	U S PLATING CO	S	413	105.74	121.00	171.61	245.97	0.00	269.15	913.47
11380	UNITED METAL FINISHERS INC	S	413	0.15	18.60	15.76	1.49	0.22	71.11	107.33
13003	UNIVERSAL METAL FINISHING	S	413	0.06	9.72	89.96	7.32	0.00	13.38	120.46
13053	V P PLATING & PARISO INC	S	413	1.41	22.44	34.43	45.46	4.07	32.31	140.12
13340	WEST TOWN PLATING INC	S	413	0.21	256.90	47.49	80.82	2.33	28.13	415.88
11701	YALE POLISHERS & PLATERS INC	S	413	0.04	4.77	6.30	13.91	0.00	3.84	28.86
12320	AKZO NOBEL CHEMICALS, INC	S	414	1.40	16.78	61.54	62.94	8.39	195.81	346.87
10204	HALL CO THE C P	S	414	0.15	0.59	5.60	0.88	0.00	11.06	18.28

APPENDIX IX (Continued)

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10157	KOPPERS INDUSTRIES INC	S	414	0.00	3.41	72.92	11.57	0.10	228.77	316.77
10593	NALCO CHEMICAL CO. - 66TH PLACE	S	414	8.21	36.95	271.00	45.17	0.00	1,133.26	1,494.59
10888	PELRON CORP	S	414	0.38	0.00	6.70	0.00	0.00	15.51	22.59
11464	U O P CO.	S	414	0.00	4.30	28.78	119.43	0.00	62.72	215.23
10918	WITCO CORP	S	414	1.47	2.95	7.37	22.10	0.00	41.25	75.13
24771	METAL-MATIC INC	S	420	0.09	0.09	6.60	0.95	0.00	6.55	14.28
10766	MIDWAY WIRE INC	S	420	0.90	5.41	27.03	10.81	69.38	436.99	550.51
24508	RELIANT BOLT	S	420	2.74	0.98	3.53	0.78	0.00	7.25	15.28
10134	THOMPSON STEEL CO	S	420	0.03	0.00	0.75	0.14	0.00	2.99	3.91
10132	WHEATLAND TUBE CO	S	420	0.20	1.88	17.93	3.27	25.11	332.50	380.88
11837	GUTMANN LEATHER CO, INC	S	425	0.54	7,767.51	31.95	16.25	0.00	61.20	7,877.46
10487	HORWEEN LEATHER CO	S	425	1.55	2,096.44	49.67	21.73	0.00	71.41	2,240.81
13242	CHICAGO PAPERBOARD	S	430	0.86	5.15	34.32	9.01	1.29	187.05	237.67
USER NO.	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
24813	A & J PLATING CO.	S	433	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12990	A M I INC	S	433	0.01	0.47	0.51	0.03	0.00	1.08	2.10
21743	ABLE CASTING INC	S	433	0.10	0.63	11.37	1.46	0.00	20.22	33.77
24781	ABLE ELECTROPOLISHING CO	S	433	0.12	211.92	2.09	8.99	0.62	1.85	225.59
25290	ABOVE & BEYOND BLACK OXIDE INC	S	433	0.00	0.13	0.23	0.12	0.20	0.81	1.49
11427	ALAMO GROUP (IL) INC	S	433	0.03	0.09	0.55	0.08	0.00	1.92	2.67
12749	ALANSON MFG CO	S	433	1.68	3.15	0.42	0.09	0.02	9.41	14.76
25314	AMCO CORP DIV OF LEGGETT & PLATT	S	433	0.06	1.67	2.38	0.60	0.00	34.07	38.77
15939	AMCO ENGINEERING CO	S	433	0.03	0.06	1.81	0.06	0.00	2.65	4.60
13351	AMERICAN NAMEPLATE CO	S	433	0.04	3.37	8.81	2.18	0.29	12.41	27.10
10273	AMERICAN PLATING	S	433	0.13	0.05	24.26	28.17	0.00	12.37	64.98
11364	AMERICAN PRECISION CASTINGS	S	433	0.04	0.03	0.47	0.08	0.00	3.49	4.12
11172	AMERICAN RIVET CO	S	433	0.46	5.47	4.98	1.90	1.98	34.06	48.85
24468	AMERICAN STANDARD CIRCUITS INC	S	433	0.11	0.00	123.50	8.24	10.04	9.51	151.39
13090	ANCHOR METAL FINISHING CO	S	433	0.00	0.14	1.47	0.19	0.30	9.12	11.22
12831	B & T POLISHING INC	S	433	0.04	2.29	11.18	18.30	0.00	18.93	50.75
13048	BLACKSTONE MFG CO	S	433	0.00	6.53	8.63	0.47	0.00	48.50	64.13
25009	BOEING PRECISION GEAR INC	S	433	0.17	0.95	5.24	0.43	0.00	15.30	22.08
10311	BORG WARNER AUTOMOTIVE INC	S	433	0.43	3.54	7.12	4.04	0.22	19.51	34.86

