Petitioner's Exhibit No. 1

EAST CHICAGO SANITARY DISTRICT
(Wastewater Division)

INDIANA UTILITY REGULATORY COMMISSION

CAUSE NO. 45632

DIRECT TESTIMONY

OF

KENNETH L. MYERS

SPONSORING ATTACHMENTS KLM-1 THROUGH KLM-8

East Chicago Sanitary District
(Wastewater Division)

Cause No. 45632

Direct Testimony of Kenneth L. Myers

BACKGROUND

Q. Please state your name, title, and business address.

A. My name is Kenneth L. Myers, I am the Director of Wastewater Operations for the City of East Chicago Sanitary District, and my business address is 5201 Indianapolis Boulevard, East Chicago, IN 46312.

Q. Please briefly describe your formal education and professional experience.

A. I received a Bachelor of Science in Civil Engineering from Marquette University in 1983. I began working for the Indiana State Board of Health in 1984 as a sanitary engineer. After two years, I moved to private employment. I held a number of roles in project engineering and project management over the next thirty years with various environmental, consulting, and construction firms. In February 2016, I joined the East Chicago Sanitary District ("Sanitary District") as Pretreatment Compliance Manager.

Q. What is your current role with the Sanitary District?

A. I was promoted to Director of Wastewater Operations effective May 10, 2021.

Q. Please give a short description of your responsibilities with the Sanitary District.

A. I am in charge of general management of the Sanitary District, including day-to-day operations. Specifically, I am responsible for operation of the City's wastewater collection system and treatment plant, including overseeing department personnel, reporting, budgeting, contracting, planning and implementing maintenance and improvement projects, and various other functions relating to the operation of the Sanitary District.

Q. What is the purpose of your direct testimony in this proceeding?

A. My purpose in testifying is to generally describe the nature of operations at the Sanitary District, provide the Commission information on infrastructure needs for environmental and other reasons, discuss basic operating expenses, and describe other future needs of the District. I will also briefly describe the relief requested.

Q. Are you sponsoring any exhibits?

A. Yes. Attachment KLM-1 is a copy of my current resume . Attachment KLM-2 is a copy of the Petition in this matter. Attachment KLM-3 is a copy of Resolution SD 21-08, adopted on August 5, 2020, authorizing this request for Commission approval of increased rates. Attachment KLM-4 is the Long Term Control Plan as supplemented and approved. Attachment KLM-5 reflects recent correspondence with IDEM regarding a schedule amendment for the Long Term Control Plan. Attachment KLM-6 is the Guaranteed Savings Contract with state-approved vendor Kokosing Industrial ("Kokosing") related to Phase II of the Long Term Control Plan. Attachment KLM-7 is a compilation of images of the treatment plant and distribution system. Attachment

KLM-8 reflects certain capital improvement plan projects and their anticipated costs, over the next five years.

Q. What relief is the Sanitary District seeking?

A. A phased-in rate increase that incorporates cost of service principles.

Q. Why is the Sanitary District seeking relief from the Commission?

A. Approximately two years ago, the Sanitary District sought a rate increase from the City Council, but the City Council declined to approve it. Since that time, the financial needs of the Sanitary District have increased, and the Sanitary District has also further scrutinized its needs. It seeks an increase from the Commission under newly enacted Ind. Code § 36-9-25-11.3.

OVERVIEW OF EAST CHICAGO SANITARY DISTRICT

Q. Can you describe the physical infrastructure associated with the Sanitary District?

A. The physical infrastructure is substantial. In terms of real estate, it takes up about 10 square miles. The sewage collection system and piping is approximately 72 miles long and varies in size from 8 to 96 inches in diameter and has 11 pumping stations supporting sanitary, stormwater, or both. The lift stations are made up of 2 combined lift stations, 3 storm water lift stations, 3 sanitary lift stations and 3 storm relief stations. Flow from the sanitary lift stations pump wastewater to the wastewater treatment plant ("WWTP") for treatment while the stormwater lift stations discharge stormwater to the Grand Calumet River and Indiana Harbor Ship Canal. Combined and relief lift stations pump CSO wastewater or to one of the three permitted CSO outfalls. The three CSO permitted lift stations are: Michigan Avenue CSO 002, which discharges into the Indiana Harbor Ship Canal, Alder Street CSO 003, which discharges into the Grand Calumet River, and the Magoun Avenue CSO 005, which discharges into the WWTP discharge channel and ultimately into the Grand Calumet River. The WWTP CSO Lagoon gets primary treatment via detention and sedimentation at the CSO Lagoon prior to discharge.

Q. How many staff work at the Sanitary District?

A. The wastewater treatment plant has approximately 30 employees, covering operations, maintenance, and administrative duties.

Q. Does the Sanitary District have job openings?

A. Yes. We are actively working to fill approximately ten (10) job openings, including in maintenance, operations, compliance, and stormwater management.

Q. What are the Sanitary District's annual personnel costs?

A. As reflected in the Cost-of-Service Study ("COSS") provided with Andre Riley's testimony, the annual personnel costs are approximately $2,598,720.

Q. Excluding personnel costs, what are the Sanitary District's additional annual operational costs?

A. Again, as reflected in the COSS, the annual operational costs are approximately $3,411,747.

Q. What are some of the challenges currently faced by the Sanitary District?

A. As discussed further in my testimony, the Sanitary District is challenged by aging infrastructure and required environmental controls. Increased rates are overdue.

Q. How has the Sanitary District traditionally funded maintenance and repairs?

A. Maintenance and repairs have been funded on an ad hoc basis. Because the sanitary system is a combined sewer system, certain repairs have been made from the Stormwater Fund; and as described in Mr. Riley's testimony, this fund is not one of the five (5) funds of the Wastewater Division. Other repairs have been funded by the City Engineer's Office. And the Sanitary District has also paid for certain repairs and maintenance. Because other departments have paid for certain expenses—generally because of a lack of cash reserves in the Sanitary District—it is my belief that not all relevant expenses of the Sanitary District have been tracked by the Sanitary District.

Q. Can you provide any examples?

A. Yes, I can. One current example relates to flooding in the Roxana subdivision. The Roxana subdivision has a separated sewer system but storm drainage has been seeping into the sanitary system and, as a result, flowing to the Roxana Lift Station. To remediate this problem, efforts are being undertaken to clean the sewer and do a videotaped hydraulic study of the collection system. The project is also currently under bid for lining five miles of the system, including manhole repair and replacement to avoid stormwater seepage into the sanitary collection system. This project has an expected total cost of $3.5 million, and those expenses are being funded out of the City's engineering budget or Stormwater Fund rather than the Sanitary District, even though this is part of the sanitary collection system.

Another example involves maintenance and repairs for the large collection sewer main for the Alder St. Lift Station, which is an old brick sewer around 100 years old. That sewer conveys approximately 80% of the influent to the WWTP. A $14.5 million project is underway to clean the sewer and re-line it. Construction on this project is anticipated for 2022 and 2023. A portion of this expense may be assigned to the Sanitary District, rather than paid by other funds or departments; the Sanitary District has not budgeted for this expense.

A third example concerns sewer removal and replacement in conjunction with Indianapolis Blvd. roadway construction from Michigan Avenue to Columbus Avenue. The full budget for the entire roadway project is estimated to be approximately $22 million. The Sanitary District may be assessed a portion of that expense related to the sewer replacement if the expense is not carried by other departments. Again, the Sanitary District has not budgeted for this expense.

Q. Is there an expectation that the Sanitary District begin covering certain repair and maintenance expenses that may have previously been paid by other departments or budgets?

A. Yes. The Sanitary District may need to pay for its own repair and maintenance costs rather than shift those expenses to other departments or the City to the extent it can. We are beginning to plan for these kinds of expenses as discussed further below.

Q. Have you also had recent maintenance issues at the WWTP?

A. Yes. Some of our WWTP processes have not been fully operational over the last few years due to mechanical failures, and this has led to violations of our NPDES Permit. In early 2020, two gear boxes for our aerators at the oxidation ditch required replacement. One spare gear box was on hand at the plant but repairs to the other gear box took approximately six months to complete. During this time the plant incurred NPDES violations for ammonia due to the lack of sufficient aeration. Upon recovery from this condition, biosolids production increased at the end of 2020. This resulted in an increase in the sludge blankets in our five clarifiers. During the winter of this year, two of the five clarifiers became inoperable as the tow/bridges and skimmer arms in both clarifiers were damaged, partially the result of the thicker sludge blankets in the clarifiers. The clarifiers were taken offline for an extended period until repairs could be made. The treatment capacity of the plant, especially with respect to solids removal, was reduced during this time, resulting in more NPDES violations for total suspended solid discharges. Additionally, during this same time period, breakdowns of the two 30-year old sludge dewatering presses occurred. This resulted in having generally one dewatering press operational from December 2020 through October 13, 2021, severely limiting our ability to remove biosolids from the treatment stream and contributing to the increased frequency of NPDES violations for total suspended solids.

LONG TERM CONTROL PLAN (LTCP)

Q. Is East Chicago under an LTCP with IDEM?

A. Yes, it is, and has been since 2007 related to combined sewer overflows ("CSOs").

Q. Is Attachment KLM-4 a copy of the LTCP originally approved by IDEM?

A. Yes, it is, as well as the letter approving it.

Q. Can you please describe East Chicago's LTCP and its phases?

A. The City's LTCP, as originally planned, involves various construction projects to avoid or minimize CSOs. In particular, the LTCP has as its goals the elimination of CSO outfall from the Michigan Avenue Pump Station to the Indiana Harbor Ship Canal, limited discharge from the Alder St. Lift Station to the Grand Calumet River, and either full or limited treatment of stored combined sewage from the CSO Lagoon at the WWTP which discharges to a tributary to the Grand Calumet River. The LTCP is expected to result in the following statistical level of control:

- wet-weather flows up to the 1-year, 1-hour storm receive full treatment at the WWTP, resulting in no CSO discharges systemwide;
- wet weather flows greater than the 1-year, 1-hour storm will receive a minimum of primary treatment and disinfection by the CSO Lagoon prior to discharge; and
- there will be no untreated CSO discharges caused by wet-weather flows less than the 10-year, 1-hour storm.

Q. Has any phase of the LTCP been completed?

A. Yes. Phase I is complete. Phase I included the elimination of a cross-connection between a main combined sewer and a dedicated storm sewer, replacement of pumps at the 145th St. Lift Station, partial installation of sewer main and metering pit for the

WWTP planned conveyance of increased CSO influent after completing Phase II improvements at the Alder St. Lift Station with discharge to the WWTP CSO Lagoon, and construction of a CSO dewatering well to pump stored CSO wastewater in the CSO Lagoon to the WWTP headworks for treatment and also to lower the water level in the CSO Lagoon to increase its storage capacity for the next storm event.

Q. What was the purpose of this construction?

A. The general purpose was to increase storage capacity during storm events.

Q. What is involved in Phase II of the LTCP?

A. Phase II LTCP CSO has four primary components: upgrades to the 145th St. Lift Station, upgrades to the Alder St. Lift Station, upgrades to the Roxana Lift Station, and construction of conveyance facilities to the WWTP and CSO Lagoon.

Q. Have some of these projects begun?

A. Yes. Construction and engineering firm Kokosing is providing services and was issued a Notice To Proceed with Phase II activities in November 2020. At that time, it began certain piping and installation projects. Substantial progress has been made on the various construction projects with a projected completion date of September 2022.

Q. What are the upgrades to the 145th St. Lift Station?

A. Two existing pumps will be removed and modified to increase their pumping capacity, and then-installed. Three additional will be installed. A new valve vault and piping header will be installed. We will eliminate the existing pressure chamber and install a new electrical transformer, new motor controls, and PLCs. As of October 19, 2021, the majority of this work has been completed. The three new pumps were installed and the two existing pumps have been modified and re-installed. Final testing of four of the pumps is being completed during the week of October 18 and the installation and testing of one repaired pump is scheduled for the first week of November.

Q. What are the upgrades at the Alder St. Lift Station?

A. We are removing three existing pumps and replacing with three new VFD pumps with higher horsepower to increase the amount of water pumped to the WWTP for treatment and reduce the volume and frequency of CSO permitted discharges. We will add new motor controls and PLCs. We will connect the SCADA to a fiber network. As of this time, all three new VFD pumps have been installed and are operating and have been tested. Final programming of the SCADA controls is ongoing. During the testing of the pumps, it was identified that the sanitary wet well has an accumulation of solids, sludges, and floatables that could damage the newly installed pumps, require more routine preventative maintenance and/or limit their pumping capacity. The District is evaluating options to complete the cleanout of the debris in the wet well which is a significant task given the fact that the Alder St. Lift Station provides nearly 80% of the WWTP's influent flow which would require bypass pumping to the forcemain during the planned clean out activities.

Q. What are the upgrades at the Roxana Lift Station?

A. Similar to the Alder St. Lift Station, we removed two existing pumps and replaced with two new VFD pumps. We installed new motor controls and PLCs. We connected

SCADA to a fiber network. Lastly, we installed a new electrical generator. Each of these upgrades at the Roxana Lift Station have been completed.

Q. What conveyance construction is involved?

A. We have constructed a valve vault for forcemain connection to the headworks and CSO Lagoon. We are tying in existing forcemain to the valve vault. And we are tying in a forcemain to the WWTP headworks. We are installing a new forcemain from the new valve vault to the metering pit that was installed during Phase I. We are installing a new forcemain from the end of the meter pit forcemain to the CSO Lagoon influent channel. We are constructing a structural improvement to the CSO Lagoon influent channel, extending the Magoun Avenue forcemain, the filter building backwash, and the new forcemain discharges into the CSO Lagoon influent channel. The valve vault, new sewer main connections and CSO influent channel improvements have been completed. Work involving the forcemain connection from the valve vault to the WWTP headworks has been completed. When the SCADA programming and controls work is completed, we will be able to begin using the valve vault bypass.

The general goal of this construction is to enable the system to take increased CSO flow from the Alder St. Lift station, thereby reducing the volume and frequency of CSO discharges from the Alder St. Lift Station to the Grand Calumet River. During rain events, the additional CSO volume is pumped from the Alder St. Lift Station to the WWTP for treatment and, when the influent volume at the WWTP exceeds the high flow treatment design capacity, the excess CSO flow from Alder will be directed to the CSO Lagoon for storage and later treatment.

Q. Has the Sanitary District been coordinating with IDEM on Phase II LTCP activities?

A. Yes. The Sanitary District has been closely coordinating with IDEM on Phase II LTCP activities. An extended schedule for implementation of Phase II improvements became necessary when the City's Common Council did not approve the rate increase necessary to fund the Phase II improvements. As a result, the Sanitary District sought legislative relief to seek a rate increase through the Commission, leading to this rate case filing, and IDEM agreed to extend the schedule. These matters are reflected in Attachment KLM-5, which is recent correspondence with IDEM over the amendment to the LTCP schedule.

Q. How has the Sanitary District been financing the initial work on Phase II?

A. The Sanitary District secured a Bond Anticipation Note (BAN) in June 2020, which the City used to secure the agreement with Kokosing to begin construction on Phase II. Details on the BAN are included in Andre Riley's testimony.

Q. Will the BAN satisfy all the costs of Phase II?

A. No. This cost of the Phase II projects is anticipated to be approximately $13.05 million. The BAN provided temporary funding of $8.3 million, with the remainder being funded by the held over 2015 Bond proceeds. This allowed Kokosing to commence construction of the pump station rehabilitation project, with work estimated to be completed in December 2022. It was critical to begin construction on Phase II to meet commitments to IDEM. This rate increase is critical to provide adequate operating revenue to the Sanitary District and to permit the Sanitary District to pay off the BAN with long-term debt anticipated through the State Revolving Fund Loan Program (SRF).

Q. Is there a summary of Kokosing's work?

A. Yes. Attachment KLM-6 includes a summary of the Phase II pump station rehabilitation work agreement with Kokosing.

Q. Does the LTCP also contain a third phase?

A. Yes, it does.

Q. What is planned for Phase III of the LTCP?

A. Phase III involves sewer separation and UV disinfection at the CSO Lagoon. When the LTCP was originally submitted in 2007 and updated in 2011, sewer separation appeared to be the most cost-effective alternative at a projected cost of $12 million. However, a recent re-evaluation of sewer separation costs has determined that Phase III sewer separation is likely to cost approximately $60 million. Moreover, sewer separations are not achieving the results that regulatory agencies had once hoped. It is possible that it might be more helpful and cost-efficient to do "end of pipe" treatment (and removal of solids) with a separate disinfection unit at each of the outfalls.

Q. As a result of that assessment, is the Sanitary District re-evaluating Phase III?

A. Yes, the Sanitary District is consulting with the firm Donohue & Associates ("Donohue") to review the LTCP and evaluate additional Phase III alternatives, including end-of-pipe treatment as a potential alternative to sewer separation.

Q. Is this re-evaluation being done with the approval of IDEM?

A. Yes, IDEM has approved this re-evaluation of Phase III, and an LTCP Amendment is due December 31, 2021. Attachment KLM-5 provides additional details.

Q. What is the timeline for Phase III?

A. Construction on Phase III projects is currently set to start in September 2024, but the construction schedule may be revised when Donohue finishes its evaluation.

Q. Does this rate filing concern any expenses that will be incurred in relation to Phase III?

A. No it does not.

CURRENT INFRASTRUCTURE AND ADDITIONAL CAPITAL NEEDS

Q. Please describe the state of East Chicago's current sanitary facilities.

A. The Sanitary District is built on aging infrastructure. The Alder Street Lift Station was originally constructed in 1925 with various pumps added over the next 60 years and rehabilitated in 1998-1999. The 145th Street Lift Station was constructed around the early 1970s as a storm water pump station, but certain equipment is no longer functional. The WWTP was placed into operation around 1944 and rehabilitated in 1988 as a Three Stage Wastewater Treatment Plant. Various pictures of these facilities are included in Attachment KLM-7, which I created as an overview and visual of the system.

The LTCP Phase II and III projects will provide important upgrades for the Sanitary District collection system. Upgrades are also needed throughout the WWTP. With increasing age of the components, repairs are getting harder to make and replacement parts harder to find.

Q. In addition to the projects planned for LTCP Phases II and III, does the Sanitary District have a separate capital improvement plan?

A. Historically, the Sanitary District has not had a capital improvement plan; however, we have been working with engineers, including Donohue, to help us think strategically about long-term capital projects in addition to those related to the LTCP. As noted, many of the facilities are old and outdated, and in some cases have exceeded their useful life expectancy. I believe that the outdated treatment facilities and the age and deterioration of the collection contribute to inefficiencies and ever-growing operational cost increases that need to be addressed.

Q. Have you projected any expenses related to such engineering studies?

A. Yes, we have projected expenses for engineering assessments and studies related to repair and replacement needs. While the Wastewater Division has not typically incurred expenses for these kinds of activities, going forward, I believe that will be an important expenditure for the safety and efficiency of the Sanitary District. I understand that Mr. Riley made an adjustment in his rate study related to this priority.

Q. Have any specific projects been identified to-date?

A. Building upgrades, new equipment and pumps, general upkeep and repairs, and construction of combined sewer overflow structures are some of the items contemplated. Attachment KLM-8 reflects some of these projects.

Q. Are the total projected costs known for these projects?

A. We have some estimates but are still working with vendors to develop financial projections for most of these projects. The estimates that have been provided are included in Attachment KLM-8.

Q. How does the Department propose to finance these projects?

A. At this time, no funding has been specifically set aside for long-term planned improvements. I understand that Baker Tilly's rate study includes a component of rate-recovery based on depreciation to provide a source of revenue to finance such improvements.

Q. Would infrastructure improvements benefit customers?

A. Yes, I believe that infrastructure improvements are necessary to enhance efficiency and provide greater system reliability.

Q. Is it possible that priorities could change and other projects might be substituted for those currently reflected on Attachment KLM-8?

A. Yes, it is certainly possible. The projects specified are known and identified needs of the Sanitary District. However, it is possible that other priorities and needs may arise that would require expenditure of funds. The District currently does not have a separate "rainy day" fund to address extraordinary and unexpected expenses, and Attachment KLM-8 reflects only a best estimate of the improvements needed over the next five years. It is also very likely that as these improvements are made it will become apparent that other infrastructure improvements will be needed as well.

INFORMATION ABOUT SEWER RATES

Q. When was East Chicago's last rate increase?

A. The City Council for East Chicago last passed increased sewer rates in 2015, and the Sanitary District began implementing those new rates throughout 2016.

Q. How do East Chicago's rates compare with other municipal sewage works departments?

A. East Chicago has some of the lowest average monthly residential sewer rates at just under $21.00. Even if the requested rate increase is approved, customers' average monthly bills for a customer using 5,000 gallons/month will still be approximately $32.00, well below the statewide average of approximately $49.00/month.

Q. What is driving the need for increased revenue?

A. There are multiple factors driving the need for additional revenue, including the required environmental compliance costs from the LTCP, rate fatigue, operation and maintenance costs increases, revenue shortfalls under prior rates, service on previously issued bonds, and necessary capital improvements.

Q. As a municipal utility, East Chicago is not assessed taxes on its property. Do the new rates you are seeking contemplate a payment to the Civil City in lieu of property taxes?

A. Yes. The proposed rates include recovery of East Chicago's cost to make annual payments in lieu of taxes ("PILOT") in the amounts calculated in Baker Tilly's rate study. The Sanitary District has historically made PILOT payments to East Chicago, but it has not made those payments recently because of its financial condition.

Q. How much of a rate increase is the Sanitary District seeking in this proceeding?

A. Because it has conducted a cost-of-service study, the amount of the requested rate increase varies by user.

Q. How does the Sanitary District propose to implement the rate increase?

A. The Sanitary District proposes that rates be increased in phases. In his testimony, Mr. Riley addresses the amounts of the rate increases as allocated to various customer classes and the phased-in approach. These increases are necessary for the Sanitary District to modernize, meet compliance standards, and continue to provide sewage and stormwater services to the residents of East Chicago. It is therefore in our customers' interest for East Chicago to increase its sewer rates.

CONCLUSION

Q. Do you have an opinion regarding whether the Commission should approve the rate relief Petitioner is requesting?

A. Yes, I believe the Commission should approve the rate relief being requested. The increase is critically necessary to cover Petitioner's revenue requirements, meet environmental obligations, and continue providing reliable and efficient wastewater service to the ratepayers in East Chicago.

Q. Does this conclude your direct testimony in this cause?

A. Yes.

VERIFICATION

I, Kenneth L. Myers, affirm under penalties of perjury that the foregoing representations are true and correct to the best of my knowledge, information, and belief.

Kenneth L. Myers

Date: Oct 21, 2021

US.135048073.01

KLM-1

2607 HICKORY DRIVE • DYER, INDIANA 46311
219.793.6403
KENMYERS2607@GMAIL.COM

KENNETH L. MYERS

PROFESSIONAL EXPERIENCE

Over 25 years of environmental management and consulting business experience solving a wide variety of environmental concerns for private industry, lending institutions and municipal government agencies. Presently responsible for the compliance enforcement and reporting related to the City of East Chicago Pretreatment Program for its wastewater treatment plant. Responsibilities include the review and approval of industrial wastewater discharge permits, oversight of the City's pretreatment monitoring and enforcement activities, preparation of various environmental reports including Monthly Monitoring Reports (MMRs), Combined Sewer Outfall (CSO) Discharge Monitoring Reports (DMRs) and quarterly and annual reports to the United States Environmental Protection Agency (USEPA) and Indiana Department of Environmental Management (IDEM) as part of our municipality's reporting requirements under various Administrative Orders of Consent. Also responsible for oversight of the day-to-day 24/7 wastewater plant and collection system operations. Previously, completed and/or managed over 1,000 due diligence projects including completion of Phase I ESAs and/or Transaction Screens, desk top reviews and opinion reports, and peer review of other consultant environmental reports for a wide variety of commercial and industrial properties throughout the United States and Canada. Designed and implemented Phase II investigations to address identified environmental concerns. Developed and implemented remedial cleanup strategies to obtain state agency approved closures for various environmental concerns including LUSTs, vapor intrusion, plant decommissioning, soil and groundwater impacts involving various contaminants, and Brownfield development. The closure strategies included monitored natural attenuation (MNA), Risk Integrated System of Closure (RISC), institutional and/or engineering controls, and active remediation using various treatment systems to cost effectively obtain the closure objectives of each specific client's need. Developed and implemented Site Investigation Plans, Corrective Action Plans (CAPs), periodic monitoring reports, Remedial Action Work Plans (RAWPs), Remedial Action/Corrective Action Completion Reports (RACRs/CACRs), and UST closure reports for submittal to various state environmental agencies. Responsible for managing a portfolio of over 100 LUST sites in Illinois and Wisconsin with total environmental project costs of nearly $3 million per year. Completed construction oversight and monitoring for environmental remediation projects as well as general construction and redevelopment projects, including contract administration. Performed Property Condition Assessments (PCAs) for various lending institutions of industrial, commercial, multi-family housing and healthcare facilities. Responsible for mentoring of junior engineering staff through oversight, review, and evaluation of their performance on individual projects and establishing goals and objectives to assist in their career development. Responsible for quality control of environmental report deliverables to the client as well as submittals to appropriate state and federal agencies.

EMPLOYMENT HISTORY

City of East Chicago – Sanitary District - Director of Wastewater Operations, January 2021 to present;
Pretreatment Compliance Manager, February 2016 – December 2020
Lender Consulting Services, Inc. (LCS) - Vice President of Midwest Operations, Oct 2012 – June 2015
Golars LLC - Senior Project Manager, Dec 2011 – Oct 2012
Integrated Environmental Solutions, Inc. (IES) - Senior Project Manager, Dec 2010 – Nov 2011
Practical Environmental Consultants, Inc. (PEC) -Senior Project Manager, Jun 2007 – July 2010
A M Construction – Project Manager, Apr 2006 – Jun 2007

Short Elliott Hendrickson, Inc. (SEH) - Sr. Project Manager /Client Service Manager, Dec 1998 – Mar 2006
Niagara Frontier Consulting Services, Inc. (NFCS) - Principal Engineer, Mar 1996 - Jun 1998
Conestoga-Rovers & Associates (CRA) – Sr. Project Engineer / Project Manager, Jun 1988 – Mar 1996
Roy F. Weston, Inc. - Environmental Engineer – Technical Assistance Team, Mar 1986 – Jun 1988
Indiana State Board of Health (ISBH) - Sanitary Engineer –Air Pollution Control Division, Jan 1984 – Feb 1986

SUMMARY OF ADDITIONAL TRAINING /CERTIFICATIONS

- OSHA 40-hr Hazardous Waste, Certified.
- OSHA Hazardous Waste Site Supervisor, Certified.
- NEPA Certification for EIS/EA Studies for Indiana Department of Transportation Work, 24 hour training certification.
- Professional Liability Education Program, Contract Review and Revisions I (Contract Basics), II (Advanced Topics) and III (Additional Clauses). Presented by DPIC Companies.
- Client Service Management (CSM)/Project Management (PM) Certification Process – SEH.
- Due Diligence at Dawn – Focusing on the Due Diligence Market for Low-Cap Loans.
- Economic Growth through Environmental Quality - Brownfield Redevelopment in Indiana.
- Environmental Regulations in Illinois – Practical Aspects of Environmental Regulations.
- Groundwater Remedial Workshop – USEPA.
- Assessment and Management of Drinking Water Contamination - USEPA.

EDUCATION

Marquette University, Milwaukee, Wisconsin
Bachelors of Science – Civil Engineering

KLM-2

STATE OF INDIANA
INDIANA UTILITY REGULATORY
COMMISSION

PETITION OF THE BOARD OF SANITARY COMMISSIONERS OF THE SANITARY DISTRICT OF THE CITY OF EAST CHICAGO, INDIANA, FOR AUTHORITY TO INCREASE ITS RATES AND CHARGES FOR WASTEWATER SERVICE, AND FOR APPROVAL OF NEW SCHEDULES OF WASTEWATER RATES AND CHARGES.	)	Cause No. 45632

PETITION

Petitioner, the Board of Sanitary Commissioners of the Sanitary District of the City of East Chicago, Indiana ("Petitioner"), respectfully petitions the Indiana Utility Regulatory Commission ("Commission") for authority to increase its rates and charges for wastewater service and approval of a new schedule of rates and charges applicable thereto. In support of its Petition, the Petitioner states:

1. Petitioner provides municipal wastewater services within the East Chicago Sanitary District ("Sanitary District") through the Wastewater Division. The Board has been established pursuant to Ind. Code § 36-9-25-3(b). The Wastewater Division collects rates and charges for the rendering of services pursuant to Ind. Code § 36-9-25-11.

2. Petitioner, through its Wastewater Division, collects, conveys, and treats wastewater within the Sanitary District for residential, commercial, industrial, and other consumers. Petitioner's wastewater properties are used and useful in its public service and

operated and maintained so as to provide adequate, dependable, and efficient service to its customers.

3. As a municipal wastewater utility, Petitioner is generally exempt from the jurisdiction of the Commission except, as discussed further below, for purposes of opting to seek approval of rates and charges from the Commission.

4. Petitioner's existing wastewater rates were established pursuant to Ordinance No. 15-0023, adopted by the Common Council of the City of East Chicago ("Common Council"), on November 25, 2015.

5. Petitioner has experienced increased cost and expense since its last rate increase approved by the Common Council.

6. Petitioner must also make necessary additions, extensions, replacements, and improvements to its capital infrastructure to continue providing reasonable and adequate service to its customers, as well as comply with an existing 2007 agreement with the Indiana Department of Environmental Management (IDEM) to undertake capital improvements to address rain-induced discharge, i.e., combined sewer overflows or "CSOs," into rivers and streams that is in violation of the federal Clean Water Act as explained in greater detail in supporting testimony.

7. Petitioner proposes to obtain increased funding for additions, extensions, replacements, and improvements for its wastewater service and infrastructure from revenues. Petitioner also intends to use increased funding to support the issuance of long-term debt financed through SRF to payoff outstanding Sanitary District Revenue Bond Anticipation Notes of 2020 (the "2020 BAN").

8. Petitioner's revenues provided by its current rates are inadequate to meet the cost and expense of operating its present facilities; the cost and expense of capital improvements; and the costs and expenses to meet or exceed environmental, legal, and other requirements.

9. Specifically, the existing rates and charges do not produce sufficient revenue for Petitioner to pay all the necessary expenses related to the operation of the wastewater services, including maintenance costs, operating charges, upkeep, repairs, depreciation, and interest charges on existing financial obligations; provide a sinking fund for the liquidation of bonds or other evidence of indebtedness; provide a debt service reserve for bonds or other obligations; provide adequate money for working capital; provide adequate money for making extensions and replacements to the extent not provided for through depreciation; provide funding for legally required capital improvements; provide money for the payment of any taxes that may be assessed against the utility; compensate the City for taxes that would be due to the City on the utility property were it privately owned; nor provide a return on investment for the physical plant facility investments. The existing rates and charges are therefore insufficient per Ind. Code § 36-9-25-11.3(f).

10. It is now necessary to increase the present rates and charges in order to provide sufficient funding to meet the required financial burden of operating and maintaining the Petitioner's wastewater system, including meeting the environmental and legal requirements necessary to enable Petitioner to continue rendering safe and efficient wastewater service.

11. During the 2020 Session of the Indiana General Assembly, House Enrolled Act 1131 was passed to increase access to the Commission for the purpose of setting new rates and charges. Specifically, the bill amended Ind. Code § 36-9-25-11.3 to expand access to the

Commission for Sanitary Districts in a "municipality in a county having a population of more than four hundred thousand (400,000) but less than seven hundred thousand (700,000) in which the legislative body has adopted this chapter by ordinance" and "that is under an order or party to an agreement with one or more state or federal agencies to remediate environmental conditions." Ind. Code § 36-9-25-11.3(a)(2); *id.* § 1(a)(2).

12. The East Chicago Sanitary District meets this expanded criteria added through the 2020 legislation. The East Chicago Sanitary District is located in Lake County, which has an estimated population of approximately four hundred eighty-five thousand (485,000). Additionally, the Sanitary District entered into an agreement with IDEM in 2007 to undertake capital improvements to address unlawful sewage discharge into rivers and streams that can occur during rain events.

13. Pursuant to Ind. Code § 36-9-25-11.3(d)(1), at its public meeting on August 5, 2021, Petitioner approved the filing of this Petition with the Commission seeking authority for an overall increase not to exceed 40%. Such rate increase is proposed to be implemented pursuant to a cost-of-service study and a phased-in approach.

14. The extensions, replacements, and improvements for which authority is sought to increase rates and charges are reasonably necessary for Petitioner to provide adequate, efficient, and legally compliant wastewater service. The new schedule of rates and charges will represent rates and charges which are lawful, nondiscriminatory, necessary, reasonable, and just. Therefore, the establishment of the new schedule of rates and charges should be approved by the Commission.

15. Petitioner plans to utilize a historical test year for purposes of detailing Petitioner's actual and proforma operating revenues, expenses, and revenue requirements under present and proposed rates based on the twelve (12) months ended December 31, 2019, avoiding COVID-19 impact. Petitioner submits that the financial and accounting data, when properly adjusted pursuant to Petitioner's evidence, including, but not limited to, the additional capital requirements Petitioner must meet in accordance with the IDEM agreement, fairly reflect the Petitioner's annual operations. Therefore, such historical test year, as adjusted, is a proper basis for fixing the requested new rates for Petitioner and testing the effect of those rates.

16. Petitioner considers Ind. Code § 36-9-25-11.3, among others, applicable to the subject matter of this proceeding.

17. The attorneys authorized to represent Petitioner in this proceeding, who are authorized to accept service of papers in the proceeding on behalf of Petitioner, are:

Jane Dall Wilson, Atty. No. 24142-71
Katrina Gossett Kelly, Atty. No. 28583-49
Bradley S. Boswell, Atty. No. 35750-49
FAEGRE DRINKER BIDDLE & REATH LLP
300 North Meridian Street, Suite 2500
Indianapolis, Indiana 46204
317-237-0300
317-237-1000 (facsimile)
jane.wilson@faegredrinker.com
katrina.kelly@faegredrinker.com
brad.boswell@faegredrinker.com

18. Petitioner requests that a date be promptly fixed for a preliminary hearing in this proceeding.

19. WHEREFORE, Petitioner respectfully prays the Commission promptly conduct a prehearing conference, determine a procedural schedule, conduct an evidentiary hearing, and take such similar action as it deems appropriate, and thereafter issue a final order in this Cause

a) authorizing an increase in Petitioner's rates and charges for wastewater service as requested by Petitioner;

b) approving the establishment of new schedules of wastewater rates and charges applicable thereto, with such schedules properly to reflect and establish the proposed rate increase;

c) making such other and similar orders as the Commission may deem appropriate and proper.

Respectfully submitted,

/s/Jane Dall Wilson

Jane Dall Wilson (#24142-71)
Katrina Gossett Kelly (#28583-49)
Bradley S. Boswell (#35750-49)
FAEGRE DRINKER BIDDLE & REATH LLP
300 North Meridian Street, Suite 2500
Indianapolis, Indiana 46204
317-237-0300
317-237-1000 (facsimile)
jane.wilson@faegredrinker.com
katrina.kelly@faegredrinker.com
brad.boswell@faegredrinker.com

Attorneys for Petitioner, The Board of Sanitary Commissioners of the Sanitary District of the City of East Chicago, Indiana

CERTIFICATE OF SERVICE

The undersigned hereby certifies that the foregoing was served this 22nd day of October, 2021, electronically to:

William I. (Bill) Fine
Daniel LeVay
Indiana Office of Utility Consumer Counselor
PNC Center
115 West Washington Street, Suite 1500 South
Indianapolis, Indiana 46204
infomgt@oucc.in.gov
wfine@oucc.in.gov
dlevay@oucc.in.gov

/s/Jane Dall Wilson

KLM-3

RESOLUTION NO. SD 21-08

RESOLUTION AUTHORIZING A NEW SCHEDULE OF RATES AND CHARGES FOR SERVICES RENDERED BY THE SANITARY DISTRICT OF EAST CHICAGO, INDIANA, AND RELATED MATTERS

WHEREAS, the Board of Sanitary Commissioners ("Board") of the Sanitary District (District) of the City of East Chicago, Indiana has under consideration the necessity for an increase in sewer user charges; and

WHEREAS, the Board has caused a study to be made by Baker Tilly Municipal Advisors, LLC ("Rate Consultants") to determine whether or not an increase in user charges for service rendered by the Sanitary District, is required in order to enable the District to pay its necessary expenses of operating, including the payment of its bonded indebtedness, funds for extensions and replacements and all the other costs of operation as set forth in the applicable statute, LC. § 36-9-25 ; and

WHEREAS, the District has been advised by the Rate Consultants, that the District is in immediate need of a user charge/rate increase in order for the District to realize sufficient revenues to properly operate its facilities as required by statute; and

WHEREAS, the Rate Consultants have provided to the Board of Sanitary Commissioners a recommendation to implement upon approval by the Indiana Utility Regulatory Commission a proposed increase of 40%; and

WHEREAS, the Board of Sanitary Commissioners now finds that it will be necessary to increase the sewer user charges for wastewater service rendered by the District in order for the revenues produced by the District's facilities to comply with the statutory requirements of the State of Indiana; and

WHEREAS, a petition will be filed in the near future and assigned an IURC Cause Number; and

WHEREAS, the full extent of the rate relief to be sought in the referenced petition to the IURC remains to be finalized; and

WHEREAS, after full review, discussion and due consideration of the aforesaid matter presented, reported, and recommended, upon motion duly made and seconded, the following resolutions were adopted:

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF SANITARY COMMISSIONERS OF THE SANITARY DISTRICT OF THE CITY OF EAST CHICAGO, INDIANA

1. That a new schedule of sewer user charges shall be established reflecting an increase not to exceed forty percent (40%) of the current user charge rates.

2. That the Sanitary District Director and the Sanitary District employees and agents, are hereby authorized to secure the approval of the rates and user charges established by this Resolution by the Indiana Utility Regulatory Commission, and to take any and all actions that are necessary to put said rates and user charges in effect for the Sanitary District of the City of East Chicago, Indiana.

3. That all resolutions and parts of resolution in conflict herewith are hereby repealed; provided, however, that all existing rules and regulations of the District are to continue in effect and that the existing schedule of water rates and user charges for service rendered shall also remain in effect until a new schedule of rates and charges is established and approved by the Indiana Utility Regulatory Commission, and further until such time as the order of said Commission approving said new rates and charges shall direct.

4. That this Resolution shall be in full force and effect from and after its passage and adoption.

Adopted this 5th day of August 2021

Steve Flowers, President

/s/ Ben Moricz

Alojzy (Ben) Moricz, Vice President

Tia Cauley, Member

/s/ Jawann Jones

Jawann Jones, Member

Miguel (Mike) Rivera, Member

Attest:

Anthony Herrera, Secretary

KLM-4(a)

IDEM

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

VIA ELECTRONIC MAIL

December 30, 2011

Mr. Pete Baranyai
Director of Utilities
East Chicago Sanitary District
5201 Indianapolis Boulevard
East Chicago, Indiana 46312

Dear Mr. Baranyai:

Re: Long Term Control Plan Approval
NPDES Permit No. IN0022829
Agreed Judgment Cause
No. 48C01-0810PL00999
City of East Chicago
Lake County

IDEM's Office of Water Quality (OWQ) has conducted a substantive review of the City of East Chicago's (the City) Combined Sewer Overflow (CSO) Long Term Control Plan (LTCP), dated September 2011 (Revision December 2011), to determine whether it meets the requirements of state and federal law. The City's proposed LTCP alternative involves the elimination of CSO Outfall 002 (Michigan Avenue) by separating sewers in the Michigan Avenue drainage area. Discharges from CSO 003 (Alder Street) will not occur during storm events less than a 10 year, one hour event. Discharges from CSO 003, up to and including the 10 year, one hour event, will be transported to the CSO Lagoon at the Wastewater Treatment Plant (WWTP) for storage. Stored combined sewage in the CSO Lagoon will be returned to the WWTP for full treatment once WWTP capacity is available. If a discharge from CSO 005 (CSO Lagoon) is necessary, the flow will receive a minimum of primary treatment and disinfection prior to discharge. An itemized list of projects and estimated associated costs are identified in Table 6-1 of the LTCP. The LTCP proposes an implementation schedule of 20 years following IDEM approval and is expected to result in the following statistical level of control:

- Wet-weather flows up to the 1-year, 1-hour storm will receive full treatment at the WWTP – no CSO discharges system-wide.
- Wet-weather flows from greater than the 1-year, 1-hour storm will receive a minimum of primary treatment and disinfection by the CSO Lagoon prior to discharge.
- There will be no untreated CSO discharges caused by wet-weather flows less than the 10-year, 1-hour storm.

- Flows from greater than the 10-year, 1-hour storm will receive treatment to the greatest extent possible.

The estimated total capital cost for implementing the proposed plan is $20,785,000.

Based on this information, IDEM recognizes East Chicago's LTCP as an approvable document. Formal approval of the LTCP will be upon issuance of a modification, through a public process, of the City's NPDES permit No. IN0022829. The formal timeframe for implementing the LTCP will initiate upon issuance of the permit modification; however, the City may begin implementing the LTCP immediately. The LTCP implementation schedule is enforceable in accordance with the City's NPDES permit and Agreed Judgment Cause No. 48C01-0810PL00999.

Please contact Dave Tennis at (317) 232-8710 or by e-mail at dtennis@idem.in.gov if you have questions regarding this letter.

Sincerely,

Paul Higginbotham, Chief
Permits Branch
Office of Water Quality

cc: Jay Niec, Greeley and Hansen LLC
Kevin Pierard, EPA Region 5

KLM-4(b)

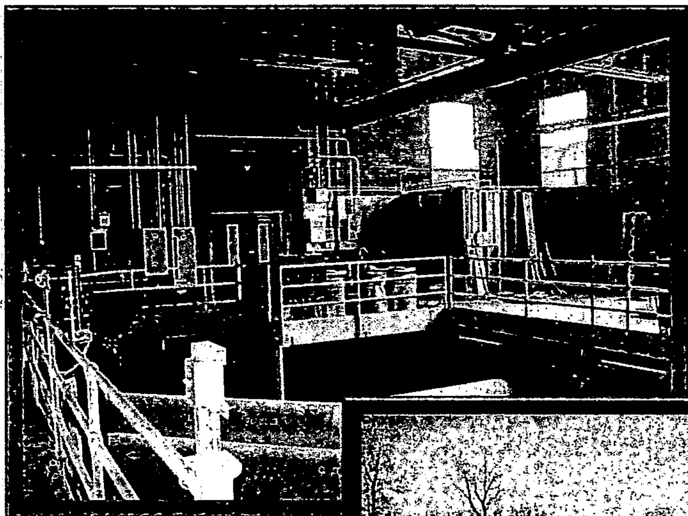
Cause No. 45632
Attachment KLM-4

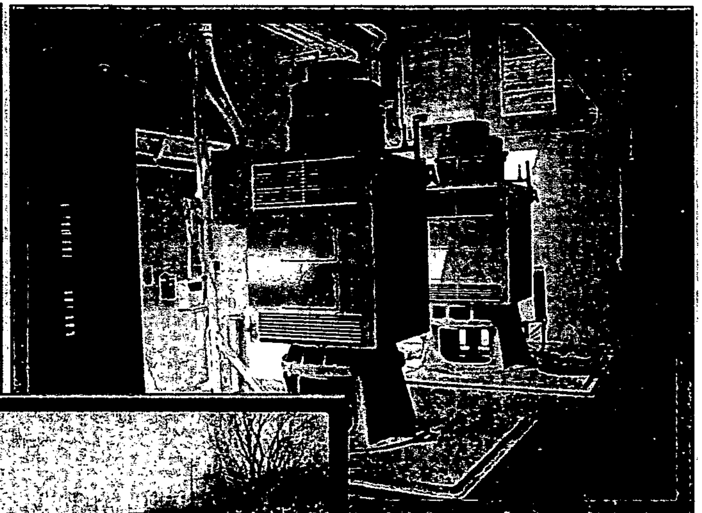
City of East Chicago

EAST CHICAGO SANITARY DISTRICT

IDEM OFFICE OF WATER QUALITY 2011 DEC 12 A 11:41

2011 Supplemental Work Plan to the 2007 East Chicago LTCP





GREELEY AND HANSEN LLC
650 S. Lake Street, Suite D
Gary, IN 46403

December 2011

CITY OF EAST CHICAGO
Anthony Copeland, Mayor

Peter Baranyai
Director of Utilities

5201 Indianapolis Boulevard
East Chicago, IN 46312
Phone: (219) 391-8466
Fax: (219) 391-8254
Email: PBaranyai@eastchicago.com

December 9, 2011

Mr. David Tennis
Indiana Department of Environmental Management
Office of Water Quality – Mail Code 65-42
Municipal NPDES Permit Section
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

Subject: 2011 Supplemental Work Plan to the 2007 East Chicago LTCP

Dear Mr. Tennis:

The East Chicago Sanitary District is pleased to submit the subject document for your review. We have revised the title of the document so that it more appropriately represents the content of the revised Work Plan that now encompasses the three (3) NPDES permitted CSO points. Please note that we have also provided to you a summary of the changes to the subject document that address each of your comments as outlined in the November 2, 2011 correspondence. We are also in the process of completing the financial affordability analysis of the alternatives as presented in the report so that we can determine when (time period) the community can afford to complete the controls, and then develop the implementation schedule for all of the controls.