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11898	BRETFORD MFG INC	S	433	0.06	0.75	2.80	0.69	0.69	13.18	18.17
11260	BRETFORD MFG INC	S	433	0.00	0.00	1.85	0.33	0.00	1.52	3.70
10314	BREUER ELECTRIC MFG CO	S	433	0.00	0.02	0.37	0.09	0.00	1.35	1.82
15695	BRISKIN MFG CO	S	433	0.06	0.56	3.57	0.56	73.62	133.70	212.09
10870	BRISKIN MFG. CO.	S	433	0.06	0.95	5.52	1.01	12.88	37.17	57.59
USER NO.	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
21828	CENTRAL STEEL FABRICATORS INC	S	433	0.01	0.00	1.04	0.17	0.00	1.76	2.98
11256	CHICAGO ALLIS MFG	S	433	0.00	1.01	6.45	10.88	3.22	65.47	87.02
10342	CHICAGO FAUCET CO	S	433	0.33	337.78	237.59	536.87	3.72	149.21	1,265.50
10347	CHICAGO HARDWARE & FIXTURE	S	433	0.00	0.26	0.94	0.29	0.03	7.54	9.07
13354	CHILO MFG & PLATING CO INC	S	433	0.36	0.12	36.35	33.13	0.00	21.65	91.60
10279	CLAD-REX INC	S	433	0.10	0.31	1.02	0.44	0.00	5.74	7.61
10397	DAUBERT CHEMICAL CO INC	S	433	0.00	0.03	0.90	12.91	0.00	4.47	18.31
10844	DEMUTH STEEL PRODUCTS CO	S	433	0.00	0.05	0.18	0.04	0.00	0.40	0.67
14650	DOWNEY B L CO INC	S	433	0.00	0.51	3.71	53.43	0.19	87.92	145.76
24378	EDSAL MANUFACTURING CO	S	433	0.00	0.00	2.22	0.00	0.00	5.08	7.30
11406	EDSAL MFG CO	S	433	0.14	0.14	5.11	1.42	2.27	11.21	20.30
12222	ELECTRONIC PLATING CO	S	433	4.02	44.17	27.38	49.28	0.00	159.52	284.36
15546	EN-CHRO PLATING INC	S	433	0.03	49.77	3.27	11.08	0.52	2.47	67.14
25365	EX-CELL METAL PRODUCTS	S	433	0.00	0.00	0.00	0.00	0.00	0.58	0.58
15525	FAIL SAFE LIGHTING SYSTEMS INC	S	433	0.00	0.11	1.59	0.85	0.00	3.71	6.25
11212	FILMCOTE INC	S	433	0.00	1.04	0.66	5.51	0.00	0.41	7.62
24826	FINISHING CO, INC, THE	S	433	0.06	0.09	1.70	0.41	0.00	4.40	6.66
11350	FORMWELL CORP	S	433	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10439	FRAMBURG AND CO	S	433	0.03	0.16	32.62	25.65	0.03	10.83	69.32
12719	GATTO INDUSTRIAL PLATING	S	433	0.22	8.68	59.67	10.69	0.00	119.12	198.38
13393	GENERAL MOTORS - ELECTRO MOTIVE	S	433	0.00	0.72	25.24	3.61	0.00	81.49	111.06
12197	GEO-RAE CORP	S	433	0.01	0.08	0.21	0.14	0.05	2.09	2.57
11632	GRAPH-ON INC	S	433	0.01	0.02	0.09	0.02	0.01	0.16	0.31
23696	GREENLEE DIAMOND TOOL CO	S	433	0.00	0.01	1.78	8.01	0.38	5.62	15.81
10471	HANDY BUTTON MACHINE CO	S	433	0.22	28.26	17.52	8.26	0.00	82.43	136.70
USER NO.	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)