We appreciate your assistance during this process and if you have questions regarding this correspondence, please contact me at (219) 391-8466.

Respectfully submitted,

Pete Baranyai
Director of Utilities

cc: Anthony DeBonis, Legal Counsel ECSD
Jay H. Niec, Greeley and Hansen LC

IDEM TECHNICAL REVIEW COMMENTS

East Chicago Sanitary District
CSO LTCP Supplemental Work Plan Review
NPDES Permit No. IN0022829
December, 2011

1. Comment: System-Wide Proposed Alternatives and Level of Control

Please confirm that the proposed LTCP alternative and level of control for Michigan Avenue continues to involve total sewer separation, and still corresponds to a 20-year redevelopment master plan, as discussed in the 2007 LTCP document.

For clarification, the proposed alternative/level of control for the Alder Street CSO identified in the Supplemental Plan (i.e., no CSO events from precipitation events less than or equal to the 10-year/1-hour storm event), appears to be an approvable alternative. However, the LTCP for East Chicago must provide a holistic, system-wide set of alternatives and proposed level of control before IDEM may consider approving the LTCP.

Response: The proposed LTCP Michigan Avenue continues to be based on total sewer separation. The time line of 20 years as proposed in the 2007 LTCP report is currently being verified by the District's financial consultant. We understand the need for a "system wide" set of alternatives and have addressed this issue throughout the 2011 Supplemental Work Plan. For example, Table 6-1 lists the proposed alternatives for the EC system. While the most feasible alternative(s) will be determined based on the updated financial analyses, Table 6-1 does list the "system wide" recommendations.

2. Comment: Financial Capability Assessment and Implementation Schedule

The 2007 LTCP document did contain a financial capability assessment based on the proposed alternatives at that time. East Chicago must update this assessment to include costs associated with the updated alternatives within the Supplemental Plan, as well as projected costs associated with separating sewers in the North Harbor/Michigan Avenue area. Chapter 6 of the Supplemental LTCP commits to completing an updated financial capability assessment, but does not provide a timeframe for completing this task.

The National CSO Policy provides for a flexible, phased implementation of CSO controls to achieve compliance with the technology-based and water quality based requirements of the Clean Water Act. As mentioned above, the East Chicago LTCP must contain fixed schedules for implementing all proposed CSO controls. CSO guidance documents outline schedules for implementing all proposed CSO controls. CSO guidance documents outline methods for calculating a LTCP implementation schedule based on a permittee's financial capability, and other factors. Within the guidance documents, general time periods of presented which correspond with a permittee's Financial Capability Matrix Score. It is important to note that the time periods presented in the guidance should be viewed as general boundaries to aid in establishing reasonable and effective CSO control implementation schedules. The final CSO control implementation schedule shall be a time period, and included sufficient detail regarding specific projects, that is negotiated between East Chicago and IDEM. The updated assessment mentioned above will guide IDEM and East Chicago in determining the appropriate system-wide LTCP implementation schedule.

The LTCP for East Chicago must present a holistic, system-wide schedule for implementing all proposed CSO alternatives, including greater detail from the redevelopment master plan for the North Harbor/Michigan Avenue area, and a schedule for implementing the proposed alternatives within the Supplemental Plan, before IDEM may consider approving the Plan.

Response: **We are in the process of completing the financial affordability analysis of the alternatives as presented in the report so that we can determine when (time period) the community can afford to complete the controls, and then develop the implementation schedule for all of the controls.**

3. Comment: Standard Operating Procedure(SOP) Development for "Draw-Down" of the CSO Lagoon

Section 4.5.3., of the Supplemental LTCP discusses using the CSO Lagoon at the WWTP to store wet weather flow, and discusses constructing a new CSO Lagoon Pump Station to drain the lagoon during dry weather. IDEM understands that the CSO Lagoon would never be fully drained, and therefore suggests utilizing the term "draw-down" to describe how flow will be returned to the WWTP.

The CSO Lagoon is currently operating as a flow through facility where discharges are controlled by a rectangular weir. Normally water levels on the weir are very close to the crest of the weir. Given that, please discuss how much freeboard in the Lagoon must be maintained to ensure capture of flows associated with the 10-year/1-hour storm event. An SOP must be created to outline maintenance activities for the CSO Lagoon (i.e., schedule to address solids build-up in the CSO Lagoon, and a plan to address structural deficiencies along the discharge area of the CSO Lagoon), as well as to identify operational procedures for the CSO Lagoon (i.e., how long the "draw-down" process would continue during dry weather to ensure that the necessary freeboard level is achieved). This SOP must be incorporated into East Chicago's CSO Operational Plan.

Response: **Text in Section 4.5.3 of the 2011 Supplemental Work Plan to the 2007 East Chicago LTCP have been revised to indicate that a Standard Operating Procedure (SOP) for Draw-Down of the CSO Lagoon will be developed. The draw-down of the CSO Lagoon will based on the stage-volume calculations of the CSO Lagoon. The SOP will outline maintenance activities for the CSO Lagoon (i.e. schedule to address solids build-up in the CSO Lagoon, and a plan to address structural deficiencies along the discharge area of the CSO Lagoon), as well as to identify operational procedures for the CSO Lagoon (i.e. how long the draw-down process would continue during dry weather to ensure that the necessary freeboard level is achieved). The SOP will be incorporated into East Chicago's CSO Operational Plan. SOP is also mentioned in Chapter 8 (Post Construction Monitoring Program and Operational Plan Revisions) of the 2011 Supplemental Work Plan to the 2007 East Chicago LTCP.**

4. Comment: Post Construction Monitoring

The LTCP must include a PCM program designed to document that the implemented alternatives are achieving the approved level of control. Such a program may include, but is not limited to, installation of an intensity rain gauge(s) and updating and/or developing additional modeling data. Page 4-6 of the Supplemental Plan recommends updating the existing SWMM model to address the elimination of the cross connection between the 84-inch storm sewer and 84-inch combined sewer on Alder Street. The Plan also recommends installing flow measuring devices at the Alder Street Pump Station to monitor flows into the wet well. If these activities are to be included in the PCM program then the LTCP must financially account for such activities, and the implementation schedules must identify when such activities are to occur.

Response: A new Chapter 8 titled "Post Construction Monitoring Program and Operational Plan Revisions" has been added to 2011 Supplemental Work Plan to the 2007 East Chicago LTCP. The recommended Post Construction Monitoring Program (PCM) will vary for each outfall as per the recommended approach for the control of CSO's from each outfall and will be developed accordingly as the recommended plans for each CSO outfall are completed.

Tasks to Update the existing SWMM model to address the elimination of the cross connection between the 84-inch storm sewer and 84-inch combined sewer on Alder Street and installing flow measuring devices at the Alder Street Pump Station to monitor flows into the wet well have been included in the PCM. The 2011 Supplemental Work Plan to the 2007 East Chicago LTCP financially accounts for these activities in Section 4.6.1 - 145th Street Storm Water Pump Station and Tributary Storm Sewers. The implementation schedule will identify when these activities are to occur.

5. Comment: General Comments on the Supplemental Plan

Chapter 5 of the Plan outlines the selected alternative for Alder Street and the 145th Street Pump Station. As understood by IDEM, no CSO events from precipitation events less than or equal to the 10-year/1-hour storm event will occur from either the Alder Street CSO or the CSO Lagoon. Therefore, item number one (1) on Page 5-9 should be revised to remove any reference to primary treatment.

Response: This reference has been removed from the text in Chapter 5 of the2011 Supplemental Work Plan to the 2007 East Chicago LTCP

6. Comment: Clarification is needed on Page ES-1 regarding the location of East Chicago. Current text in paragraph two (2) states that East Chicago is located west of Chicago and east of Gary, Indiana these locations should be reversed.

Response: The text (Page ES-1) has been corrected in the 2011 Supplemental Work Plan to the 2007 East Chicago LTCP..

7. Comment: Clarification is needed on Page 4-4 regarding the number of the pumps at the Alder Street Pump Station. Current text in Section 4.5.1., states "The existing four (3) storm pumps..." Please clarify the correct number of existing storm pumps.

Response: There are 4 storm pumps at the Alder Street Pump Station. Text in Section 4.5.1 (Page 4-4) has been corrected to reflect the 4 pumps.

Table of Contents

Table of Contents

Table of Contents

List of Tables

List of Figures

Table of Contents

List of Appendices

Executive Summary

The purpose of this Supplemental Work Plan is to evaluate and present selected storage and treatment options for combined sewer flows that flow to and emanate from the Alder Street basin as well as to address the Magoun Avenue, and the Michigan Avenue pump station relative to the East Chicago Wastewater Treatment Plant (EC WWTP). The information provided in this Supplemental Work Plan has been partially obtained from previous Long-Term Control Plan (LTCP) studies, site visits and discussion with the Owner. The element of this Supplemental Work Plan related to recommended alternative(s) is a prerequisite for consideration and approval by the Indiana Department of Environmental Management (IDEM) in order to be compliant with the intentions of the IDEM's CSO control strategy. It also is possible that the projects identified in this Supplemental Work Plan could be eligible for low interest State Revolving Fund (SRF) funding provided that terms and conditions of a Preliminary Engineering Report (PER) be submitted to the IDEM's SRF section for consideration and approval. Ultimately, if SRF funding is to be obtained, an SRF application will also need to be submitted to the IDEM.

The City of East Chicago is a community of approximately 30,000 residents located east of Chicago and west of Gary, Indiana and adjacent to Lake Michigan. The City encompasses an area of approximately 15.6 square miles. The City of East Chicago's WWTP presently provides service to many residential, commercial and industrial customers located within and outside the City's limits. Primarily, the EC wastewater collection system is comprised of combined sewer systems.

Regulatory requirements dictate the frequency, occurrence and the amount of combined sewage that may be discharged to a receiving stream. The CSO occurrence is primarily a function of protection of the WWTP during periods of high rainfall. This protection measure assures that the WWTP does not become overwhelmed with high amounts of water during a rain event and that it can continue to effectively treat wastewater during storm events. Unfortunately, a side effect of combined sewers is that the additional storm water that enters the sewers during a storm event must eventually go somewhere, and when the WWWTP is at its flow capacity, the excess flow reaches the receiving stream.

This Supplemental Work Plan contains recommendations to reduce the occurrence of CSO events to the receiving stream during a specified rain event from the East Chicago NPDES permitted CSO locations and to meet the criteria as set forth by the IDEM regarding the quantity and quality of allowable discharges. Recommendations include storage and treatment methodologies, associated costs, and a schedule of proposed project(s) implementation. The suggested recommendations will allow safe continued operation of the WWTP, and meet the intent of the IDEM CSO LTCO strategy for the CSO basin area.

Chapter 1 Introduction

1.1 Overview

Combined sewer systems convey both sanitary wastewater and storm water through the same sewer main in the collection system to a wastewater treatment plant (WWTP). During heavy rainfall events, the flow into the combined sewer system can often exceed the treatment capacity of the WWTP or exceed the conveyance system's ability to transport the combined wastewater to the WWTP. Overloading the combined sewers with excessive water can result undesirable problems such as sewer backups, and basement flooding etc. Therefore, to alleviate and reduce the occurrence of problems associated with overloaded sewer systems, overflow points called combined sewer overflows (CSOs) are constructed at strategic locations in the sewer collection system to allow excessive combined flow to discharge into a receiving stream. The CSO locations are permitted under the National Pollutant Discharge and Elimination System (NPDES) through the utilities NPDES permit.

The City of East Chicago wastewater collection system is comprised primarily of a combined sewer system (CSS) that contains three (3) NPDES permitted CSOs overflows. During heavy rainfall events, these NPDES permitted CSOs discharge into the Grand Calumet River and the Indiana Harbor Ship Canal. The three (3) NPDES permitted CSO locations are:

1. Outfall 002 – Discharge of the Michigan Avenue Pump Station to the Indiana Harbor Ship Canal.
2. Outfall 003 – Discharge of the Alder Street Pump Station to the Grand Calumet River.
3. Outfall 005 – Discharge of the CSO Lagoon, which receives flow from the Magoun Avenue Pump Station, to an open channel that is tributary to the Grand Calumet River

1.1.1 Project Need and Scope

The East Chicago Sanitary District (ECSD) completed an update of its original 2004 Combined Sewer Overflow Long Term Control Plan in 2007 which identified several alternatives for improvements throughout the East Chicago collection system including at the WWTP to reduce CSOs being discharged to the Grand Calumet River and the Indiana Harbor Ship Canal.

The 2007 Combined Sewer Overflow Long Term Control Plan (LTCP) Update addressed the site-specific nature of the CSO discharges and identified CSO controls as required in the ESCD's National Pollution Discharge Elimination System (NPDES) permit. The combined sewer system and the impacts resulting from the combined sewer overflows into the Grand Calumet River and the Indiana Harbor Ship Canal were examined. CSO control alternatives were developed and analyzed based on their constructability, effectiveness and financial feasibility.

In 2011, the ESCD targeted the development of a Supplemental Work Plan as an update to its 2007 LTCP. The purposed of the Supplemental Work Plan was to not only focus on reducing the number of CSO occurrences related to the Alder Street Pump Station, but to also review the affects of the Magoun Avenue pump station, to review the recommendations to reduce CSOs tributary to the Michigan Avenue pump station, and to provide an overall plan to schedule, financially manage and implement the recommended improvements.

Therefore, this Supplemental Work Plan refines the CSO control alternatives developed in the 2007 LTCP and where feasible, also includes new control alternatives for reducing the number of CSO occurrences at the Alder Street Pump Station.

This Work Plan also includes alternatives for rehabilitating the 145th Street Storm Water Pump Station and addresses the cross connection between the 145th Street storm sewer and CSO sewer connected to the Alder Street Pump Station.

All alternatives developed in this work plan have been analyzed for constructability and effectiveness including a financial capability assessment.

1.1.2 Regulatory Compliance

According to the combined sewer overflow (CSO) control programs of the United States Environmental Protection Agency (USEPA) and the Indiana Department of Environmental Management (IDEM), ESCD is required to address CSOs through an evolving series of regulations. The USEPA and IDEM have developed the CSO control program as outlined in the following documents:

1. 1989 National CSO Policy, USEPA
2. 1991 Indiana CSO Strategy, IDEM
3. National CSO Control Policy, USEPA, 1994
4. State of Indiana CSO Strategy, IDEM, 1996
5. SEA 431 Adopted by Indiana Legislature March 2000
6. Combined Sewer Overflow Long Term Control Plan, Use Attainability Analysis Guidance Document, September 2001
7. Combined Sewer Overflow Public Notification Rule 327 IAC 5-2.1
8. SEA 620 Adopted by Indiana Legislature April 2005

Compliance with CSO regulations is included as part of the ESCD's NPDES Permit.

Chapter 2 Existing Conditions

The existing conditions of the Alder Street Pump Station and 145th Street Storm Water Pump Station and its impact on ECSD's combined sewer overflows are described below.

2.1 Alder Street Pump Station

2.1.1 General

The Alder Street Pump Station was originally constructed in 1925. The original installation consisted of two (2) horizontal 50-MGD centrifugal pumps, two (2) vertical 10-MGD centrifugal pumps and one (1) 25-MGD vertical centrifugal pump. All of these pumps pumped combined sewage from a 96-inch inlet sewer to a 9.5ft x 5.5ft concrete flume, which discharges to the Grand Calumet River at Cline Avenue through the Alder Street CSO 003 outfall location as shown in **Figure 2-1**.

Three (3) 8-MGD centrifugal pumps were added to the Alder Street Pump Station around 1944 when the Wastewater Treatment Plant (WWTP) for East Chicago was placed into operation to pump dry weather flows through a 42-inch forcemain to the WWTP. These sanitary pumps draw suction from the same wet well that receives the storm water flow.

In 1958, a vertical centrifugal 50-MGD storm water pump was added, a new 60-inch sewer was constructed to convey combined flows from Subsystems 4A and 3 to the Pump System, an existing bar screen was replaced with a new bar screen, a screen bypass channel was added, and motor operators were added to the sluice gates on the influent sewer.

In 1988, the sanitary pumps were replaced with submersible pumps installed in the dry pit. A pump house was also added above the sanitary pumps. A 36-inch magnetic flow meter was provided to measure the sanitary flows and the existing bar screen and inlet sluice gates was replaced. System automation was added in 1990.

The Adler Pump Station was again rehabilitated in 1998-1999 which included major improvements such as replacement of the existing bar screen with three (3) climbing bar screens, replacement of the six (6) existing storm pumps with four (4) new vertical turbine pumps, installation of three (3) new centrifugal solids handling sanitary pumps, and installation of new electrical gear, controls and standby generator.

2.1.2 Collection System

The Alder Street combined station and storm relief pump station serves Subsystems 4, 4A, 5, 5A, 6, 7 and 8 directly, and Subsystem 9, via Canal Street Sanitary Pump Station. The Subsystems are shown in Figure 2-2. With the exception of Subsystems 4A, and 5A, which feed into Subsystems 4 and 5 respectively, the above mentioned subsystems discharge into the main trunk combined sewer located on Alder Street as shown in **Figure 2-1**.

Figure 2-1. Project Location Map

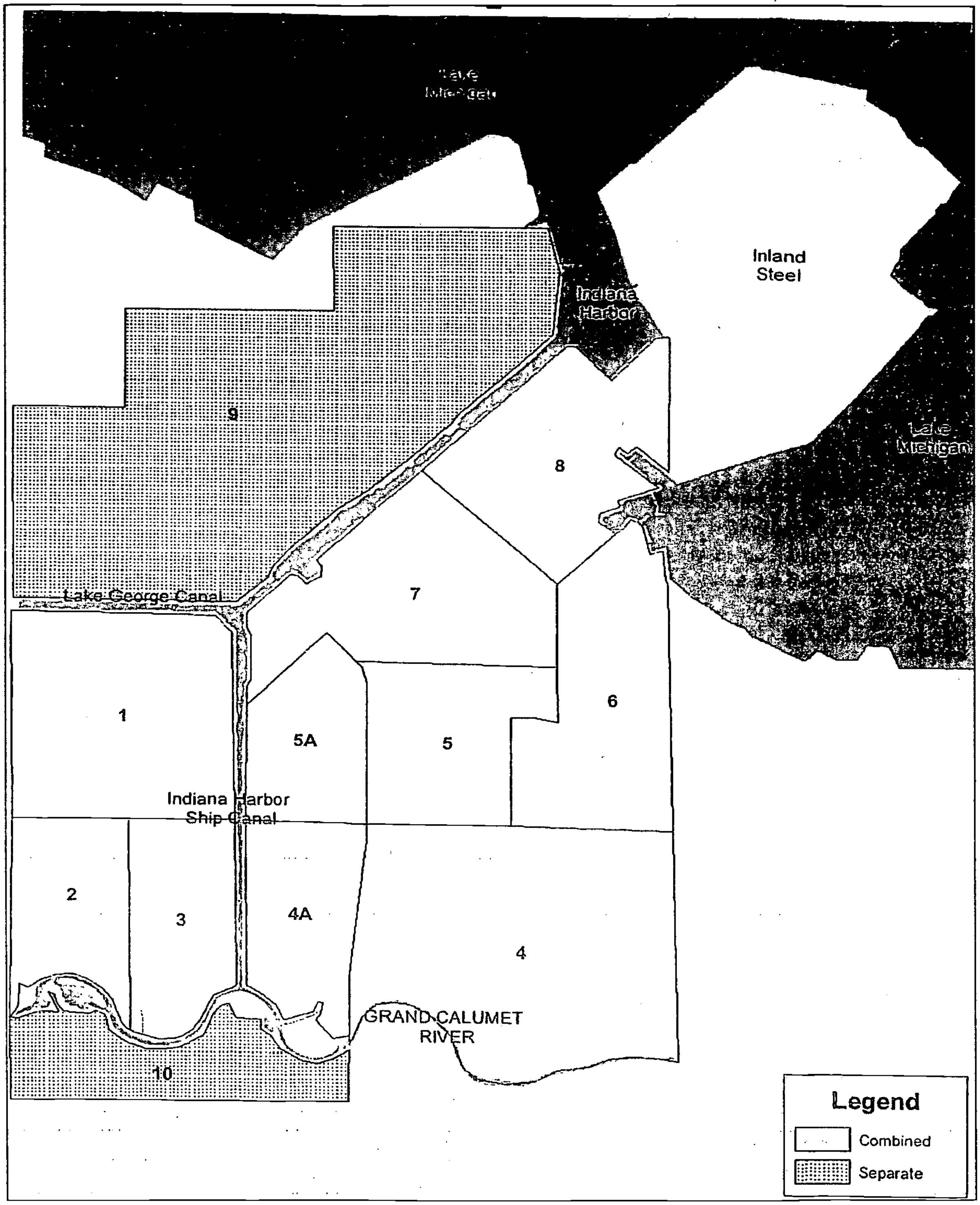


Figure 2-2. ECSD Subsystem Location Map
Source: 2007 EC LTCP UPdate

Sewer televising was conducted in April 2006 of the 84-inch storm sewer running adjacent to the 84-inch combined sewer feeding Alder Street Pump Station. During this video inspection, a cross connection was identified which was allowing water from the storm sewer into the combined sewer. The cross connection is located at the intersection of Alder Street and Jeorse Circle as shown in **Figure 2-3**.

Further investigation of the televising logs and records indicates that the cross connection pipe (approximately 12-inch) drops vertically from the 84-inch storm sewer through the connecting pipe and then through a bend, directs the flow to the combined sewer that is in parallel alignment in the Alder Street right-of-way. The cross connecting pipe is shown in **Figure 2-4**. Preliminary calculations have determined that this cross connection can allow flows of approximately 11,000 gallons per minute to flow from the 84-inch storm sewer to the 84-inch combined sewer at full pipe flow.

The above mentioned 84-inch storm sewer flows into the 145th Street Storm Pump Station which is discussed in Section 2-2.

2.1.3 Estimate of Alder Street Pump Station CSO Flows

The CSO volume and CSO flows for the Alder Street Pump Station were estimated based on the review of East Chicago's Long Term Control Plan (EC LTCP) Update, dated August 2007. The combined sewer system flow data was taken from the monthly NPDES CSO Discharge Monitoring Report (CSO DMR) for the period of January 2010 to June 2011. The CSO DMR data is included in Appendix A and summarized in **Table 2-1**.

Table 2-1 Summary of Monthly CSO DMR Reports From January 2010 through June 2011 for Alder Street Pump Station

Year	Total Precipitation (Inches)	No. of Days of Precipitation	Total CSO Discharged (MG)	No. of CSO Event Occurrences
2010				
January	0.88	6	0.33	1
February	0.56	5	0	0
March	1.43	12	0	0
April	3.79	12	3.5	3
May	5.74	15	4.1	3
June	6.87	16	6.21	3
July	6.26	13	12.67	4
August	2.73	7	4.2	2
September	3.34	10	1.2	2
October	3.1	6	2.3	2
November	2.43	11	1.3	2

Year	Total Precipitation (Inches)	No. of Days of Precipitation	Total CSO Discharged (MG)	No. of CSO Event Occurrences
December	2.79	6	4.11	2
2011				
January	0.23	3	0	0
February	2.14	9	9.2	4
March	2.18	9	1.9	2
April	5.66	17	6.3	5
May	6.2	12	10.32	7
June	4.6	12	8.7	4

Per the Storm Water Management Model (SWMM) model results used in the 2007 LTCP Update, the CSO volume and flows were calculated based on a 1-Year, 1-Hour rainfall event and a 10-Year, 1-Hour rainfall event. These SWMM model results are summarized in **Table 2-2.**

Table 2-2. CSO Discharge Summary for Design Storm Events at Alder Street Pump Station

Criteria	Unit	Rainfall	
Rainfall Duration	time	1-Year 1-Hour	10-Year 1-Hour
Rainfall Amount	inches	1.14	1.98
CSO Volume	MG	2.3	7.5
CSO Flow	MGD	50.7 [1]	122 [2]
Sanitary Flow to WWTP	MGD	20	20

(1) Based on one (1) small Storm pump in operation
(2) Based on one (1) small and one (1) large Storm Pump in operation

During the period of January 2010 to June 2011 as shown in the summary of monthly CSO DMR data in **Table 2-1**, rainfall occurred on 119 days in 2010 and 62 days in January through June of 2011. The annual rainfall received was 40 inches in 2010 and 21 inches in January through June of 2011. The CSO was activated from Alder Street Pump Station to the Grand Calumet River (NPDES permitted outfall No. CSO 003), on an average of 24 days in 2010 and 22 days in January through June of 2011.

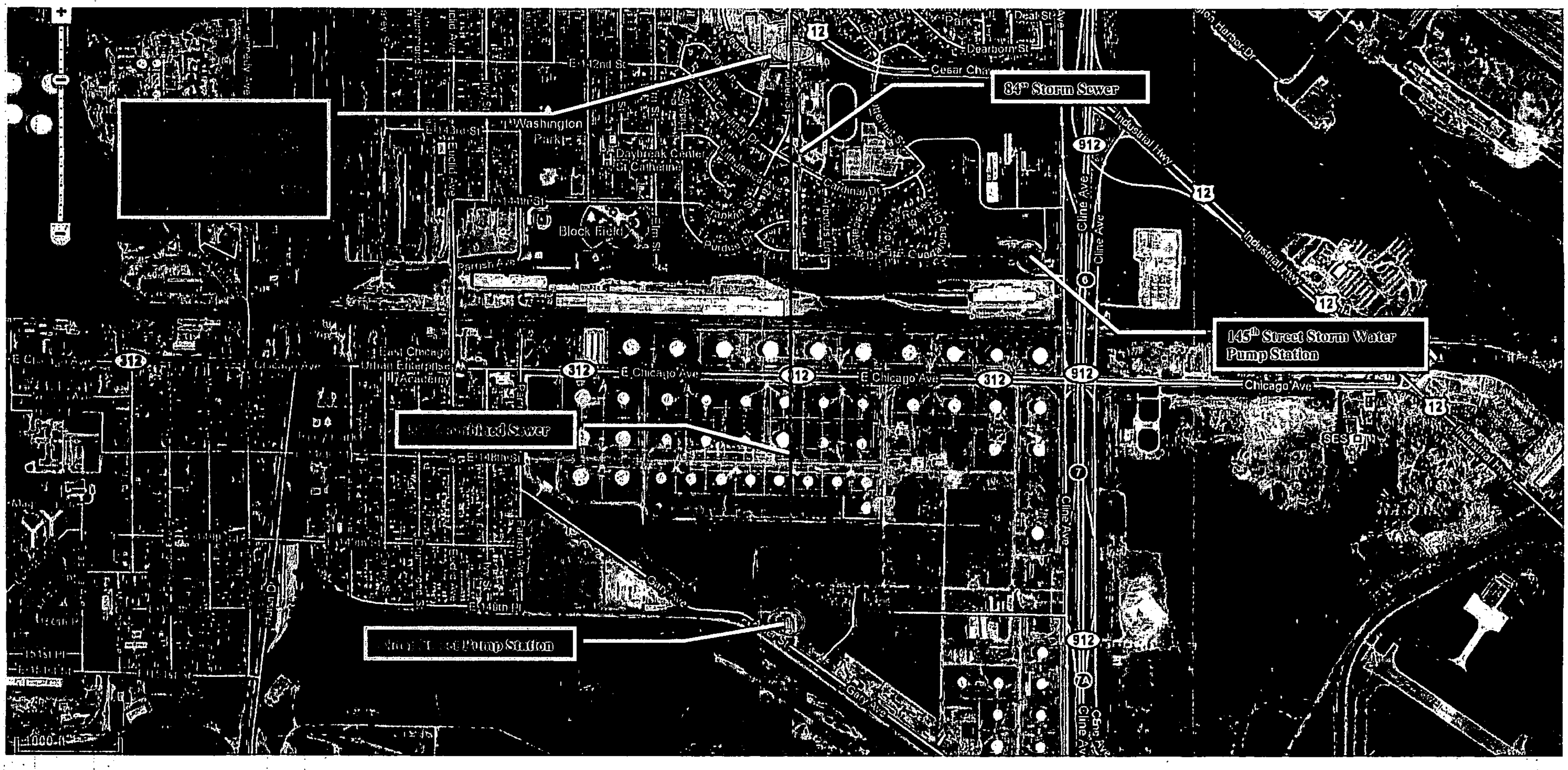


Figure 2-3. 84-Inch Combined Sewer and 84-Inch Storm Sewer in Alder Street

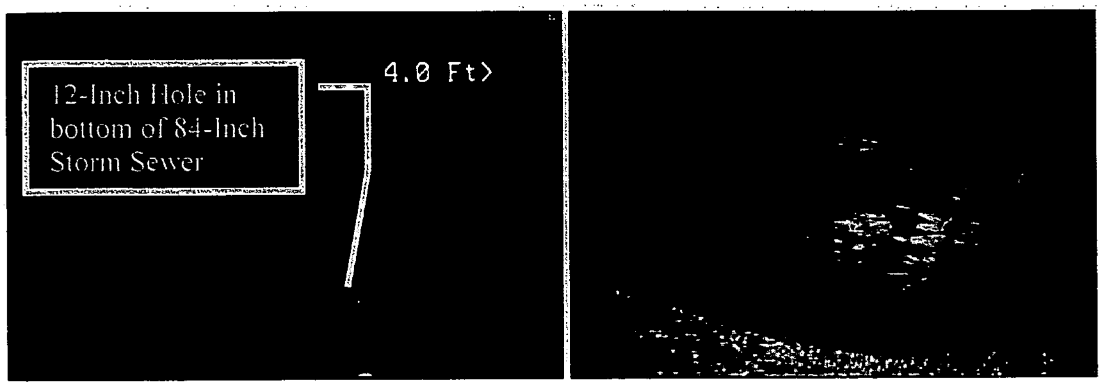


Figure 2-4. Photos showing Cross Connection Between 84-Inch Storm Sewer and 84-Inch Combined Sewer

2.1.4 Alder Street Pump Station Existing Conditions

The Alder Street Pump Station receives flows from a 96-inch combined sewer from the north and a 60-inch storm relief sewer from the west. The two sewers combine on the Alder Street Pump Station site before entering the wet well on the north end of the climber bar screen room. Out of three (3) climber screens, two (2) are used on a normal basis and a third is provided to accommodate high flows or as a back-up to the other two screens. The screened material removed from the bar screens are deposited into a dumpster in the climber screen room by a screenings conveyor. All three climber screens are in good working condition.

The screened wastewater flows to an expanded wet well south of the climber screen room. From the wet well, three (3) centrifugal solids handling sanitary pumps pump dry weather flow to the WWTP. During periods of high flow, such as a storm event, excess flow above the capacity of the sanitary pumps (i.e. 20 MGD) is pumped to the Grand Calumet River by four vertical storm water pumps. The existing pumps at the Alder Street Pump Station are summarized in **Table 2-2**.

Table 2-3. Summary of Existing Pumps at Alder Street Pump Station

Pump	Type of Pump	Pumping Capabilities	Working Condition[1]
Sanitary Pumps	Vertical, Dry Pit, Non Clog	Three (3) Total Each Pump rated 7,000 GPM @ 47-feet TDH, 125HP	Satisfactory
Storm Pumps	Vertical Turbine, Mixed Flow	Two (2) Pumps, Each rated at 48,650 GPM @ 24 feet TDH, 400 HP Two (2) Pumps, Each rated at 34,700 GPM @ 25 feet TDH, 300 HP	Satisfactory

(1) Based on Operators feedback

Additional information on both Sanitary Pumps and Storm pumps are provided in **Appendix B**.

All the operations of the storm pumps, sanitary pumps and bar screens are automatically controlled and monitored by a Programmable Logic Controller (PLC) in the Pump Station Control Panel. The PLC automatically starts/stops and adjusts the output of the sanitary and storm pumps based on the level of the wet well. An ultrasonic level sensor mounted above the wet well measures the level in the wet well. The level sensor sends a 4-20 mA signal to the PLC that allows it to determine the level in the wet well and operate the pumps to maintain a desired liquid level.

At least one sanitary pump is normally operating at all times. The storm pumps will only operate when the flow to the station exceeds the capacity of the sanitary pumps. The flow from the sanitary pumps is measured by a magnetic flow meter located in a vault outside of the station. Discussions with WWTP personnel have indicated that the magnetic flow meter has reached the end of its useful life and may need replacement.

Flow from each individual storm pumps is measured by an ultrasonic Doppler flow meter mounted on the discharge pipe of each pump.

An emergency generator is provided at the Alder Pump Station to provide emergency power in the event of a power outage. The diesel engine driven generator can power two sanitary pumps, three storm pumps, the bar screens and conveyor, exhaust fans and lighting panel in the station. An automatic transfer switch engages the generator in the event of power outage.

During a site visit to the Alder Street Pump Station, structural concrete joint deterioration was identified in the 9.5ft x 5.5ft discharge conduit to the storm pumps as shown in **Figure 2-5.** This original 1920s concrete conduit needs further investigation to determine the appropriate course of recommended repairs.

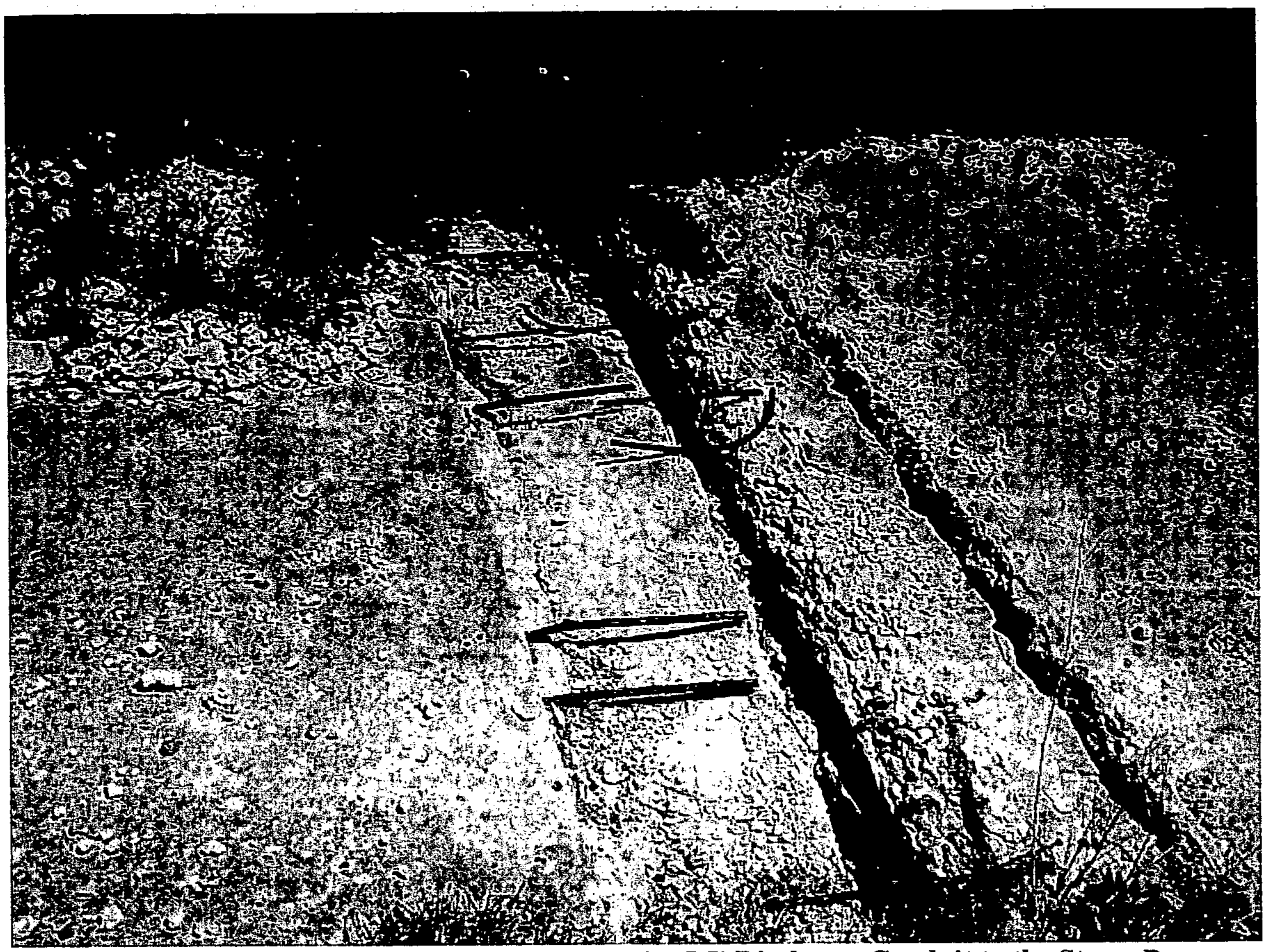


Figure 2-5. Concrete joint deterioration on the 9.5' x 5.5' Discharge Conduit to the Storm Pumps at Alder Street Pump Station

2.2 145th Street Storm Water Pump Station

The 145th Street Pump Station was constructed around the early 1970s as a storm water pump station to discharge storm water through a 48-inch force main to the GCR. The discharge location is adjacent to the Alder Street Pump Station discharge location on Cline Avenue as shown on **Figure 2-1**.

The 145th Street Pump Station receives storm water through an 84-inch storm sewer from the west. This 84-inch storm sewer (originally considered to be abandoned) was televised as part of 2007 EC LTCP update and found to still be active. A cross connection between the 84-inch storm sewer with the 84-inch combined sewer to Alder Street Pump Station was discovered during the mentioned televising near the intersection of Alder Street and Jeorse Circle as shown in **Figure 2-3**. The cross connection is further explained in Section 2.1.2.

The 145th Street Pump Station consists of a manually cleaned bar screen which is no longer functional, a wet well with spaces for six vertically mounted pumps, and a pump control panel mounted in a weather proof enclosure. There are no buildings located at the pump station site. There is currently only one working pump at the site. **Figures 2-6** and **2-7** show photos taken in May 2011 at the pump station site

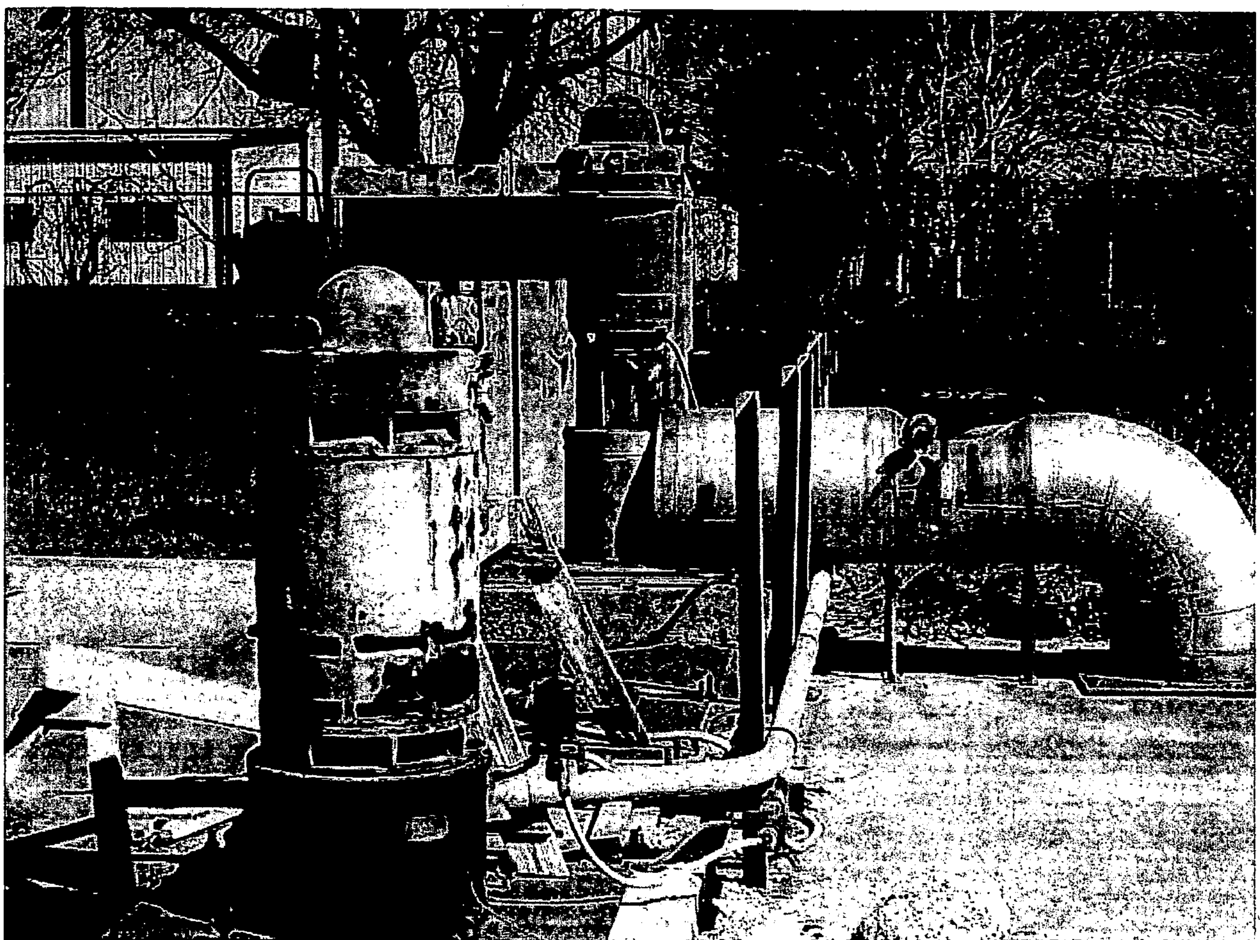


Figure 2-6. 145th Street Pump Station Site Photo I

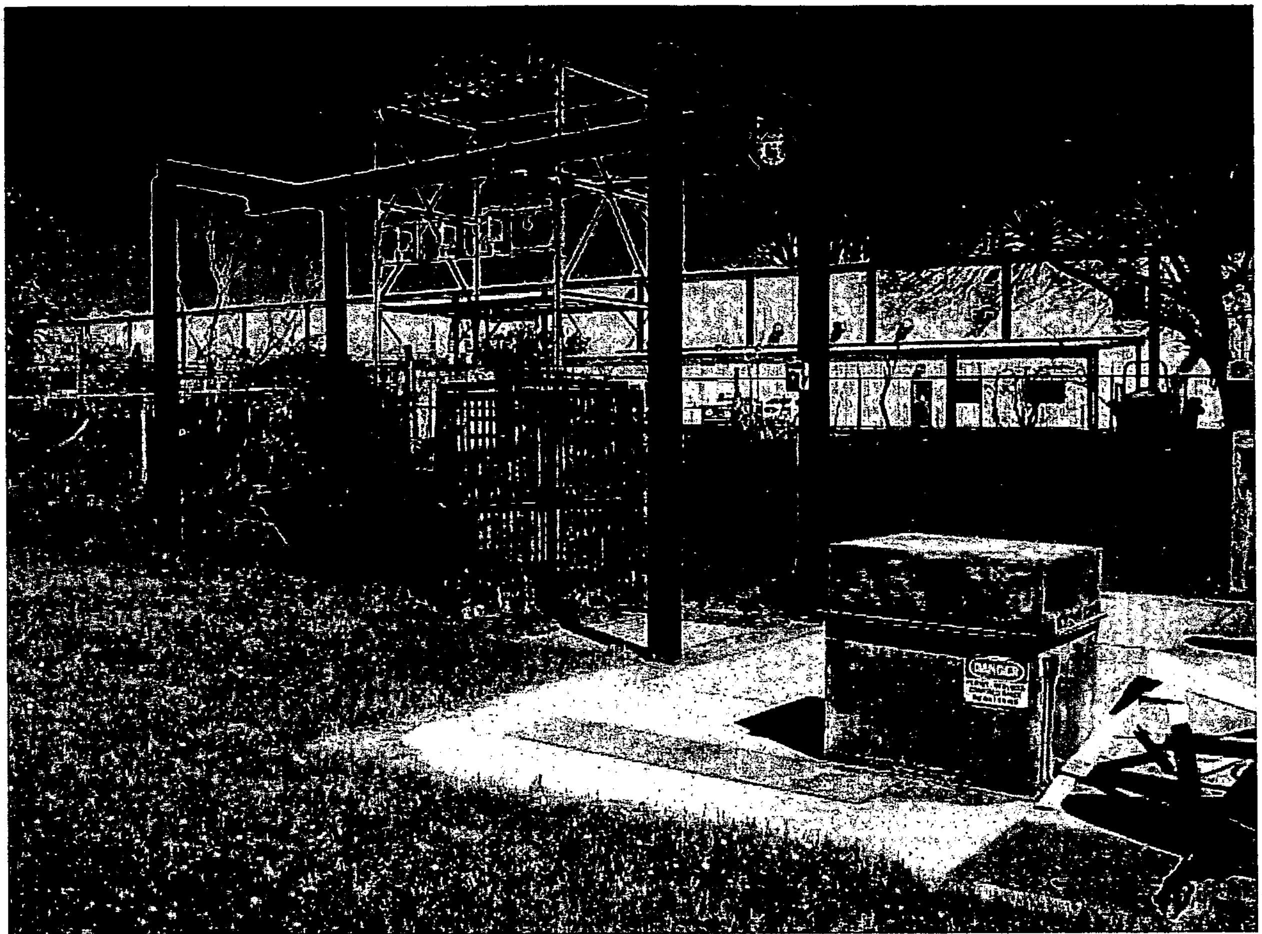


Figure 2-7 145th Street Pump Station Site Photo II

The pump station is currently active though no flow-records are available. It is expected that removal the above mentioned cross connection will result in additional storm water flows to the pump station.

A visual inspection of the pump station site indicated that major rehabilitation work is required to bring it to proper working condition. Additional information on the pump station is included in **Appendix C**.

Chapter 3 Development of Alternatives

3.1 General

Development of alternatives will include reviewing of alternatives as described in the East Chicago Long Term Control Plan (LTCP) Update dated August 2007 and considering further means of controlling CSO discharges at the Alder Street Pump Station.

Each alternative will be screened per the following criteria developed during discussions with East Chicago:

1. Overall cost of implementing the alternative;
2. Reduction in quantifiable CSOs;
3. Relative complexity of operation and maintenance of alternative/ selected technology;
4. Impact on community include economic benefits, public perception, land use and energy and utility usage and;
5. Acceptance of alternative by Indiana Department of Environmental Management (IDEM) in accordance with IDEM Policy for CSO Treatment Facility as included in **Appendix D**.

The recommendations for the Alder Street Pump Station and the 145th Street Pump Station were developed as a part of EC's existing LTCP Update, and will consider alternatives to provide for treatment of various amounts of CSO as measured as a percentage capture on an annual average basis, and/or will reduce the amount of storm water reaching the combined sewer. Based on discussions with IDEM, the strategy as used for this Supplemental Work Plan is as follows:

1. Primary treatment of combined sewage flows generated during storms up to the 10-Year 1-Hour storm event including 30 minutes detention or equivalent for settling, skimming and disinfection;
2. Treatment of combined sewage flows generated during storms in excess of the 10-Year 1-Hour storm event to the extent possible with facilities designed for lesser flows and;
3. Reduction of storm water getting into combined sewers in a quantifiable manner.

IDEM also allows for alternative facilities to be considered on a case specific demonstration that will achieve equivalent or better treatment and control, or that an alternative level of protection is adequate or necessary to achieve the water quality objectives. Demonstrations must consider receiving stream characteristics, discharge characteristic and cost/ benefit information.

3.2 CSO Retention / Primary Treatment and Disinfection Facilities

CSO Retention / Primary Treatment and Disinfection facilities will be evaluated for the CSO discharges from the Alder Street Pump Station.

The lagoon treatment that is currently provided for the Magoun Avenue CSO is considered to be equivalent or better than primary treatment.

The regulatory guidance describes the minimum level of CSO treatment as including primary treatment and disinfection. Primary treatment technology generally includes conventional primary settling tanks, ballasted flocculation, or vortex particle separators. For conventional primary treatment, the same tanks that are used for retention of a 1-Year 1-Hour storm event would be used for primary settling tanks and for chlorine contact tanks. The tanks would be equipped with overflow weirs and baffles along with facilities to flush the tanks after a storm event. For disinfection, it is anticipated that a hypochlorite chlorine solution would be added to the influent channel and a dechlorinating chemical (sodium bi-sulfite) would be added to the effluent channel. UV disinfection will also be evaluated.

As described in detail in 2007 EC LTCP Update, the use of ballasted flocculation and vortex particle separators (also known as swirl concentrators) as an option to conventional primary settling tanks were eliminated from further consideration due to additional complexity in treatment and additional operation and maintenance requirements.

3.3 CSO Storage

3.3.1 In-System Storage

The 2007 EC LTCP Update evaluated the potential for using various sections of the existing sewer system for temporary storage. In general, storage within the existing system is potentially feasible for the storage of flows from the smaller storm events (i.e. 3 month frequency events) and where volume is available in large diameter pipes that have been sized to convey flows from the larger storm events. However, runoff from the 1-Year and especially the 10-Year storm event as being considered in the analysis produced volumes of storm water that were greater than the volumes available in the existing piping system. Hence in-system storage was not considered to be a feasible alternative during the 2007 EC LTCP Update.

CSO control technology using embedded smart sensors will be evaluated for reducing CSO discharges. This technology can actively maximize the available storage volume in the system at any given time to reduce the volume of CSO reaching the Alder Street Pump Station using smart sensors and valves throughout the collection system.

3.3.2 Deep Tunnel Storage

Deep tunnel storage has been used as a means to control large amounts of CSO. An example of this technology in use is the Deep Tunnel System in Chicago, Il. On a large scale, where local geology is suitable, this proves to be a cost effective way to control CSO. However, the relative volume of CSO in East Chicago is small when compared with typical capacity of deep tunnel construction. As a result, this technology is considered prohibitively expensive for East Chicago, and will not be evaluated any further.

3.3.3 Lagoon Storage

Another option to provide primary treatment and disinfection of combined sewage flows generated during storm events up to 10-Year 1-Hour storm period is to provide facilities that can temporarily store the combined sewage. The use of a lagoon would involve a fill and draw operation, rather than a flow through treatment operation, for flows generated during a 10-Year 1-Hour storm event or less. For storms greater than the 10-Year 1-Hour storm event, combined sewage would flow through the lagoon and be discharged. As this is an option to the CSO retention and treatment facilities in IDEM's guidelines, it would need to be reviewed and approved by IDEM as part of the LTCP process.

Evaluation of this alternative will include relative costs, as well as the relative impacts, as compared to flow-through treatment at these locations. Other facilities such as screening the influent and other ancillary equipment will be evaluated, as well.

3.3.4 Tank Storage

An alternative option of providing CSO storage for the 10-Year 1-Hour storm event in a tank will also be considered. Tank storage will also function as a fill and draw operation as described above with lagoon storage. It would also include an overflow for events larger than the 10-Year 1-Hour storm event. The difference is that because the tank can be constructed with a deeper water depth and uses vertical walls; the area required for tank storage is significantly less than that required for lagoon storage. In addition, the use of flushing mechanisms with a tank eliminates the need for screening the influent and reduces the manual labor required to clean the facility after a storm event

3.4 Conveyance to the WWTP and CSO Lagoon

Conveyance to the WWTP for treatment can include a variety of transportation and treatment methods. The existing collection system includes a series of pumping stations that currently transport flows to the WWTP. The existing treatment facility includes a tertiary mechanical wastewater treatment plant, and a parallel CSO lagoon capable of providing the equivalent of secondary treatment to combined sewage flows.

A variety of options exist for improving conveyance to the WWTP for treatment. Conveyance options can also be developed in logical increments to match existing unit capabilities.

The first increment would include using existing pumping and force main capabilities to transport additional flow through the treatment lagoon at the WWTP site. Currently, flow to the mechanical portion of the WWTP during wet weather matches the existing treatment capacity. The CSO Lagoon, however, may be able to accommodate additional flows during the storm events. Evaluation of this alternative would include determining the impacts of pumping additional flows from the Alder Street Pump Station to the WWTP, and a corresponding amount of additional flows from the Magoun Pump Station to the lagoon, rather than the mechanical portion of the WWTP.

Another option is to evaluate the connection between the existing force main from the Alder Street Pump Station to the CSO Lagoon in addition to the WWTP. A related improvement would be to use this same section of force main after the CSO event subsides to return flows from the CSO Lagoon to the headworks of the WWTP. This can potentially require a new pump station at the CSO lagoon and the appropriate control valves on the force main.

The next increment of increasing conveyance to the WWTP would be that associated with increasing the treatment plant capacity with the addition of a new final clarifier. The previous WWTP expansion left space on the plant site for an additional clarifier, if needed in the future. The incremental increase in capacity associated with this addition should be evaluated to determine if additional pumping and force main facilities are needed, as well as to characterize the improvement in system performance.

Larger increments in increased transport and treatment capacity would require significant increases in treatment capacity at the WWTP, including aeration and tertiary filtration. The costs to construct, own and operate these additional WWTP facilities are considered excessive, and are not considered to be feasible for additional consideration.

3.5 Collection System Improvements

Construction of new storm and / or sanitary sewers as needed to provide a storm sewer system that is separate from the sanitary system was considered in the 2007 EC LTCP Update as the ultimate alternative to eliminate CSOs. The prior analysis indicated that separation of the entire system is cost prohibitive and is no longer considered as viable alternative. However, targeted separation of the storm sewer relief contributing to the Alder Street Pump Station will be evaluated. Currently, the Indiana Department of Transportation (INDOT) in conjunction with East Chicago is planning to separate sanitary flow from approximately 6,500 lineal feet of large diameter combined sewer between west 145th street and 151st street along Baring Ave. Even though both the new sanitary sewer and the existing combined sewer both flow to the Magoun Pump Station, a greater percentage of sanitary flow will be pumped to the WWTP on a consistent basis.

Rehabilitation of the 145th Street Storm Water Pump Station will also be evaluated as a part of Collection system improvements.

Chapter 4 Alternative Evaluation

4.1 General

This chapter evaluates the CSO reduction and treatment strategies that warranted further investigation as discussed in Chapter 3. The facilities needed to implement these strategies as part of this Supplemental Work Plan for the Alder Street Pump Station and 145th Street Pump Station are presented along with estimates of the probable project cost. The estimate of the probable project costs for facilities similar those presented in East Chicago Long Term Control Plan (LTCP) Update dated August 2007 (also called as 2007 EC LTCP Update in this Work Plan) were obtained by adjusting the 2007 EC LTCP Update dollars using the ENR Construction Cost Index (*CCI = 9116*).

4.2 CSO Retention / Primary Treatment and Disinfection

This alternative consists of the CSO Retention / Primary Treatment and Disinfection facilities as per IDEM guidance to provide:

1. Primary treatment of combined sewage flows generated during storms up to the 10-Year 1 Hour storm event including 30 minutes detention or equivalent for settling, skimming and disinfection;
2. Treatment of combined sewage flows generated during storms in excess of the 10-Year 1-Hour storm event to the extent possible with facilities designed for lesser flows.

As estimated in Section 2.1.3 of this Work Plan, for a 10-Year 1-Hour Storm Event consisting of 1.98 inches of rain, the total CSO volume is approximately 7.5 million gallons. Based on the flowrate of 122 MGD with one small Storm Pump and one large storm pump in service, the volume needed to provide 30 minutes of detention is 2.5 million gallons.

For this alternative, the sanitary pumps would continue to pump to the WWTP and the force main on the discharge of the CSO pumps would be intercepted and directed to the new 2.5 million gallon retention and treatment facilities. A process flow diagram of the existing pump station and the proposed CSO Retention/ Primary Treatment and Disinfection is shown in **Figure 4-1**.

For smaller storms, when the CSO pumps come online, the CSO pump discharges fill the 2.5 million gallon retention and treatment facility but do not discharge to the GCR. After the storm event, the facility would drain by gravity back to the Alder Street Pump Station wet well. The flows will subsequently be pumped to WWTP for treatment.

Flow in accordance with events larger than the 1-Year 1-Hour storm event (total CSO volume of 2.3 million gallons) would receive the equivalent of primary treatment and disinfection as mentioned above with IDEM guidance before discharging to the GCR

For planning purposes, a disinfection system of liquid sodium hypochlorite and dechlorination by addition of a sodium bisulphite solution is assumed for this alternative.

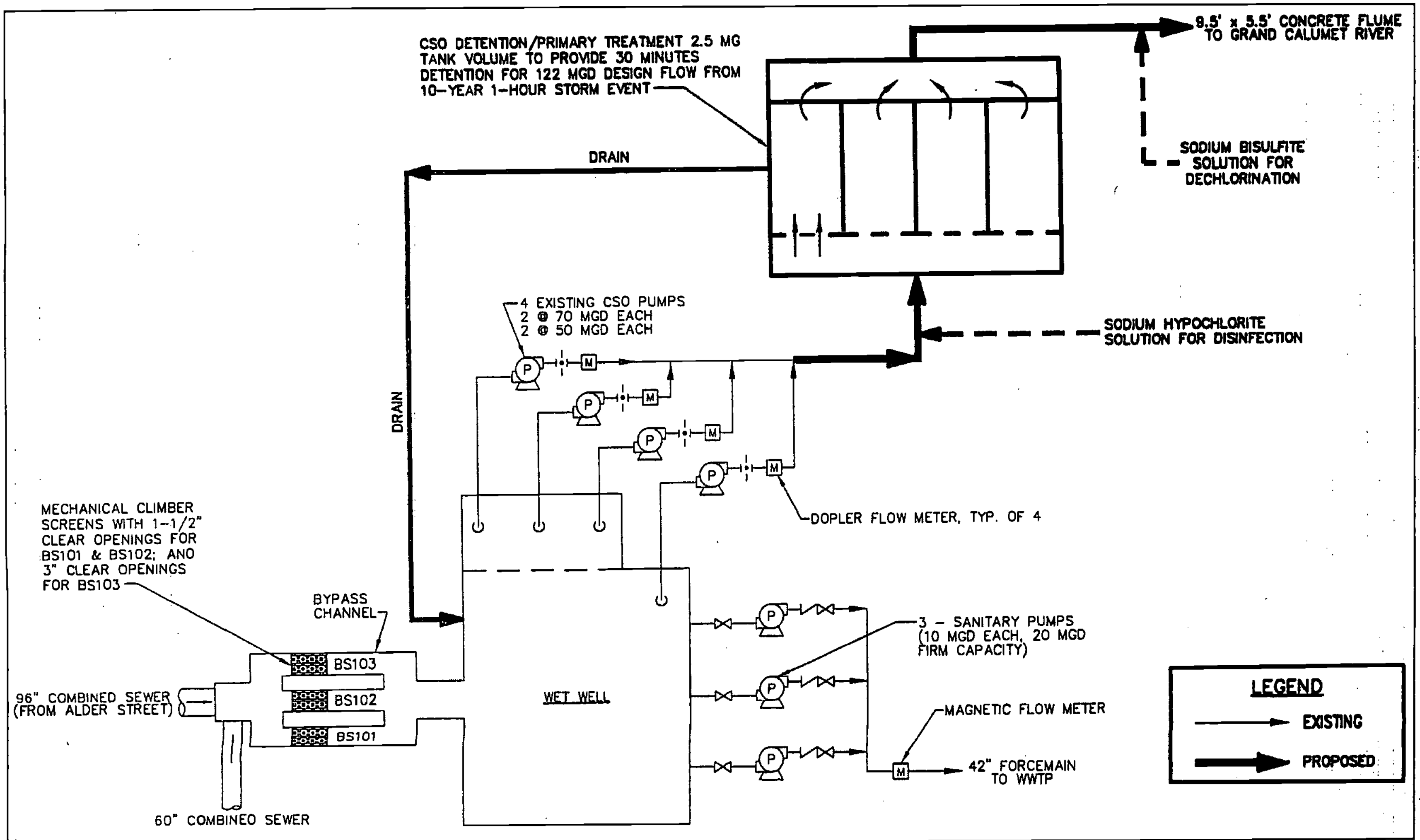


Figure 4-1. Process Flow Diagram for CSO Retention/ Primary Treatment Facilities at Alder Street Pump Station
Source: 2007 EC LTCP Update

A CSO Retention/ Primary Treatment and Disinfection facility for the Alder Street Pump Station would require a site of approximately 4 acres. Although no specific site has been selected for this facility, there are open land areas adjacent to the pump station and forcemain and it is assumed that property could be acquired as needed.

The CSO Retention / Primary Treatment and Disinfection Facility was estimated to have a Probable Project Cost of $11,170,000 and result in additional annual operation and maintenance costs of $130,000, as presented in **Appendix E, Table E-1.**

4.3 CSO Lagoon Storage

The alternative consists of providing an earthen lagoon to retain 7.5 million gallons of combined sewage that is generated during a 10-Year 1-Hour storm event. The force main on the discharge of the CSO pumps at the Alder Street Pump Station would be redirected to the CSO Lagoon and the sanitary pumps would continue to pump to the WWTP.

The use of a lagoon for storage would involve fill and draw operation, rather than a flow through treatment operation, for flows generated during a 10-Year 1-Hour storm event or less. For storms greater than 10-Year 1-Hour event, combined sewage would flow through the lagoon and be discharged.

Per 2007 EC LTCP Update, there are significant constraints in the construction of a lagoon in East Chicago due to soil types and high water table. The Recommended Standards for Wastewater Facilities states that a minimum separation of 4 feet between the bottom of pond and the maximum ground water elevation should be maintained. In East Chicago, only a shallow pond or lagoon could be built and still comply with the 4 feet of separation. In addition the bottom of the lagoon would need to be sealed to minimize seepage loss into the existing ground. For planning purposes, it was assumed that depth of the water in the lagoon would be limited to five feet and that a one foot thick liner would be required.

To reduce the manual effort required to clean the lagoon after each storm event, fine screening of the lagoon influent has been included in this alternative. Due to the difficulty involved with hosing down the clay liner directly, a synthetic liner is also recommended in addition to the clay liner.

Per 2007 EC LTCP, the construction of a CSO Lagoon requires a site of approximately 11 acres located in the vicinity of the Alder Street Pump Station or forcemain.

The CSO Lagoon was estimated to have a Probable Project Cost of $12,890,000 and result in additional annual operation and maintenance costs of $150,000, as presented in **Appendix E, Table E-2.**

4.4 CSO Tank Storage

The CSO Tank Storage alternative uses concrete tanks instead of earthen lagoons for the 7.5 million gallon storage that is required to retain the 10-Year 1-Hour storm event. Per 2007 EC LTCP Update and for planning purposes, it was assumed that a storage tank would be constructed in a similar fashion as the CSO Retention/ Primary Treatment Facility. The tankage would have a side water depth (SWD) of 10 feet and be equipped with automated flushing mechanisms. The tanks would overflow to the GCR during events larger than 10-Year 1-Hour storm event, but would not be equipped with disinfection facilities. A site of approximately 7 acres would be required for a CSO Storage Tank.

The CSO Tank Storage alternative was estimated to have a Probable Project Cost of $17,810,000 and result in additional annual operation and maintenance costs of $80,000, as presented in **Appendix E, Table E-3.**

4.5 Conveyance to the WWTP and CSO Lagoon

This alternative includes improvements that would allow the existing 142 million gallon CSO Lagoon at the WWTP to be used for CSO storage similar to how the Magoun Avenue Pump Station operates. The recommended improvements are as follows:

1. Increase capacity of the existing Sanitary Pumps at Alder Street Pump Station to a maximum combined capacity of 60 MGD;
2. Construct new force main between existing Alder Street Pump Station force main and the existing CSO Lagoon;
3. Construct new pump station to drain existing CSO Lagoon during dry-weather and allowing combined sewage to be treated at the WWTP.

The above improvements are conceptually shown in **Figure 4-2** and discussed in detail below.

4.5.1 Increase Capacity of Sanitary Pumps at Alder Street Pump Station

The basis of increasing the capacity of the sanitary pumps at Alder Street Pump Station are as follows:

1. To reduce the total number of occurrences of CSO events;
2. To provide treatment of combined sewage flows generated during storms up to 10-Year 1-Hour event to the extent possible by diverting flows in excess of treatment capacity of the WWTP to the existing 142 million gallons CSO Lagoon at the WWTP.

For initial planning purposes, it is assumed that the combined pumping capacity of the sanitary pumps will be increased to 60 MGD. It is noted that 60 MGD will be the pumping capacity at the Alder Street Pump Station during storm events with all three (3) sanitary pumps in service. The existing four (4) storm pumps will serve as a back up during storm events and will discharge to the GCR as a CSO event.

As described in Section 2.1.3 of this Work Plan, the 2007 EC LTCP Update had estimated a CSO total volume of 7.5 million gallons and CSO flow of 2.5 million gallons based on two storm pumps running at a combined capacity of 122 MGD for 30 minutes for a 10-Year 1-Hour storm event.

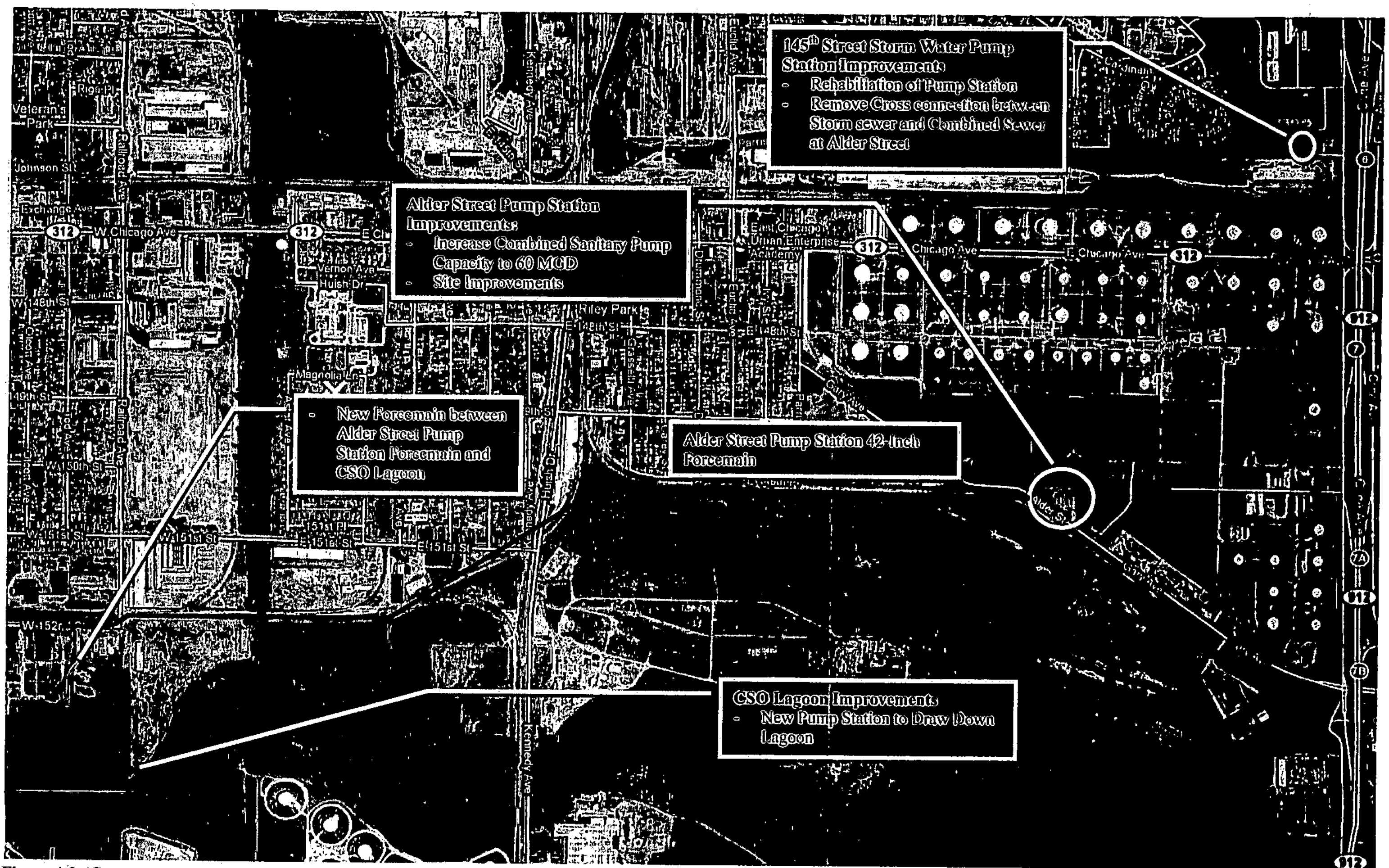


Figure 4-2. Conveyance to WWTP and CSO Lagoon Improvements

The CSO volumes estimated for the 10-Year 1-Hour storm event at Alder Street Pump Station used the SWMM model originally developed by HNTB in 2004 and updated again by HNTB for the 2007 EC LTCP Update. The CSO volume estimate includes the 12-inch cross connection between the 84-inch storm sewer and the 84-inch combined sewer on Alder Street and as described in Section 2.1.2 of this Work Plan. It was estimated that the cross connection could generate flows up to 11,000 gallons per minute or approximately 15 MGD

The 12-inch cross connection between the 84-inch storm sewer and 84-inch combined sewer is to be eliminated and factored into a revised SWMM model for the CSO volume generated at the Alder Street Pump Station for the 10-Year 1-Hour storm event. As previously mentioned, East Chicago Sanitary District is proceeding with several sewer separation projects currently contributing to the combined sewer flows to the Alder Street Pump Station and should be accounted for in the revised SWMM model.

Therefore, it is recommended that the existing SWMM model results be updated with the elimination of the above mentioned cross connection between the 84-inch storm sewer and 84-inch combined sewer on Alder Street and model results reviewed for flows / flowrates generated at the Alder Street Pump Station during different storm events including 10-Year 1-Hour storm event. For purposes of this Work Plan, 60 MGD is assumed to be the peak flowrate entering the Alder Street Pump Station during a 10-Year 1-Hour Storm event.

It is also recommended that flow measuring devices be installed at Alder Street Pump Station to monitor the actual influent flows into the wet well.

This alternative will also require a forcemain to connect the existing Alder Street Pump Station 42-inch forcemain *(to WWTP)* to the existing CSO Lagoon at the WWTP. Details on this forcemain are provided in Section 4.5.2 below.

During storm events of 10-Year 1-Hour or lesser, it is expected that sanitary pumps will pump all combined sewer flows to the existing CSO lagoon while simultaneously maximizing flows to the WWTP on an as needed basis.

For initial planning purposes, it is assumed that the existing pumps be replaced with new pumps and the estimated Probable Project Cost is approximately $1,070,000 and result in additional annual operation and maintenance costs of $5,000 as presented in **Appendix E, Table E-4**. If this option is selected, the existing electrical system will be studied in further detail during the design phase. In addition, the pumps at the Roxanna Sanitary Pump Station which pumps to the Alder Street Pump Station force main need to be evaluated due to changes in the operating head conditions.

4.5.2 New Force main Between the Existing Alder Street Pump Station Force main and Existing CSO Lagoon at WWTP

Diverting flows from the Alder Street Pump Station to the WWTP in excess of WWTP treatment capacity during storm events to the existing CSO Lagoon requires constructing a section of force main between the existing Alder Street Pump Station force main and the CSO Lagoon. This force main would be constructed along with the necessary motorized valves and controls to allow the sanitary pumps at the

Alder Street Pump Station with a combined pumping capacity of 60 MGD (as mentioned above in Section 4.5.1 of this Work Plan), to pump to both the WWTP and the existing CSO Lagoon.

It is assumed that the new forcemain will be sized as a 42-inch main, similar to the existing Alder Street Pump Station forcemain.

The estimated Probable Project Cost for the new forcemain along with motorized valves and controls is approximately $420,000 and result in annual operation and maintenance costs of approximately $2,000, as presented in **Appendix E, Table E-5**.

4.5.3 New CSO Lagoon Pump Station

The storm relief pumps located in the Magoun Avenue Pump Station, currently pump combined sewage into the CSO Lagoon located at the WWTP. The CSO Lagoon has a water surface area of 14.4 acres, an average water depth of 30 feet and has an approximate volume of 142 million gallons.

The lagoon is currently operated as a flow through treatment facility with its discharge controlled by a rectangular sharp crested weir. The height of the water flowing over the weir is measured and used to calculate the discharge flowrate. The discharge weir arrangement restricts the flow leaving the lagoon and increases the detention time and degree of treatment provided by the lagoon. The flow equalization provided by the lagoon results in lower discharge rates over a longer period of time as compared to the short duration high flow rates that are pumped into the lagoon from the Magoun Avenue Pump Station.

For this alternative it is proposed that this 142 million gallon CSO Lagoon be used as a CSO storage facility to provide retention of CSO flows generated by storms up to 10-Year 1-Hour event from Alder Street Pump Station. A new pump station to draw-down the CSO Lagoon will be constructed. This pump station will draw-down the CSO Lagoon during dry-weather periods by pumping the lagoon flows to the WWTP for treatment thereby generating enough storage volume to handle flows from both the Alder Street Pump Station and the Magoun Avenue Pump Station. Based solely on the need to store 7.5 million gallons of CSO discharge, and a lagoon surface area of approximately 14 acres, approximately 23 acre-ft of storage volume, or approximately 2ft of freeboard is required in the lagoon. Lagoon draw down time will be determined and verified in the SOP for variations in the day to day operational characteristics of the WWTP.

A Standard Operating Procedure (SOP) for Draw-Down of the CSO Lagoon will be developed. The draw-down of the CSO Lagoon will based on the stage-volume calculations of the CSO Lagoon. The SOP will outline maintenance activities for the CSO Lagoon (i.e. schedule to address solids build-up in the CSO Lagoon, and a plan to address structural deficiencies along the discharge area of the CSO Lagoon), as well as to identify operational procedures for the CSO Lagoon (i.e. how long the draw-down process would continue during dry weather to ensure that the necessary freeboard level is achieved).

It is expected that the existing submersible pump station which currently handles sanitary flows from the WWTP facilities can be modified to draw-down the CSO Lagoon.

It is assumed that the ECSD will be able to utilize the existing force main from the United States Army Corps of Engineer (USACE) East Chicago Sediment Remediation Project located across Indianapolis Blvd. from the WWTP, as a force main for pumping the lagoon flows to the WWTP. The remediation project currently sends its effluent to the WWTP through a 10-inch HDPE forcemain and the project is expected to be complete by end of 2011. ECSD may be able to subsequently utilize this HDPE force main for its purposes.

The USACE in partnership with the ECSD is currently conducting a demonstration project along the Grand Calumet River for remediation of its contaminated bottom sediments. The USACE project will also involve an improved channel extending from the WWTP to the proposed USACE recontamination barrier. The improved channel layout will include measures that will create a more natural streambed and ecosystem, increasing the complexity and diversity of the system. The layout also includes a plunge pool basin with a series of pools and riffles that will create habitat for smallmouth bass, minnows, and macro invertebrates. Additional information on the USACE project is provided in **Appendix F**.

The estimated Probable Project Cost for the CSO Lagoon Pump Station is $1,150,000 and result in annual operation and maintenance costs of $20,000, as presented in **Appendix E, Table E-6**.

4.6 Collection System Improvements

4.6.1 145th Street Storm Water Pump Station and Tributary Storm Sewers

As described in Sections 2.1.2 and 4.5.1 of this Work Plan, the 12-inch cross connection between the 84-inch storm sewer and 84-inch combined sewer at the Alder Street will be eliminated.

Eliminating the above mentioned cross connection would revert the 145th Street Storm Water Pump Station to its intended purpose as a storm water pump station. Therefore, it would be anticipated that the 145th Street storm water pump station would be rehabilitated.

Through elimination of the 12-inch cross-connection, this alternative would eliminate the flow of ground water infiltration from this section of storm sewers into the combined sewers, which would reduce the flow to the WWTP during dry weather conditions. During wet weather conditions, all the storm water would be pumped to the GCR from the 145th Street Storm Water Pump Station and the amount of combined sewage that is tributary to the Alder Street Pump Station would be reduced.

A preliminary estimate of the total Probable Project Cost to rehabilitate the 145th Street Storm Water Pump Station and to plug the 12-inch connection between the 84-inch storm sewer and 84-inch combined sewer on Alder Street is $1,980,000 and as included in **Appendix E, Table E-7**. It is noted that this cost includes implementation of Post Construction Monitoring Program which includes monitoring of Alder Street Pump Station improvements and is described in Chapter 8.

Chapter 5 Selected Alternative

Per discussions with IDEM, the strategies used for evaluation for each Alternative in this work plan were based on achieving at least one of more of the following:

1. Treatment of combined sewage flows generated during storms in excess of the 10-Year 1-Hour storm event to the extent possible with facilities designed for lesser flows and;
2. Reduction of storm water getting into combined sewers in a quantifiable manner.

A summary of the alternatives as developed in Chapter 4 for the retention and treatment of CSO discharges from the Alder Street Pump Station are presented in **Table 5-1**.

Table 5-1 Summary of Alternatives for Alder Street Pump Station

Alternatives	Probable Project Cost	145th Street Storm Water Pump Station Improvements[1]	Total Probable Project Cost	Probable Additional Annual O&M Cost
CSO Retention/ Primary Treatment and Disinfection for 10-Year 1-Hour Event (30 Mins Detention, 2.5 MG)	$11,170,000[2]	$ 1,980,000	$13,150,000	$130,000
CSO Lagoon Storage for 10-Year 1-Hour Storm Event (7.5 MG)	$12,890,000[3]	$ 1,980,000	$14,870,000	$150,000
CSO Tank Storage for 10-Year 1-Hour Storm Event	$17,810,000[4]	$ 1,980,000	$19,790,000	$80,000
Conveyance to WWTP and CSO Lagoon[2]	$ 2,640,000[5]	$ 1,980,000	$ 4,620,000	$ 27,000

1. 145th Street Storm Water Pump Station Improvements including the removal of storm and combined sewer cross connection is included in all alternatives due to direct quantifiable reduction in CSO contribution at Alder Street Pump Station
2. See Appendix E, Table E-1 for details.
3. See Appendix E, Table E-2 for details.
4. See Appendix E, Table E-3 for details.
5. Includes costs for pump capacity increases for Alder Street Pump Station sanitary pumps (Appendix E, Table E-4), new force main between Alder Street Pump Station force main and CSO lagoon (Appendix E, Table E-5) and a new CSO Lagoon Pump Station for draining the lagoon (Appendix E, Table E-6)

Chapter 6 System-Wide Proposed Alternatives and Level of Control

This chapter summarizes the overall system-wide proposed alternatives for East Chicago Sanitary District Long Term Control Plan in accordance with strategies developed with IDEM. This summary is based on the information available in 2007 EC LTCP, except that the alternatives for Alder Street Pump Station are also discussed in this Work Plan.

Per discussions with IDEM, the strategies used in 2007 EC LTCP Update (as found in Chapter 10 of that document) was to develop alternatives that provide for the capture and treatment of CSOs from certain design storm events as follows:

1. Retention, for transportation and treatment at the Wastewater Treatment Plant (WWTP), of combined sewage flows generated during storms up to 10-Year. 1-Hour storm (1.14 inches of rain);
2. Primary Treatment of combined sewage flows generated during storms in excess of the 10-Year 1-Hour storm event (1.98 inches of rain) (30 minutes detention or equivalent for settling, skimming and disinfection) and;
3. Treatment of combined sewage flows generated during storms in excess of the 10-Year 1-Hour storm event to the extent possible with facilities designed for lesser flows and;

IDEM also allows for alternative facilities to be considered on a case specific demonstration that will achieve equivalent or better treatment and control or that an alternative level of protection is adequate or necessary to achieve the water quality objectives. Demonstrations must also consider receiving stream characteristics, discharge characteristic and cost/benefit information.

The estimate of the probable project costs for facilities similar to those as presented in the 2007 EC LTCP Updat were obtained by adjusting the 2007 EC LTCP Update dollars using the 2011 ENR Construction Cost Index (*CCI = 9116*).

6.1 Michigan Avenue CSO Pump Station and Tributary Sewer System

The 2007 EC LTCP Update (Chapter 10) identified Sewer Separation as the lowest total probable project cost with no additional operation and maintenance costs. Also in the course of constructing the necessary sewers to separate the system, it is expected that the existing combined sewers, which are approximately 100 years old, would be inspected and any needed rehabilitation or replacement would occur as part of the sewer separation. With any CSO Retention / Treatment alternative, sewer repairs or replacement would have been done on as needed basis and the costs would have been in addition to the costs of CSO Retention / Treatment facilities.

When the sewer separation is complete, the discharge of the Michigan Avenue Pump Station would stop being regulated as a CSO and would start being regulated as a stormwater discharge under the City's Storm Water NPDES Permit.

The estimated Total Probable Project Cost to separate the sewers tributary to the Michigan Avenue Pump Station is $11,795,000, as presented in **Appendix E, Table E-8**. No additional operational and maintenance costs are expected as a result of the sewer separation project.

Since the time when the 2007 EC LTCP Update was prepared, the ECSD has implemented several sewer separation projects in the following areas. Details on the completed sewer separation projects and its associated costs will be provided once the ongoing financial affordability analysis is complete.

The implementation schedule for converting the remaining combined sewers to separate storm and sanitary sewers tributary to the Michigan Avenue Pump Station (including the North Harbor area) is discussed in Chapter 7.

6.2 Magoun Avenue Pump Station and Tributary Sewer System

The Magoun Avenue Pump Station currently pumps its discharge to the CSO Lagoon at the Wastewater Treatment Plant (WWTP). It is expected that this operation will be continued and that no additional improvements are anticipated over the course of this Work Plan other than scheduled preventative, and predictive maintenance at the Magoun Avenue Pump Station.

It is noted that any improvements at the CSO Lagoon as described in this Work Plan for Alder Street Pump Station will positively impact Magoun Avenue Pump Station including the ability to draw-down the WWTP CSO Lagoon during dry weather periods and its corresponding benefit of added lagoon volume availability during wet weather periods.

6.3 Wastewater Treatment Plant Improvements

The WWTP improvements involved upgrading existing equipment as needed to maintain the existing WWTP capacity. Additionally, recommendations will be discussed that include the ability to disinfect the effluent from the CSO Lagoon.

6.3.1 Influent Mechanical Bar Screen Replacement

As described in Chapter 9 of 2007 EC LTCP Update, given the maintenance history and age of the two (2) existing mechanically cleaned climber type screens at WWTP, it was recommended that the screens be replaced.

The estimated Total Probable Project Cost to replace the existing screens is $1,264,000, as presented in **Appendix E, Table E-9**. No additional increase in annual Operation and Maintenance costs are expected with replacement of screens.

6.3.2 UV Equipment Replacement with Ability to Disinfect WWTP CSO Lagoon Discharges

The existing low-pressure UV system at the WWTP is approximately 25 years old and has reached the end of its useful life. In accordance with CSO strategies used to develop alternatives, it is recommended that UV Improvements at WWTP include provisions for disinfecting CSO discharges from the CSO Lagoon.

As described in Chapter 9 of 2007 EC LTCP Update, the CSO Lagoon effluent could be disinfected by combining the lagoon effluent with the WWTP effluent and using the same UV equipment to disinfect both flow streams or new UV equipment could be provided to disinfect the lagoon effluent separate from the WWTP effluent. Details of each approach are provided in the 2007 EC LTCP Update.

For planning purposes, it is assumed that the existing UV equipment will be replaced with a UV system that has the capability to treat combined WWTP effluent and CSO Lagoon effluent. As described in Section 9.5.3 of 2007 EC LTCP Update, a UV hydraulic capacity of 40 MGD is also assumed for developing updated LTCP costs.

The estimated Probable Project Costs to install yard piping and valves to direct the CSO Lagoon effluent to the existing UV System influent chamber, and to replace the existing UV disinfection equipment with new UV disinfection equipment approximately $4,030,000 for a capacity of 40 MGD and result in additional annual operation and maintenance costs of $30,000, as presented in **Appendix E, Table E-10**.

It is also noted that there will be added improvement in quality of combined WWTP effluent and CSO Lagoon effluent with the implementation of the USACE project (constructed wetlands) as described in Section 4.5.3 of this Work Plan.

6.4 Summary of Overall System-Wide Alternatives

A summary of the alternatives as described in this Chapter for the retention and treatment of CSO discharges from overall system-wide alternatives for design storm events up to the 10-Year, 1-Hour storm event is presented in **Table 6-1**.

Table 6-1 Summary of Overall System-Wide Alternatives

Alternatives	Total Probable Project Cost	Probable Additional Annual O&M Cost	Present Worth Additional Annual O&M[1]	Total Project Cost[2]
Michigan Avenue Pump Station and Tributary Sewer System:				
▪ North Harbor / Michigan Avenue 100% Sewer Separation[3]	$11,795,000[7]	-	-	$11,795,000[7]
Magoun Avenue Pump Station and Tributary Sewer System[4]	-	-	-	-
Alder Street Pump Station and Tributary Sewer System[5]:				
▪ CSO Retention / Primary Treatment and Disinfection for 10-Year 1-Hour Event (30 Mins Detention, 2.5 MG) at Alder Street Pump Station Site	$13,150,000[8]	$130,000[8]	$1,491,000	$14,641,000
▪ CSO Lagoon Storage for 10-Year 1-Hour Storm Event (7.5 MG) at Alder Street Pump Station Site	$14,870,000[9]	$150,000[9]	$1,720,000	$16,590,000
▪ CSO Tank Storage for 10-Year 1-Hour Storm Event at Alder Street Pump Station Site	$19,790,000[10]	$80,000[10]	$918,000	$20,708,000
▪ Conveyance to WWTP and CSO Lagoon[6]	$ 4,620,000[11]	$ 27,000[11]	$310,000	$4,930,000
Wastewater Treatment Plant Improvements				
▪ Influent Mechanical Bar Screen Replacement	$1,260,000[12]	-	-	$1,260,000

Alternatives	Total Probable Project Cost	Probable Additional Annual O&M Cost	Present Worth Additional Annual O&M[1]	Total Project Cost[2]
▪ UV Equipment Replacement with Ability to Disinfect WWTP CSO Lagoon Discharges	$4,030,000[12]	$30,000[13]	$195,000	$4,060,000

1. Present Worth calculated at 5% for 20 years
2. Total Project Cost = Total Probable Project Cost + Present Worth Additional Annual O&M Cost
3. Other alternatives evaluated for Michigan Avenue Pump Station not listed due requirement of retention / treatment facilities. See 2007 EC LTCP Update for details on retention / treatment facilities. 100% Sewer Separation was the lower cost alternative.
4. No improvements recommended.
5. The 145th Street Storm Water Pump Station Improvements including the removal of storm and combined sewer cross connection is included in all alternatives due to direct quantifiable reduction in CSO contribution at Alder Street Pump Station.
6. Includes pump capacity increases for Alder Street Pump Station sanitary pumps, new force main between Alder Street Pump Station force main and CSO lagoon and a new CSO Lagoon Pump Station for draining the lagoon.
7. See Appendix E, Table E-8 for details. The cost will be updated once the ongoing financial affordability analysis is complete to reflect the costs of sewer separation projects undertaken since 2007 EC LTCP.
8. See Appendix E, Table E-1 for details. Includes cost of rehabilitating the 145th Street Station as mentioned in Appendix E, Table E-7.
9. See Appendix E, Table E-2 for details. Includes cost of rehabilitating the 145th Street Station as mentioned in Appendix E, Table E-7.
10. See Appendix E, Table E-3 for details. Includes cost of rehabilitating the 145th Street Station as mentioned in Appendix E, Table E-7.
11. Includes costs for pump capacity increases for Alder Street Pump Station sanitary pumps (Appendix E, Table E-4), new force main between Alder Street Pump Station force main and CSO lagoon (Appendix E, Table E-5), a new CSO Lagoon Pump Station for draining the lagoon (Appendix E, Table E-6) and Rehabilitation of the 145th Street Station (Appendix E, Table E-7).
12. See Appendix E, Table E-9 for details.
13. See Appendix E, Table E-10 for details.

Chapter 7 Financial Capability Assessment and Implementation Schedule

7.1 Waste Water Cost per Household Indicator

The financial capability assessment for this 2011 Supplemental Work Plan will analyze the current and future waste water cost per household. The wastewater cost per household indicator will be calculated in accordance with the USEPA "Guidance for Financial Capability Assessment and Schedule Development", and the "IDEM Combined Sewer Overflow (CSO) Long Term Control Plan" documents.

7.1.1 Total Waste Water Cost per Household

The total waste water cost per household for the City of East Chicago is defined as the current waste water costs plus the annualized costs associated with the recommended improvements in this 2011 Supplemental Work Plan and the annualized costs of planned capital improvements needed to maintain the functionality of the existing collection and treatment systems. Typically, the costs of wastewater collection and treatment are funded by user rates and property taxes, whereby, user rates fund the expenses associated with the waste water treatment plant, collection system equipment, and maintenance capital. Property taxes are typically used to fund expenses associated with the collection system O&M related to personnel wages and benefits. However, the Indiana 1% tax caps now in place limit the availability of tax revenue to municipalities and as a result, municipalities must now rely on revenue based funding for operations of its facility.