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24944	HOMAK MANUFACTURING CO	S	433	0.00	0.32	4.31	0.88	0.40	16.35	22.25
25431	IDEAL-GERIT DRUM RING	S	433	0.00	0.00	0.39	0.50	0.00	11.10	11.98
13717	IMPERIAL PLATING CO INC	S	433	0.09	83.28	69.00	84.84	0.00	95.82	333.03
25525	J G METAL FINISHING	S	433	0.00	0.23	2.92	2.59	0.03	2.48	8.26
12424	J L O METAL PRODUCTS CO	S	433	0.28	4.54	5.74	2.13	0.00	57.21	69.90
10885	LAKEWOOD ENGINEERING & MFG	S	433	0.00	1.36	7.71	0.45	0.00	55.55	65.07
24882	METAL BOX INTERNATIONAL	S	433	0.37	0.00	1.52	0.91	0.00	1.96	4.76
24946	MORSE AUTOMOTIVE CORP	S	433	0.00	0.06	1.54	0.60	0.00	7.63	9.82
21811	NEW METAL CRAFTS INC	S	433	0.00	0.11	1.03	0.10	0.29	3.51	5.03
10987	NINA ENTERPRISES, INC	S	433	0.00	1.35	1.65	0.28	0.00	10.31	13.59
24696	NUWAY INDUSTRIES INC	S	433	0.08	0.67	3.25	0.51	0.00	6.95	11.47
10635	PRECISION INSTRUMENT	S	433	0.00	0.05	1.96	1.79	0.03	3.27	7.10
21463	PRO-TEC METAL FINISHING CORP	S	433	0.01	0.03	0.16	0.07	0.00	0.78	1.06
25324	PULSAR INC	S	433	0.00	0.00	0.28	0.01	0.00	0.05	0.34
13277	Q C FINISHERS INC	S	433	0.04	2.35	0.33	0.28	0.00	3.61	6.61
10639	QUAM NICHOLS CO	S	433	0.00	0.00	1.96	0.00	0.00	10.05	12.01
15043	R & R RESEARCH D/B/A E J SOMERVILLE	S	433	0.02	15.89	0.35	0.08	0.07	0.68	17.09
11244	READY METAL MFG CO	S	433	0.00	0.28	5.27	0.94	0.00	13.17	19.66
10645	REFLECTOR HARDWARE CORP	S	433	0.07	0.73	1.67	1.37	0.10	8.94	12.88
24347	RIPPEL ARCHITECTURAL METALS INC	S	433	0.00	0.86	13.83	0.43	32.77	12.96	60.86
13581	RIXSON-FIREMARK DIV	S	433	0.04	0.14	3.74	0.20	1.62	5.37	11.11
15773	S & B FINISHING CO, INC	S	433	0.10	0.34	5.74	0.86	0.00	16.38	23.42
13202	S K HAND TOOL CORP	S	433	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25445	SKY ELECTRONICS	S	433	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10683	SLOAN VALVE CO	S	433	0.52	77.08	17.76	52.60	2.41	7.76	158.14
USER NO.	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
24585	SORINI RING MANUFACTURING CO INC	S	433	0.00	0.03	0.43	0.16	0.00	0.89	1.51
25449	STIFFEL CO	S	433	0.25	1.76	63.92	1.76	0.00	119.54	187.23
10413	STROMBECKER CORP	S	433	0.05	0.00	0.94	0.00	0.00	7.87	8.86
11616	TRILLA STEEL DRUM CORP	S	433	0.08	0.70	5.32	0.78	0.00	12.28	19.16
13992	TRI-POWDERCOATING INC	S	433	0.06	0.28	2.04	1.71	0.00	18.42	22.50
10126	TRIUMPH INDUSTRIES	S	433	0.07	3.51	3.03	1.35	0.00	72.54	80.50

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

APPENDIX IX (Continued)