For the year 2011, a total of 4,953,100,000 gallons of wastewater was the total influent East Chicago Wastewater Treatment Plant (EC WWTP). Approximately 2,187,643,849 gallons of the total WWTP influent can be attributed to 6,413 residential customers. This resulted in approximately 44.17% of the total flow treated by the WWTP being contributed by residential households. Detailed computations on residential allocation percentages are based on *Financial Capability Analysis* performed by East Chicago Sanitary District (ECSD) and are provided in **Appendix G.**

The total wastewater cost per household is $347 per year with the total current cost of $7,157,553 which includes the Annual Operation and Maintenance (O&M) cost, Annual Capital Replacement Costs and Annual Debt Service costs. Detailed computations on wastewater per household costs are based on *Financial Capability Analysis* performed by East Chicago Sanitary District (ECSD) and are provided in **Appendix G.**

The total wastewater cost per household with recommended improvements as summarized in Chapter 6 is $441 per year. This cost includes the additional O&M and debt service attributed to the residential customers of East Chicago Sanitary District. Detailed computations on wastewater per household costs are based on *Financial Capability Analysis* performed by East Chicago Sanitary District (ECSD) and are provided in **Appendix G.**

SEIM Factor	SEIM Value	Benchmark	Weak, Mid- Range or Strong	Score
Property Tax Revenue as Percent of Market Value	5.20%	4.00%	Weak	3
Property Tax Collection	89.00%	94.00%	Weak	3
Total SEIM Score				**17**
Average SEIM Score				**2.833**

7.3 Overall Financial Capability and Implementation Schedule

The Overall Financial Capability Matrix and Implementation Schedule from *IDEM's Combined Sewer Overflow (CSO) Long Term Control Plan and Use Attainability Analysis Guidance Document* is provided in Table 7-2.

Table 7-2 Financial Capability and Implementation

SEIM Score	WWCPHI Below 1%	WWCPHI 1% to 2%	WWCPHI Above 2%	Length of Time for LTCP Implementation Schedule
Above 2.5	Medium	High	High	High = 10-20 years
1.5 to 2.5	Low	Medium	High	Medium = 5-10 years
Below 1.5	Low	Low	Medium	Low = 5 years

Table 7-2 shows that with a Wastewater Cost per Household Indicator between 1% and 2% of the MHI and an SEIM Average score of 2.833, the financial capability burden for the City of East Chicago is high. Therefore, the current IDEM guidelines would allow the City of Chicago 10-20 years for implementation of the recommended system-wide projects as summarized in the Chapter 6. The anticipated implementation schedule is provided in Table 7-3.

Chapter 7 Financial Capability Assessment and Implementation Schedule

7.1 Waste Water Cost per Household Indicator

The financial capability assessment for this 2011 Supplemental Work Plan will analyze the current and future waste water cost per household. The wastewater cost per household indicator will be calculated in accordance with the USEPA "Guidance for Financial Capability Assessment and Schedule Development", and the "IDEM Combined Sewer Overflow (CSO) Long Term Control Plan" documents.

7.1.1 Total Waste Water Cost per Household

The total waste water cost per household for the City of East Chicago is defined as the current waste water costs plus the annualized costs associated with the recommended improvements in this 2011 Supplemental Work Plan and the annualized costs of planned capital improvements needed to maintain the functionality of the existing collection and treatment systems. Typically, the costs of wastewater collection and treatment are funded by user rates and property taxes, whereby, user rates fund the expenses associated with the waste water treatment plant, collection system equipment, and maintenance capital. Property taxes are typically used to fund expenses associated with the collection system O&M related to personnel wages and benefits. However, the Indiana 1% tax caps now in place limit the availability of tax revenue to municipalities and as a result, municipalities must now rely on revenue based funding for operations of its facility.

For the year 2011, a total of 4,953,100,000 gallons of wastewater was the total influent East Chicago Wastewater Treatment Plant (EC WWTP). Approximately 2,187,643,849 gallons of the total WWTP influent can be attributed to 6,413 residential customers. This resulted in approximately 44.17% of the total flow treated by the WWTP being contributed by residential households. Detailed computations on residential allocation percentages are based on *Financial Capability Analysis* performed by East Chicago Sanitary District (ECSD) and are provided in **Appendix G**.

The total wastewater cost per household is $347 per year with the total current cost of $7,157,553 which includes the Annual Operation and Maintenance (O&M) cost, Annual Capital Replacement Costs and Annual Debt Service costs. Detailed computations on wastewater per household costs are based on *Financial Capability Analysis* performed by East Chicago Sanitary District (ECSD) and are provided in **Appendix G**.

The total wastewater cost per household with recommended improvements as summarized in Chapter 6 is $441 per year. This cost includes the additional O&M and debt service attributed to the residential customers of East Chicago Sanitary District. Detailed computations on wastewater per household costs are based on *Financial Capability Analysis* performed by East Chicago Sanitary District (ECSD) and are provided in **Appendix G**.

7.1.2 Wastewater Cost per Household Indicator

The wastewater cost per household indicator (WW_{CPHI}) is determined by dividing the total wastewater cost per household by the median household income and multiplying by 100. Using the median household income of $26,773 and wastewater cost per household of $441/year, the WW_{CPHI} as estimated for East Chicago is 1.65%. Detailed computations on residential indicators are based on *Financial Capability Analysis* performed by East Chicago Sanitary District (ECSD) and are provided **in Appendix G**

7.2 Socio-Economic Indicators

The financial capability of a community to afford the controls outlined in the LTCP depends upon several socio-economic factors:

- Median household income
- Average unemployment rate
- Net debt per capita (includes existing and proposed Debt)
- Bond rating
- Property tax revenue as a percent of market value
- Property tax collection rate

Each factor received a score on the Socio-Economic Indicators (SEIM) based upon its relative strength/ weakness when compared to a benchmark value (as outlined in IDEM's *Combined Sewer Overflow (CSO) Long Term Control Plan and Use Attainability Analysis Guidance Document*). A summary of the Socio-Economic Indicators for the City of East Chicago is presented in Table 7-1 and also included with the *Financial Capability Analysis* performed by East Chicago Sanitary District (ECSD) in **Appendix G.**

Table 7-1 Socio-Economic Matrix

SEIM Factor	SEIM Value	Benchmark	Weak, Mid- Range or Strong	Score
Median Household Income	$26,773	$49,445	Weak	3
Average Unemployment Rate	7.80%	8.80%	Mid-Range	2
Net Debt per Capita				
▪ Existing Debt	$4,110	$3,000	Weak	3
▪ Proposed Debt	$4,841	$3,000		
Bond Rating	BB	BBB	Weak	3

SEIM Factor	SEIM Value	Benchmark	Weak, Mid- Range or Strong	Score
Property Tax Revenue as Percent of Market Value	5.20%	4.00%	Weak	3
Property Tax Collection	89.00%	94.00%	Weak	3
Total SEIM Score				17
Average SEIM Score				2.833

7.3 Overall Financial Capability and Implementation Schedule

The Overall Financial Capability Matrix and Implementation Schedule from *IDEM's Combined Sewer Overflow (CSO) Long Term Control Plan and Use Attainability Analysis Guidance Document* is provided in Table 7-2.

Table 7-2 Financial Capability and Implementation

SEIM Score	WWCPHI Below 1%	WWCPHI 1% to 2%	WWCPHI Above 2%	Length of Time for LTCP Implementation Schedule
Above 2.5	Medium	High	High	High = 10-20 years
1.5 to 2.5	Low	Medium	High	Medium = 5-10 years
Below 1.5	Low	Low	Medium	Low = 5 years

Table 7-2 shows that with a Wastewater Cost per Household Indicator between 1% and 2% of the MHI and an SEIM Average score of 2.833, the financial capability burden for the City of East Chicago is high. Therefore, the current IDEM guidelines would allow the City of Chicago 10-20 years for implementation of the recommended system-wide projects as summarized in the Chapter 6. The anticipated implementation schedule is provided in Table 7-3.

Table 7-3 Projected Schedule of Implementation

Project	Planning/ Design	Initiate Construction	Complete Construction
Alder Street Pump Station and Tributary Sewer System:			
a. 145th Street Storm Water Pump Station Rehabilitation	September 1, 2012	April 1, 2013	May 31, 2014
b. Removal of Storm and Combined Sewer Cross Connection on Alder Street	September 1, 2012	April 1, 2013	May 31, 2014
c. Conveyance System to WWTP and CSO Lagoon	January 1, 2017	March 1, 2018	January 1, 2020
d. Initiation of Post-Construction Monitoring	March 1, 2020		
Wastewater Treatment Plant Improvements:			
a. UV Equipment Replacement with Ability to Disinfect WWTP CSO Lagoon Discharges	July 1, 2021	July 1, 2022	December 31, 2023
b. Initiation of Post-Construction Monitoring	April 1, 2023		
Michigan Avenue Pump Station and Tributary Sewer System:			
a. North Harbor / Michigan Avenue Sewer Separation	June 1, 2023	November 1, 2024	December 31, 2032

Chapter 8 Post Construction Monitoring Program and Operational Plan Revisions

8.1 Post Construction Monitoring Program

The selected CSO controls must include a post construction water quality monitoring program which is adequate to verify improvement and compliance with water quality standards and protection of designated uses, as well as ascertain the effectiveness of CSO Controls.

The recommended Post Construction Monitoring Program (PCM) will vary for each outfall as per the recommended approach for the control of CSO's from each outfall and will be developed accordingly as the recommended plans for each CSO outfall are completed.

8.1.1 NPDES Permitted Outfall 002

In accordance with 2007 EC LTCP, for NPDES Outfall 002, which is the discharge from the Michigan Avenue CSO Pump Station, it is anticipated that sewers will be separated a few blocks at a time in conjunction with redevelopment activities and the pump station discharge will eventually become a storm water discharge. When the sewer separation is complete, monitoring under the Districts MS4 program will be initiated.

8.1.2 NPDES Permitted Outfall 003

For NPDES Outfall 003, it is anticipated that after the improvements of the Alder Street Pump Station Basin as recommended in this 2011 ECSD LTCP Supplemental Work Plan, a CSO discharge will only occur when rainfall exceeds the 10-Year, 1-Hour Storm event. It is anticipated that (at a minimum) the following activities will be included as part of the Post Construction Monitoring Program for Alder Street Pump Station (NPDES Permitted Outfall 003):

1. Monitoring for CSO flow volume and Start/Stop of discharge;
2. Potential review of the necessity to install additional rain gauges throughout the system;
3. Installing flow measuring devices at the Alder Street Pump Station to monitor actual influent flows into the wet well;
4. The elimination of cross connection between 84-inch storm sewer and 84-inch combined sewer on Alder Street, and
5. Update existing SWMM Model as necessary during the improvement process.

8.1.3 NPDES Outfall 005

For NPDES Outfall 005, which is the discharge from the CSO Lagoon, the recommended improvements include the disinfection of the CSO Lagoon discharge. It should be noted that CSO discharge occurrences from the lagoon is expected to be reduced significantly up to the design storm events of 10-Year, 1-Hour due to the recommended draw-down capability of the CSO Lagoon during dry weather period as described in Section 4.5.3 of this Work Plan.

It is recommended that the post construction monitoring include start, stop, flow volume and testing of *E.coli* to assess performance is in accordance with the wet-weather limited recreation use. In regards to the other water quality parameters, the CSO Lagoon effluent has been tested on prior occasions and that data can be referred to as necessary to understand the water quality of the CSO Lagoon effluent.

8.1.4 Post LTCP Approval Activities

After the LTCP has been approved by IDEM, ECSD is required to conduct a periodic review not less that every 5 years. The review shall include the following:

1. Document to IDEM that the LTCP has been reviewed;
2. Update the LTCP as necessary to document the results of the post-construction monitoring of installed CSO abatement projects;
3. Document / update the financial capability assessment used to support designated use modification and;
4. Submit any amendments to the LTCP to IDEM for approval.

8.2 Operational Plan Revisions

The existing ECSD CSO Operational Plan, dated January 5, 1995 will be revised as new facilities are constructed and brought on line. The revisions will include the intended operational strategy for proposed improvements as well as other improvements that were implemented since January 1995. Changes in the operation of specific pieces of equipment will be included in revisions to the Operation and Maintenance Manual for the respective pump station and the wastewater treatment plant improvements.

When the ECSD CSO Operational Plan is revised, it will also include a Standard Operating Procedure (SOP) for the "Draw-Down" procedure of the CSO Lagoon as described in Section of 4.5.3 of this Work Plan. The SOP will outline maintenance activities for the CSO Lagoon (i.e. schedule to address solids build-up in the CSO Lagoon, and a plan to address structural deficiencies along the discharge area of the CSO Lagoon), as well as to identify operational procedures for the CSO Lagoon (i.e. how long the draw-down process would continue during dry weather to ensure that the necessary freeboard level is achieved).

APPENDIX A

Monthly CSO DMR Data from January 2010 – June 2011

National Pollutant Discharge Elimination System (NPDES)
CSO Discharge Monitoring Report (CSO DMR)
State Form 50546 (R9-01)

City:	EAST CHICAGO	Page	1 of 1
Facility:	MUNICIPAL W.W.T.P.	Permit Number:	IN0022829
Monitoring Period (MM/DD/YY to MM/DD/YY):	01/01/10 to 01/31/10	Check box if no CSO discharge occurred for the month	
Design Peak Inf. Flow (MGD):	36	Measured/Metered (M) or Estimated (E) must be specified. (Please attach methods used.)	

					CSO Outfall No.	002 MICH AVE					CSO Outfall No.	003 ALDER ST					CSO Outfall No.	005 BASIN				
Day of Month	Day of Week	Precip. in Inches	Influent Flow (MGD)	Peak Inf. Flow Rate (MG)	Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	
1	F		12.89	18.00																		
2	S		12.48	18.50																		
3	SN		12.27	17.50																		
4	M		12.16	17.00																		
5	T		11.78	17.00																		
6	W		11.23	16.00																		
7	R		11.34	16.00																		
8	F		11.18	17.00																		
9	S		11.03	17.00																		
10	SN		10.99	16.00																		
11	M	0.05	10.18	16.00																		
12	T		10.98	16.00																		
13	W		11.30	18.00																		
14	R		11.73	17.00																		
15	F		10.90	16.00																		
16	S		10.22	15.00																		
17	SN		9.90	15.00																		
18	M		10.54	15.50																		
19	T		10.58	15.50																		
20	W	0.03	10.80	16.00																		
21	R	0.19	12.74	25.50																		
22	F	0.01	10.78	17.50																		
23	S		11.12	16.50																		
24	SN	0.40	16.13	34.00	03:30AM	E	0.75	E	1.10	E	04:16AM	M	0.30	M	0.33	E	06:00AM	E	14.00	E	1.94	
25	M		12.92	18.00																		
26	T		12.16	17.00																		
27	W	0.20	12.25	16.00																		
28	R		11.93	17.00																		
29	F		11.80	16.00																		
30	S		11.68	16.00																		
31	SN		11.63	15.00																		
Totals:		0.88					0.75		1.10				0.30		0.33				14.00		1.94	

Typed or Printed Name and Title of Principal Executive Officer or Authorized Agent	Telephone
Peter S. Baranyai Director of Wastewater Operations	219-391-8466

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSONS WHO MANAGE THE SYSTEM OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION; THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

Signature of Principal Executive Officer or Authorized Agent	Date
[signature]	02/18/2010

National Pollutant Discharge Elimination System (NPDES)
CSO Discharge Monitoring Report (CSO DMR)

State Form 50546 (R9-01)

City:	East Chicago	Page	1 of 1
Facility:	Municipal W.W.T.P.	Permit Number	IN0022829
Monitoring Period (MM/DD/YY to MM/DD/YY)	02/01/10 to 02/28/10	Check box if no CSO dischage occurred for the month	X
Design Peak Inf. Flow (MGD)	36	Measured/Metered (M) or Estimated (E) must be specified. (Please attach methods used.)	

Day of Month	Day of Week	Precip in Inches	Influent Flow (MGD)	Peak Inf Flow Rate (MG)	CSO Outfall No. 002 Mich Ave. Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	CSO Outfall No. 003 Alder St. Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	CSO Outfall No. 005 Basin Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)
1	T		11.59	16.50																	
2	W		11.48	16.00																	
3	R		11.25	17.50																	
4	F		10.97	16.50																	
5	S		10.94	15.50																	
6	SN		10.45	16.00																	
7	M		10.20	15.00																	
8	T		10.37	15.50																	
9	W		10.80	16.00																	
10	R		10.67	15.50																	
11	F	0.09	10.52	15.00																	
12	S		10.17	16.00																	
13	SN		9.83	14.00																	
14	M		9.76	14.00																	
15	T		9.87	14.00																	
16	W		10.10	15.00																	
17	R		10.16	15.00																	
18	F		10.68	19.00																	
19	S		10.36	16.00																	
20	SN		10.00	15.00																	
21	M	0.03	10.48	18.00																	
22	T	0.10	12.15	18.00																	
23	W	0.26	10.91	20.00																	
24	R		10.21	18.00																	
25	F		10.96	15.50																	
26	S	0.08	10.76	18.00																	
27	SN		10.83	16.50																	
28	M		11.00	17.00																	
Totals:		0.56					0.00		0.00				0.00		0.00				0.00		0.00

Typed or Printed Name and Title of Principal Executive Officer or Authorized Agent	Telephone
Peter S. Baranyai	219-391-8466

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSONS WHO MANAGE THE SYSTEM OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION; THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

Signature of Principal Executive Officer or Authorized Agent	Date
(signature)	3/3/2010

National Pollutant Discharge Elimination System (NPDES)
CSO Discharge Monitoring Report (CSO DMR)

State Form 50546 (R9-01)

City:	EAST CHICAGO	Page	1 of 1
Facility:	MUNICIPAL W.W.T.P.	Permit Number	IN0022829
Monitoring Period (MM/DD/YY to MM/DD/YY)	03/01/10 to 03/31/10	Check box if no CSO discharge occurred for the month	
Design Peak Inf. Flow (MGD)	36	Measured/Metered (M) or Estimated (E) must be specified. (Please attach methods used.)	

					CSO Outfall No. 002 MICH AVE						CSO Outfall No. 003 ALDER ST						CSO Outfall No. 005 BASIN EF					
Day of Month	Day of Week	Precip. in Inches	Influent Flow (MGD)	Peak Inf. Flow Rate (MG)	Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E
1	M		11.01	17.00																		
2	T		10.87	16.50																		
3	W		10.97	17.00																		
4	R		10.83	16.50																		
5	F		10.57	16.00																		
6	S		10.42	15.50																		
7	SN	0.06	10.96	20.00																		
8	M		11.10	16.00																		
9	T	0.20	11.15	17.00																		
10	W	0.01	11.76	18.00																		
11	R	0.22	13.81	31.00																		
12	F	0.43	11.90	19.00																		
13	S	0.12	16.03	36.00																	0.27	
14	SN		11.49	17.00																	0.15	
15	M		12.37	19.00																	0.06	
16	T		12.07	17.00																		
17	W		12.24	18.00																		
18	R		11.88	16.50																		
19	F		11.59	17.00																		
20	S	0.14	11.77	18.00																		
21	SN	0.02	11.57	17.50																		
22	M		11.56	17.00																		
23	T		11.19	16.50																		
24	W		11.52	17.00																		
25	R	0.08	11.38	17.00																		
26	F	0.01	10.34	15.00																		
27	S	0.04	10.42	16.00																		
28	SN	0.10	10.59	16.00																		
29	M		10.41	16.00																		
30	T		10.38	17.00																		
31	W		10.45	16.00																		
Totals		1.43					0.00		0.00				0.00		0.00				0.00		0.48	

Typed or Printed Name and Title of Principal Executive Officer or Authorized Agent	Telephone
Peter S. Baranyai Director of Wastewater Operations	219-391-8466

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSONS WHO MANAGE THE SYSTEM OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION; THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

Signature of Principal Executive Officer or Authorized Agent	Date
[signature]	04/14/2010

National Pollutant Discharge Elimination System (NPDES)
CSO Discharge Monitoring Report (CSO DMR)
State Form 50546 (R9-01)

City:	EAST CHICAGO	Page	1 of 1
Facility	MUNICIPAL W.W.T.P.	Permit Number	IN0022829
Monitoring Period (MM/DD/YY to MM/DD/YY)	04/01/2010 to 04/30/2010	Check box if no CSO discharge occurred for the month	
Design Peak Flow (MGD)	36		

Measured/Metered (M) or Estimated (E) must be specified. (Please attach methods used.)

					CSO Outfall No. 002 MICH AVE						CSO Outfall No. 003 ALDER ST						CSO Outfall No. 005 BASIN E					
Day of Month	Day of Week	Precip in Inches	Influent Flow (MGD)	Peak Flow Rate (MG)	Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	
1	R		10.40	16.00																		
2	F		9.81	16.00													11:00AM	M	13.00	M	0.01	
3	S	0.34	12.85	33.00													12:01AM	M	24.00	M	0.01	
4	SN	0.70	13.83	39.00	10:20PM	E	1.25	E	1.80	E	10:08PM	M	1.10	M	1.10	E	12:01AM	M	24.00	M	0.01	
5	M	0.15	14.03	36.00	12:30AM	E	45.00	E	0.70	E	12:22AM	M	0.34	M	0.40	E	12:01AM	M	24.00	M	0.93	
6	T	0.13	13.24	28.00													12:01AM	M	24.00	M	0.37	
7	W	0.88	15.92	32.00	01:00AM	E	2.25	E	3.30	E	12:41PM	M	1.95	M	2.00	E	12:01AM	M	24.00	M	0.81	
8	R	0.02	14.06	21.00													12:01AM	M	24.00	M	1.60	
9	F		13.15	18.00													12:01AM	M	24.00	M	0.47	
10	S		12.59	17.50													12:01AM	M	24.00	M	0.18	
11	SN		11.91	17.00													12:01AM	M	24.00	M	0.06	
12	M		12.18	17.00													12:01AM	M	24.00	M	0.02	
13	T		11.69	17.00													12:01AM	M	24.00	M	0.01	
14	W		11.66	17.00													12:01AM	M	24.00	M	0.01	
15	R		11.77	17.00													12:01AM	M	24.00	M	0.01	
16	F	0.02	11.47	17.00													12:01AM	M	6.50	M	0.01	
17	S		10.52	15.00																		
18	SN		10.56	16.00																		
19	M		10.60	16.00																		
20	T		10.58	16.00																		
21	W	0.01	10.68	16.00																		
22	R	0.02	10.24	16.00																		
23	F	0.32	10.87	31.00																		
24	S	0.55	16.83	33.00													02:45AM	M	21.25	M	0.26	
25	SN	0.65	17.47	31.00													12:01AM	M	24.00	M	0.81	
26	M		12.87	20.50													12:01AM	M	24.00	M	0.63	
27	T		11.50	17.00													12:01AM	M	24.00	M	0.19	
28	W		11.57	16.00													12:01AM	M	24.00	M	0.05	
29	R		11.40	17.00													12:01AM	M	24.00	M	0.03	
30	F		11.25	16.50													12:01AM	M	24.00	M	0.02	
31																						
Totals		3.79					48.50		5.80				3.39		3.50				496.75		6.50	

Typed or Printed Name and Title of Principal Executive Officer or Authorized Agent	Telephone
Peter S. Baranyai Director of Wastewater Operations	219-391-8466

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSONS WHO MANAGE THE SYSTEM OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION; THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

Signature of Principal Executive Officer or Authorized Agent	Date
	5/14/2010

National Pollutant Discharge Elimination System (NPDES)
CSO Discharge Monitoring Report (CSO DMR)
State Form 50546 (R9-01)

City:	EAST CHICAGO	Page	1 of 1
Facility	MUNICIPAL W.W.T.P.	Permit Number	IN0022829
Monitoring Period: (MM/DD/YY to MM/DD/YY)	05/01/10 to 05/31/10	Check box if no CSO dischage occurred for the month:	
Design Peak Inf. Flow (MGD)	36		

Measured/Metered (M) or Estimated (E) must be specified. (Please attach methods used.)

					CSO Outfall No. 002 MICH AVE						CSO Outfall No. 003 ALDER ST						CSO Outfall No. 005 BASIN				
Day of Month	Day of Week	Precip in Inches	Influent Flow (MGD)	Peak Infl. Flow Rate (MG)	Time Dischage Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)
1	S	0.65	14.34	39.00													12:01AM	M or E		M	0.56
2	SN	0.57	16.99	33.00													12:01AM	M	24.00	M	0.69
3	M		12.71	17.50													12:01AM	M	24.00	M	0.31
4	T		12.18	17.50													12:01AM	M	24.00	M	0.09
5	W	0.02	12.12	17.50													12:01AM	M	24.00	M	0.02
6	R		11.33	18.00													12:01AM	M	24.00	M	0.01
7	F	0.71	16.42	33.00	06:20AM	E	1.00	E	1.50	E	06:23AM	M	0.70	4	0.80	E	12:01AM	M	24.00	M	0.35
8	S	0.02	12.58	19.00													12:01AM	M	24.00	M	0.27
9	SN		11.38	17.00													12:01AM	M	24.00	M	0.07
10	M	0.05	11.86	17.00													12:01AM	M	24.00	M	0.02
11	T	0.72	17.39	35.00													12:01AM	M	24.00	M	0.97
12	W	0.27	14.49	23.00													12:01AM	M	24.00	M	0.45
13	R	0.67	19.67	33.00	03:10AM	E	1.15	E	1.80	E	03:25AM	M	0.80	M	0.80	E	12:01AM	M	24.00	M	1.03
14	F		14.24	19.00													12:01AM	M	24.00	M	0.50
15	S		19.64	19.00													12:01AM	M	24.00	M	0.19
16	SN		13.31	18.50													12:01AM	M	24.00	M	0.07
17	M	0.39	16.57	33.00													12:01AM	M	24.00	M	0.07
18	T	0.01	13.76	18.50													12:01AM	M	24.00	M	0.08
19	W		13.70	20.00													12:01AM	M	24.00	M	0.03
20	R	0.12	13.24	19.00													12:01AM	M	24.00	M	0.02
21	F	0.48	16.62	32.00													12:01AM	M	24.00	M	0.15
22	S		12.83	19.00													12:01AM	M	24.00	M	0.30
23	SN		12.59	18.00													12:01AM	M	24.00	M	0.13
24	M		12.46	17.50													12:01AM	M	24.00	M	0.05
25	T		12.23	17.00													12:00 AM	M	24.00	M	0.02
26	W		11.71	18.00													12:01AM	M	24.00	M	0.01
27	R		11.57	17.00													12:01AM	M	24.00	M	0.01
28	F		11.20	18.00													12:01AM	M	24.00	M	0.01
29	S		10.90	16.00													12;01AM	M	24.00	M	0.01
30	SN	0.14	10.87	27.50													12:01AM	M	24.00	M	0.01
31	M	0.92	16.23	38.00	01:15PM	E	3.00	E	4.40	E	01:32PM	M	2.40	M	2.50	E	12:01AM	M or E		M	0.67
Totals							5.15		7.70				3.90		4.10				696.00		7.17

Typed or Printed Name and Title of Principal Executive Officer or Authorized Agent	Telephone
Peter S. Baranyai Director of Wastewater Operations	219-391-8466

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSONS WHO MANAGE THE SYSTEM OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION; THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

Signature of Principal Executive Officer or Authorized Agent	Date
	6/4/2010

National Pollutant Discharge Elimination System (NPDES)
CSO Discharge Monitoring Report (CSO DMR)

State Form 50546 (R9-01)

City:	EAST CHICAGO	Page	1 of 1
Facility	MUNICIPAL W.W.T.P.	Permit Number	IN0022829
Monitoring Period (MM/DD/YY to MM/DD/YY)	06/01/10 to 06/30/10	Check box if no CSO discharge occurred for the month	
Design Peak Inflow (MGD)	36	Measured/Metered (M) or Estimated (E) must be specified. (Please attach methods used.)	

Day of Month	Day of Week	Precip in Inches	Influent Flow (MGD)	Peak Influent Flow Rate (MG)	CSO Outfall No. 002 MICH AVE: Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	CSO Outfall No. 003 ALDER ST: Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	CSO Outfall No. 005 BASIN: Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)
1	T	0.40	14.07	32.00													12:01AM	M	24.00	M	0.96
2	W	0.52	16.26	36.00	05:25AM	E	0.50	E	1.50	E	05:09AM	M	0.40	M	0.40	E	12;01AM	M	24.00	M	0.38
3	R	0.02	12.43	18.00													12:01AM	M	24.00	M	0.57
4	F	0.07	12.93	22.00													12:01AM	M	24.00	M	0.19
5	S		16.87	33.50													12:01AM	M	24.00	M	0.15
6	SN	0.69	17.32	31.00													12:01AM	M	24.00	M	0.49
7	M	0.01	13.64	18.50													12:01AM	M	24.00	M	0.53
8	T	0.27	15.11	25.00													12:01AM	M	24.00	M	0.23
9	W		14.89	20.00													12:01AM	M	24.00	M	0.14
10	R		13.41	19.00													12:01AM	M	24.00	M	0.06
11	F		13.20	22.00													12:01AM	M	24.00	M	0.02
12	S	0.23	14.72	32.00													12:01AM	M	24.00	M	0.01
13	SN	0.02	12.65	18.50													12:01AM	M	24.00	M	0.01
14	M		12.53	17.50													12;01AM	M	24.00		0.01
15	T	0.40	14.66	34.00	07:24PM	M	1.50	M	2.10	E	8:44PM	M	0.30	M	0.31	E	12:01AM	M	24.00	M	0.05
16	W		13.23	20.00													12:01AM	M	24.00		0.30
17	R		11.83	17.00													12:01AM	M	24.00		0.09
18	F	0.63	15.92	32.00	06:10PM	M	1.30	M	1.80	E							12:01AM	M	24.00		0.05
19	S	0.03	15.00	33.00													12:01AM	M	24.00		0.57
20	SN		12.05	17.00													12:01AM	M	24.00		0.20
21	M	0.29	14.33	29.50	10:03AM	M	0.20	M	0.30	E							12:01AM	M	24.00		0.16
22	T		12.56	18.00													12:01AM	M	24.00		0.12
23	W	2.61	17.45	39.00	9:31AM	M	6.80	M	11.20	E	09:49AM	M	5.30	M	5.50	E	12:01AM	M	24.00		1.62
24	R		17.26	30.00													12:01AM	M	24.00		2.78
25	F		18.53	27.00													12:01AM	M	24.00		1.09
26	S	0.47	18.60	31.50													12:01AM	M	24.00		1.39
27	SN	0.21	18.09	39.00													12:01AM	M	24.00		1.09
28	M		16.94	28.00													12:01AM	M	24.00		0.68
29	T		15.88	26.00													12:01AM	M	24.00		0.24
30	W		15.46	22.00													12:01AM	M	24.00		0.09
Totals:							10.30		16.90				6.00		6.21				720.00		14.27

Typed or Printed Name and Title of Principal Executive Officer or Authorized Agent	Telephone
Peter S. Baranyai Director of Wastewater Operations	219-391-8466

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSONS WHO MANAGE THE SYSTEM OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION; THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

Signature of Principal Executive Officer or Authorized Agent	Date
[signature]	07/01/2010

SEAL OF THE STATE OF INDIANA 1816

National Pollutant Discharge Elimination System (NPDES)
CSO Discharge Monitoring Report (CSO DMR)

State Form 50546 (R9-01)

City:	EAST CHICAGO	Page:	1 of 1
Facility:	MUNICIPAL W.W.T.P.	Permit Number:	IN0022829
Monitoring Period: (MM/DD/YY to MM/DD/YY)	07/01/10 to 07/31/10	Check box if no CSO discharge occurred for the month:	
Design Peak Inf Flow (MGD):	36	Measured/Metered (M) or Estimated (E) must be specified. (Please attach methods used.)	

					CSO Outfall No. 002 MICH AVE						CSO Outfall No. 003 ALDER ST						CSO Outfall No. 005 BASIN E					
Day of Month	Day of Week	Precip in Inches	Influent Flow (MGD)	Peak Inf Flow Rate (MG)	Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E
1	R		14.65	20.50													12:01AM	M	24.00	M	0.05	
2	F		13.94	21.50													12:01AM	M	24.00	M	0.02	
3	S		13.29	18.00													12:01AM	M	24.00	M	0.01	
4	SN		13.17	19.00													12:01AM	M	24.00	M	0.01	
5	M		12.49	19.00													12:01AM	M	24.00	M	0.01	
6	T	0.13	13.43	27.50													12:01AM	M	24.00	M	0.01	
7	W	0.14	13.89	26.00													12:01AM	M	24.00	M	0.01	
8	R	0.34	15.70	33.00													12:01AM	M	24.00	M	0.33	
9	F		11.78	18.00													12:01AM	M	24.00	M	0.29	
10	S	0.06	13.77	27.00	08:13PM	M	0.80	M	1.20	E							12:01AM	M	24.00	M	0.09	
11	SN	0.46	14.20	35.00	09:45PM	M	1.70	M	2.50	E	10:26PM	M	0.70	M	0.70	E	12:01AM	M	24.00	M	0.10	
12	M	0.01	14.68	28.00													12:01AM	M	24.00	M	1.17	
13	T	0.38	15.54	34.50													12:01AM	M	24.00	M	0.89	
14	W		13.78	20.00													12:01AM	M	24.00	M	0.45	
15	R		12.83	21.00													12:01AM	M	24.00	M	0.20	
16	F		12.25	21.50													12:01AM	M	24.00	M	0.07	
17	S		11.42	18.00													12:01AM	M	24.00	M	0.02	
18	SN	0.22	13.24	32.50	01:13PM	M	0.70	M	1.10	E	01:48PM	M	0.30	M	0.30	E	12:01AM	M	24.00	M	0.02	
19	M		11.91	18.00													12:01AM	M	24.00	M	0.05	
20	T		11.88	19.50													12:01AM	M	24.00	M	0.02	
21	W		11.78	18.00													12:01AM	M	24.00	M	0.01	
22	R		11.36	17.00													12:01AM	M	24.00	M	0.01	
23	F	0.09	12.15	23.00																		
24	S	2.59	18.91	39.00	12:25AM	M	13.70	M	21.40	E	01:24AM	M	9.40	M	9.70	E	03:30PM	M	8.50	M	2.74	
25	SN	0.54	20.98	31.00							01:13AM	M	2.60	M	0.27	E	12:01AM	M	24.00	M	5.98	
26	M		21.02	28.00													12:01AM	M	24.00	M	2.11	
27	T		19.01	28.00													12:01AM	M	24.00	M	1.09	
28	W	0.26	18.76	34.00	12:37AM	M	1.00	M	1.50	E							12:01AM	M	24.00	M	0.77	
29	R		17.75	33.00													12:01AM	M	24.00	M	0.71	
30	F		17.59	29.00													12:01AM	M	24.00	M	0.30	
31	S	1.04	19.35	35.00	05:25AM	M	3.60	M	5.20	E	05:38AM	M	1.65	M	1.70	E	12:01AM	M	24.00	M	2.13	
Totals:							21.50		32.90				14.65		12.67				704.50		19.67	

Typed or Printed Name and Title of Principal Executive Officer or Authorized Agent:	Telephone:
Peter S. Baranyal Director of Wastewater Operations	219-391-8466

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSONS WHO MANAGE THE SYSTEM OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION; THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

Signature of Principal Executive Officer or Authorized Agent:	Date:
[signature]	08/04/2010

National Pollutant Discharge Elimination System (NPDES)
CSO Discharge Monitoring Report (CSO DMR)

State Form 50546 (R9-01)

City:	EAST CHICAGO	Page	1 of 1
Facility:	MUNICIPAL W.W.T.P.	Permit Number	IN0022829
Monitoring Period (MM/DD/YY to MM/DD/YY)	08/01/10 to 08/31/10	Check box if no CSO dischage occurred for the month:	
Design Peak Inf. Flow (MGD)	36	Measured/Metered (M) or Estimated (E) must be specified. (Please attach methods used.)	

					CSO Outfall No. 002 MICH AVE						CSO Outfall No.)03 ALDER ST						CSO Outfall No.)05 BASIN				
Day of Month	Day of Week	Precip. Inches	Influent Flow (MGD)	Peak Inf. Flow Rate (MG)	Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)
1	SN		18.67	27.00													12:01AM	M	24.00	M	1.46
2	M	0.05	18.07	27.00													12:01AM	M	24.00	M	0.61
3	T	1.13	20.91	33.00	05:15AM	M	4.70	M	7.20	E	05:25AM	M	3.20	M	3.30	E	12:01AM	M	24.00	M	2.20
4	W	0.36	20.56	35.50	02:09AM	M	6.80	M	9.90	E							12:01AM	M	24.00	M	2.02
5	R		19.19	29.00													12:01AM	M	24.00	M	1.30
6	F		18.48	29.00													12:01AM	M	24.00	M	0.68
7	S		17.79	27.00													12:01AM	M	24.00	M	0.33
8	SN		16.42	28.00													12:01AM	M	24.00	M	0.16
9	M		16.09	27.00													12:01AM	M	24.00	M	0.08
10	T		15.09	20.00													12:01AM	M	24.00	M	0.05
11	W		14.91	20.50													12:01AM	M	24.00	M	0.03
12	R		14.70	19.50													12:01AM	M	24.00	M	0.02
13	F	0.73	15.50	36.00	09:36PM	M	2.10	M	3.10	E	10:01PM	M	0.91	M	0.90	E	12:01AM	M	24.00	M	0.03
14	S		15.52	28.00													12:01AM	M	24.00	M	1.93
15	SN		14.51	19.00													12:01AM	M	24.00	M	0.60
16	M		14.33	20.00													12:01AM	M	24.00	M	0.19
17	T	0.20	14.00	19.00													12:01AM	M	24.00	M	0.04
18	W	0.03	13.90	20.00													12:01AM	M	24.00	M	0.10
19	R		13.41	19.00													12:01AM	M	24.00	M	0.02
20	F		13.05	20.00													12:01AM	M	24.00	M	0.01
21	S	0.23	13.56	30.00													12:01AM	M	24.00	M	0.16
22	SN		11.23	18.00													12:01AM	M	24.00	M	0.42
23	M		12.63	19.00													12:01AM	M	24.00	M	0.44
24	T		13.11	18.50													12:01AM	M	24.00	M	0.18
25	W		12.53	21.00													12:01AM	M	24.00	M	0.06
26	R		11.48	17.00													12:01AM	M	24.00	M	0.02
27	F		11.61	18.00													12:01AM	M	24.00	M	0.01
28	S		11.14	17.00													12:01AM	M	24.00	M	0.01
29	SN		12.05	17.00													12:01AM	M	24.00	M	0.01
30	M		12.22	16.00													12:01AM	M	24.00	M	0.01
31	T		12.32	18.00													12:01AM	M	24.00	M	0.01
Totals:		2.73					13.60		20.20				4.11		4.20				744.00		13.19

Typed or Printed Name and Title of Principal Executive Officer or Authorized Agent	Telephone
Peter S. Baranyai Director of Wastewater Operations	219-391-8466

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSONS WHO MANAGE THE SYSTEM OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION; THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

Signature of Principal Executive Officer or Authorized Agent	Date
	09/11/2010

National Pollutant Discharge Elimination System (NPDES)
CSO Discharge Monitoring Report (CSO DMR)
State Form 50546 (R9-01)

City:	EAST CHICAGO	Page:	1 of 1
Facility:	MUNICIPAL W.W.T.P.	Permit Number:	IN0022829
Monitoring Period (MM/DD/YY to MM/DD/YY):	09/01/10 to 09/30/10	Check box if no CSO discharge occurred for the month:	
Design Peak Inf. Flow (MGD):	36	Measured/Metered (M) or Estimated (E) must be specified. (Please attach methods used.)	

					CSO Outfall No. 002 MICH AVE						CSO Outfall No. 003 ALDER ST						CSO Outfall No. 005 BASIN				
Day of Month	Day of Week	Precip. in Inches	Influent Flow (MGD)	Peak Inf. Flow Rate (MGD)	Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)
1	W	0.19	13.04	26.50													12:01 AM	M	24.00	M	0.01
2	R	1.26	17.52	31.00	08.59 AM	M	2.61	M	3.80	E	10:15 AM	M	0.99	M	1.00	E	12:01 AM	M	24.00	M	0.73
3	F		13.69	28.00							12:01 AM	M	0.20	M	0.20	E	12:01 AM	M	24.00	M	1.65
4	S		11.77	17.00													12:01 AM	M	24.00	M	0.46
5	SN		11.82	17.00													12:01 AM	M	24.00	M	0.12
6	M		11.85	18.00													12:01 AM	M	24.00	M	0.03
7	T		12.02	18.00													12:01 AM	M	24.00	M	0.01
8	W		12.15	18.00																	
9	R		11.48	17.00													12:01AM	M	24.00	M	0.02
10	F		10.94	16.50													12:01AM	M	24.00	M	0.01
11	S	0.28	13.08	30.00													12:01 AM	M	24.00	M	0.01
12	SN		10.45	16.00																	
13	M		10.43	16.50													12:01AM	M	24.00	M	0.01
14	T		10.80	17.00													12:01 AM	M	24.00	M	0.01
15	W		10.89	18.00													12:01 AM	M	24.00	M	0.01
16	R	0.29	13.01	30.00													12:01 AM	M	24.00	M	0.01
17	F		10.35	16.00													12:01 AM	M	24.00	M	0.01
18	S	0.23	11.95	29.50													12:01 AM	M	24.00	M	0.01
19	SN		10.15	15.50													12:01 AM	M	24.00	M	0.01
20	M		10.48	16.50													12:01 AM	M	24.00	M	0.01
21	T	0.46	11.78	30.50													123:01AM	M	24.00	M	0.01
22	W	0.40	13.19	34.50	12:01 AM	M	0.60	M	0.90	E							12:01 AM	M	24.00	M	0.01
23	R		10.68	18.00													12:01 AM	M	24.00	M	0.01
24	F	0.15	11.79	26.00													12:01 AM	M	24.00	M	0.06
25	S	0.05	9.86	16.00													12:01 AM	M	24.00	M	0.03
26	SN	0.03	10.02	16.00													12:01AM	M	24.00	M	0.01
27	M		10.22	16.00													12:01 AM	M	24.00	M	0.01
28	T		9.90	16.00													12:01 AM	M	24.00	M	0.01
29	W		9.90	16.00													12:01 AM	M	24.00	M	0.01
30	R		10.05	16.00													12:01 AM	M	24.00	M	0.01
Totals:							3.21		4.70				1.19		1.20				672.00		3.30

Typed or Printed Name and Title of Principal Executive Officer or Authorized Agent: Peter S. Baranyai Director of Wastewater Operations	Telephone: 219-391-8466

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSONS WHO MANAGE THE SYSTEM OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION; THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

Signature of Principal Executive Officer or Authorized Agent:	Date: 10/4/2010

National Pollutant Discharge Elimination System (NPDES)
CSO Discharge Monitoring Report (CSO DMR)

State Form 50546 (R9-01)

City:	EAST CHICAGO	Page	1 of 1
Facility:	MUNICIPAL W.W.T.P.	Permit Number	IN0022829
Monitoring Periods (MM/DD/YY to MM/DD/YY)	10/01/10 to 10/31/10	Check box if no CSO discharge occurred for the month	
Design Peak Infl. Flow (MGD)	36	Measured/Metered (M) or Estimated (E) must be specified. (Please attach methods used.)	

					CSO Outfall No. 002 MICH AVE						CSO Outfall No. 003 ALDER ST						CSO Outfall No. 005 BASI				
Day of Month	Day of Week	Precip in inches	Influent Flow (MGD)	Peak Infl. Flow Rate (MG)	Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)
1	F		9.38	16.00													12:01AM	M	24.00	M	<0.01
2	S	1.40	16.87	35.00	09:48AM	M	1.77	M	2.60	E	12:00PM	M	0.41	M	0.40	E	12:01AM	M	24.00	M	0.64
3	SN		10.83	16.00													12:01AM	M	24.00	M	0.62
4	M		10.51	15.50													12:01AM	M	24.00	M	0.17
5	T		10.72	16.00													12:01AM	M	24.00	M	0.04
6	W		10.86	17.00													12:01AM	M	24.00	M	<0.01
7	R		10.92	17.00													12:01AM	M	24.00	M	<0.01
8	F		10.45	16.00													12:01AM	M	24.00	M	<0.01
9	S		10.37	16.00													12:01AM	M	24.00	M	<0.01
10	SN		10.40	16.50													12:01AM	M	24.00	M	<0.01
11	M		10.32	16.00													12:01AM	M	24.00	M	<0.01
12	T		10.25	17.00													12:01AM	M	24.00	M	<0.01
13	W	0.06	10.58	19.00													12:01AM	M	24.00	M	<0.01
14	R		10.37	16.00													12:01AM	M	24.00	M	<0.01
15	F		10.23	16.00													12:01AM	M	24.00	M	<0.01
16	S		10.03	16.00													12:01AM	M	24.00	M	<0.01
17	SN		9.89	15.50													12:01AM	M	24.00	M	<0.01
18	M		10.08	16.00													12:01AM	M	24.00	M	<0.01
19	T		10.17	17.00													12:01AM	M	24.00	M	<0.01
20	W		10.27	16.00																	
21	R		9.93	16.00													12:01AM	M	24.00	M	<0.01
22	F		9.73	14.00													12:01AM	M	24.00	M	<0.01
23	S	0.15	10.49	27.50													12:01AM	M	24.00	M	<0.01
24	SN	0.84	12.38	40.00	07:53PM	M	2.79	M	4.10	E							12:01AM	M	24.00	M	<0.01
25	M	0.23	14.00	32.00	12:20AM	M	2.20	M	3.20	E	12:30AM	M	1.81	M	1.90	E	12:01AM	M	24.00	M	1.12
26	T	0.42	12.53	31.50	08:23AM	M	1.88	M	2.70	E							12:01AM	M	24.00	M	0.77
27	W		10.86	18.00													12:01AM	M	24.00	M	0.57
28	R		11.19	17.00													12:01AM	M	24.00	M	0.21
29	F		10.34	15.00													12:01AM	M	24.00	M	0.05
30	S		10.29	16.00													12:01AM	M	24.00	M	<0.01
31	SN		10.18	16.00													12:01AM	M	24.00	M	<0.01
Totals:		3.10					8.64		12.60				2.22		2.30				720.00		4.19

Typed or Printed Name and Title of Principal Executive Officer or Authorized Agent	Telephone
Peter S. Baranyai Director of Wastewater Operations	219-391-8466

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSONS WHO MANAGE THE SYSTEM OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION; THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

Signature of Principal Executive Officer or Authorized Agent	Date
	11/8/2010

National Pollutant Discharge Elimination System (NPDES)
CSO Discharge Monitoring Report (CSO DMR)

State Form 50546 (R9-01)

City:	EAST CHICAGO	Page:	1 of 1
Facility:	MUNICIPAL W.W.T.P.	Permit Number:	IN0022829
Monitoring Period: (MM/DD/YY to MM/DD/YY)	11/01/10 to 11/30/10	Check box if no CSO dischage occurred for the month	[illegible]
Design Peak Inf. Flow (MGD)	36	Measured/Metered (M) or Estimated (E) must be specified. (Please attach methods used.)	

					CSO Outfall No. 002 MICH AVE						CSO Outfall No. 003 ALDER ST						CSO Outfall No. 005 BASIN				
Day of Month	Day of Week	Precip. in Inches	Influent Flow (MGD)	Peak Inf. Flow Rate (MG)	Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)
1	M		10.16	15.50																	0.01
2	T		9.81	16.00																	0.01
3	W		9.91	17.00																	
4	R	0.26	10.24	28.00	11:13 PM	M	0.20	M	0.30	E											D.01
5	F	0.03	10.10	22.00																	
6	S		8.88	15.00																	
7	SN		9.66	15.00																	0.01
8	M		8.96	15.00																	D.01
9	T		9.13	15.00																	0.01
10	W		9.27	16.00																	D.01
11	R		8.98	15.00																	D.01
12	F		8.72	15.50																	D.01
13	S	0.10	9.32	20.00																	0.01
14	SN	0.02	8.71	14.50																	D.01
15	M		8.89	14.50																	D.01
16	T		8.88	15.50																	0.01
17	W		9.48	15.50																	D.01
18	R		9.21	16.00																	D.01
19	F		8.66	14.00																	
20	S		8.57	14.50																	D.01
21	SN	0.01	8.16	14.50																	0.01
22	M	0.97	15.62	35.00							10:52 AM	M	0.80	M	0.80	E					
23	T	0.02	9.37	18.00																	0.32
24	W	0.40	11.02	28.00																	D.12
25	R	0.03	11.43	31.00																	0.26
26	F		9.07	13.00																	0.10
27	S		9.05	14.00																	0.02
28	SN		9.30	15.00																	
29	M	0.53	11.85	35.00							10:30 PM	M	0.50	M	0.50	E					0.01
30	T	0.06	11.70	24.50																	0.55
Totals:							0.20		0.30				1.30		1.30				0.00		1.55

Typed or Printed Name and Title of Principal Executive Officer or Authorized Agent	Telephone
Peter S. Baranyai Director of Utilities	219-391-8466

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSONS WHO MANAGE THE SYSTEM OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION; THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

Signature of Principal Executive Officer or Authorized Agent	Date
[signature]	12/10/2010

National Pollutant Discharge Elimination System (NPDES)
CSO Discharge Monitoring Report (CSO DMR)

State Form 50546 (R9-01)

City:	EAST CHICAGO	Page:	1 of 1
Facility:	MUNICIPAL W.W.T.P.	Permit Number:	IN0022829
Monitoring Period: (MM/DD/YY to MM/DD/YY)	12/01/10 to 12/31/10	Check box if no CSO dischage occurred for the month:	
Design Peak Inf. Flow (MGD)	36		

Measured/Metered (M) or Estimated (E) must be specified. (Please attach methods used.)

Day of Month	Day of Week	Precip in Inches	Influent Flow (MGD)	Peak Inf. Flow Rate (MG)	CSO Outfall No. 002 MICH AVE: Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	CSO Outfall No.)03 ALDER ST: Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	CSO Outfall No.)05 BASIN: Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)
1	W		10.51	16.00													12.01 AM	M	24.00	M	0.28
2	R		9.93	16.50													12:01 AM	M	17.25	M	0.09
3	F		9.97	16.00																	
4	S		9.93	16.00																	
5	SN		9.97	15.50																	
6	M		10.06	16.50																	
7	T		9.77	15.50																	
8	W		10.00	16.50																	
9	R		9.93	16.00																	
10	F	0.57	9.91	20.50																	
11	S	0.10	15.36	33.00	5:15 PM	E	0.25	E	0.40	E	5:24 PM	M	0.30	M	0.31	E	5:45 PM	M	6.25	M	0.14
12	SN		11.07	18.00													12:01 AM	M	24.00	M	0.58
13	M		10.43	16.50													12:01 AM	M	24.00	M	0.30
14	T		10.35	16.50													12:01AM	M	24.00	M	0.08
15	W		10.98	19.00													12:01 AM	M	24.00	M	0.05
16	R		10.67	17.00													12:01 AM	M	24.00	M	0.05
17	F		10.22	16.00													12:01 AM	M	24.00	M	0.06
18	S		10.31	16.00													12:01 AM	M	24.00	M	0.09
19	SN		10.27	16.00													12:01 AM	M	24.00	M	0.06
20	M		11.13	16.00													12:01 AM	M	24.00	M	0.04
21	T		10.19	16.00													12:01 AM	M	24.00	M	0.37
22	W		10.35	17.50													12:01 AM	M	24.00	M	0.45
23	R		10.50	16.50													12:01 AM	M	24.00	M	0.04
24	F		10.25	16.50													12:01AM	M	12.50	M	0.03
25	S	0.21	10.13	16.50																	
26	SN		9.90	16.00													3:00 PM	M	9.00	M	0.01
27	M		9.91	15.50													12:01 AM	M	24.00	M	0.02
28	T		10.26	16.00													12:01 AM	M	24.00	M	0.02
29	W	0.02	10.34	16.00													12:01 AM	M	24.00	M	0.02
30	R	0.01	14.80	25.50													12:01 AM	M	24.00	M	0.02
31	F	1.88	18.11	38.50	6:45 AM	E	3.00	E	4.40	E	7:03 AM	M	3.60	M	3.80	E	12:01 AM	M	24.00	M	2.04
Totals:							3.25		4.80				3.90		4.11				477.00		4.83

Typed or Printed Name and Title of Principal Executive Officer or Authorized Agent	Telephone
Peter S. Baranyai Director of Wastewater Operations	219-391-8466

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSONS WHO MANAGE THE SYSTEM OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION; THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

Signature of Principal Executive Officer or Authorized Agent	Date
[signature]	01/18/11

National Pollutant Discharge Elimination System (NPDES)
CSO Discharge Monitoring Report (CSO DMR)
State Form 50546 (R9-01)

City: EAST CHICAGO	Page 1 of 1
Facility: MUNICIPAL W.W.T.P.	Permit Number: IN0022829
Monitoring Period (MM/DD/YY to MM/DD/YY): 01/01/11 to 01/31/11	Check box if no CSO discharge occurred for the month:
Design Peak Inf Flow (MGD): 36	

Measured/Metered (M) or Estimated (E) must be specified. (Please attach methods used.)

Day of Month	Day of Week	Precip in Inches	Influent Flow (MGD)	Peak Inst Flow Rate (MG)	CSO Outfall No. 002 MICH AVE: Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	CSO Outfall No. 003 ALDER ST: Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	CSO Outfall No. 005 BASIN E: Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)
1	S		16.47	27.00																	
2	SN		15.07	19.00													01:00AM	M	22.00	M	1.76
3	M		14.66	19.00																	
4	T		14.44	20.00													02:00AM	M	13.00	M	0.82
5	W		13.97	19.00																	
6	R		14.17	22.00																	
7	F		12.94	18.00																	
8	S		11.90	18.00																	
9	SN		11.81	17.00																	
10	M		11.89	17.00																	
11	T		11.24	18.00																	
12	W		11.87	17.00																	
13	R		11.67	18.00																	
14	F		11.23	17.00																	
15	ES		10.97	17.00																	
16	SN		11.15	16.50																	
17	M	0.07	11.46	17.00													10:00AM	M	24.00	M	0.45
18	T	0.05	12.00	18.50													12:01 AM	M	24.00	M	0.82
19	W		11.29	17.00													12:01 AM	M	24.00	M	0.79
20	R		10.97	16.50													12:01AM	M	22.00	M	0.17
21	F		10.77	17.00																	
22	S		10.24	16.00													2:30AM	M	14.50	M	0.76
23	SN		9.99	16.00																	
24	M		10.54	16.00																	
25	T		10.66	19.00																	
26	W		10.65	17.00																	
27	R	0.11	10.75	16.50																	
28	F		10.94	17.00																	
29	S		10.55	16.00													12:30PM	M	11.30	M	0.17
30	SN		10.18	16.00													12:01AM	M	6.45	M	0.11
31	M		10.47	16.00																	
Totals		0.23					0.00		0.00				0.00		0.00				161.25		5.85

Typed or Printed Name and Title of Principal Executive Officer or Authorized Agent	Telephone
Peter S. Baranyai Director of Utilities	219-391-8466

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSONS WHO MANAGE THE SYSTEM OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION; THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

Signature of Principal Executive Officer or Authorized Agent	Date
[signature]	2/11/2011

National Pollutant Discharge Elimination System (NPDES)
CSO Discharge Monitoring Report (CSO DMR)
State Form 50546 (R9-01)

City:	East Chicago	Page	1 of 1
Facility:	Municipal W.W.T.P.	Permit Number:	IN0022829
Monitoring Period: (MM/DD/YY to MM/DD/YY)	02/01/11 to 02/28/11	Check box if no CSO discharge occurred for the month:	
Design Peak Inf. Flow (MGD)	36	Measured/Metered (M) or Estimated (E) must be specified. (Please attach methods used.)	

Day of Month	Day of Week	Precip. In Inches	Influent Flow (MGD)	Peak Inf. Flow Rate (MG)	CSO Outfall No. 002 Mich Ave. Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	CSO Outfall No. 003 Alder St. Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	CSO Outfall No. 005 Basin Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)
1	T		10.52	16.20																	
2	W		9.88	16.00																	
3	R		9.92	15.00																	
4	F		10.11	15.50																	
5	S		9.98	16.50																	
6	SN	0.04	10.02	15.50																	
7	M	0.04	10.23	16.50																	
8	T		9.90	16.00																	
9	W		9.94	16.00																	
10	R		10.48	16.00																	
11	F		10.03	17.00																	
12	S		10.02	16.00																	
13	SN		11.94	22.00																	
14	M		13.34	20.00																	
15	T		10.99	16.00																	
16	W		13.63	25.00																	
17	R		17.72	28.00																	
18	F		14.81	19.00																	
19	S		14.08	20.00																	
20	SN	1.02	16.57	33.00	02:15PM	E	3.00	E	4.40	E	02:33PM	M	3.70	M	3.80	E					
21	M	0.05	15.83	23.00	12:30AM	E	2.50	E	3.60	E	12:18AM	M	2.70	M	2.80	E	12:01PM	E	11.50	E	3.16
22	T		16.63	29.50													12:01AM	E	123.00	E	3.44
23	W	0.03	17.01	27.00																	
24	R	0.03	15.47	20.50																	
25	F	0.08	15.91	20.00																	
26	S	0.77	15.04	19.50																	
27	SN	0.08	15.65	33.00	10:00PM	E	1.25	E	1.80	E	10:02PM	M	1.40	M	1.40	E					
28	M		17.84	25.00	03:10AM	E	1.00	E	1.50	E	02:55AM	M	1.10	M	1.20	E					
Totals:		2.14					7.75		11.30				8.90		9.20				134.50		6.60

Typed or Printed Name and Title of Principal Executive Officer or Authorized Agent: Peter S. Baranyai

Telephone: 219-391-8466

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSONS WHO MANAGE THE SYSTEM OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION; THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

Signature of Principal Executive Officer or Authorized Agent: [signature]

Date: 03/09/2011

National Pollutant Discharge Elimination System (NPDES)
CSO Discharge Monitoring Report (CSO DMR)

State Form 50546 (R9-01)

City:	East Chicago	Page:	1 of 1
Facility:	Municipal W.W.T.P.	Permit Number:	IN0022829
Monitoring Period: (MM/DD/YY to MM/DD/YY)	03/01/11 to 03/31/11	Check box if no CSO discharge occurred for the month.	
Design Peak Inf. Flow (MGD)	36		

Measured/Metered (M) or Estimated (E) must be specified. (Please attach methods used.)

					CSO Outfall No. 002 Mich Ave.						CSO Outfall No. 003 Alder St.						CSO Outfall No. 005 Basin					
Day of Month	Day of Week	Precip. in Inches	Influent Flow (MGD)	Peak Inf. Flow Rate (MG)	Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E
1	T		16.93	27.50													08:00AM	M	16.00	M	0.80	
2	W		16.87	29.00													12:01AM	M	24.00	M	0.34	
3	R		15.94	26.00													12:01AM	M	24.00	M	0.18	
4	F	0.47	16.38	35.00	9:26 AM	M	1.30	M	1.90	E	09:38PM	M	0.80	M	0.80	E	12:01AM	M	24.00	M	0.40	
5	S	0.04	15.97	25.00													12:01AM	M	24.00	M	1.26	
6	SN		14.88	26.00													12:01AM	M	24.00	M	1.37	
7	M		15.69	28.00													12:01AM	M	24.00	M	1.19	
8	T	0.08	15.82	28.00													12:01AM	M	24.00	M	0.50	
9	W	0.29	19.81	32.00													12:01AM	M	24.00	M	0.44	
10	R	0.04	16.25	26.00													12:01AM	M	24.00	M	0.04	
11	F		16.60	27.00													12:01AM	M	24.00	M	0.15	
12	S		15.43	27.00													12:01AM	M	24.00	M	0.01	
13	SN		14.19	20.00													12:01AM	M	24.00	M	0.03	
14	M		15.25	28.00													12:01AM	M	7.00	M	0.01	
15	T	0.02	14.88	26.00																		
16	W		14.36	20.00																		
17	R		13.00	18.50																		
18	F		13.37	19.00																		
19	S		13.11	18.00																		
20	SN	0.21	14.72	32.00																		
21	M		13.77	27.50																		
22	T	0.90	16.54	32.50	02:30AM	M	2.10	M	3.10	E	02:00AM	M	1.10	M	1.10	E	01:00PM	M	11.00	M	1.64	
23	W	0.13	14.99	25.50													12:01AM	M	24.00	M	1.36	
24	R		13.91	21.00													12:01AM	M	24.00	M	0.54	
25	F		13.46	18.50													12:01AM	M	24.00	M	0.18	
26	S		13.09	18.00													12:01AM	M	24.00	M	0.07	
27	SN		12.62	18.00													12:01AM	M	24.00	M	0.02	
28	M		12.85	19.50													12:01AM	M	13.50	M	0.01	
29	T		12.56	18.00																		
30	W		12.65	23.50																		
31	R		12.19	18.00																		
Totals:		2.18					3.40		5.00				1.90		1.90				455.50		10.54	

Typed or Printed Name and Title of Principal Executive Officer or Authorized Agent	Telephone
Peter S. Baranyai	219-391-8466

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSONS WHO MANAGE THE SYSTEM OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION; THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

Signature of Principal Executive Officer or Authorized Agent	Date
	4/19/2011

National Pollutant Discharge Elimination System (NPDES)
CSO Discharge Monitoring Report (CSO DMR)

State Form 50546 (R9-01)

City:	East Chicago	Page:	1 of 1
Facility:	Municipal W.W.T.P.	Permit Number:	IN0022829
Monitoring Period (MM/DD/YY to MM/DD/YY):	04/01/11 to 04/30/11	Check box if no CSO discharge occurred for the month:	
Design Peak Inf. Flow (MGD):	36		

Measured/Metered (M) or Estimated (E) must be specified. (Please attach methods used.)

					CSO Outfall No. 002 Mich Ave.						CSO Outfall No. 003 Alder St.						CSO Outfall No. 005 Basin					
Day of Month	Day of Week	Precip. in Inches	Influent Flow (MGD)	Peak Inf. Flow Rate (MG)	Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)
1	F	0.20	13.54	29.50																	0.00
2	S		12.42	18.50																	0.00
3	SN	0.04	11.77	17.50													5:00 AM	M	19.00	M	0.02
4	M	0.24	14.76	29.00													12:01 AM	M	24.00	M	0.01
5	T		12.02	17.50													12:01 AM	M	24.00	M	0.04
6	W		11.87	22.50													12:01AM	M	24.00	M	0.00
7	R	0.29	12.80	30.00													12:01AM	M	24.00	M	0.00
8	F	0.46	17.43	32.00	04:15AM	E	0.20	E	0.30	E	04:27AM	M	0.33	M	0.40	E	12:01AM	M	24.00	M	0.74
9	S		11.95	17.00													12:01AM	M	24.00	M	0.59
10	SN		12.06	17.00													12:01AM	M	24.00	M	0.44
11	M		11.27	17.00													12:01AM	M	24.00	M	0.20
12	T		12.27	16.00													12:01AM	M	24.00	M	0.06
13	W		12.38	17.00													12:01AM	M	24.00	M	0.02
14	R		11.93	18.00													12:01AM	M	24.00	M	0.01
15	F	0.04	11.91	17.00													12:01AM	M	24.00	M	0.01
16	S	0.18	12.78	19.00													12:01AM	M	24.00	M	0.01
17	SN	0.08	10.28	16.00													12:01AM	M	24.00	M	0.01
18	M	0.35	15.86	32.00													12:01AM	M	24.00	M	0.09
19	T	0.85	17.87	33.00	10:00PM	E	1.80	E	2.60	E	09:35PM	M	0.50	M	0.60	E	12:01AM	M	24.00	M	0.26
20	W	0.03	14.46	25.00													12:01AM	M	24.00	M	1.38
21	R	0.03	13.26	19.00													12:01AM	M	24.00	M	0.49
22	F	1.04	20.98	34.00	04:45AM	E	3.05	E	4.50	E	5:10AM	E	2.45	E	2.90	E	12:01AM	M	24.00	M	1.35
23	S	0.01	15.89	25.50													12:01AM	M	24.00	M	1.90
24	SN		15.40	24.50													12:01AM	M	24.00	M	1.33
25	M		16.10	32.00													12:01AM	M	24.00	M	1.20
26	T	1.11	22.20	32.50	01:15AM	E	3.90	E	5.60	E	01:03AM	M	1.40	M	1.50	E	12:01AM	M	24.00	M	2.63
27	W	0.66	20.56	32.00	9:00AM	E	2.30	E	3.30	E	09:30AM	M	1.00	M	0.90	E	12:01AM	M	24.00	M	3.12
28	R	0.05	20.69	26.00	12:15AM	E	0.20	E	0.30	E							12:01AM	M	24.00	M	2.80
29	F		19.26	27.00													12:01AM	M	24.00	M	1.13
30	S		18.53	27.00													12:01AM	M	24.00	M	0.48
31																					
Totals:		5.66					11.45		16.60				5.68		6.30				667.00		20.32

Typed or Printed Name and Title of Principal Executive Officer or Authorized Agent:	Telephone:
Peter S. Baranyai	219-391-8466

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSONS WHO MANAGE THE SYSTEM OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION; THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

Signature of Principal Executive Officer or Authorized Agent:	Date:
	05/13/11

National Pollutant Discharge Elimination System (NPDES)
CSO Discharge Monitoring Report (CSO DMR)
State Form 50546 (R9-01)

City:	East Chicago	Page:	1 of 1
Facility:	Municipal W.W.T.P.	Permit Number:	IN0022829
Monitoring Period: (MM/DD/YY to MM/DD/YY)	05/01/11 to 05/31/11	Check box if no CSO discharge occurred for the month:	
Design Peak Inf. Flow (MGD):	36		

Measured/Metered (M) or Estimated (E) must be specified. (Please attach methods used.)

					CSO Outfall No. 002 Mich Ave.						CSO Outfall No. 003 Alder St.						CSO Outfall No. 005 Basin					
Day of Month	Day of Week	Precip. In Inches	Influent Flow (MGD)	Peak Inf. Flow Rate (MG)	Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E
1	SN		17.76	28.00													12:01AM	M	24.00	M	0.30	
2	M		15.62	26.00													12:01AM	M	24.00	M	0.20	
3	T		16.41	29.00													12:01AM	M	24.00	M	0.34	
4	W		15.87	21.00													12:01 AM	M	24.00	M	0.19	
5	R	0.09	15.35	28.00													12:01 AM	M	24.00	M	0.13	
6	F		14.94	21.00													12:01AM	M	24.00	M	0.02	
7	S	0.07	13.66	21.00													12:01AM	M	24.00	M	0.04	
8	SN		13.07	19.00													12:01AM	M	24.00	M	0.01	
9	M		13.18	20.00													12:01AM	M	24.00	M	0.01	
10	T		13.04	19.00													12:01AM	M	24.00	M	0.01	
11	W		12.62	18.50													12:01AM	M	24.00	M	0.01	
12	R	0.30	14.83	31.50	6:22 PM	M	3.00	M	4.40	E	9:30 PM	M	0.30	M	0.32	E	12:01AM	M	24.00	M	0.01	
13	F	0.09	13.64	25.00	2:30 AM	E	1.30	M	1.80	E							12:01AM	M	24.00	M	0.44	
14	S	0.77	17.18	33.00	6:30 PM	E	1.70	M	2.50	E	8:24 PM	M	0.30	M	0.31	E	12:01AM	M	24.00	M	0.34	
15	SN	0.94	22.13	33.00	1:00 AM	E	1.70	M	2.50	E	1:27 AM	M	0.80	M	0.85	E	12:01AM	M	24.00	M	2.18	
16	M		17.33	26.00													12:01AM	M	24.00	M	1.37	
17	T		16.35	26.00													12:01AM	M	24.00	M	0.57	
18	W	0.05	16.38	28.00													12:01AM	M	24.00	M	0.33	
19	R		15.41	20.00													12:01AM	M	24.00	M	0.16	
20	F		14.66	20.00													12:01AM	M	24.00	M	0.06	
21	S		14.29	22.00													12:01AM	M	24.00	M	0.03	
22	SN	0.04	14.08	19.00													12:01AM	M	24.00	M	0.02	
23	M		14.11	21.00													12:01AM	M	24.00	M	0.01	
24	T		13.24	22.00													12:01AM	M	24.00	M	0.01	
25	W	2.45	17.63	36.00	8:50 AM	M	9.10	M	14.60	E	9:26 AM	M	4.96	M	5.16	E	12:01AM	M	24.00	M	1.50	
26	R	0.55	13.79	31.00	2:00 AM	E	5.70	M	8.30	E	2:47 AM	M	2.10	M	2.15	E	12:01AM	M	24.00	M	2.76	
27	F		14.52	27.00	10:15 AM	E	0.30	M	0.40	E							12:01AM	M	24.00	M	2.32	
28	S	0.40	21.00	31.00	2:00 PM	E	1.97	M	2.90	E	2:15 PM	E	0.32	M	0.33	E	12:01AM	M	24.00	M	1.35	
29	SN	0.45	18.16	34.00	12:22 AM	M	1.95	M	2.90	E	2:07 PM	M	1.20	M	1.20	E	12:01AM	M	24.00	M	2.49	
30	M		19.32	26.00													12:01AM	M	24.00	M	2.55	
31	T		18.86	27.50	---												12:01AM	M	24.00	M	1.79	
Totals:		6.20					26.72		40.30				9.98		10.32				744.00		21.55	

Typed or Printed Name and Title of Principal Executive Officer or Authorized Agent	Telephone
Peter S. Baranyai	219-391-8466

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSONS WHO MANAGE THE SYSTEM OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION; THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

Signature of Principal Executive Officer or Authorized Agent	Date
	6/9/2011

National Pollutant Discharge Elimination System (NPDES)
CSO Discharge Monitoring Report (CSO DMR)
State Form 50546 (R9-01)

City:	East Chicago	Page:	1 of 1
Facility:	Municipal W.W.T.P.	Permit Number:	IN0022829
Monitoring Period: (MM/DD/YY to MM/DD/YY)	06/01/11 to 06/30/11	Check box if no CSO discharge occurred for the month.	
Design Peak Infl. Flow (MGD)	36	Measured/Metered (M) or Estimated (E) must be specified. (Please attach methods used.)	

Day of Month	Day of Week	Precip. (inches)	Influent Flow (MGD)	Peak Infl. Flow Rate (MG)	CSO Outfall No. 002 Mich Ave. Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	CSO Outfall No. 003 Alder St. Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)	M or E	CSO Outfall No. 005 Basin Time Discharge Began	M or E	Event Duration (Hours)	M or E	Event Discharge (MG)
1	W		18.46	27.00													12:01AM	M	24.00	M	0.96
2	R	0.12	17.94	32.00													12:01AM	M	24.00	M	0.38
3	F		16.83	27.00													12:01AM	M	24.00	M	0.25
4	S	0.32	17.26	30.00													12:01AM	M	24.00	M	0.28
5	SN		15.39	26.00	2:00AM	E	0.50	E	0.80	E							12:01 AM	M	24.00	M	0.51
6	M		15.30	28.00													12:01AM	M	24.00	M	0.18
7	T		14.59	29.00													12:01AM	M	24.00	M	0.07
8	W		14.31	25.50													12:01AM	M	24.00	M	0.02
9	R	2.05	22.55	38.00	09:30AM	E	6.50	E	9.90	E	09:33AM	M	4.40	M	4.50	E	12:01AM	M	24.00	M	1.98
10	F	0.02	21.60	34.00							05:40AM	M	0.70	M	0.70	E	12:01AM	M	24.00	M	2.36
11	S	0.03	19.78	28.00													12:01AM	M	24.00	M	1.04
12	SN		18.22	28.00													12:01AM	M	24.00	M	0.39
13	M		17.01	27.00													12:01AM	M	24.00	M	0.15
14	T		15.87	26.00													12:01AM	M	24.00	M	0.08
15	W	1.02	20.05	34.00	7:00AM	E	3.60	E	5.30	E	07:12AM	M	2.50	M	2.60	E	12:01AM	M	24.00	M	0.88
16	R	0.09	19.67	27.00													12:01AM	M	24.00	M	2.18
17	F		19.04	26.00													12:01AM	M	24.00	M	0.86
18	S		17.35	26.00													12:01AM	M	24.00	M	0.40
19	SN		16.69	26.00													12:01AM	M	24.00	M	0.20
20	M	0.20	17.20	27.50													12:01AM	M	24.00	M	0.12
21	T	0.02	15.60	26.00													12:01AM	M	24.00	M	0.07
22	W		15.28	26.00													12:01AM	M	24.00	M	0.04
23	R	0.04	14.55	26.50													12:01AM	M	24.00	M	0.01
24	F		13.71	18.50													12:01AM	M	24.00	M	0.01
25	S		13.35	18.00													12:01AM	M	24.00	M	0.01
26	SN		13.29	18.00													12:01AM	M	24.00	M	0.01
27	M	0.02	13.94	20.50													12:01AM	M	24.00	M	0.01
28	T		14.17	21.00													12:01AM	M	24.00	M	0.01
29	W		13.96	22.00													12:01AM	M	24.00	M	0.01
30	R	0.67	13.06	36.00							09:15PM	M	0.85	M	0.90	E	12:01AM	M	24.00	M	0.01
Totals:		4.60					10.60		16.00				8.45		8.70				720.00		13.48

Typed or Printed Name and Title of Principal Executive Officer or Authorized Agent	Telephone
PETER S. BARANYAI DIRECTOR OF UTILITIES	219-391-8466

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSONS WHO MANAGE THE SYSTEM OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION; THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

Signature of Principal Executive Officer or Authorized Agent	Date
	7/12/2011

APPENDIX B

Alder Street Pump Station Pump Information

a. At the Panel View, press "F5" to obtain the Set-Point Menu (after entering the appropriate PIN number).

b. Select "Pump Control Status / Reset" at the Set-Point Menu.

c. At the Pump Control Status / Reset screen, press "F4" to return to the Submersible Level Sensor Control screen.

E. MAJOR UNIT COMPONENTS

1. Sanitary Pumps

The three sanitary pumps are 14-inch x 14-inch, Yeomans Chicago Corporation, Model 14620-5, Type 6250, vertical line-shaft driven, dry pit, non-clog centrifugal pumps. The pumps have a design capacity of 7,000 gpm at a TDH of 47-feet and a speed of 875 rpm. A copy of the pump test curve is included in Figure III-3.

The centrifugal pumps utilize Chesterton, Model 155, cartridge single mechanical seals. Non-potable water flow to the mechanical seals is controlled by Honeywell Solenoid Valve Divisions, Skinner Valve, 7,000 Series, ½-inch normally closed, 120-volt solenoid valves. A rotameter is provided on the seal water lines to dial in the required seal water flow. Seal water flow to the sanitary pumps should be between 1 and 2-gpm.

The pressure switch on the water seal line between the solenoid valve and the pump is a Mercoid, Model DS221-3-6, ½-inch pressure switch.

The sanitary pumps are powered by 125-horsepower, Reliance Electrical, Frame 447TC, 480-volt, 3-phase, 875-rpm, totally enclosed, fan cooled, vertical C-face, premium efficiency, inverter duty, electric motors.

Power is transferred from the 125-horsepower motors to the sanitary pumps by Johnson Power, Series 71, U6 composite tube shafts. Each pumps has two shafts with an intermediate bearing and coupling.

2. Pump Isolation Valves

The suction isolation valves for the sanitary pumps are 20-inch, DeZurik, Figure 825, hand wheel actuated, 304 stainless steel, lined gate valves.

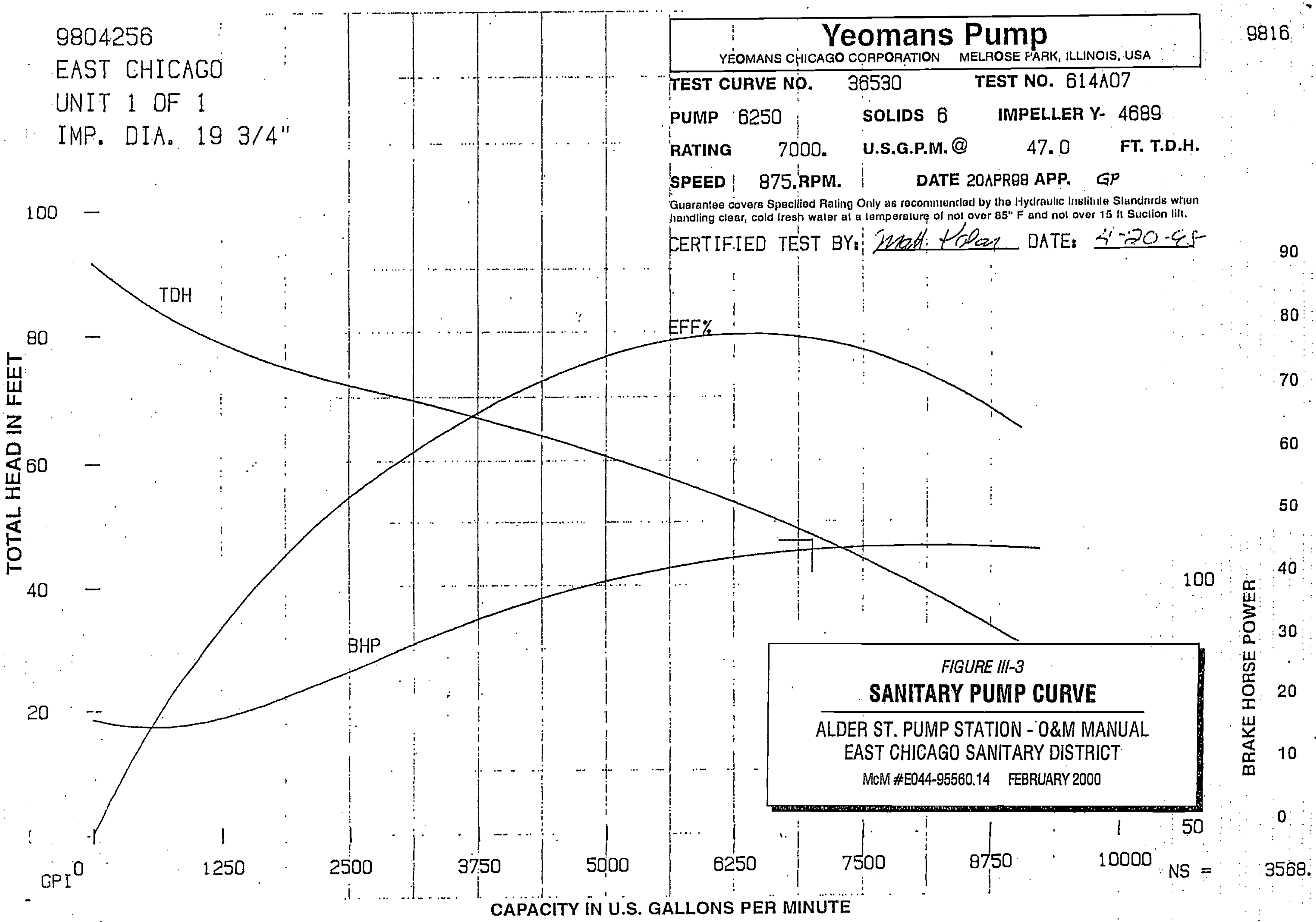


FIGURE III-3

SANITARY PUMP CURVE

ALDER ST. PUMP STATION - O&M MANUAL
EAST CHICAGO SANITARY DISTRICT
McM #E044-95560.14 FEBRUARY 2000

Y.C. FORM 515 (YP)

D. MAJOR UNIT COMPONENTS

1. Storm Water Pumps

Storm Water Pumps 104 and 105 are 42-inch, single-stage, WDM Pumps, Model 42KMM, Type KM, mixed flow, vertical turbine pumps. The pumps have a design capacity of 50,250 gpm at a TDH of 24-feet and a speed of 390 rpms.

Storm Water Pumps 104 and 105 are powered by a 400 Hp, Tatung Company, 3-phase, 460-volt, 60-Hertz, Model TIK-VCKT, Frame 500-V, inverter duty, open dip-proof, electric motors.

Storm Water Pumps 106 and 107 are 36-inch, single-stage, WDM Pumps, Model 36KMM, mixed flow, vertical turbine pumps. The pumps have a design capacity of 35,200 gpm at a TDH of 25-feet and a speed of 440 rpms.

Storm Water Pumps 106 and 107 are powered by a 300-horsepower, Tatung Company, 3-phase, 460-volt, 60-Hertz, Model TIK-VCKT, Frame 450-V, inverter duty, open drip-proof electric motors.

Details of the two pumps are included in Figures IV-4 and IV-5. Storm water pump performance tests are included in Appendix IV-A. Test reports on the Tatung Company motors is included in Appendix IV-B.

The line shaft bearings of the vertical turbine pumps are continuously lubricated by a Lube Devices, Inc., Bulletin F397-1, automatic solenoid controlled lubricator. The lubricator has a two gallon, Model RE0159, reservoir and a normally closed solenoid valve. The solenoid valve opens and closes as the pump turns on and off to provide full fluid flow to the shaft bearings. The lubricator utilizes a GEMS, Model LS1700, float switch in the reservoir that will generate an alarm through the PLC if the reservoir runs out of oil.

2. Pump Discharge Valves

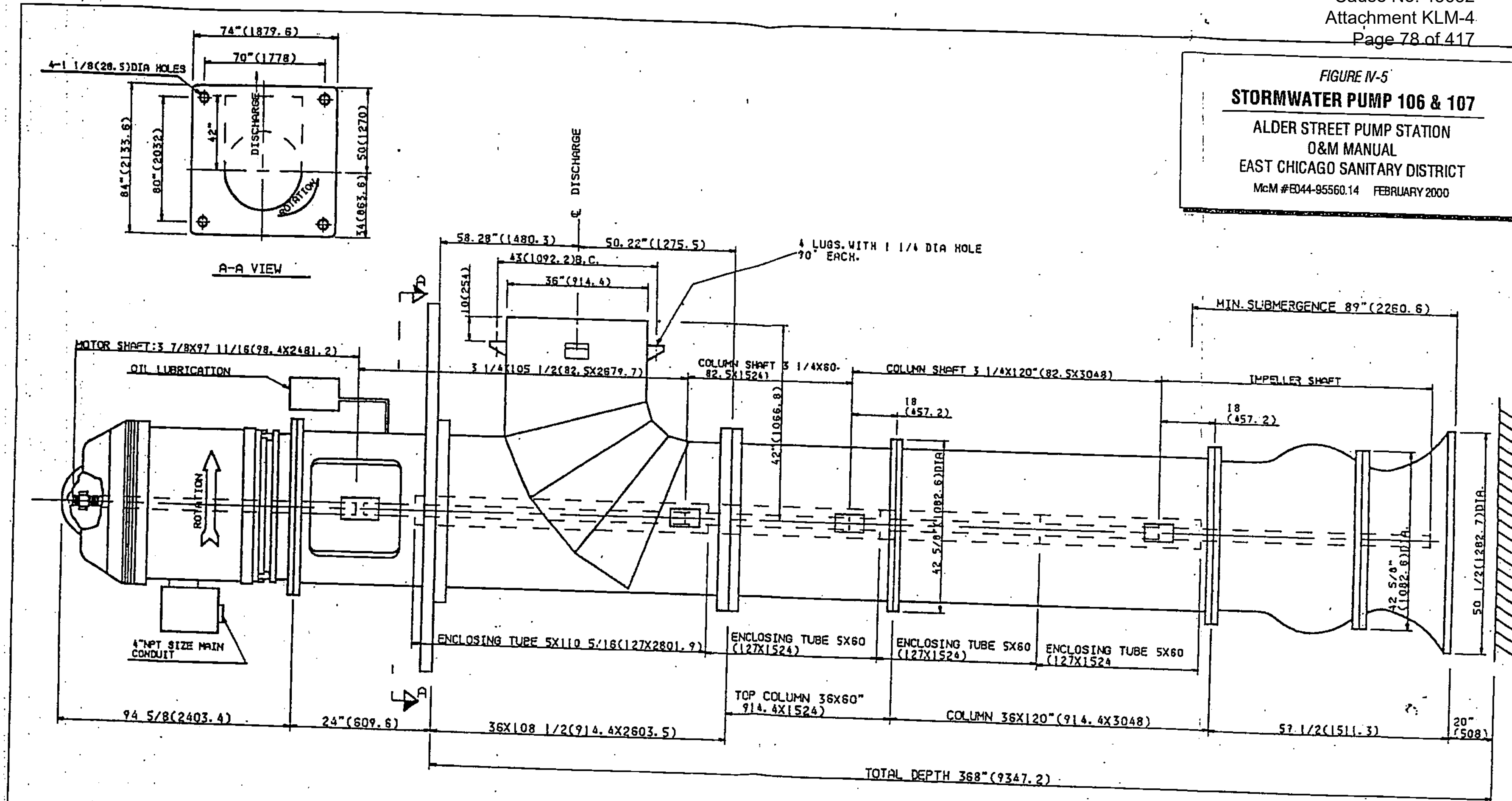
The discharge valves for Storm Water Pumps 104 and 105 are 42-inch, Henry Pratt Company, Triton XR-70, butterfly valves with Limitorque, Model L120-10-5/ WTRA-36 motor actuators.

The discharge valves for Storm Water Pumps 106 and 107 are 36-inch, Henry Pratt Company, Triton XR-70, butterfly valves with Limitorque, Model L120-10-3/ WTRA-36 motor actuators.