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24397	U S STANDARD SIGN CORP	S	433	0.01	1.23	0.42	0.12	0.00	1.37	3.15
24950	UNITED ELECTRONICS CORP	S	433	0.00	0.28	96.08	8.82	2.48	6.62	114.28
13676	UNITED RE-MANUFACTURING CO INC	S	433	0.02	9.37	1.18	0.20	0.00	4.48	15.25
10735	UNITY MANUFACTURING CO	S	433	0.13	12.07	20.39	55.41	0.00	16.10	104.11
13714	V P ANODIZING INC	S	433	0.14	7.97	6.14	8.99	0.92	7.09	31.25
11522	VERTIFLEX CO	S	433	0.04	0.70	3.57	0.16	5.13	16.01	25.61
11664	WATER SAVER FAUCET CO	S	433	0.08	4.73	40.48	7.36	32.26	42.02	126.93
25443	AMERICAN PHARMACEUTICAL	S	439	0.39	4.92	91.58	5.47	1.71	292.87	396.94
12485	BROADVIEW INJECTION MOLDING CO	S	463	0.01	0.01	0.49	0.13	0.00	1.47	2.11
11278	CELL-PARTS MANUFACTURING CO	S	463	0.01	0.04	1.32	0.08	0.00	0.79	2.24
15870	EAGLEBROOK PLASTICS INC	S	463	0.07	0.29	2.98	0.29	0.00	8.49	12.12
13657	HYDRO COMPONENTS R&D CORP	S	463	0.03	0.16	0.64	0.23	0.00	2.14	3.20
12976	INPLEX INC	S	463	0.04	1.58	1.97	0.11	0.00	13.71	17.41
25342	KENTILE OPERATING CO	S	463	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13489	LIFE-LIKE PRODUCTS INC	S	463	0.00	0.08	2.16	0.00	0.00	13.13	15.37
14482	PORTH PLASTIC CO	S	463	0.03	0.36	1.17	0.06	0.06	2.27	3.94
10854	SWEETHEART CUP CO	S	463	0.30	1.27	134.36	1.93	3.35	75.20	216.42
15749	WESLEY-JESSEN CORP	S	463	0.58	0.81	9.94	0.09	0.00	10.53	21.96
USER NO.	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
13268	NATIONAL CASTINGS, INC	S	464	0.01	0.51	6.27	0.81	1.09	25.44	34.13
11136	AMERICAN NATIONAL CAN CO	S	465	0.00	0.00	23.51	2.52	0.00	6.72	32.75
10995	PRECOAT METALS	S	465	0.00	103.31	2.14	2.05	0.94	21.29	129.73
10679	SIGNODE CORPORATION	S	465	0.00	0.00	6.29	0.03	1.60	9.12	17.05
10158	WERNER CO	S	467	0.05	0.10	8.37	0.55	0.00	34.27	43.34
10341	CHICAGO EXTRUDED METALS	S	468	0.15	0.27	105.94	1.67	13.68	192.32	314.04
14380	CYPRUS ROD	S	468	0.11	0.64	142.38	1.29	0.00	32.44	176.86
10774	ZENITH ELECTRONICS CORP (RAULAND)	S	469	0.00	235.39	98.97	2.67	165.84	853.28	1,356.15
24910	KILOBAR COMPACTING CORP	S	471	0.15	0.01	0.01	0.00	0.00	0.08	0.24
13590	LITTON / KESTER SOLDER	S	471	0.03	0.34	0.81	0.11	1.03	12.62	14.95
10536	KRAMER, H & CO	S	421D	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12223	ALBERTO CULVER FOODS	S	SIU	0.07	0.39	2.56	0.72	0.00	17.03	20.78
15999	ALLIED HASTINGS BARREL	S	SIU	0.00	0.11	2.99	0.59	0.00	11.53	15.21
25497	AMERICAN BOTTLING	S	SIU	0.54	26.77	2.68	4.28	4.28	87.27	125.81
13543	AMERICAN LINEN	S	SIU	0.29	3.45	22.98	5.75	0.00	58.31	90.77

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APPENDIX IX (Continued)

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USER NO.	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
11529	AMERICAN MEAT PACKING CORP	S	SIU	0.00	0.00	23.74	2.30	0.00	85.78	111.82
14454	ANGELICA TEXTILE SVCS	S	SIU	0.29	0.00	14.94	1.44	0.00	56.88	73.54
14306	ARAMARK UNIFORM SERVICE	S	SIU	2.71	216.91	14.01	13.56	18.08	167.65	432.92
10281	ARCHIBALD CANDY CORP	S	SIU	0.39	0.49	12.68	2.35	0.14	51.34	67.39
12302	AZTECA FOODS INC	S	SIU	0.00	1.20	4.64	1.06	0.00	17.02	23.91
15872	BEAVER OIL CO INC	S	SIU	0.34	29.77	27.88	220.25	7.05	893.04	1,178.33
13079	BESSIN CORP	S	SIU	0.66	2.43	11.64	2.10	2.43	149.44	168.70
11443	BEST FOODS (CPC INTERNATIONAL)	S	SIU	1.09	8.69	54.30	11.95	5.43	194.40	275.85
10027	BRACH & BROCK CONFECTIONS	S	SIU	10.96	21.93	274.12	27.41	8.22	2,404.07	2,746.73
13586	BRIDGFORD FOODS	S	SIU	0.00	1.19	15.02	2.14	4.00	273.43	295.78
24170	C P C FOODSERVICE	S	SIU	0.00	4.23	61.97	8.45	7.04	176.06	257.75
11196	CAPITOL WHOLESALE MEATS	S	SIU	0.32	5.39	12.75	5.79	4.74	73.25	102.24
24684	CARGILL, INC	S	SIU	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13031	CARRY COMPANIES OF ILLINOIS	S	SIU	0.11	1.24	4.67	1.52	3.02	23.54	34.10
10001	CBSL TRANSPORTATION SERVICES INC	S	SIU	0.06	0.86	2.04	1.30	0.00	29.26	33.52
25272	CHICAGO BAKING CO	S	SIU	0.00	0.73	26.59	0.73	0.00	29.71	57.77
15985	CINTAS CORP	S	SIU	9.12	26.74	206.03	32.40	86.50	577.84	938.63
13787	CITY OF CHICAGO - JARDINE WATER PLANT	S	SIU	28.98	1,253.22	507.08	507.08	362.20	2,716.52	5,375.08
13958	CITY OF CHICAGO-CHELTENHAM WTR FLT PLT	S	SIU	9.27	101.99	361.59	83.44	27.81	695.36	1,279.45
10168	CLOROX PRODUCTS MFG	S	SIU	0.36	0.00	11.72	3.55	0.00	28.06	43.68
25417	CORN PRODUCTS INTL	S	SIU	1.12	98.41	562.56	143.43	2.79	2,209.68	3,018.00
15916	COSMOPOLITAN TEXTILE	S	SIU	0.67	2.00	16.31	10.32	0.00	42.94	72.23
15035	CROSFIELD CATALYSTS	S	SIU	2.16	32.48	55.28	248.25	42.16	109.49	489.83
24522	CULINARY FOODS	S	SIU	0.00	10.59	48.86	10.59	8.14	101.79	179.97
17261	DANA CONTAINER INC	S	SIU	0.35	4.77	2.02	1.96	0.66	41.81	51.57
13681	DEN FRANCO CORP	S	SIU	0.00	0.00	3.46	0.27	0.00	15.38	19.11
24638	DOBBS INTERNATIONAL	S	SIU	0.00	0.92	19.79	1.38	0.00	40.96	63.05
24647	DOBBS INTERNATIONAL	S	SIU	0.19	0.00	21.89	0.57	0.00	18.64	41.30
15609	ELGIN DAIRY FOODS, INC	S	SIU	0.00	0.28	5.92	0.85	0.00	14.22	21.27
10425	ELKAY MFG CO	S	SIU	0.38	7.67	19.55	6.71	0.00	47.72	82.02
10106	ENTENMANNS BAKERY	S	SIU	0.00	0.47	5.42	1.41	0.71	13.21	21.22