FIGURE IV-5

STORMWATER PUMP 106 & 107

ALDER STREET PUMP STATION
O&M MANUAL
EAST CHICAGO SANITARY DISTRICT
McM #E044-95560.14 FEBRUARY 2000



OPERATING CONDITIONS		MOTOR DATA		MATERIALS		WEIGHT Lbs.	OTHER DATA
CAPACITY 35200 GPM	LIQUID- STORM WATER	MAKE	VOLTS 460	BOWLS AND SUCTION BELL:	ASTM A 278 CLASS 30 CAST IRON	MOTOR	5 PIECE MITERED ELBOW
TDH 25 FT.	SP.GRAV. 1.0	CAPACITY: 300 HP	RPM 440	IMPELLER	ASTM A351-CD4MCU	PUMP 15415	
SUC.PRESS.	VISC. 1.0 CP	TYPE		IMPELLER SHAFT:	ASTM A 276-416 SS		
DIS.PRESS.	TEMP.	FRAME		TOP SHAFT:	ASTM A 276-416 SS		
				COLUMN AND DISCH. HEAD:	STEEL (ASTM A 36 & A 53)	TOTAL	

REV.	COMMENTS	DATE
0	CERTIFIED	06/19/97
1	RPM WAS 600. LUGS AND DATA ADDED.	07/30/97
2	FLOW & MODEL	11/5/97

PUMP ELEVATION: 36KMM / 1 STAGE

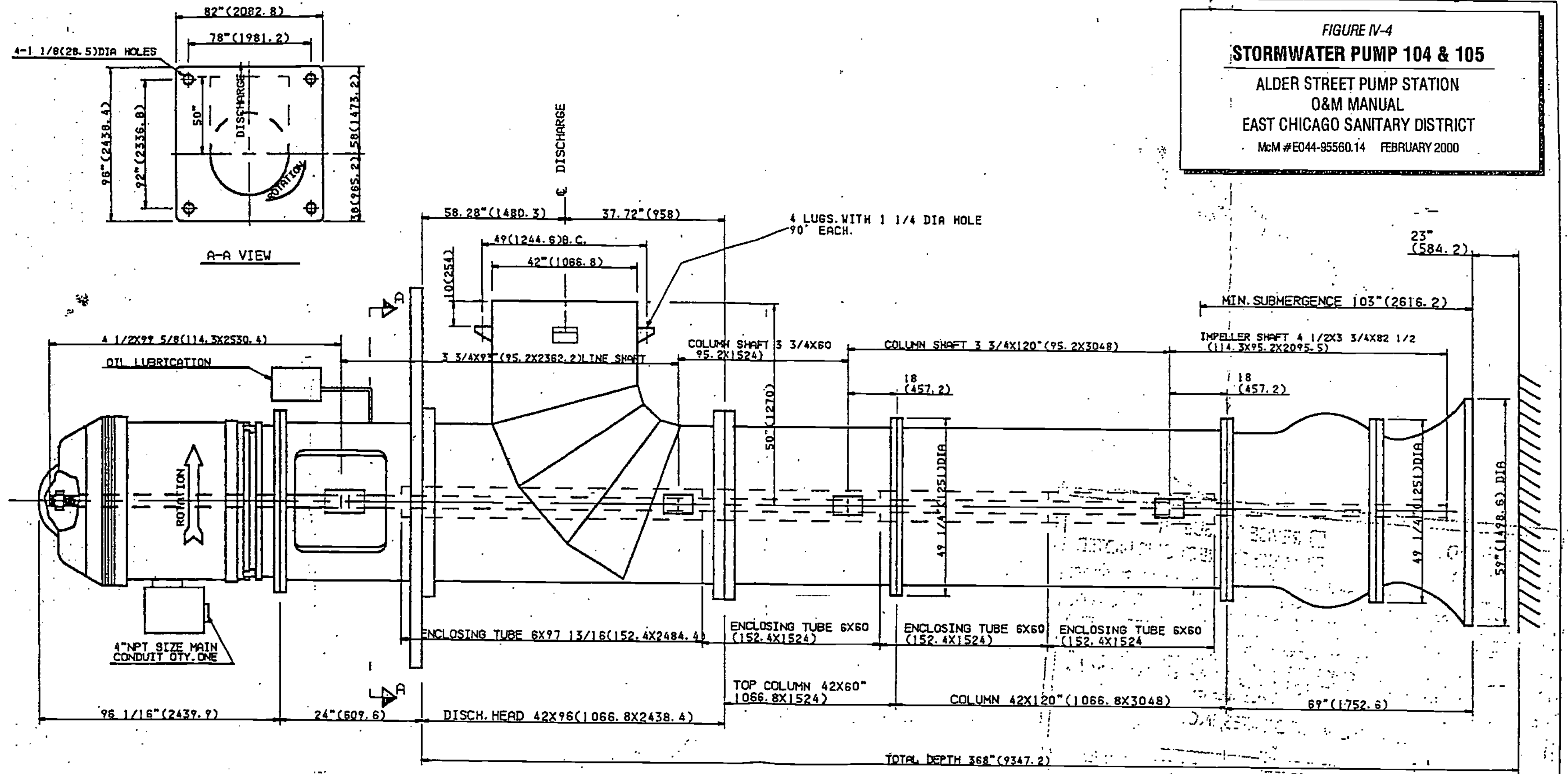
CUSTOMER: EAST CHICAGO SANITARY DISTRICT	PUMP. VERTICAL MIXED FLOW	PLANT ALDER STATION	ITEM No. 106 & 107
P.ORDER	MODEL 36KMM / 1 STAGE	LOCATION	PROJECT
REQ.	SIZE 36	SERVICE	QUANTITY 2 (TWO)

WDM PUMPS
2974 FLEETBROOK DRIVE MEMPHIS, TN. 38116
ORDER: 0002558(60048) \ DIMENSIONS:IN(MM) DO NOT SCALE
DR. JAH 06/18/97 APP. 06/18/97
D-1770 REV 1

FIGURE IV-4

STORMWATER PUMP 104 & 105

ALDER STREET PUMP STATION
O&M MANUAL
EAST CHICAGO SANITARY DISTRICT
McM #E044-95560.14 FEBRUARY 2000



REV.	COMMENTS	DATE
0	CERTIFIED	06/19/97
1	RPM WAS 600, LUGS AND DATA ADDED.	07/30/97
2	FLOW, + MODEL	11/5/97

PUMP ELEVATION: 42KMM / 1 STAGE

OPERATING CONDITIONS		MOTOR DATA	
CAPACITY 50250 GPM	LIQUID STORM WATER	MAKE	VOLTS 460
TDH 24 FT.	SP. GRAV. 1.0	CAPACITY: 400 HP	RPM 390
SUC. PRESS.	VISC. 1.0 CП	TYPE	
DIS. PRESS.	TEMP.	FRAME	

MATERIALS		WEIGHT Lbs.	OTHER DATA
BOWLS AND SUCTION BELL:	ASTM A 278 CLASS 30 CAST IRON	MOTOR	5 PIECE MITERED ELBOW
IMPELLER	ASTM A351-CD4MCU	PUMP 17600	
IMPELLER SHAFT:	ASTM A 276-416 SS		
TOP SHAFT:	ASTM A 276-416.SS		
COLUMN AND DISCH. HEAD:	STEEL (ASTM A 36 & A 53)	TOTAL	

CUSTOMER: EAST CHICAGO SANITARY DISTRICT	PUMP VERTICAL MIXED FLOW	PLANT ALDER STATION	ITEM No. 104 & 105
P. ORDER	MODEL 42KMM / 1 STAGE	LOCATION	PROJECT
REQ.	SIZE 42	SERVICE	QUANTITY 2 (TWO)

WDM PUMPS
2774 FLEETBROOK DRIVE MEMPHIS, TN. 38116

ORDER: 2558(80038)	DIMENSIONS: IN(MM)	DO NOT SCALE	
DWN. JAM 06/17/97	APP. MVY 06/19/97	No. D-1769	REV 1

APPENDIX IV-A

STORM WATER PUMP TEST CURVES

WDM PUMPS

PERFORMANCE TEST REPORT

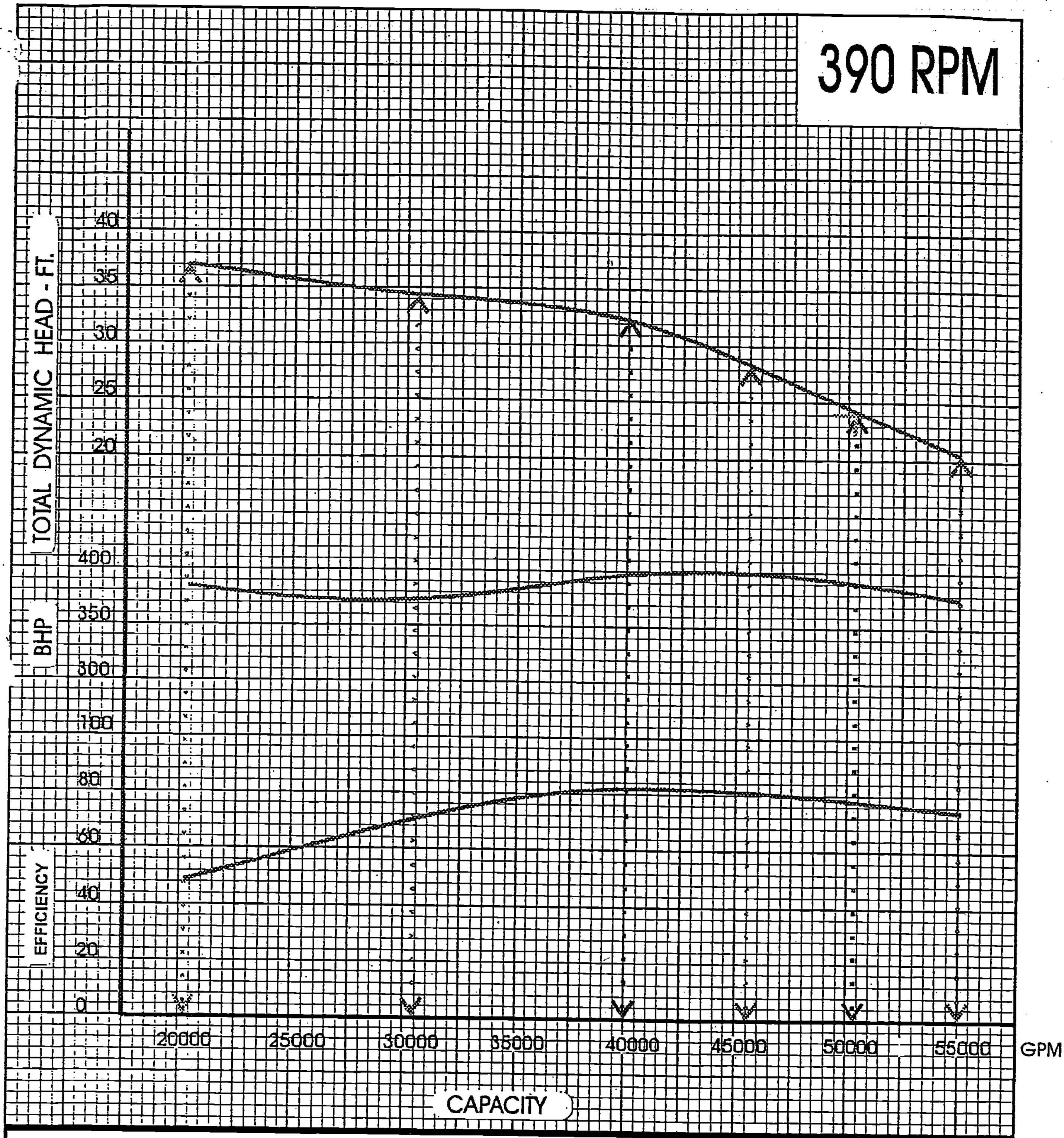
	POINT 1	POINT 2	POINT 3	POINT 4	POINT 5	POINT 6	POINT 7	POINT 8
CAPACITY (g.p.m.)	20200	30300	40000	45500	50300	55000		
DYNAMIC LEAVEL (ft.)	9	9	9	9	9	9		
DISCH. PRESS. (psi)	11.7	9.98	8.62	6.15	4	1.9		
DISCH. PRESS. (ft.)	27.02	23.07	19.92	14.22	9.24	4.395		
VEL. HEAD & FIRCT. (ft.)	0.946	2.13	3.68	4.78	5.9	7.065		
T.D.H. (ft.)	36.96	34.2	32.6	28.05	24.14	20.46		
INPUT KW	307.84	296.33	317.1	318.64	313.7	300.32		
MOTOR EFFIC.	0.936	0.936	0.936	0.936	0.936	0.936		
OUTPUT KW	288.14	277.37	296.81	298.25	293.63	281.1		
B.H.P.	386.25	371.81	397.88	399.81	393.61	376.81		
PUMP EFFIC.	48.81	70.38	82.76	80.46	77.9	75.41		

PUMP SIZE	42KMM	MOTOR H.P.	400
NUMBER OF STAGES	1	R.P.M.	390
COLUMN SIZE	36	FRAME	500V
CAPACITY	50200 GPM	MANUF.	TATUNG CO.
T.D.H.	24 FT	SERIAL NO.	83890156
PUMP SERIAL NO.	80321289	DATE	27-Aug-98

CUSTOMER	EAST CHICAGO SANITARY DISTRICT
PROJECT NAME	ALDER STATION
TAG	P-104

WDM PUMPS

VERTICAL MIXED FLOW PUMP



PUMP SIZE	42KMM	MOTOR H.P.	400
NUMBER OF STAGES	1	R.P.M.	390
COLUMN SIZE	36	FRAME	500V
CAPACITY	50200 GMP	MANUF.	TATUNG CO.
T.D.H.	24 FT	SERIAI No.	83890156
PUMP SERIAL No.	80321289	DATE	27-AGO-98

CUSTOMER	EAST CHICAGO SANITARY DISTRIC
PROJECT NAME	ALDER STATION
TAG.	P-104

WDM PUMPS

PERFORMANCE TEST REPORT

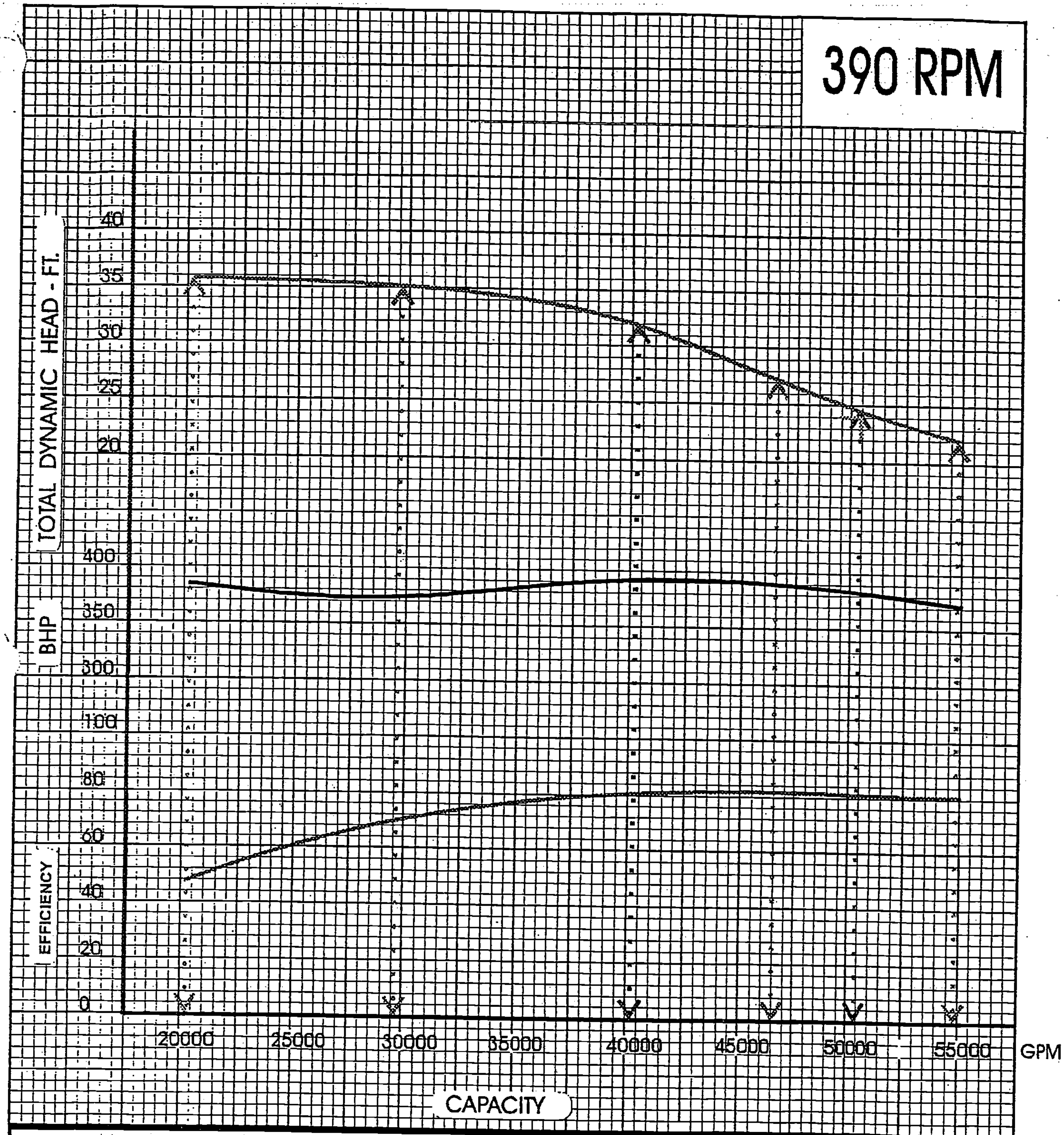
	POINT 1	POINT 2	POINT 3	POINT 4	POINT 5	POINT 6	POINT 7	POINT 8
CAPACITY (g.p.m.)	20200	29600	40100	46500	50400	54800		
DYNAMIC LEAVEL (ft.)	9	9	9	9	9	9		
DISCH. PRESS. (psi)	11.27	10.37	8.36	5.75	4.11	2.57		
DISCH. PRESS. (ft.)	26.05	23.96	19.31	13.28	9.5	5.95		
VEL. HEAD & FIRCT. (ft.)	0.946	2.034	3.69	5.023	6	7.05		
T.D.H. (ft.)	36	35	32	27.3	24.5	22		
INPUT KW	306	296.07	316.96	311.2	301.97	301		
MOTOR EFFIC.	0.936	0.936	0.936	0.936	0.936	0.936		
OUTPUT KW	286.41	277.13	296.67	291.28	282.64	281.73		
B.H.P.	383.9	371.5	397.69	390.46	378.88	377.65		
PUMP EFFIC.	47.83	70.42	81.48	82.1	82.3	80.61		

PUMP SIZE	42KMM	MOTOR H.P.	400
NUMBER OF STAGES	1	R.P.M.	390
COLUMN SIZE	36	FRAME	500V
CAPACITY	50200 GPM	MANUF.	TATUNG CO.
T.D.H.	24 FT	SERIAL NO.	83890156
PUMP SERIAL NO.	80321292	DATE	5-Sep-98

CUSTOMER	EAST CHICAGO SANITARY DISTRICT
PROJECT NAME	ALDER STATION
TAG	P-105

WDM PUMPS

VERTICAL MIXED FLOW PUMP



PUMP SIZE	42KMM	MOTOR H.P.	400
NUMBER OF STAGES	1	R.P.M.	390
COLUMN SIZE	36	FRAME	500V
CAPACITY	50200 GMP	MANUF.	TATUNG CO.
T.D.H.	24 FT	SERIAl No.	83890156
PUMP SERIAL No.	80321292	DATE	05-SEP-98

CUSTOMER	EAST CHICAGO SANITARY DISTRIC
PROJECT NAME	ALDER STATION
TAG.	P-105

WDM PUMPS

PERFORMANCE TEST REPORT

	POINT 1	POINT 2	POINT 3	POINT 4	POINT 5	POINT 6	POINT 7	POINT 8
CAPACITY (g.p.m.)	15250	20000	30000	35000	36500	40500		
DYNAMIC LEAVEL (ft.)	8.7	8.7	8.7	8.7	8.7	8.7		
DISCH. PRESS. (psi)	14	12.5	9.8	7.4	6.3	3.5		
DISCH. PRESS. (ft.)	32.3	28.9	22.6	17.1	14.6	8.1		
VEL. HEAD & FIRCT. (ft.)	0.5	1.1	2.1	2.7	2.75	3.6		
T.D.H. (ft.)	41.5	38.7	33.4	28.5	26.0	20.4		
INPUT KW	239	222	235	232	225	206		
MOTOR EFFIC.	0.945	0.945	0.945	0.945	0.945	0.945		
OUTPUT KW	225.9	209.8	222.1	219.2	212.6	194.7		
B.H.P.	302.8	281.2	297.7	293.9	285.0	261.0		
PUMP EFFIC.	52.8%	69.5%	85.1%	85.7%	84.1%	79.9%		

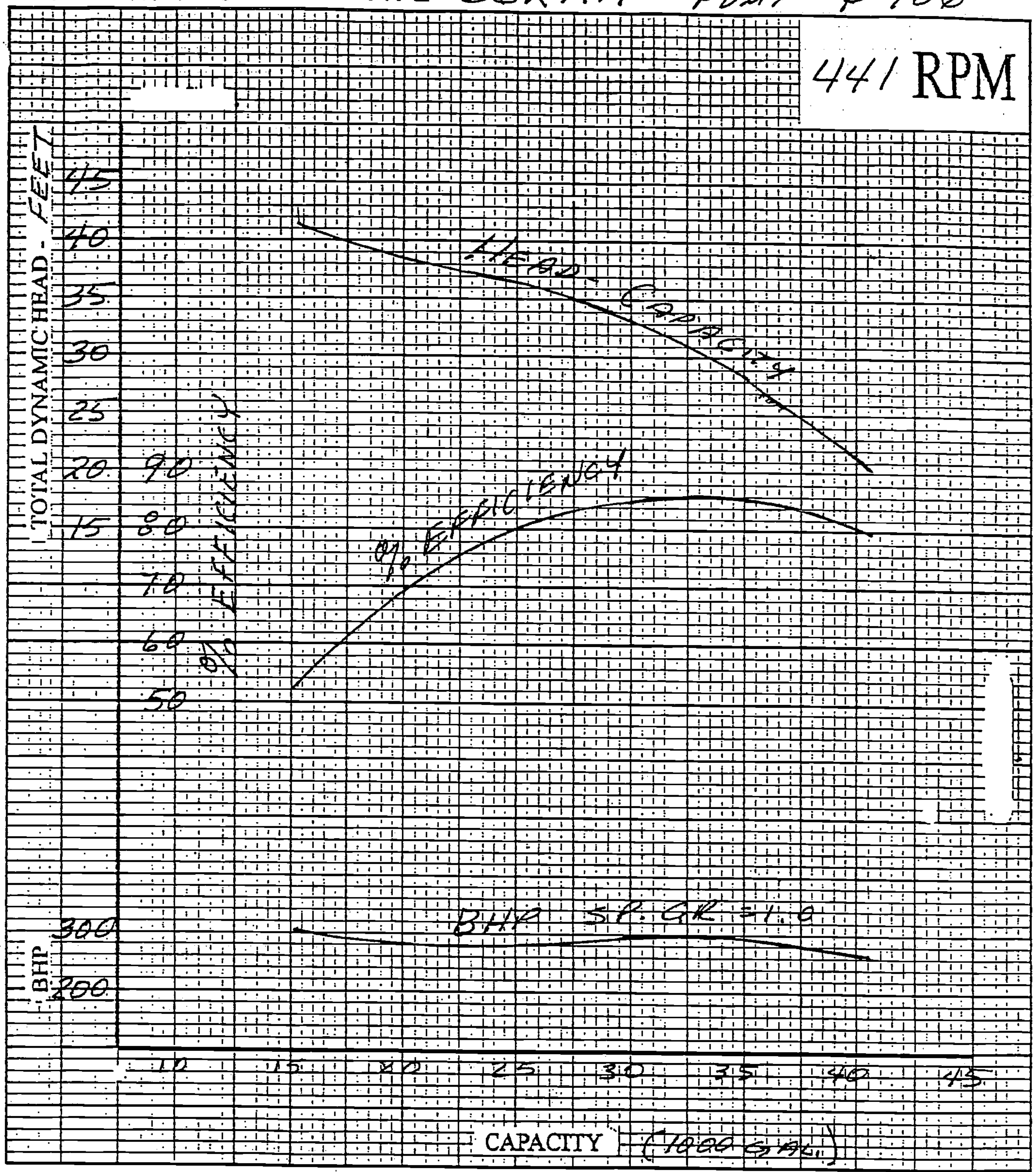
PUMP SIZE	36 KMM	MOTOR H.P.	300 H.P.
NUMBER OF STAGES	1	R.P.M.	441
COLUMN SIZE	36 X 6 X 3 3/4	FRAME	450 V
CAPACITY	35200 G.P.M.	MANUF.	TATUNG
T.D.H.	25 FT.	SERIAL NO.	83680113
PUMP SERIAL NO.(PRELIMINARY)	001		

CUSTOMER	CITY OF EAST CHICAGO, IN	TESTED BY :	C.M.S.
PROJECT NAME	EAST CHICAGO	DATE	6/18/1998
TAG	P-106		

WDM PUMPS

PERFORMANCE TEST REPORT

TYPE 36KMM PUMP P-106



SERVICE CONDITIONS

CLIENT: EAST CHICAGO IN.	FLUID:	Sp. Gr.:	VIS.:
SERVICE: ALDER STATION	CAPACITY:	BHP.:	EFF.:
DATE: 6-16-98	HEAD:	NPSHA:	NPSHR:

WDM PUMPS

PERFORMANCE TEST REPORT

	POINT 1	POINT 2	POINT 3	POINT 4	POINT 5	POINT 6	POINT 7	POINT 8
CAPACITY (g.p.m.)	15000	20000	31000	35300	36500	41500		
DYNAMIC LEAVEL (ft.)	9	9	9	9	9	9		
DISCH. PRESS. (psi)	12.5	10.4	8.8	6.9	6.4	3.5		
DISCH. PRESS. (ft.)	28.9	24.0	20.3	15.9	14.8	8.1		
VEL. HEAD & FIRCT. (ft.)	0.5	1.1	2.15	2.71	2.75	3.7		
T.D.H. (ft.)	38.4	34.1	31.5	27.6	26.5	20.8		
INPUT KW	224	212	233	229	228	219		
MOTOR EFFIC.	0.945	0.945	0.945	0.945	0.945	0.945		
OUTPUT KW	211.7	200.3	220.2	216.4	215.5	207.0		
B.H.P.	283.8	268.6	295.2	290.1	288.8	277.4		
PUMP EFFIC.	51.2%	64.2%	83.5%	85.0%	84.7%	78.5%		

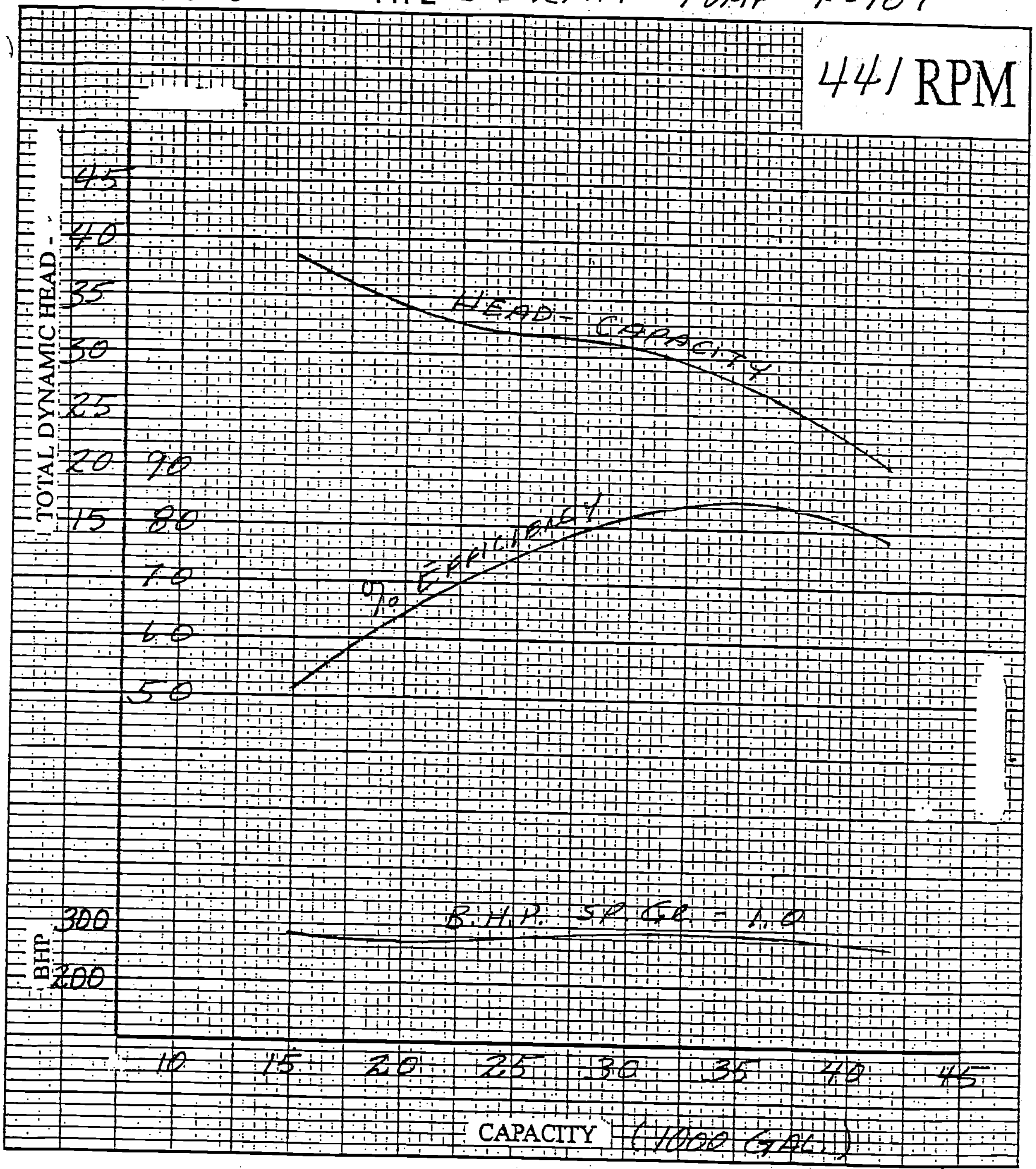
PUMP SIZE	36 KMM	MOTOR H.P.	300 H.P.
NUMBER OF STAGES	1	R.P.M.	441
COLUMN SIZE	36 X 6 X 3 3/4	FRAME	450 V
CAPACITY	35000 G.P.M.	MANUF.	TATUNG
T.D.H.	25 FT.	SERIAL NO.	83680113
PUMP SERIAL NO.(PRELIMINARY)	'002		

CUSTOMER	CITY OF EAST CHICAGO, IN	TESTED BY :	C.M.S.
PROJECT NAME	EAST CHICAGO	DATE	6/18/1998
TAG	P-107		

WDM PUMPS

PERFORMANCE TEST REPORT

TYPE 36 KMM PUMP P-107



SERVICE CONDITIONS

CLIENT: EAST CHICAGO IN.	FLUID:	Sp. Gr.:	VIS.:
SERVICE: ALDER STATION	CAPACITY:	BHP.:	EFF.:
DATE: 6-18-98	HEAD:	NPSHA:	NPSHR:

APPENDIX C

145th Street Storm Water Pump Station

145TH STREET PUMP STATION

2. Floatables control at the Alder Street and Michigan Street outfalls is recommended with outfall booms at each outfall at an estimated cost of $10,000 per location. Floatables from the Magoun Avenue pump station discharge (from the lagoon) can be accomplished by baffling the outlet pipe of the lagoon at an estimated cost of $10,000.

The first recommendation will be implemented if deemed appropriate and necessary by IDEM. Floatables control will become part of the pump station improvements project.

G. 145th Street Storm Station

In 1992, the District adapted a Worthington pump, which was previously used at the CSO lift station in the treatment plant to pump secondary effluent to the CSO lagoon or polishing, for use at the 145th Street Storm station. The manufacturer has confirmed that this adaptation is within the design capabilities of the pump. The existing pumps at that station are in need of repair, i.e. new castings, shafts and impellers, so the use of the now idle Worthington pump will permit the District to economically improve efficiency of the 145th street station and realize the full capital investment of the existing pumps. That work is scheduled for completion in 1995, when funds are available. After a suitable trial period, with demonstrated acceptable performance, the second pump at 145th Street Station will be replaced with the other existing Worthington Pump.

H. Canal Street Sanitary and Storm Pump Stations

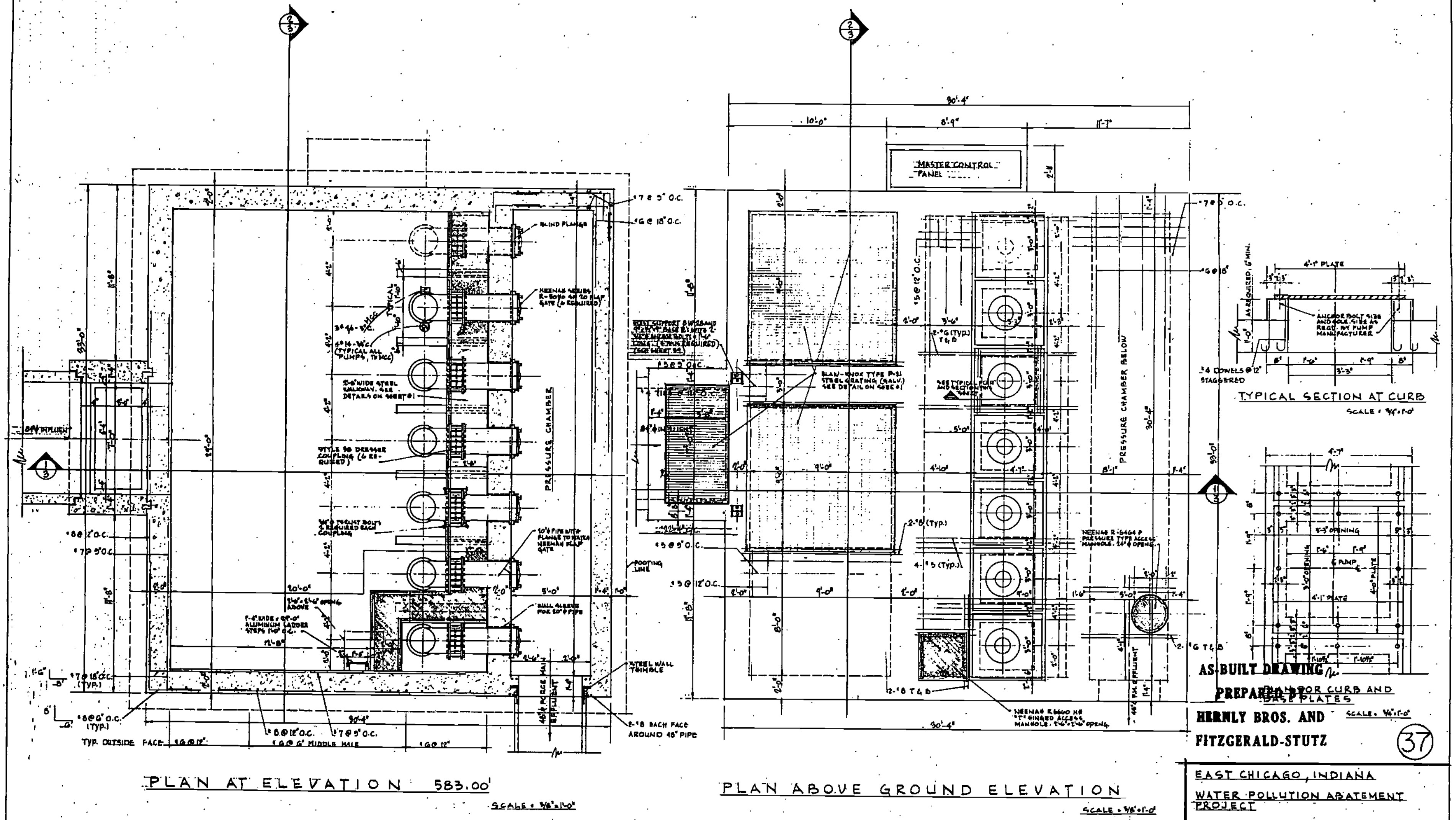
Both of these pump stations are to be replaced in 1996 as part of an INDOT project which consists of a new road and bridge. The overflow paint will be eliminated when the new station is built.

I. Collection System

Current activities planned for the collection system include:

1. A portable flow meter for measuring sewer system flows will be purchased in 1995.


145TH STREET STORM PUMP STATION
Location: 145th Street and Cline Ave.
Date of Construction: 1970
Type and Number of Pumps: (2) Motor Driven Vertical Centrifugal
Capacity: 28.6 MGD (19,860 gpm)
Discharge to: Grand Calumet River, Cline Ave.
E 145th St
Image IndianaMap Framework Data
© 2009 Google
© 2009 Europa Technologies
©2009
Google



AS-BUILT DRAWING
PREPARED BY
HERNLY BROS. AND
FITZGERALD-STUTZ

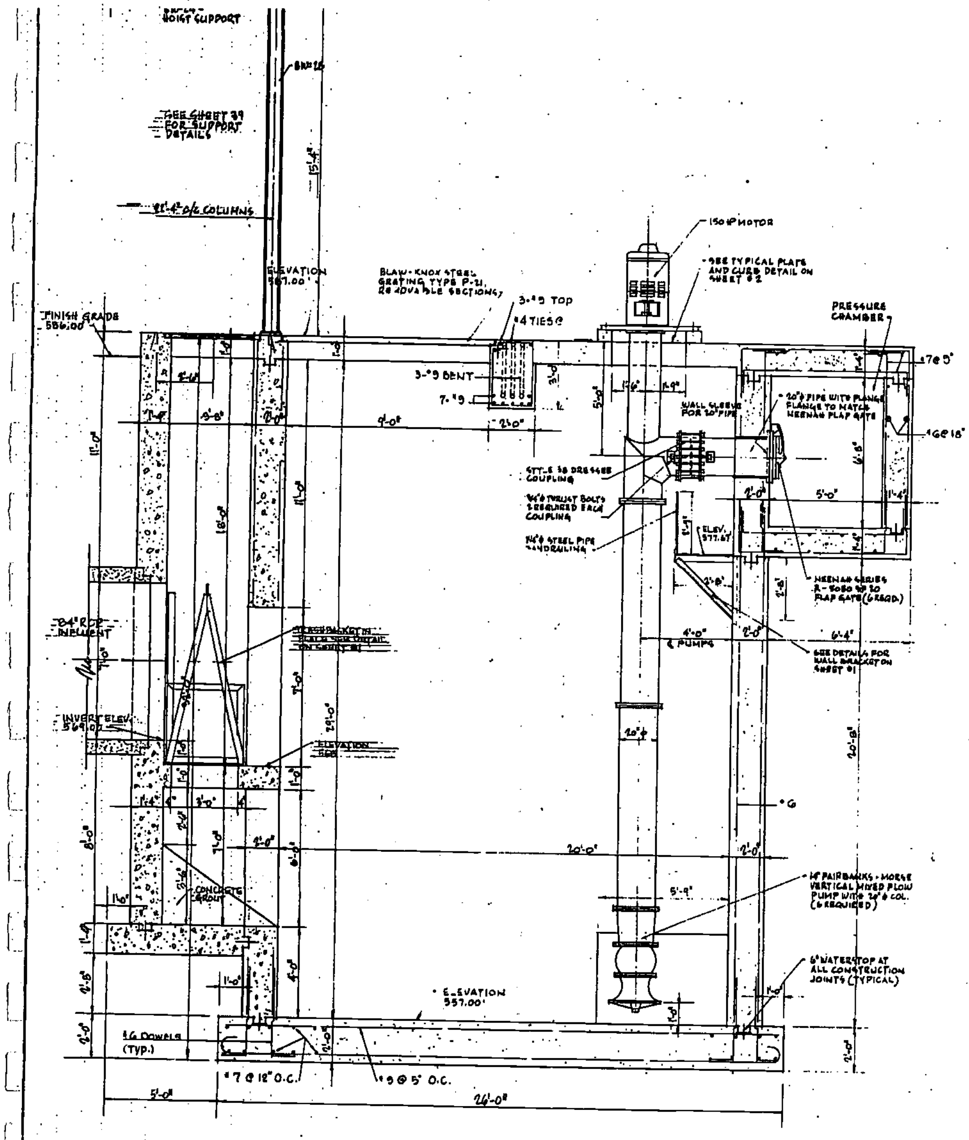
37

EAST CHICAGO, INDIANA
WATER POLLUTION ABATEMENT PROJECT
145TH STREET PUMPING STATION

HERNLY BROS. INC.
PARKER, INDIANA
SEPTEMBER 1970

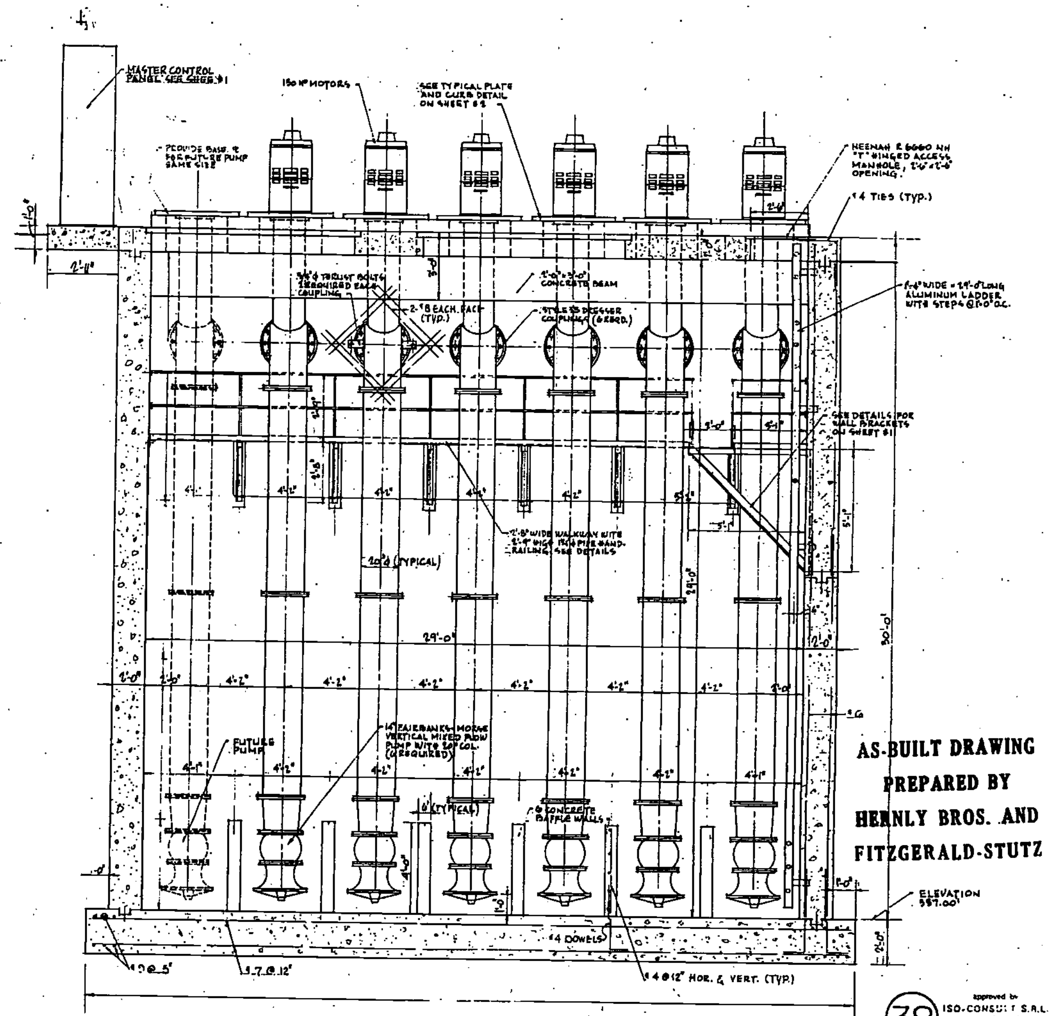
SHEET 2 of 3

approved by
ISO-CONSULT S.R.L.
INGENIEUR-BUREAU AG



SECTION #1

SCALE = 3/8" = 1'-0"



SECTION #2

SCALE = 3/8" = 1'-0"

NOTE

BACKFILL UNDER AND AROUND WET WELL SHALL BE GRADE 'B' SPECIAL BORROW COMPACTED TO 95% OF THE MODIFIED PROCTOR.
PROVIDE 2-#5 EACH FACE AROUND OPENING UNLESS NOTED.
THE NOTES FOR DIV. A6 SHALL BE USED.

AS-BUILT DRAWING PREPARED BY HERNLY BROS. AND FITZGERALD-STUTZ

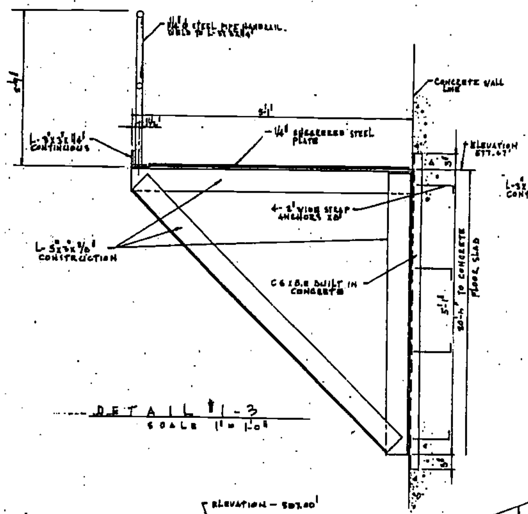
38

EAST CHICAGO, INDIANA

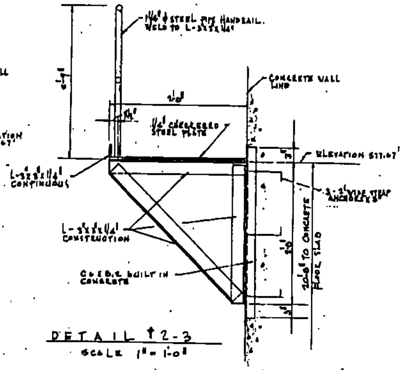
WATER POLLUTION ABATEMENT PROJECT

145TH STREET PUMPING STATION

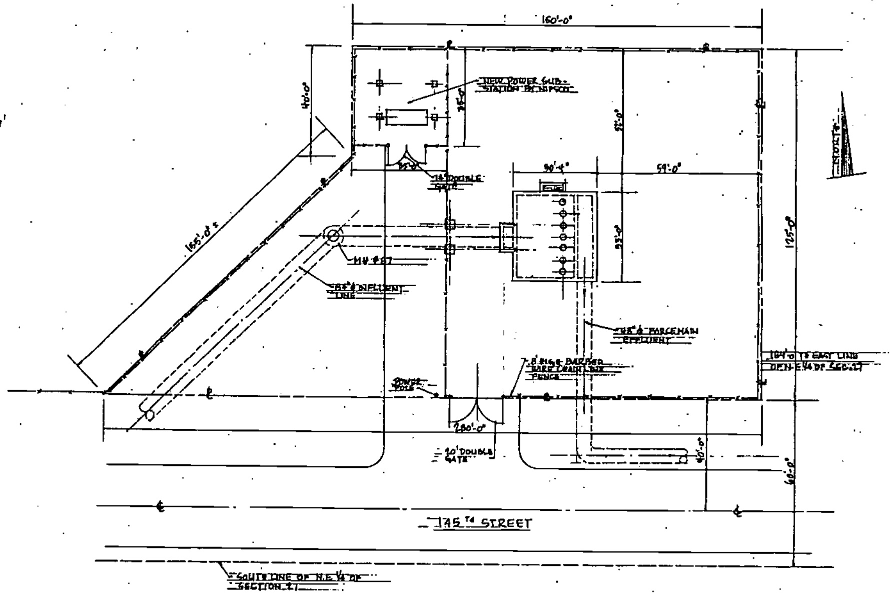
HERNLY BROS. INC.
PARKER, INDIANA



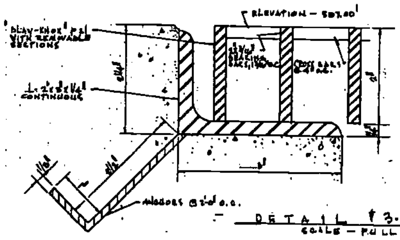
DETAIL #1-3
SCALE 1" = 1'-0"



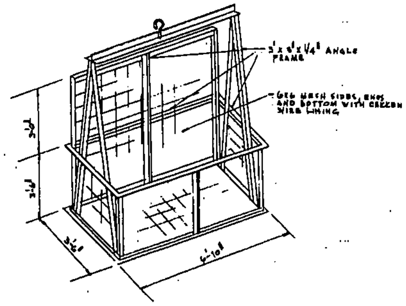
DETAIL #2-3
SCALE 1" = 1'-0"



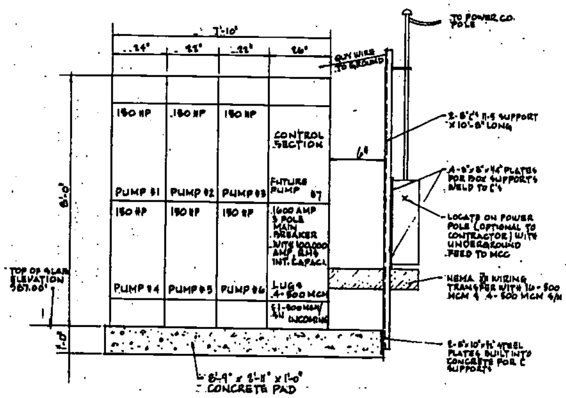
SITE PLAN
SCALE 1" = 20'



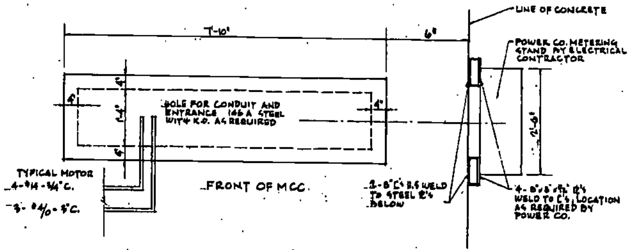
DETAIL #3-3
SCALE — FULL



DETAIL OF TRASH BASKET



CONTROL PANEL ELEVATION
SCALE = 3/4" = 1'-0"



PLAN OF CONTROL PANEL
SCALE = 3/4" = 1'-0"

AS-BUILT DRAWING
PREPARED BY
HERNLY BROS. AND
FITZGERALD-STUTZ

36

EAST CHICAGO, INDIANA
WATER POLLUTION ABATEMENT PROJECT
145TH STREET PUMPING STATION

HERNLY BROS. INC.
PARKER, INDIANA
SEPTEMBER 1970

SHEET 1 OF 3

APPENDIX D

IDEM Policy for CSO Treatment Facility

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT	**STATUS:** Final	**POLICY NUMBER:** **Water-016**
AGENCY NONRULE POLICY DOCUMENT **SUBJECT:** **CSO Treatment Facilities**	**AUTHORIZED:** Thomas W. Easterly, Commissioner	
	SUPERSEDES: **New**	**ISSUING OFFICE(S):** **Office of Water Quality**
	ORIGINALLY EFFECTIVE: Date April 11, 2008	**RENEWED/REVISED:** Date

Disclaimer: This nonrule policy document (NPD) is intended solely as guidance and does not have the effect of law or represent formal Indiana Department of Environmental Management (IDEM) decisions or final actions. This nonrule policy document shall be used in conjunction with applicable laws. It does not replace applicable laws, and, if it conflicts with these laws, the laws shall control. This nonrule policy document may be put into effect by IDEM 30 days after presentation to the appropriate board. Pursuant to IC 13-14-11.5, this policy will be available for public inspection for at least 45 days prior to presentation to the appropriate board. If the nonrule policy is presented to more than one board, it will be effective 30 days after presentation to the last board. IDEM will submit the policy to the Indiana Register for publication. Revisions to the policy will follow the same procedure of presentation to the board and publication.