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APPENDIX IX (Continued)

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12837	ERICKSON COMPANY	S	SIU	0.18	7.24	28.25	5.12	29.13	321.34	391.25
11126	EVANS FOOD PRODUCTS	S	SIU	0.00	0.64	12.71	6.36	6.36	24.79	50.85
USER NO.	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
25309	FAVORITE BRANDS INTL - FARLEY DIV	S	SIU	0.26	2.05	12.81	0.00	0.00	21.52	36.63
25310	FAVORITE BRANDS INTL - FARLEY DIV	S	SIU	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12240	FERRARA PAN CANDY CO	S	SIU	0.35	3.02	219.37	3.96	1.64	76.23	304.58
24639	FRESH EXPRESS - CHICAGO	S	SIU	0.00	1.54	9.71	1.23	0.00	28.20	40.68
13443	FROEDTERT MALT	S	SIU	0.00	14.97	82.32	24.95	0.00	376.51	498.75
21831	G & K SERVICES	S	SIU	1.12	15.39	70.37	6.89	21.32	117.34	232.43
24783	GAMMA PHOTO LABS L L C	S	SIU	0.23	49.37	33.14	45.54	2.37	19.39	150.04
12782	GATX TERMINALS, ARGO TERMINAL	S	SIU	0.04	0.00	5.25	0.48	0.33	12.06	18.16
25200	GLASS CRAFTERS INC	S	SIU	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13021	GRIFFITH LABORATORIES USA	S	SIU	0.00	5.74	12.92	6.60	0.00	45.63	70.89
11133	GUERNSEY BEL INC	S	SIU	0.15	0.00	26.94	1.22	0.00	17.76	46.08
10183	HARPER LEATHER GOODS	S	SIU	0.29	0.88	3.66	1.90	0.00	16.24	22.98
10597	HELENE CURTIS INC	S	SIU	0.83	9.18	23.21	5.54	1.12	53.07	92.95
13913	HENDRICKSON SPRING	S	SIU	0.29	5.21	13.62	4.06	0.00	160.51	183.68
25136	HINCKLEY & SCHMITT	S	SIU	0.00	2.14	12.86	9.16	10.13	69.74	104.03
25137	HINCKLEY & SCHMITT	S	SIU	0.30	0.92	12.22	1.53	0.00	28.51	43.48
11319	HOME JUICE COMPANY	S	SIU	0.43	3.43	16.21	2.37	1.48	48.09	72.02
13920	INOLEX CHEMICAL CO	S	SIU	0.00	28.27	2.19	0.36	0.00	6.75	37.58
25090	INTERSTATE BRANDS	S	SIU	0.00	0.67	10.67	1.67	5.67	16.33	35.00
10824	JERNBERG INDUSTRIES	S	SIU	0.00	10.75	48.48	12.71	0.00	94.92	166.87
10518	JEWEL FOOD STORES	S	SIU	0.58	6.04	25.51	5.78	14.71	186.20	238.82
10577	KRAFT GENERAL FOODS, CHICAGO PLANT	S	SIU	0.00	2.59	35.74	2.59	0.00	151.79	192.71
13793	KRONOS-CENTRAL PRODUCTS, INC	S	SIU	0.00	0.40	6.80	1.47	0.00	41.84	50.50
USER NO.	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
13844	LSG LUFTHANSA SERVICE/SKY CHEFS, INC	S	SIU	0.61	6.05	84.15	3.63	0.00	123.50	217.94
10103	M & M MARS	S	SIU	0.00	25.96	81.14	5.41	0.00	147.13	259.64

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USER NO.	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
14086	MCCAIN CITRUS INC	S	SIU	0.00	1.36	13.55	2.26	0.00	46.98	64.15
15996	MORGAN SERVICES, INC	S	SIU	0.00	1.69	19.20	1.90	0.00	44.74	67.53
14095	MULLINS FOOD PRODS/PACKAGING SERVICE	S	SIU	0.30	1.52	14.60	2.43	0.00	35.89	54.75
10873	NABISCO BRANDS - CHICAGO BAKERY	S	SIU	2.38	12.79	115.50	14.17	15.56	424.15	584.56
15958	NATIONAL CONTAINER SERVICES	S	SIU	0.11	8.78	29.13	75.43	8.88	88.18	210.50
10753	NATIONAL STARCH & CHEMICAL CORP	S	SIU	0.26	1.58	17.10	2.10	0.00	791.65	812.69
10509	NAVISTAR INTERNATIONAL TRANS CORP	S	SIU	2.82	8.47	151.83	12.71	10.59	327.67	514.10
10698	NESTLE CHOCOLATE & CONFECTIONS	S	SIU	0.00	0.00	38.59	1.46	0.00	58.97	99.02
24078	O S I INDUSTRIES INC	S	SIU	0.74	2.21	25.03	5.15	0.00	216.41	249.54
24001	OAK LAWN PARK DISTRICT	S	SIU	0.00	0.30	1.99	1.00	3.98	21.31	28.58
11716	ON-COR FROZEN FOODS INC	S	SIU	0.00	0.38	4.75	1.61	0.00	27.78	34.52
25248	ORTEK INC	S	SIU	0.15	1.50	5.85	8.24	14.84	49.17	79.75
10219	OWENS CORNING SUMMIT ROOFING	S	SIU	0.00	4.99	22.73	4.43	13.30	81.49	126.95
10316	PEER FOOD PRODUCTS CO	S	SIU	0.00	0.94	4.83	1.25	0.00	50.37	57.38
10453	PEPSI-COLA GENERAL BOTTLERS INC	S	SIU	0.42	4.56	18.23	3.56	0.00	86.09	112.86
24111	REDI-CUT FOODS INC	S	SIU	2.74	8.88	50.11	15.02	1.56	191.82	270.11
13839	ROSCOE CO	S	SIU	0.00	1.54	20.68	1.54	0.00	40.74	64.51
10651	ROSE PACKING CO, INC	S	SIU	4.57	5.71	49.12	5.14	0.00	192.50	257.04
12963	ROYAL CONTINENTAL BOX CO INC	S	SIU	0.00	0.98	61.89	0.68	1.27	17.96	82.78
12520	ROYAL CROWN BOTTLING COMPANY OF CHICAGO	S	SIU	0.53	2.66	17.31	3.20	0.00	28.76	52.47
13427	SAFETY-KLEEN SYSTEMS	S	SIU	0.95	14.72	170.71	16.29	2.39	98.98	304.04
13828	SCOTT PETERSEN & CO	S	SIU	0.26	1.30	26.56	1.56	0.00	107.02	136.70
24098	SELECT BEVERAGES, INC	S	SIU	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23995	SEXTON/CONGRESS DEVELOPMENT COMPANY	S	SIU	0.13	5.07	0.99	4.64	1.25	6.11	18.18
13729	SOUTH CHICAGO PACKING CO	S	SIU	0.00	0.57	11.98	8.56	1.43	44.50	67.04
10290	STANDARD REFRIGERATION CO	S	SIU	0.00	0.11	8.57	1.07	0.00	13.60	23.35
15471	SWISS VALLEY FARMS	S	SIU	1.78	8.30	24.30	9.48	2.37	97.22	143.46