1. PURPOSE

Most Combined Sewer Overflow (CSO) communities in Indiana have already analyzed or are in the process of analyzing a range of alternatives for controlling CSOs for purposes of long term control plan development. The purpose of this document is to inform CSO communities that, in addition to the reasonable range of alternatives described in U.S. EPA's CSO Policy, IDEM is willing to accept, for additional evaluation as part of a community's alternatives analysis, a treatment basin alternative[1] provided that such alternative meets the criteria set forth in this nonrule policy document (NPD).

[1] For technical information concerning one type of CSO treatment basin, see *Michigan Combined Sewer Overflow Control Manual, September 26, 1994* and http://www.rougeriver.com/

Consistent with the CSO Policy, IDEM will determine the appropriateness of such an alternative on a case-by-case basis, in the context of evaluating all of the alternatives.

2. SCOPE

This policy affects CSO communities that choose to consider a CSO Treatment Facility as part of a broader alternatives analysis in order to be consistent with the 1994 CSO Control Policy.

3. SUMMARY

A CSO Treatment Facility designed and operated as discussed in this document provides a prescribed high level of CSO treatment that precludes the need for a use attainability analysis.

4. DEFINITIONS

The following definitions apply to the defined term as used in this NPD:

"CSO" means combined sewer overflow and is the combination of sanitary sewage and storm water in the same conduit (sewer pipe).

"CSO Community" means a community (municipality) that has combined sewer overflow discharges.

"Combined Sewer Overflow Control Policy" or "Policy" is the U.S. EPA policy governing the control of combined sewer overflows from CSO communities.

"CSOOP" means combined sewer overflow operational plan.

"LTCP" means long term control plan, a document required to be prepared by CSO Communities for the elimination or management of combined sewer overflow discharges.

"NPDES" means National Pollutant Discharge Elimination System and is a national program for the issuance of permits to entities that have direct discharge of treated wastewater into receiving waters.

5. ROLES

CSO treatment facilities as part of a community's Long Term Control Plan is reviewed for approval by the Office of Water Quality's Wet Weather Section.

6. POLICY

CSO Treatment Facilities

6.A. CSO Treatment Facility Design Criteria

In developing information concerning CSO Treatment Facilities, CSO communities should evaluate facilities designed to meet the following general criteria:

1. Retention, for transportation to and treatment at the wastewater treatment plant ("WWTP"), of flows generated during storms no smaller than the "One Year, One Hour Storm." These alternatives should also provide for the transport of this entire volume to the WWTP and the full treatment of that same entire volume within 48 hours. (See 6.B.8. below). Inherent in this requirement is the complete transport of this flow within the sewer conveyance system to and adequate treatment of this flow at the WWTP.

2. Treatment of combined sewage flows generated during storms no smaller than the "Ten Year, One Hour Storm," which includes, at a minimum, the following:

   a. The detention of flows for settling that achieves the Total Suspended Solids ("TSS") control described in 6.B.10 with the ten year one hour peak hourly flow retained for no less than 30 minutes.

   b. Skimming of the detained flows to remove solids and floatables.

   c. Disposal of the solids and floatables in accordance with any applicable solid waste disposal laws and regulations.

   d. Disinfection of all detained flows, to the effluent level set forth in 6.B.9.

   e. Dechlorination, if necessary, so that the effluent from the CSO Treatment Facility does not exceed the Total Residual Chlorine ("TRC") level set forth in 6.B.9.

3. Combined sewage flows in excess of the "Ten Year One Hour" (or higher) designed storm used for sizing of the CSO Treatment Facility should receive whatever treatment is feasible given capacity limitations at the CSO Treatment Facility and the WWTP.

The discharger may also evaluate alternative facilities that will achieve equivalent or better treatment and control than would a facility that meets the criteria set forth in 6.A.1., 6.A.2., and 6.A.3., above.

For CSOs into waters of the state where pollutants other than *E. coli* may be causing water quality problems, CSO communities must also evaluate, as part of the alternatives evaluation, the effectiveness of any CSO Treatment Facility alternative in treating those additional pollutants of concern.

6.B. Other Assumptions and Criteria to Use in Evaluating a CSO Treatment Facility

The following assumptions and design criteria should be applied when considering inclusion of a CSO Treatment Facility in the alternatives analysis in accordance with this nonrule policy document:

1. The Ten Year, One Hour Storm and the One Year, One Hour Storm should be defined in either of the following:

   a. *Bulletin 71, Rainfall Frequency Atlas of the Midwest*, which can be found at: www.sws.uiuc.edu/pubdoc/B/ISWSB-71.pdf The Huff Climatic Regions for Indiana map should be used.

   b. The HERPICC Storm Water Drainage Manual, July 1995, which can be found on the Purdue University website: http://www.ecn.purdue.edu/INLTAP/Publications/documents/Stormwater%20Drainage%20 manual.pdf

2. Rainfall should be assumed to be of uniform intensity and distribution over the entire service area for a duration of exactly one hour. Zero rainfall shall be assumed both before and after the one hour rainfall event.

3. Antecedent conditions should be assumed to be average warm weather conditions.

4. Retention/CSO Treatment Facilities should be sized based on case-specific sewer system response to the two theoretical design storms described in 6.B.1. above. All Primary treatment facilities should be sized for no less than thirty minutes detention time for solids removal and disinfection at no less than the "Ten Year, One Hour Storm," and retention of all flow for ultimate transport to the WWTP at no less than the "One Year, One Hour Storm." Where 'equivalent' facilities are proposed, both criteria would be considered.

5. Detention time for solids removal and disinfection should be calculated on the basis of maximum hourly flow.

6. Sewer system response should be estimated using data and appropriate engineering models (SWMM, etc.). Actual characterization data should be used in lieu of strictly model default data. Time of Concentration should not be

assumed to be one hour just because the "One Hour" storm is used as a definition.

7. Retention/CSO Treatment Facilities should be configured to optimize solids removal and disinfection.

8. Dewatering times should be less than 48 hours from the time when rainfall ceases. All combined sewage retained in the facility should be transported to the WWTP and receive full treatment at the WWTP, regardless of storm size. Dewatering while a bypass is in progress should not be considered.

9. Disinfection should be controlled to achieve the daily maximum *E. coli* concentration of 235/100 ml. If disinfection is carried out using chlorine or hypochlorite, dechlorination must be employed to meet a maximum TRC of .06 mg/l.

10. Combined sewage Facilities should be designed and operated to meet an appropriate level of TSS control to ensure effective disinfection.

12. The CSO community should evaluate how any CSO Treatment Facility alternative developed in accordance with this document would perform over the course of a "typical year." This will assist in evaluating the costs, benefits, and effectiveness of such an altemative compared to the other alternatives that are being considered.

6.C. Treatment Flows in Excess of the Ten Year, One Hour Storm

Combined sewage flows in excess of the design storm used for sizing of the CSO Treatment Facility should receive whatever treatment is feasible, given capacity limitations at the CSO Treatment Facility and at the WWTP.

Since most storm and combined sewers are designed to handle the ten year storm without surcharging, this will probably mean that flows greater than those generated by the "Ten Year, One Hour Storm" should be transported to the CSO Treatment Facility, but the degree of treatment may need to be less than thirty minutes detention. The important point here is that no untreated overflows should occur from a CSO Treatment Facility. No untreated overflows means that pump stations should be provided with firm pump capacity to handle all flows transported by the existing collection system, even when it may be more than the ten year storm flow.

6.D. Permitting CSO Treatment Facilities

If an alternative including a CSO Treatment Facility is ultimately selected as part of the LTCP that is ultimately approved by IDEM, discharges from CSO Treatment Facilities will require effluent grab sampling. Effluent limits shall be imposed for *E. coli* and monitoring may be required for flow, biochemical oxygen demand ("BOD"), total suspended solids ("TSS"), Ammonia Nitrogen (as N), Total Phosphorus (as P), pH, dissolved oxygen ("DO"), and total residual chlorine ("TRC"), if applicable. Metals monitoring may also be required on a case-by-case basis.

6.E. APPENDICES

6.E.1. ENFORCEMENT DISCRETION LANGUAGE

The City/Town of _____'s approved CSOOP, LTCP, and NPDES permit outline the wet weather operating procedures and design capabilities of the WWTP and CSO Treatment Facility. All CSO Treatment Facility wet weather discharges shall receive the specified treatment to the extent possible. In conditions where wet weather discharges from the CSO Treatment Facility result from a storm event, rainfall amount, or intensity which exceed the design capacity of the facility, the permittee shall provide documentation that all conditions and requirements expressed in its NPDES permit, including Attachment A, were achieved. All documentation regarding performance of the WWTP and CSO Treatment Facility during storm events identified above would be reviewable by IDEM with exercise of enforcement discretion for CSO Treatment Facility discharges accorded to it under IC 13–30 for these storm events.

6.E.2. SAMPLING PROTOCOL

BASIN DISCHARGE SAMPLING

Effluent composite sampling, either by automatic sampler collecting at set intervals or by grab samples collected at the CSO Treatment Facility collected during discharges from the wet weather treatment component shall be initiated within 30 minutes from the beginning of a discharge event, must be representative of the discharge, and must be of sufficient quantity to ensure the parameters can be measured. Sampling must continue no less frequently than every two hours during the duration of the event. For events lasting more than 24 hours, a new sampling period shall be initiated each day. Composite samples may be used to analyze parameters identified. The daily average shall be reported as the maximum daily concentration. The average of the daily averages shall be reported as the monthly concentration. Facilities are encouraged to collect more data to better understand the discharges from CSO outfalls.

For *E. coli*, the daily maximum shall be the geometric mean of all samples on any discharge day. The *E. coli* monthly average shall be the geometric mean of all samples collected during the month, provided that five (5) or more samples are collected. The goal of the effluent monitoring program is to collect at least three (3) samples during each discharge event, and the samples shall be collected at shorter intervals at the onset of the event if the permittee estimates that the event duration may be less than six (6) hours.

For purposes of reporting on a discharge event that lasts less than twenty-four (24) hours but occurs during two (2) calendar days, the pollutant concentrations for the event shall be reported as daily values on the day when the majority of the discharge occurred.

7. REFERENCES

8. SIGNATURES

MAY 6, 2008

Thomas W. Easterly, Commissioner,
Indiana Department of Environmental Management

Date

MAY 7, 2008

Bruno Pigott, Assistant Commissioner,
Office of Water Quality

Date

May 9, 2008

Robert Keene, Assistant Commissioner,
Office of Legal Counsel

Date

This policy is consistent with Agency requirements.

May 19, 2008

Indiana Department of Environmental Management
Quality Assurance Program
Planning and Assessment

Date

EAST CHICAGO SANITARY DISTRICT

Table E-1

Estimate of Probable Costs for CSO Retention/Primary Treatment and Disinfection at the Alder Street Pump Station (122 MGD design Flow; 2.5 MG Tank Volume)[1]

Item	Quantity	Unit	Unit Price	Total
Project Costs				
Earth Excavation and Disposal	29,000	CY	$ 12	$ 348,000
Cast-In -Place reinforced Concrete base Slab	4,700	CY	$ 400	$ 1,880,000
Cast-In -Place reinforced Concrete Formed Walls and Floors	1,500	CY	$ 600	$ 900,000
Granular Fill	800	CY	$ 30	$ 24,000
Sediment Flushing w/Tipping Buckets	2.5	MG	$ 250,000	$ 625,000
Control Gates and Valves	1	Lump Sum	$ 250,000	$ 250,000
Overflow Weir Troughs and Baffles	2,000	LF	$ 70	$ 140,000
Influent and Effluent Piping	1	Lump Sum	$ 600,000	$ 600,000
Disinfection Equipment	1	Lump Sum	$ 200,000	$ 200,000
Building	2,000	SF	$ 300	$ 600,000
Electrical, Instrumentation and Control	1	Lump Sum	$ 500,000	$ 500,000
Sitework	1	Lump Sum	$ 200,000	$ 200,000
Miscellaneous	1	Lump Sum	$ 500,000	$ 500,000
Subtotal				$ 6,767,000
Contingency @ 15%				$ 1,015,050
Probable Construction Cost				$ 7,782,050
Engineering, Legal and Administrative Costs @ 25%				$ 1,945,513
Land Acquisition	4	Acre	$ 20,000	$ 80,000
Probable Project Cost[1]				$ 9,810,000
2011 Probable Project Cost[2]				**$ 11,170,000**
Probable Annual Operation and Maintenance Cost				
Chemicals	1	Lump Sum	$ 10,000	$ 10,000
Labor	1,000	Hour	$ 60	$ 60,000
Miscellaneous	1	Lump Sum	$ 25,000	$ 25,000
Equipment Maintenance	1	Lump Sum	$ 17,000	$ 17,000
Probable Annual O&M Cost[1]				$ 112,000
2011 Probable Annual O&M Cost[2]				**$ 130,000**

2011 Estimated Probable Project Cost $ 11,300,000

1. Taken from Appendix III, Table III-6 of 2007 EC LTCP Update
2. Costs adjusted using ENR Construction Cost Index (CCI) of 9116 for September 2011

EAST CHICAGO SANITARY DISTRICT

Table E-2

Estimate of Probable Costs for 7.5 MG Lagoon Storage at the Alder Street Pump Station[1]

Item	Quantity	Unit	Unit Price	Total
Project Costs				
Earth Excavation and Disposal	57,000	CY	$ 12	$ 684,000
Lagoon Lining Excavation and Clay Backfill	9,500	CY	$ 16	$ 152,000
Synthetic Liner	23,300	SY	$ 10	$ 233,000
Diversion and Overflow Structure	1	Lump Sum	$ 1,000,000	$ 1,000,000
Influent and Effluent Piping	1	Lump Sum	$ 500,000	$ 500,000
Water Piping and Appurtenances for lagoon Washdown	1	Lump Sum	$ 150,000	$ 150,000
Fine Screens	1	Lump Sum	$ 4,000,000	$ 4,000,000
Sitework	1	Lump Sum	$ 500,000	$ 500,000
Miscellaneous	1	Lump Sum	$ 500,000	$ 500,000
Subtotal				$ 7,719,000
Contingency @ 15%				$ 1,157,850
Probable Construction Cost				$ 8,876,850
Engineering, Legal and Administrative Costs @ 25%				$ 2,219,213
Land Acquisition	11	Acre	$ 20,000	$ 220,000
Probable Project Cost[1]				$ 11,320,000
2011 Probable Project Cost[2]				**$ 12,890,000**
Probable Annual Operation and Maintenance Cost				
Labor	1,800	Hour	$ 60	$ 108,000
Miscellaneous	1	Lump Sum	$ 10,000	$ 10,000
Equipment Maintenance	1	Lump Sum	$ 17,000	$ 17,000
Probable Annual O&M Cost[1]				$ 135,000
2011 Probable Annual O&M Cost[2]				**$ 150,000**

2011 Estimated Probable Project Cost $ 13,040,000

1. Taken from Appendix III, Table III-7 of 2007 EC LTCP Update
2. Costs adjusted using ENR Construction Cost Index (CCI) of 9116 for September 2011

EAST CHICAGO SANITARY DISTRICT

Table E-3

Estimate of Probable Costs for 7.5 MG Tank Storage at the Alder Street Pump Station[1]

Item	Quantity	Unit	Unit Price	Total
Project Costs				
Earth Excavation and Disposal	72,000	CY	$ 12	$ 864,000
Cast-In -Place reinforced Concrete base Slab	13,000	CY	$ 400	$ 5,200,000
Cast-In -Place reinforced Concrete Formed Walls and Floors	2,500	CY	$ 600	$ 1,500,000
Granular Fill	2,200	CY	$ 30	$ 66,000
Sediment Flushing w/Tipping Buckets	8.0	MG	$ 200,000	$ 1,600,000
Control Gates and Valves	1	Lump Sum	$ 350,000	$ 350,000
Influent and Effluent Piping	1	Lump Sum	$ 500,000	$ 500,000
Sitework	1	Lump Sum	$ 200,000	$ 200,000
Miscellaneous	1	Lump Sum	$ 500,000	$ 500,000
Subtotal				$ 10,780,000
Contingency @ 15%				$ 1,617,000
Probable Construction Cost				$ 12,397,000
Engineering, Legal and Administrative Costs @ 25%				$ 3,099,250
Land Acquisition	7	Acre	$ 20,000	$ 140,000
Probable Project Cost[1]				$ 15,640,000
2011 Probable Project Cost[2]				**$ 17,810,000**
Probable Annual Operation and Maintenance Cost[1]				
Labor	800	Hour	$ 60	$ 48,000
Miscellaneous	1	Lump Sum	$ 10,000	$ 10,000
Equipment Maintenance	1	Lump Sum	$ 8,000	$ 8,000
Probable Annual O&M Cost[1]				$ 66,000
2011 Probable Annual O&M Cost[2]				**$ 80,000**
2011 Estimated Probable Project Cost				**$ 17,890,000**

1. Taken from Appendix III, Table III-8 of 2007 EC LTCP Update
2. Costs adjusted using ENR Construction Cost Index (CCI) of 9116 for September 2011

EAST CHICAGO SANITARY DISTRICT

Table E-4

Estimate of Probable Costs for Replacement of the Sanitary Pumps (60 MGD Capacity) at the Alder Street CSO Pump Station

Item	Quantity	Unit	Unit Price	Total
Project Costs				
Replace Sanitary Pumps (20 MGD Capacity for each Pump)	3	Each	$ 160,000	$ 480,000
Electrical, Instrumentation and Control	1	Lump Sum	$ 180,000	$ 180,000
Miscellaneous	1	Lump Sum	$ 85,000	$ 85,000
Subtotal				$ 745,000
Contingency @ 15%				$ 111,750
Probable Construction Cost				$ 856,750
Engineering, Legal and Administrative Costs @ 25%				$ 214,188
2011 Probable Project Cost				**$ 1,070,000**
Probable Annual Operation and Maintenance Cost [1]				
Labor	100	Hour	$ 60	$ 6,000
2011 Probable Annual O&M Cost				**$ 6,000**

2011 Estimated Probable Project Cost $ 1,076,000

1. Additional O&M cost will be offset due to reduced frequency in operation of the storm pumps.

EAST CHICAGO SANITARY DISTRICT

Table E-5

Estimate of Probable Costs for CSO Lagoon Forcemain (24-Inch Diameter) at the WWTP[1]

Item	Quantity	Unit	Unit Price	Total
Project Costs				
24-Inch Forcemain	1,000	LF	$ 160	$ 160,000
Motorized valves and Controls	1	Lump Sum	$ 50,000	$ 50,000
Miscellaneous	1	Lump Sum	$ 50,000	$ 50,000
Subtotal				$ 260,000
Contingency @ 15%				$ 39,000
Probable Construction Cost				$ 299,000
Engineering, Legal and Administrative Costs @ 25%				$ 74,750
Probable Project Cost[1]				$ 370,000
2011 Probable Project Cost[2]				**$ 420,000**
Probable Annual Operation and Maintenance Cost				
Labor	100	Hour	$ 60	$ 6,000
Probable Annual O&M Cost[1]				$ 6,000
2011 Probable Annual O&M Cost[2]				**$ 7,000**
2011 Estimated Probable Project Cost				**$ 427,000**

1. Taken from Appendix III, Table III-16 of 2007 EC LTCP Update
2. Costs adjusted using ENR Construction Cost Index (CCI) of 9116 for September 2011

EAST CHICAGO SANITARY DISTRICT

Table E-6

Estimate of Probable Costs for CSO Lagoon Pump Station (10 MGD Capacity) at the WWTP[1]

Item	Quantity	Unit	Unit Price	Total
Project Costs				
10 MGD Pump Station	1	Lump Sum	$ 650,000	$ 650,000
Miscellaneous	1	Lump Sum	$ 50,000	$ 50,000
Subtotal				$ 700,000
Contingency @ 15%				$ 105,000
Probable Construction Cost				$ 805,000
Engineering, Legal and Administrative Costs @ 25%				$ 201,250
Probable Project Cost[1]				$ 1,010,000
2011 Probable Project Cost[2]				**$ 1,150,000**
Probable Annual Operation and Maintenance Cost				
Labor	200	Hour	$ 60	$ 12,000
Miscellaneous	1	Lump Sum	$ 4,000	$ 4,000
Equipment Maintenance	1	Lump Sum	$ 2,000	$ 2,000
Probable Annual O&M Cost[1]				$ 18,000
2011 Probable Annual O&M Cost[2]				**$ 20,000**

2011 Estimated Probable Project Cost $ 1,170,000

1. Taken from Appendix III, Table III-17 of 2007 EC LTCP Update
2. Costs adjusted using ENR Construction Cost Index (CCI) of 9116 for September 2011

EAST CHICAGO SANITARY DISTRICT

Table E-7

Estimate of Probable Costs for 145th Street Pump Station Rehabilitation with Plugging Storm Sewer to Combined Sewer Connection

Item	Quantity	Unit	Unit Price	Total
Project Costs				
New Pumps	1	Lump Sum	$ 800,000	$ 800,000
Bar Screen	1	Lump Sum	$ 200,000	$ 200,000
Electrical, Instrumentation and Control	1		$ 75,000	$ 75,000
Cross Connection Removal	1	Lump Sum	$ 50,000	$ 50,000
Post Construction Monitoring Program[1]	1	Lump Sum	$ 250,000	$ 250,000
Subtotal				$ 1,375,000
Contingency @ 15%				$ 206,250
Probable Construction Cost				$ 1,581,250
Engineering, Legal and Administrative Costs @ 25%				$ 395,313
2011 Estimated Probable Project Cost[2]				**$ 1,980,000**

1. Includes updating existing SWMM Model,Installing flow measuring devices at the Alder Street Pump Station to monitor actual influent flows into wetwell. See Chapter 8 of Work Plan for details;

2. Additional annual O&M costs associated with operation of this pump station would be offset by reduced O&M costs at the Alder Street Pump Station and the WWTP.

EAST CHICAGO SANITARY DISTRICT

Table E-8

Estimate of Probable Costs for Michigan Avenue CSO Pump Station and Tributary Sewer System[1]

Item	Quantity	Unit	Unit Price	Total
Project Costs				
Streets Requiring New Sewers and Modifications to Stormwater and/or Sanitary Sewage Connections	42,400	LF	$ 140	$ 5,936,000
Streets Requiring Modifications to Stormwater and/or Sanitary Sewage Connections to Existing Sewers	23,300	LF	$ 30	$ 699,000
Sewer Inspection/ Verification	15,000	LF	$ 5	$ 75,000
Miscellaneous	1	Lump Sum	$ 500,000	$ 500,000
Subtotal				$ 7,210,000
Contingency @ 15%				$ 1,081,500
Probable Construction Cost				$ 8,291,500
Engineering, Legal and Administrative Costs @ 25%				$ 2,072,875
Probable Project Cost[1]				$ 10,360,000
2011 Estimated Probable Project Cost[2]				**$ 11,790,000**

1. Taken from Appendix III, Table III-5 of 2007 EC LTCP Update
2. Costs adjusted using ENR Construction Cost Index (CCI) of 9116 for September 2011
3. No Additional O&M Associated with Sewer Separation.

EAST CHICAGO SANITARY DISTRICT

Table E-9

Estimate of Probable Costs for Mechanical Bar Screen Replacement at the WWTP[1]

Item	Quantity	Unit	Unit Price	Total
Project Costs				
Mechanical Bar Screen Replacement	2	Each	$ 350,000	$ 700,000
Miscellaneous	1	Lump Sum	$ 75,000	$ 75,000
Subtotal				$ 775,000
Contingency @ 15%				$ 116,250
Probable Construction Cost				$ 891,250
Engineering, Legal and Administrative Costs @ 25%				$ 222,813
Probable Project Cost[1]				$ 1,110,000
2011 Estimated Probable Project Cost[2]				**$ 1,260,000**

1. Taken from Appendix III, Table III-12 of 2007 EC LTCP Update
2. Costs adjusted using ENR Construction Cost Index (CCI) of 9116 for September 2011
3. No Additional O&M Associated with Bar Screen Replacement

EAST CHICAGO SANITARY DISTRICT

Table E-10

Estimate of Probable Costs for 6.3.2 UV Equipment Replacement with Ability to Disinfect WWTP CSO Lagoon Discharges

Item	Quantity	Unit	Unit Price	Total
Project Costs				
UV Equipment Replacement	1	Lump Sum	$ 1,500,000	$ 1,500,000
Diversion Chamber and Yard Piping	1	Lump Sum	$ 375,000	$ 375,000
Miscellaneous (electrical, Instrumentation, structural etc)	1	Lump Sum	$ 925,000	$ 925,000
Subtotal				$ 2,800,000
Contingency @ 15%				$ 420,000
Probable Construction Cost				$ 3,220,000
Engineering, Legal and Administrative Costs @ 25%				$ 805,000
2011 Probable Project Cost				**$ 4,030,000**
Probable Annual Operation and Maintenance Costs				
Labor	200	Hour	$ 60	$ 12,000
Miscellaneous (bulb, cleaning, etc.)	1	Lump Sum	$ 10,000	$ 10,000
Equipment Maintenance	1	Lump Sum	$ 5,000	$ 5,000
Probable Annual O&M Cost[1]				$ 27,000
2011 Probable Annual O&M Cost[2]				**$ 30,000**
2011 Estimated Probable Project Cost				**$ 4,060,000**

1. Taken from Appendix III, Table III-17 of 2007 EC LTCP Update
2. Costs adjusted using ENR Construction Cost Index (CCI) of 9116 for September 2011

APPENDIX F

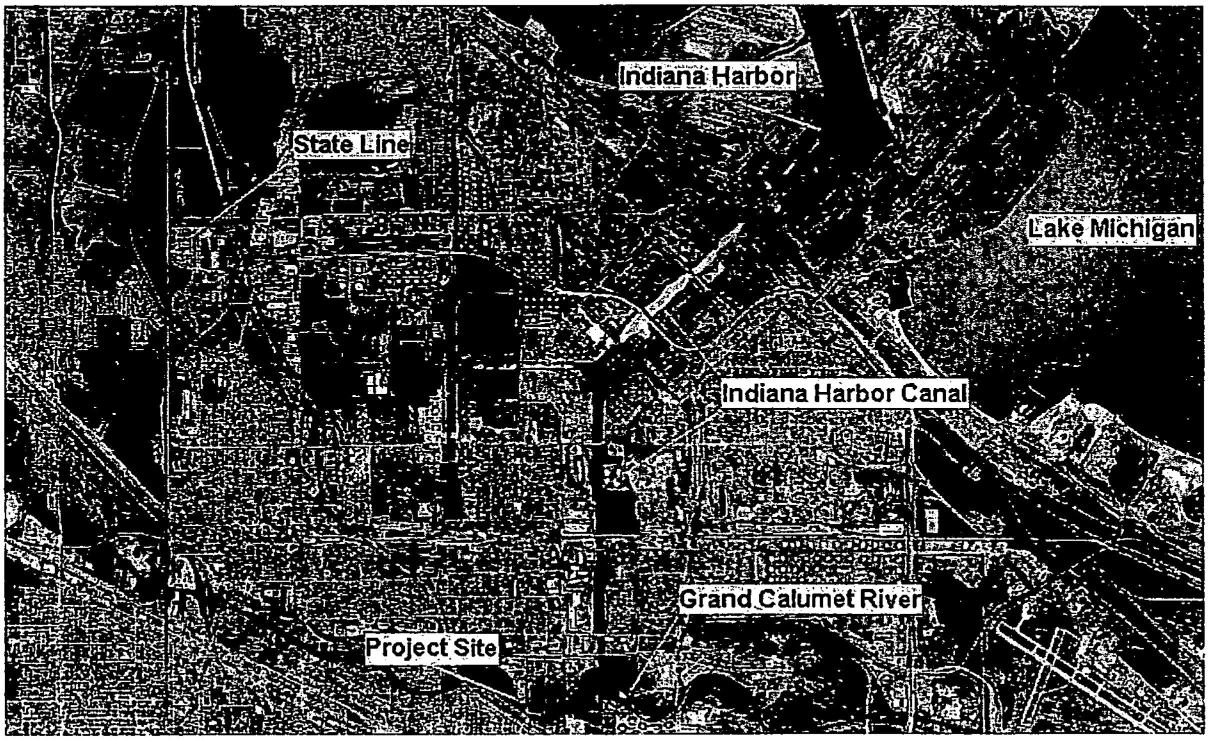
East Chicago Sediment Remediation Project

US Army Corps of Engineers ®
Chicago District

General Information

The Corps of Engineers, in partnership with the East Chicago Sanitary District have proposed to conduct a project that will demonstrate an approach for remediation of contaminated bottom sediments in the Grand Calumet River. An Environmental Assessment (EA) for the proposed demonstration project has been released for public and agency comment.

The Grand Calumet River/Indiana Harbor Canal is one of 43 Areas of Concern (AOCs) identified in the Great Lakes Water Quality Agreement. Contaminated bottom sediments are responsible for impairments to the beneficial use of waters in the AOC. As with many of the other AOCs on the Great Lakes, the technical, policy and financial challenges regarding remediation of contaminated sediments have limited progress with implementation of the Remedial Action Plans.

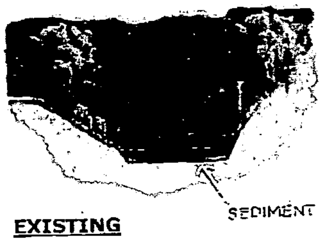


The proposed demonstration project site is a 600 by 40 foot channel that carries the discharge from the water reclamation facility of the East Chicago Sanitary District into the Grand Calumet River. This site exhibits many of the conditions of the Grand Calumet River including contaminated sediment and similar overbank conditions. The proposed demonstration project would include dredging of approximately 3,000 cubic yards of contaminated sediments, installation of a sediment barrier to demonstrate the feasibility of isolating contaminated sediments in a channel, installation of a new natural streambed that will demonstrate the feasibility of in-stream capping and habitat creation, and re-sloping and re-planting the banks to demonstrate stabilization and recontamination avoidance. After completion of construction activities, the project will undergo a three-year monitoring period to evaluate the effectiveness of project features to restore water quality and aquatic habitat and resist recontamination. A report on the demonstration project, monitoring results, and lessons learned will be prepared.

The demonstration project would provide knowledge and experience on integrating technologies for sediment removal, habitat restoration, and recontamination prevention that would be of significant value to future planning and design of sediment remediation projects for the Grand Calumet River/Indiana Harbor Canal AOC and to other AOCs throughout the Great Lakes.

This project would be conducted under the authority of Section 401(b) of the Water Resources Development Act of 1990, as amended, which is titled Great Lakes Remedial Action Plans and Sediment Remediation. The East Chicago Sanitary District has agreed to be the non-federal sponsor and contribute 35 percent of costs for the demonstration project.

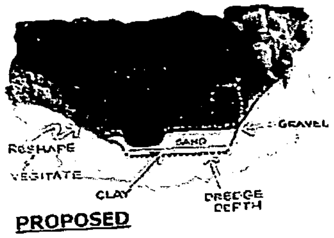
To obtain a copy of the Environmental Assessment click [HERE]. For additional information, please contact Lynne Whelan at 312-846-5330 or lynne.e.whelan@usace.army.mil.



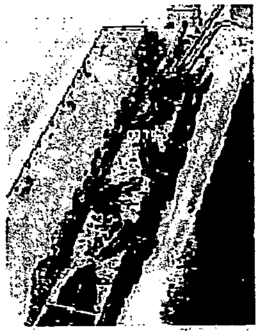
The existing channel cross-section includes steep slopes, non-native vegetation, and accumulated sediment

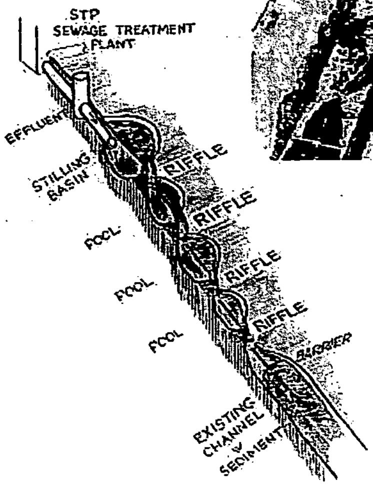
---

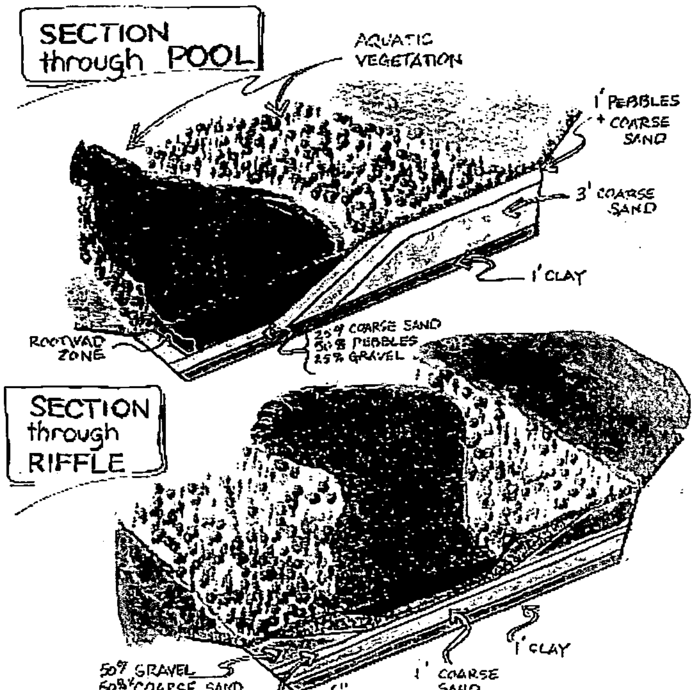
The proposed channel cross-section measures include the following. The accumulated sediment will be dredged, and a clay cover will be placed on the channel bottom to help create habitat. The channel bottom will be reconstructed to create a natural streambed (see below). The channel banks will be reshaped to provide stabilization and re-planted with native vegetation to create additional habitat.



The proposed channel layout extends from the East Chicago Sanitary District to the proposed recontamination barrier. The proposed channel layout includes measures that will create a more natural streambed and ecosystem, increasing the complexity and diversity of the system. The layout includes a stilling basin with a series of pools and riffles that will create habitat for smallmouth bass, minnows, and macroinvertebrates.




STP
SEWAGE TREATMENT PLANT
EFFLUENT
STILLING BASIN
RIFFLE
RIFFLE
POOL
RIFFLE
POOL
RIFFLE
POOL
BARRIER
EXISTING CHANNEL
SEDIMENT


SECTION through POOL
AQUATIC VEGETATION
1' PEBBLES + COARSE SAND
3' COARSE SAND
1' CLAY
ROOTWAD ZONE
25% COARSE SAND
50% PEBBLES
25% GRAVEL
SECTION through RIFFLE
1' CLAY
1' COARSE SAND
50% GRAVEL
50% COARSE SAND
5"
75% GRAVEL
25% V.COARSE SAND

KLM-4(c)

CITY OF EAST CHICAGO

George Pabey, Mayor

Al Velez
Director of Utilities

5201 Indianapolis Boulevard
East Chicago, IN 46312
Phone: (219) 391-8466
Fax: (219) 391-8254
Email: AVelez@eastchicago.com

August 30, 2007

Ms. Cyndi Wagner, Chief
Wet Weather Section
Indiana Department of Environmental Management
Office of Water Quality- Mail Code 65-42
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

IDEM OFFICE OF WATER QUALITY 2007 AUG 31 A 11:38

Subject: East Chicago Sanitary District
CSO LTCP
NPDES Permit IN0022829

Dear Ms. Wagner:

Enclosed is a copy of the final CSO Long-term Control Plan and Use Attainability Analysis (LTCP) for the East Chicago Sanitary District. Once your staff has had an opportunity to perform an initial review of the LTCP we would like to schedule a meeting to provide a brief presentation of our LTCP in order to facilitate IDEM's review and approval of the LTCP.

Sincerely,

Adolfo Velez
Utilities Director

cc: Mr. David Tennis, IDEM
ECSD Board of Commissioners
Mr. Joe Allegretti, ECSD Attorney
Mr. Pete Baranyai, Director of Wastewater Operations
Mr. Matthew Berg, HNTB
Mr. Brett Barber, Greeley and Hansen

EAST CHICAGO SANITARY DISTRICT
EAST CHICAGO, INDIANA

COMBINED SEWER OVERFLOW LONG TERM CONTROL PLAN UPDATE w/UAA

AUGUST 2007

HNTB

TABLE OF CONTENTS

Page No.

CHAPTER 10 -ALTERNATIVE COMPARISON

LIST OF APPENDICES

LIST OF TABLES

LIST OF FIGURES

Figure No. **Page No.**

CHAPTER 1
EXECUTIVE SUMMARY

1.1 Introduction

This report is an update of the March 2004 Long Term Control Plan (LTCP) that addresses the City of East Chicago's combined sewer overflow (CSO) discharges and identifies CSO controls that will bring the community into compliance with the Clean Water Act (CWA) and the NPDES permit requirements. The primary difference between the March 2004 LTCP and this LTCP Update is the manor in which alternatives are developed and the basis for selecting an alternative. The March 2004 LTCP used the "presumptive approach" which focused on the percent capture for treatment of wet weather flows as measured on an annual average basis for the entire system. This LTCP Update evaluates alternatives based on two different approaches. One approach is based on revised guidance from the Indiana Department of Environmental Management (IDEM) which requires capture and treatment of combined sewer overflows that result from the one-year one-hour and the ten-year one-hour design storm events. The second approach is based on a combination of federal and state regulations that allow for consideration of the projects affordability in the development of a Use Attainability Analysis that would establish a Wet Weather Limited Use subcategory of the recreational use designation for waters receiving combined sewer overflows. The LTCP characterizes the combined sewer system and evaluates CSO control alternatives with respect to constructability, effectiveness, and financial feasibility.

1.2 Combined Sewer Overflows

Combined sewer systems (CSS) convey both sanitary wastewater and stormwater through the same sewer main in the CSS to a wastewater treatment plant (WWTP). During heavy rainfall events, wet weather flow (WWF) that exceeds the capacity of the CSS and/or the WWTP is discharged from CSO outfalls to the Grand Calumet River and the Indiana Harbor Ship Canal. The East Chicago combined sewer system (CSS) contains three permitted combined sewer overflows (CSO's) as listed below:

- NPDES Outfall 002 – Discharge of the Michigan Avenue Pump Station to the Indiana Harbor Ship Canal
- NPDES Outfall 003 – Discharge of the Alder Street Pump Station to the Grand Calumet River
- NPDES Outfall 005 – Discharge of the CSO Lagoon, which receives flow from the Magoun Avenue Pump Station, to an open channel that is tributary to the Grand Calumet River

1.2.1 Protection of Sensitive Areas

According to EPA, sensitive areas are "waters impacted by CSO discharges, which must be given the highest priority for CSO discharge elimination, relocation, or control." Examples given by IDEM of sensitive areas include:

- Habitat for threatened or endangered species;
- Primary Contact Recreational Areas such as beaches or other swimming areas,
- Drinking Water Source Waters, or
- Outstanding State Resources Waters or Outstanding National Resource Waters.

After review of the definition for sensitive areas it was concluded that there are no known sensitive areas along the Grand Calumet River or the Indiana Harbor Ship Canal within the limits of East Chicago.

1.2.2 Public Participation

Public participation activities included the formation of a Citizen's Advisory Committee, public information meetings, articles published in the City's newsletter as well as presentations and discussions at the District's Board Meetings.

1.3 SWMM Modeling

The City of East Chicago's Combined Sewer System (CSS) was analyzed with a Storm Water Management Model (SWMM) model. A skeletal model of the CSS was composed of 639 pipes, 571 manholes, along with associated gates, weirs, pumps and outfalls. The SWMM modeling data was also compared to data as reported on the Monthly Reports of Operation for a two year period, which indicated that 90% of the wet weather flow is captured for treatment.

The SWMM model was used in the March 2004 LTCP to estimate the percent capture of the wet weather flow associated with each of the alternatives. For the LTCP Update the SWMM model was used to calculate the flow and volume of combined sewer overflows associated with the one-year one- hour event, which consists of 1.14 inches of rain, and the ten-year one-hour event, which consists of 1.98 inches of rain.

1.4 Alternative Analysis

The individual alternatives that were evaluated for the collection system, wastewater treatment plant and the CSO Lagoon as needed to comply with the IDEM guidance for the capture and treatment of flows from the one-year one-hour and the ten-year one-hour design storm events are summarized below;

Michigan Avenue Pump Station and Tributary Sewer System Alternatives

- CSO Retention / Primary Treatment and Disinfection for 10-Year 1-Hour Event (2.8 MG to provide 30 min detention for 132 MGD)
- Lagoon Storage for 10-Year 1-Hour Event (6.4 MG)
- Tank Storage for 10-Year 1-Hour Event (6.4 MG)
- Rehabilitation of CSO Weir Structures
- Sewer Separation

Alder Street Pump Station - CSO Retention/Treatment Alternatives

- CSO Retention / Primary Treatment and Disinfection for 10-Year 1-Hour Event (2.5 MG to provide 30 min detention for 122 MGD)
- Lagoon Storage for 10-Year 1-Hour Event (7.5 MG)
- Tank Storage for 10-Year 1-Hour Event (7.5 MG)

Sanitary Pump Alternatives at the Alder Street Pump Station

- No Action – Keep Existing Sanitary Pumps @ 20 MGD Capacity
- Replace Sanitary Pumps @ 25 MGD Capacity
- Replace Sanitary Pumps @ 30 MGD Capacity

145th Street Pump Station Rehabilitation and Tributary Storm Sewers

- No Action
- Pump Station Rehabilitation and Plugging Connection to the Combined Sewer System

WWTP and CSO Lagoon Alternatives

- Replace Influent Mechanical Bar Screens
- Final Clarifier Addition
- Disinfect CSO Lagoon Effluent
- CSO Lagoon Forcemain
- CSO Lagoon Pump Station

These individual alternatives were combined to form overall system alternatives that comply with IDEM's guidance for the control and treatment of combined sewer overflows for the one-year one-hour and ten-year one-hour storm events.

USEPA and IDEM Guidance also allows a community to assess the cost of implementing a design storm-based alternative on a number of factors, one of which is its affordability. The evaluation process used in this report is the Use Attainability Analysis and it resulted in an alternative for comparison to the alternatives based on capturing and treating combined sewer overflows as defined by design storm events as described above.