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15891	T A C INC	S	SIU	2.35	151.54	11.54	9.85	2.72	78.82	256.82
23963	T A C INC	S	SIU	0.49	1.83	11.57	3.65	0.85	44.19	62.58
24828	T A C INC	S	SIU	0.80	6.26	7.83	2.37	0.95	22.31	40.51
25256	T A C MCCOOK INC	S	SIU	0.11	4.50	4.93	5.04	0.86	28.63	44.06
10098	TOOTSIE ROLL IND INC	S	SIU	0.00	0.00	78.65	0.00	0.00	46.80	125.45
10014	TRIPLE A SERVICES, INC	S	SIU	0.00	0.21	7.21	0.42	0.00	34.97	42.81
13788	TRU VUE, INC	S	SIU	1.58	11.74	18.75	19.86	0.00	90.67	142.59
10050	UNIQEMA	S	SIU	0.00	13.07	41.14	358.54	0.00	262.83	675.58
11770	UNITED STATES FILTER CORP	S	SIU	0.90	2.51	35.16	3.05	0.00	34.98	76.59
12167	VANEE FOODS CO	S	SIU	0.67	4.04	17.83	7.74	0.00	79.41	109.69
10739	VEGETABLE JUICES INC	S	SIU	0.00	0.00	2.60	0.22	0.01	9.03	11.85
10709	VISKASE	S	SIU	18.95	94.57	225.68	170.28	0.93	556.38	1,066.78
10394	VITA FOOD PRODUCTS INC	S	SIU	0.00	2.58	33.73	2.58	3.37	47.81	90.07
13477	WEST AGRO	S	SIU	0.23	1.94	4.45	1.60	0.00	14.37	22.58
14268	WHITE BEAR LAUNDRY	S	SIU	0.00	4.30	16.53	5.29	0.00	37.04	63.16
10769	WM WRIGLEY JR COMPANY	S	SIU	0.01	1.27	90.63	1.36	0.00	80.93	174.20
USER NO.	COMPANY	WRP	CAT1	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
10119	ZINSSER, WILLIAM & CO., INC.	S	SIU	0.00	1.10	11.46	1.76	0.00	30.63	44.95
	STICKNEY WRP TOTALS:	291	SIUs	626	17,668	9,255	6,174	1,316	27,739	62,777

WATER RECLAMATION PLANT	NUMBER OF SIUs	CD (LBS/YR)	CR (LBS/YR)	CU (LBS/YR)	NI (LBS/YR)	PB (LBS/YR)	ZN (LBS/YR)	TMC (LBS/YR)
CALUMET WRP	69	91	974	3,255	2,160	1,018	17,085	2
EGAN WRP	11	12	138	714	235	47	637	1
HANOVER PARK WRP	5	0	11	222	25	5	113	3
KIRIE WRP	61	10	828	2,427	822	69	2,458	6
LEMONT WRP	0	0	0	0	0	0	0	(
NORTH SIDE WRP	98	187	3,788	4,006	3,713	184	8,271	2

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

APPENDIX IX (Continued)

1998 METALS LOADING FROM SIUS
SORTED BY WATER RECLAMATION PLANT

STICKNEY WRP	291	626	17,668	9,255	6,174	1,316	27,739	62
GRAND TOTALS:	535 SIUs	925	23,406	19,879	13,129	2,640	56,303	11

APPENDIX AX

STUDY PLAN FOR JOHN EGAN WRP NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT LIMIT FOR FLUORIDE AND SILVER

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AX-1

STUDY PLAN FOR JOHN EGAN WATER RECLAMATION PLANT
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT LIMITS
FOR FLUORIDE AND SILVER

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1. Plant Operations Assessment (EM&R)
   a. Assess adequacy of influent and effluent monitoring data (60 days)
   b. Conduct additional influent and effluent monitoring as necessary (120 days)
   c. Determine removal efficiencies (60 days)
   d. Minimum, consistent, maximum
   e. Identify in-plant impacts and contributions (60 days)
      i. Operational variations
      ii. Chemical additions
   f. Identify in-plant opportunities for improving removal efficiencies and reductions in pollutant contributions (60 days)
   g. Estimate benefits of in-plant reduction opportunities (30 days)

2. Point Source Contributions Assessment (IWD)
   a. Identify industrial point sources (30 days)
      i. Categorically regulated industrial users (CIU)
      ii. Non-categorical SIUs (SIU)
      iii. Other industrial users
   b. Assess adequacy of CIU/SIU monitoring data (60 days)
   c. Conduct additional CIU/SIU monitoring as necessary (120 days)
   d. Determine CIU/SIU contributions (60 days)
   e. Identify CIU/SIU reduction opportunities (60 days)
   f. Estimate benefits of CIU/SIU reduction opportunities (30 days)

3. Commercial Contributions Assessment (IWD/EM&R)
   a. Identify commercial source activities, including literature/process engineering review (90 days)
   b. Identify commercial point sources (60 days)
   c. Assess adequacy of commercial source data (60 days)

d. Conduct additional commercial source monitoring as necessary (120 days)
e. Determine commercial source contributions (60 days)
f. Identify commercial source reduction opportunities (60 days)
g. Estimate benefits of commercial source reduction opportunities (30 days)

4. Non-Point Source Contributions Assessment (EM&R/IWD)
   a. Potable water supply assessment (90 days)
      i. Develop Inventory of municipal water supply operations
      ii. Assess adequacy of monitoring data
      iii. Conduct additional water supply monitoring as necessary (120 days)
      iv. Determine of water supply contributions (60 days)
         1. Chemical additions
         2. Operational variations
      v. Identify water supply reduction opportunities (60 days)
      vi. Estimate benefits of water supply reduction opportunities (30 days)
   b. Stormwater/infiltration/background assessment
      i. Quantify stormwater/infiltration/background flow contributions (120 days)
      ii. Identify representative contribution areas (90 days)
      iii. Monitor stormwater/infiltration/background flow contributions (180 days)
      iv. Estimate stormwater/infiltration/background pollutant contributions (60 days)

5. Pollutant Reduction Strategy [Items 1-4 can be undertaken concurrently (Sub-items within items 1-4 will be conducted

TABLE AX-1 (Continued)

STUDY PLAN FOR JOHN EGAN WATER RECLAMATION PLANT
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT LIMITS
FOR FLUORIDE AND SILVER

sequentially); Item 5 will be initiated after Items 1-4 have been completed]

a. Estimate achievable reductions from all contributing sectors (60 days)
b. Identify implementation mechanism(s) for reduction activities in each sector (90 days)
c. Assess feasibility of implementing reduction activities (drivers/costs/barriers) (60 days)
d. Prioritize reduction activities via costs/benefit analysis (30 days)
e. Implement reduction activities (as necessary) (180 days)
f. Monitor effectiveness of pollutant reduction strategy/activities (Ongoing)

APPENDIX AXI

CONVERSION OF UN-IONIZED AMMONIA LIMITS TO TOTAL AMMONIA LIMITS

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

APPENDIX AXI

CONVERSION OF UN-IONIZED AMMONIA LIMITS
TO TOTAL AMMONIA LIMITS

1. Secondary Contact and Indigenous Aquatic Life

Four of the District's WRPs discharge into receiving water with this classification. The un-ionized ammonia concentration is converted into total ammonia concentration. The Secondary Contact limit is 0.1 mg/L for un-ionized ammonia. The conversion is dependent on both pH and the temperature of the water. The year 2000 annual average value is used in the conversion for these four WRPs. The total ammonia concentration determined is used in the allowable headworks load for each location.

Un-ionized Ammonia to Total Ammonia Conversion:

$$\text{Total Ammonia} = \text{Un-Ionized Ammonia } [0.94412(1+10^{X}) + 0.0559]$$

$$X = 0.09018+(2729.92/T)-pH$$

T = temperature in degrees Kelvin

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AXI-1

CONVERSION OF UN-IONIZED AMMONIA LIMITS
TO TOTAL AMMONIA LIMITS

WRP	Temp °C	pH	Un-Ionized Ammonia Limit (mg/L)	Total Ammonia Conversion (mg/L)
Calumet	18	6.66	0.1	61.79[1]
Lemont	16	7.25	0.1	18.13[1]
North Side	16	7.07	0.1	27.39[1]
Stickney	15	7.08	0.1	28.15[1]

[1]15 mg/L is the maximum allowed in General Use of Secondary Contact waters. The value is reduced to 15 mg/L in calculations.

2. General Use

The General Use standard is applied to three of the District's WRPs. The General Use receiving water standards are more stringent for the November through March period. The more stringent standards are used. The acute standard is 0.14 mg/L and the chronic standard is 0.025 mg/L. The pH and temperature are the average values from each location. The average values are determined for each location. The average values are determined from the months of January, February, March, November and December of the year 2000. The total ammonia concentration is used to determine each allowable headworks load.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AXI-2

CONVERSION OF UN-IONIZED AMMONIA LIMITS
TO TOTAL AMMONIA LIMITS

WRP	Temp °C	pH	NPDES Permit Daily mg/L		Water Quality General Use, Acute mg/L		Water Quality General Use, Chronic mg/L	
			Un-Ionized Ammonia	Total Ammonia	Un-Ionized Ammonia	Total Ammonia	Un-Ionized Ammonia	Total Ammonia
Egan	13	7.08	n/a	n/a	0.14	47.08[1]	0.025	7.84
Hanover Park	14	6.9	0.04	18.84[1]	0.14	65.95[1]	0.025	11.77
Kirie	13	7.22	0.04	9.75	0.14	34.14[1]	0.025	7.59

[1]15 mg/L is the maximum allowed in General Use or Secondary Contact waters. The value is reduced to 15 mg/L in calculations.