1.5 Selected UAA Alternative

The selected UAA Alternative includes projects with a Total Probable Project Cost of $4.2 million as presented in Table 1-1.

TABLE 1-1
SELECTED CSO CONTROLS AND PROBABLE PROJECT COSTS

PROJECT DESCRIPTION	PROBABLE PROJECT COST (MILLION $)
Replace Influent Mechanical Bar Screen at the WWTP	$1.1
Disinfect CSO Lagoon Effluent	$1.7
CSO Lagoon Forcemain	$0.4
CSO Lagoon Pump Station	$1.0
Total (excluding sewer separation and other miscellaneous projects)	**$4.2**

In addition to the specific projects listed in Table 1-1, reductions in combined sewer overflows are also expected by the revised operational strategy that has been implemented by the District for the Alder Street Pump Station and the Magoun Avenue Pump Station. This revised operation allows more combined sewage to be treated by the wastewater treatment plant and the CSO Lagoon and reduces the amount of combined sewage discharged from the Alder Street Pump Station.

Improvements to CSO water quality are also expected at the discharge from CSO 002 Michigan Avenue Pump Station, based on sewer separation that occurs in the area tributary to this pump station. This area has been targeted for redevelopment and as the overall infrastructure is reconstructed to accommodate the development, the existing combined sewer system will be converted into separate sanitary sewers and separate storm sewers. Sanitary sewage will be flow to the combined sewer system that is tributary to the Alder Street Pump Station and stormwater will flow to the Michigan Avenue Pump Station.

The schedule for implementing the Long Term Control Plan is presented in Table 1-2. In general it is anticipated that the balance of 2007 will be needed for IDEM's review and approval of the LTCP/UAA and the execution of a State Judicial Agreement as the enforcement mechanism for the CSO LTCP. After the CSO LTCP/UAA is approved, the planning, design and construction of the CSO Control Projects will proceed as indicated in Table 1-2. As provided by state and federal CSO policies, implementation of the LTCP/UAA will be followed by post construction monitoring (PCM). The PCM will be used to evaluate the efficacy of the proposed LTCP; compliance with water quality requirements; and to document/update the financial capability assessment used to support the designated use modification as obtained through the UAA process.

TABLE 1-2
IMPLEMENTATION SCHEDULE

ACTIVITY	DATE
Submit CSO LTCP Update w/UAA to IDEM and execute a State Judicial Agreement	2007
Planning and Design of CSO Control Projects as Listed in Table 1-1	2008
Initiate Construction of CSO Control Projects as Listed in Table 1-1	2010
Complete Construction of CSO Control Projects as Listed in Table 1-1	2013
LTCP/UAA Review and Update	2013

1.6 Summary of Other Related Projects and Activities

The East Chicago Sanitary District is also pursing or is involved in a series of other projects that are needed to maintain the effectiveness of the collection system and treatment plant as well as improve the water quality in the Grand Calumet River and the Indiana Harbor Ship Canal. Although these projects have not been included as a formal part of the Long Term Control Plan they demonstrate the District's commitment to maintaining the reliability of the District's wastewater treatment and collection system. The projects include:

- Repair, replacement and/or renovations of process related equipment at the wastewater treatment plant including;
  - Reconditioning of oxidation ditch aeration equipment
  - Purchase of a spare oxidation ditch aerator motor
  - Replacement of the process water pump system
  - Replacement of oxidation ditch heavy solids pumps
  - Replacement of filter backwash and wash water pumps

  - Replacement of oxidation ditch flow control gate
  - Replacement and relocation of filter press sludge pump
  - Replacement of grit removal pump
  - Replacement of treatment plant sewage lift pumps
  - Replacement of filter building effluent pumps
  - Sand filter media replacement
  - Complete rebuilding of two sludge presses
  - Replacement of Ultra-Violet Light Bulbs
- East Chicago Sediment Remediation Demonstration Project - The East Chicago Sanitary District and the U.S. Army Corps of Engineers are cooperating on a project to enhance the habitat of the channel that discharges treated water from the wastewater treatment plant and the CSO Lagoon to the Grand Calumet River.
- Indiana Harbor and Ship Canal Dredging and Sediment Removal - The East Chicago Waterway Management District and the Corps of Engineers are involved in a multi year project to remove sediments from the Indiana Harbor and Ship Canal. This project is designed to continue the navigable uses of the waterway and because some of the sediments are contaminated it should also result in water quality improvements.
- Grand Calumet River Sediment Dredging - Other agencies are responsible for dredging sediments which are considered contaminated from the Grand Calumet River. Removing these contaminated sediments should improve the water quality.
- Downspout Disconnection - The District has completed an inventory of the buildings that have downspouts connected to the combined sewer system and is involved in an education program to encourage building owners to disconnect the downspouts and discharge the stormwater on the ground. Over time this will decrease the flow into the combined sewer system which will reduce combined sewer overflows as well as reducing the surcharging of local sewers that occurs during severe rain events.
- Sewer System Repair/Replacement - The District along with the City of East Chicago regularly implements projects that provide for the repair or replacement of local sewers.
- Sewer Separation Projects – The District along with the City of East Chicago is also implementing various sewer separation projects. Two examples include projects on Beacon Street and on 135th Street. These projects involve the construction of new storm sewers which improve local drainage. The new storm sewers are typically connected to a CSO Interceptor Sewer which is tributary to a CSO Pump Station. Although this does not reduce the overall volume of CSO's, it does reduce the amount of stormwater that mixes with sanitary sewage, which should improve the CSO water quality.
- Stormwater Management – East Chicago has formed a stormwater management department to implement the requirements of the City's NPDES Phase II Stormwater Permit.
- Emergency Power – As part of a project to install a radio communication system for the City of East Chicago, an emergency generator will be installed at the wastewater

treatment plant site and will be sized and connected to provide emergency power for the wastewater treatment plant process equipment.

- Security Upgrades - The District will be installing various items such as video monitoring equipment to increase the security of the wastewater treatment plant and the major pump stations.

CHAPTER 2

INTRODUCTION

2.1 OVERVIEW

Combined sewer systems convey both sanitary wastewater and stormwater through the same sewer main in the collection system to a wastewater treatment plant (WWTP). During heavy rainfall events, the flow in the combined sewer system exceeds the capacity of this conveyance system. To prevent overloading the sewer system, overflow points called combined sewer overflows (CSOs) have been constructed to allow the flow to discharge into a receiving stream.

The City of East Chicago wastewater collection system is comprised primarily of a Combined Sewer System (CSS) that contains three CSO's. During heavy rainfall events, these CSO's discharge into the Grand Calumet River and the Indiana Harbor Ship Canal.

2.2 BACKGROUND

Collectively, the sewage collection system and WWTP are a Publicly Owned Treatment Works (POTW). Under the combined sewer overflow (CSO) control programs of the United States Environmental Protection Agency (EPA) and the Indiana Department of Environmental Management (IDEM), municipalities, with their POTW's, are required to address CSOs through an evolving series of regulations. The EPA and IDEM have developed the CSO control program as outlined in the following documents:

- 1989 National CSO Policy, EPA
- 1991 Indiana CSO Strategy, IDEM
- National CSO Control Policy, EPA, 1994
- State of Indiana CSO Strategy, IDEM, 1996
- SEA 431 Adopted by Indiana Legislature March 2000
- Combined Sewer Overflow Long Term Control Plan, Use Attainability Analysis Guidance Document, September 2001
- Combined Sewer Overflow Public Notification Rule 327 IAC 5-2.1
- SEA 620 Adopted by Indiana Legislature April 2005

Compliance with combined sewer overflow regulations is included as part of the City's National Pollutant Discharge Elimination System (NPDES) Permit.

2.3 PURPOSE

This LTCP addresses the site-specific nature of CSO discharges and identifies CSO controls as required in the City of East Chicago's NPDES permit. The combined sewer system and the impacts resulting from combined sewer overflows into the Grand Calumet River and the Indiana Harbor Ship Canal have been examined. CSO control alternatives were developed and analyzed based on their constructability, effectiveness and financial feasibility.

CHAPTER 3

DESCRIPTION OF EXISTING CONDITIONS

The East Chicago Sanitary District has three permitted CSO outfall locations: Alder Street CSO 003, Michigan Avenue CSO 002, and the Lagoon CSO 005. Combined sewage reaching the lagoon receives the equivalent of secondary treatment prior to discharge to the Grand Calumet River.

Combined sewage is screened, and floatables are trapped in the pump station wet well, before it discharges from the Alder and Michigan CSO's.

3.1 COLLECTION SYSTEM

The East Chicago Sanitary District is broken down into ten subcatchments or subsections served by 11 lift stations. The lift stations are made up of 2 combined lift stations, 3 storm runoff stations, 3 sanitary stations, and 3 storm relief stations. Figure 3-1 provides a layout of the city and its divided subsystems.

Flow from the sanitary stations is pumped to the waste water treatment facility, while the storm runoff stations discharge to the Grand Calumet River and Indiana Harbor Ship Canal. The combined lift stations and storm relief stations pump flow to the treatment plant or to one of three outfalls when plant capacity is exceeded during wet weather events. Two outfalls are along the Grand Calumet River (one of these receives treatment at the lagoon), and one is on the Indiana Harbor Ship Canal.

The sewer system in East Chicago includes combined sewers, storm relief sewers, separate sanitary sewers, and separate storm sewers. The storm relief sewers were constructed to alleviate residential and commercial flooding problems throughout East Chicago. These sewers collect combined sewage during heavy rainfall events when the combined sewers are surcharging. The relief sewers run perpendicular to the combined sewers and catch spillage from side overflow troughs installed on the combined sewer pipes. A sewer system layout is shown in Figure 3-2.

3.2 CSO PUMP STATIONS

3.2.1 Magoun Avenue Pump Station

3.2.1.1 General

The Magoun Avenue Pump Station was originally constructed in 1942. The original construction consisted of a Storm Water Pump Station, diversion chamber and Sanitary Pump Station.

Figure 3-1
Subsystem Location Map

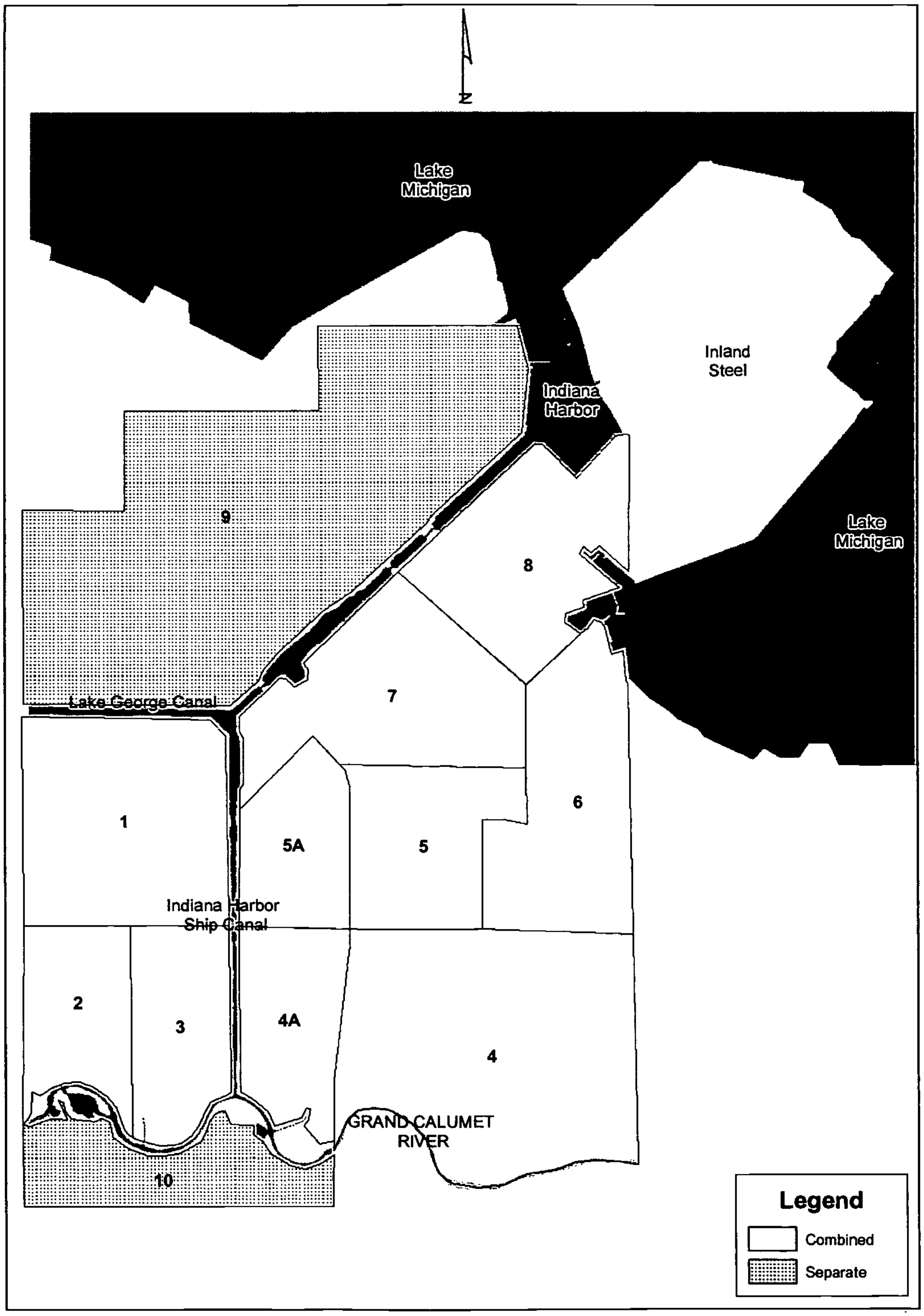
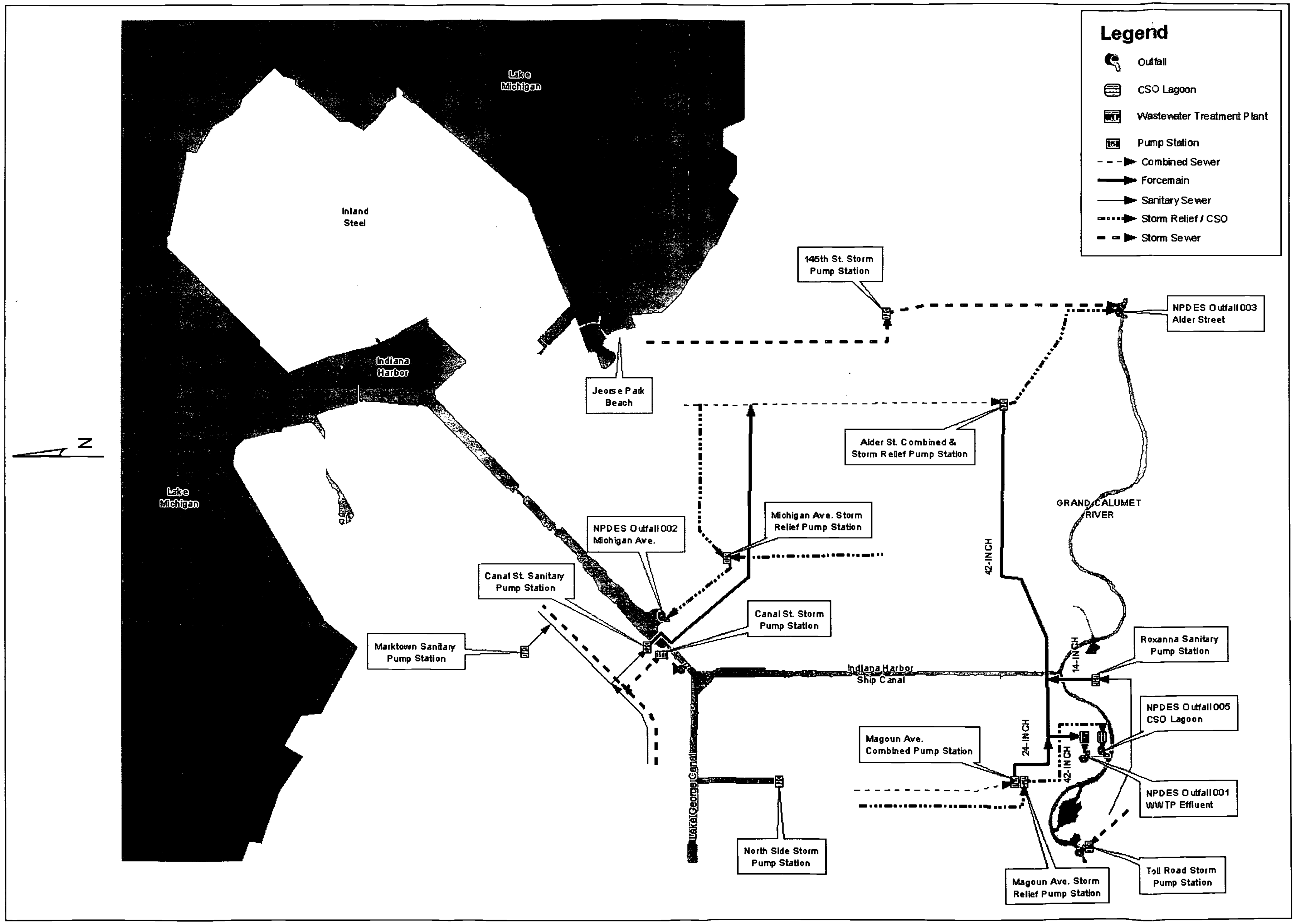
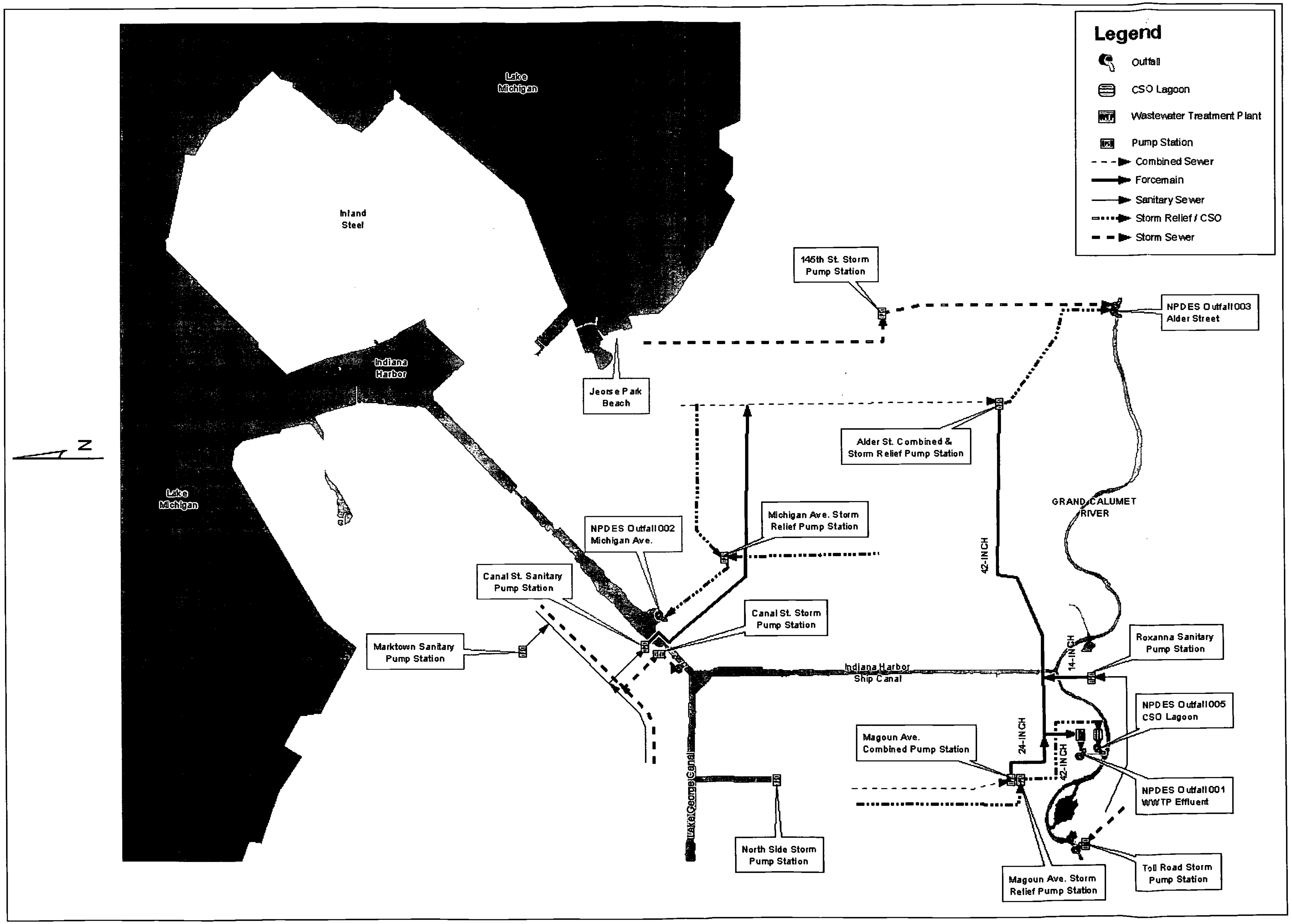


Figure 3-2
Pump Station and Wastewater Treatment Plant
Schematic Location Map



3-3

Figure 3-2
Pump Station and Wastewater Treatment Plant Schematic Location Map



3-3

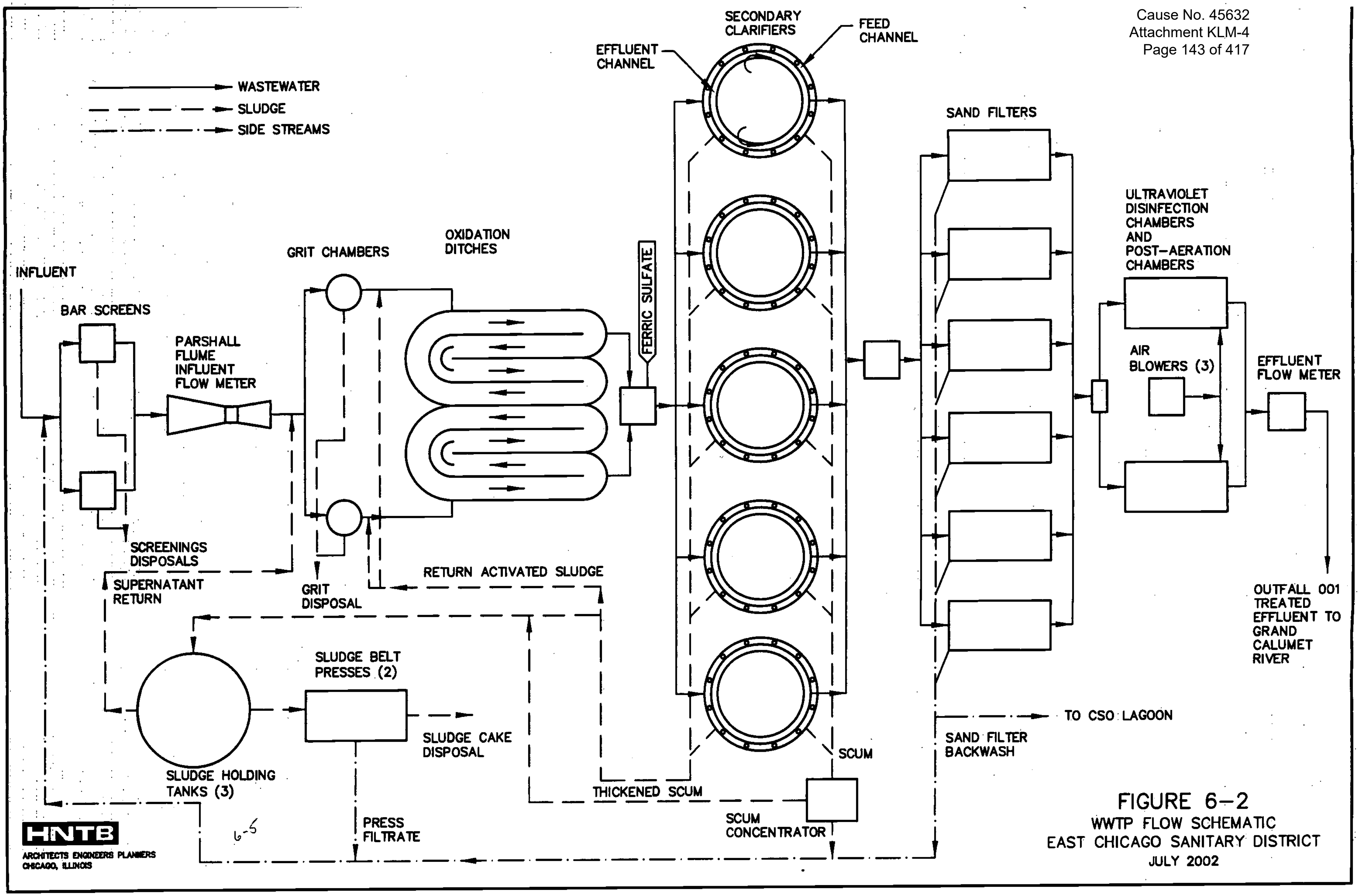
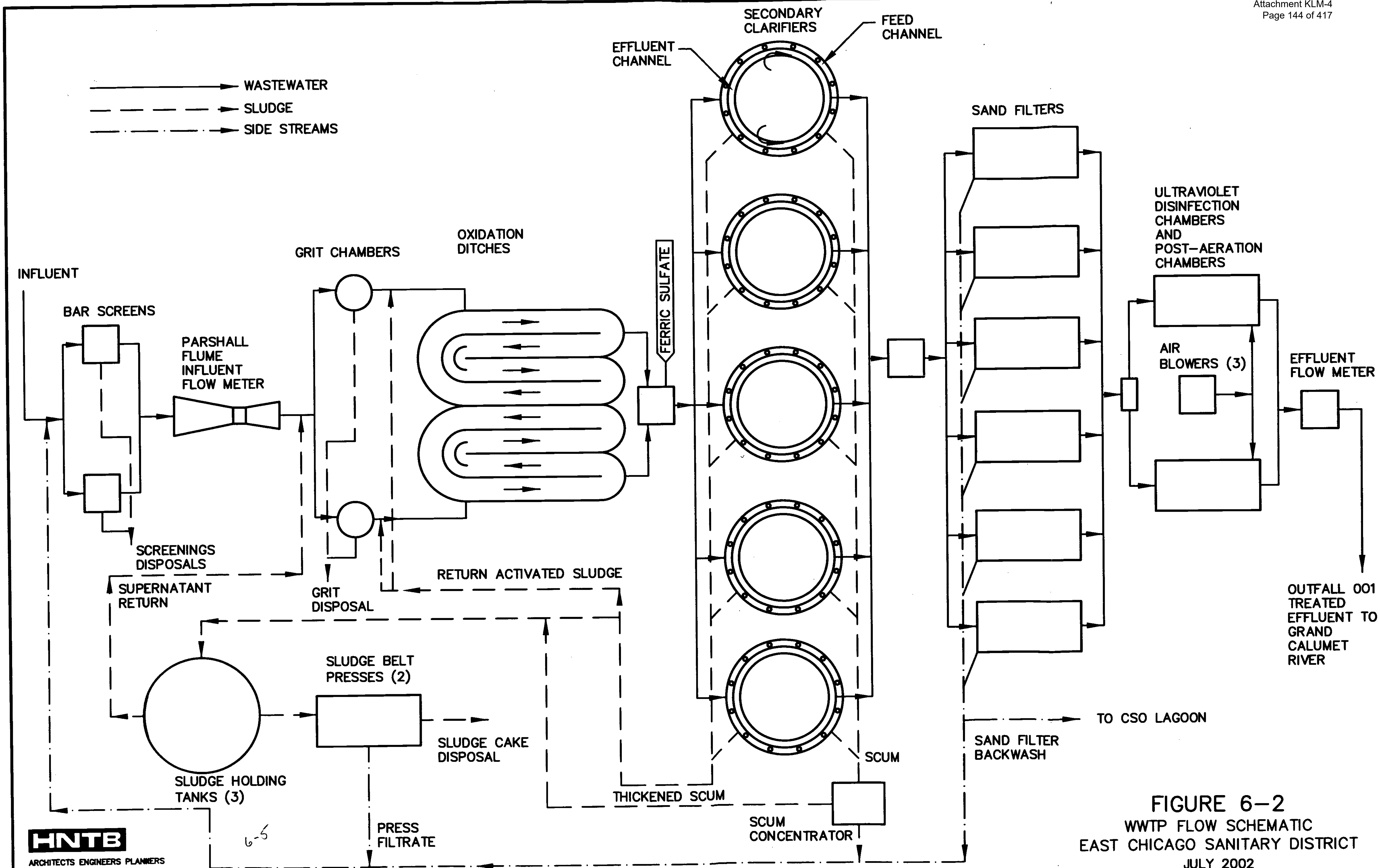


FIGURE 6-2
WWTP FLOW SCHEMATIC
EAST CHICAGO SANITARY DISTRICT
JULY 2002



HNTB
ARCHITECTS ENGINEERS PLANNERS
CHICAGO, ILLINOIS

FIGURE 6–2
WWTP FLOW SCHEMATIC
EAST CHICAGO SANITARY DISTRICT
JULY 2002

In 1969, a new Storm Water Pump Station was constructed adjacent to the existing Sanitary Pump Station, and the old Storm Water Pump Station and diversion chamber were abandoned. The 1969 construction consisted of tying a 60-inch and 72-inch combined sewer into new storm water wet well. A mechanical bar screen was provided for storm water flow and a barminutor was installed for sanitary flows. Three vertical centrifugal sanitary pumps discharged into a 24-inch forcemain. The forcemain conveyed the sanitary flow to the Wastewater Treatment Facility. Five vertical centrifugal 36-mgd storm water pumps discharged into a 72-inch forcemain.

In 1973, the existing flap gates on the discharge of each storm pump were replaced with 42-inch motor operated butterfly valves, new exhaust fans were provided, new sanitary pumps were installed, a new barminutor was installed, new impellers were provided for the storm water pumps, and ventilation changes were made to the sanitary pump station. A 48-inch magnetic flow meter was proposed for the storm water discharge, but was never constructed. The original 200-horsepower motors on the storm water pumps were replaced with 400-horsepower motors.

In the early 1970's, through an Environmental Protection Agency (EPA) research grant, the East Chicago Sanitary District constructed a 14.4-acre Combined Sewer Overflow (CSO) treatment lagoon at the Wastewater Treatment Plant site. The CSO Lagoon was originally constructed with an average water depth of 30 feet which results in a volume of 142 million gallons. The lagoon is operated as a flow through treatment facility. It was originally equipped with floating aerators and chlorine disinfection; however this equipment has been abandoned and is no longer used. Excess wet weather flows from the Magoun Avenue Pump Station have been conveyed to the lagoon since 1974. In 1986, revisions to the station included the addition of a telemetry panel and instrumentation to monitor wet well levels, door entry, station temperature, fire detection, combustible gas detection, hydrogen sulfide detection, pump run sensor and seal water pressure.

In 1999, the Magoun Avenue Pump Station was rehabilitated. Improvements included the removal of the existing five storm water pumps, three sanitary pumps and bar screens. New stainless steel climber bar screens were installed on the storm and sanitary sides of the station. Four new storm water pumps and three new sanitary pumps were also installed. In addition, an activated carbon odor control unit and an emergency generator were installed. The entire HVAC and lighting system at the station were replaced. An addition was added north of the station to house the new electrical and control equipment.

3.2.1.2 Process Description

The Magoun Avenue Pump Station serves Subsystems 1, 2 and 3, as shown in Figure 3-2.

The Magoun Avenue Pump Station consists of both a combined pump station (sanitary), which pumps to the Wastewater Treatment Facility, and a storm relief pump station. While each station has its own wet well, an overflow channel exists between the two. In the event the flow exceeds the capacity of the sanitary pumps, such as during periods of wet weather, the excess flow is diverted to the storm relief wet well. The vertical storm pumps in the relief side of the station discharge to a CSO Lagoon located at the Wastewater Treatment Facility via a 72-inch forcemain. In addition, the storm relief wet well is equipped with a pair of submersible Dewatering Pumps that discharge either to the sanitary forcemain or the sanitary influent channel. Dry weather flow is pumped to the Wastewater Treatment Facility via a 24-inch forcemain.

The Magoun Avenue Pump Station receives flow from a 60-inch combined sewer from the north and a 72-inch storm sewer from the south. The two sewers combine at the Pump Station. A weir located in the channel between the storm and sanitary wet wells directs the combined sewer flow to sanitary wet well and the storm sewer flow to the storm wet well. If the flow from the combined sewer exceeds the capacity of the three sanitary pumps, the excess flow will overflow the weir to the storm wet well.

The flow to the Pump Station flows through one of two bar screens. A bar screen is located at the influent to the sanitary wet well and at the influent to the storm wet well. The automatic bar screens remove objects, such as rags, sticks and other items that may damage downstream equipment. The screened items are removed from the bar screens and deposited into a pair of dumpsters.

The screened wastewater from the combined sewer normally flows to the sanitary wet well, where three centrifugal solids handling pumps pump the combined sewage to the Wastewater Treatment Facility. The screened wastewater from the storm sewer flows to the storm wet well, where a pair of Dewatering Pumps, pump low flows to the sanitary side. Each Dewatering Pump is equipped with a 20 horsepower motor and has a rated capacity of 964 gpm at 52 feet total dynamic head.

During periods of high flow, such as during a storm event, four vertical turbine storm water pumps pump the flow from the storm sewer and excess flow above the capacity of the sanitary pumps from the combined sewer to the CSO Lagoon. Each storm water pump is equipped with a 500 horsepower motor and is rated for 38,300 gpm at 40 feet total dynamic head.

The functions of the storm water pumps, sanitary pumps and bar screens are automatically controlled and monitored by a Programmable Logic Controller (PLC) in the Pump Station Control Panel. The PLC automatically starts/stops and adjusts the output of the sanitary and storm pumps, based on the level in the wet well. A pressure transducer mounted through the wall of the sanitary wet well measures the level in the sanitary wet wells. A submersible level sensor suspended in the wet well measures the level in the storm wet. The level sensors send a 4-20 mA signal to the PLC that allows it to determine the level in the wet well and operate the pumps to maintain a desired liquid level in the wet well.

The flow from the sanitary pumps is measured by a 20-inch magnetic flow meter located in the lower level of the sanitary sewerage Pump Room. The flow from the storm pumps is measured by an area velocity flow meter located in the open influent channel at the CSO Lagoon.

An emergency generator is provided at the facility to provide emergency power to the Pumping Station in the event of a power outage. The generator is driven by a diesel engine and is capable of running everything in the station except for one storm pump. In the event of a power outage, an automatic transfer switch will automatically engage the generator.

3.2.2 Michigan Avenue Pump Station

3.2.2.1 General

The Michigan Avenue Storm Relief Pump Station is located on the corner of Michigan Avenue at Sheridan Place, about three blocks north of Columbus Avenue (U.S. Route 12).

The 1998 modernization of this station provided for replacement of the screen and raking system, replacement of the turbine pumps, replacement of pump discharge piping and piping appurtenances, replacement of the electrical and instrumentation systems, and the addition of a generator to provide electrical power in case of failure of the Northern Indiana Power Service Company (NIPSCO) system. A separate new electrical building provides space for the switchgear, motor control center, variable speed drives, and standby generator.

3.2.2.2 Process Description

The Pump Station functions in wet weather to convey storm runoff to Lake Michigan and to provide protection from flooding. An 84-inch sewer enters the wet well from the north, from a junction chamber in Michigan Avenue. The four Storm Water Pumps discharge to an existing 72-inch forcemain that extends into the Indiana Harbor and Ship Canal northwest of the Pump Station, which flows into the Indiana Harbor. Two small Dewatering Pumps automatically drain the wet well, when the Storm Water Pumps are not operating, and discharge to the sanitary forcemain from the Canal Street Pump Station. Each Dewatering Pump is equipped with a 24-horsepower motor and has a rated capacity of 1,400 gpm at 35 feet total dynamic head.

The major elements of the station modernization include:

1. New screen and rake
2. Four new Storm Water Pumps
3. New pump discharge piping
4. Modifications to the pump discharge chamber
5. New Electrical Building
6. Variable Frequency Drives (VFD's) for two pumps
7. Solid State Reduced Voltage Starters (SSRVS's) for all four pumps
8. On-site electric generator set
9. New electrical gear and instrumentation

10. Modifications to the existing building

The screening system consists of a fixed screen and a moving rake mechanism, providing protection from large debris that could damage the pumps, and provides a measure of water quality protection by removing larger suspended matter prior to discharge of storm waters to Lake Michigan. The bar screen includes vertical 3/8" x 2 ½" bars with 3-inch clear space between the bars. The rake is operated by a hydraulic power system. The rake operates automatically in response to head loss across the screen or programmable time, and can be operated manually.

The four original pumps have been replaced with four pumps similar in design. The new pumps discharge above the operating floor and include a motor operated butterfly discharge valve on each pump. Pumps are operated automatically in response to water levels measured in the wet well. Pumps can also be operated manually. The pumps should never be operated with the discharge valve completely closed.

The pump discharge chamber was modified to provide for pump discharge into the top of the chamber instead of through the side. The original flap valves were located in the chamber and were inaccessible for inspection and service. The individual discharge lines of the old pumps were blind flanged. A new flap valve, located at the canal discharge, prevents Lake Water from backing up into the discharge chamber.

The pump station was designed for a firm capacity, with one pump out of service of 165 – 200 MGD. Each of the four storm pumps is equipped with a 600 horsepower motor and has a rated capacity of 45,500 gpm (65.5 MGD) at 40 feet total dynamic head.

Variable Frequency Drives (VFD's) installed on the pumps provide for the pumps to be driven at speeds corresponding to the rate of storm water flow into the station. This reduces the frequency of starting and stopping the pumps, and may result in electrical energy cost savings by operating the pumps under conditions of reduced friction losses in the piping.

Solid State Reduced Voltage Starters (SSRVS's) provide for operating the pumps at constant speed. SSRVS's have the advantage of starting and stopping the motors relatively slowly and, thus, reducing the wear and tear that occurs with across the line starting and stopping. The two VFD drives are also each equipped with an SSRVS unit on a bypass circuit so the pumps can be operated at constant speed when a VFD unit is out of service.

The on-site engine/generator set is designed to automatically start and to provide power to the station in case utility power to the station is lost. The set has the capacity to operate two storm water pumps plus, essentially, all the peripheral equipment in the station (except the Dewatering pumps, which are not required when the Storm Water Pumps are operating). The engine operates on No. 2 Diesel fuel, which is stored in a rectangular tank mounted under the engine and between the channels of the skid mounting.

The electrical system is entirely new, including a new NIPSCO substation adjacent to the generator room, main switchboard and emergency load transfer switch, MCC, motor drives

(VFD's and SSRVS's), lighting panel, conduit and wiring. The electrical system is located in a two-story building, which includes the engine/generator set. The Switchgear Room at grade level houses the switchboard and the main control panel. The Generator Room is to the north of the Electrical Room and houses the engine/generator set. The Electrical Room at the second floor level houses the MCC and motor drives. The radiator porch is an enclosed mezzanine above the Generator Room, adjacent to the second floor Electrical Room. The radiator porch contains the external cooling system (radiator) for the engine, the engine muffler and the external compressor for the Electrical Room air conditioning system. The radiator porch is accessible from the second floor of the Electrical Room.

The station is operated automatically by a Programmable Logic Controller (PLC) that is programmed to operate the station in response to water level in the wet well. The control system is connected to the SCADA system to report alarm conditions and changes in equipment status to the SCADA PC located at the Wastewater Treatment Plant. In addition to automatic operation, equipment is provided with controls to permit manual operation. The manual operating mode provides the operator the opportunity to test the equipment and to assume manual control of various units of equipment in case of total or partial failure of the instrumentation system.

3.2.3 Alder Street Pump Station

3.2.3.1 General

The Alder Street Pump Station was originally constructed in 1925. The original installation consisted of two horizontal 50-mgd centrifugal pumps, two vertical 10-mgd centrifugal pumps and one 25-mgd vertical centrifugal. All of these pumps pumped combined sewage from a 96-inch inlet sewer to a 9.5' x 5.5' concrete flume, which discharges to the Grand Calumet River at Cline Avenue.

In 1944, the Wastewater Treatment Plant for East Chicago was placed in operation. It is likely that around that time, sanitary pumps were added to the Alder Street Pump Station to pump dry weather flows through a 42-inch forcemain to the Wastewater Treatment plant. Three 8-mgd centrifugal pumps were provided, which draw suction from the same wet well that receives storm water flow.

In 1958, a vertical centrifugal 50-mgd storm water pump was added, a new 60-inch sewer was constructed to convey combined flows from Subsystems 4A and 3 to the Pump Station, the existing bar screen was replaced with a new bar screen, a screen bypass channel was added, and motor operators were added to the sluice gates on the influent sewer.

In 1988, the sanitary pumps were replaced with submersible pumps installed in the dry pit. Also, a pump house was added above the sanitary pumps. A 36-inch magnetic flow meter was provided to measure the sanitary flows and the existing bar screen and inlet sluice gates were replaced. System automation was also added in 1990.

The pump station was rehabilitated in 1998-1999. Major improvements included:

1. Replacing the existing bar screen with three climbing bar screens,
2. Replacing the six existing storm pumps with four new vertical turbine pumps,
3. Installing three new centrifugal solids handling sanitary pumps, and
4. Installing new electrical gear, controls and a standby generator.

3.2.3.2 Process Description

The Alder Street combined station and storm relief Pump Station serves Subsystems 4, 4A, 5, 5A, 6, 7, and 8 directly, and Subsystem 9, via the Canal Street Sanitary Pump Station and forcemain, as shown in Figure 3-1. With the exception of Subsystems 4A and 5A, which feed into Subsystems 4 and 5, respectively, the aforementioned subsystems, discharge into the main trunk combined sewer located on Alder Street. The dry weather flow to Alder Street combined Pump Station is pumped to the Treatment Plant by three centrifugal sanitary pumps via a 42-inch forcemain. The storm relief pumps share a common wet well with the combined (sanitary) pumps at the station. The storm relief pumps relieve flows in excess of the capacity of the combined pumps during wet weather. The storm relief pumps discharge to the Grand Calumet River at Cline Avenue.

The Alder Street Pump Station receives flow from a 96-inch combined sewer from the north and a 60-inch storm relief sewer from the west. The two sewers combine on the Alder Street Pump Station site before entering the wet well on the north end of the climber bar screen room. Three climber bar screen are provided. Two are used on a normal basis and a third is provided to accommodate high flows or as a back-up to the other two bar screens. The screened items removed from the bar screens are deposited into a dumpster in the climber screen room by a screenings conveyor.

The screened wastewater flows to an expanded wet well south of the climber screen room. From the wet well, three centrifugal solids handling sanitary pumps to the wastewater Treatment Facility pump the normal flow to the station. During periods of high flow, such as during a storm event, the excess flow above the capacity of the sanitary pumps is pumped to the Grand Calumet River by four vertical turbine storm water pumps. Two pumps are equipped with 400 horsepower motors and have a rated capacity of 50,250 gpm (72.4 MGD); the other two pumps are equipped with 300 horsepower motors and have a rated capacity of 35,200 gpm (50.7 MGD) at 25 feet total dynamic head.

The operation of the storm pumps, sanitary pumps and bar screens are automatically controlled and monitored by a Programmable Logic Controller (PLC) in the Pump Station Control Panel. The PLC automatically starts/stops and adjusts the output of the sanitary and storm pumps based on the level in the wet well. An ultrasonic level sensor mounted above the wet well measures the level in the wet. The level sensor sends a 4-20 mA signal to the PLC that allows it to determine the level in the wet well and operate the pumps to maintain a desired liquid level.

At least one sanitary pump is normally operating at all times. The storm water pumps will only operate when the flow to the station exceeds the capacity of the sanitary pumps.

The flow from the sanitary pumps is measured by a magnetic flow meter located in a vault outside the station. The flow from each individual storm pump is measured by an ultrasonic Doppler flow meter mounted on the discharge pipe of each pump.

An emergency generator is provided at the Pump Station to provide emergency power in the event of a power outage. The generator is driven by a diesel engine and will provide power to the lighting panel, two of the sanitary pumps, three of the storm pumps, the bar screens and conveyor, and the exhaust fans in the station. In the event of a power outage, an automatic transfer switch will engage the generator.

CHAPTER 4

SWMM MODELING RESULTS

A Storm Water Management Model (SWMM) of the collection system was used to analyze the current system as well as develop feasible alternatives for the reduction of combined sewer overflows. SWMM is a hydraulic model that is capable of analyzing complex hydraulic conditions such as bypasses, overflows and in-system storage.

The two major components of the computational engine of the model, EXTRAN and RUNOFF, were created using the existing sewer system information, land use data and rainfall history for the City of East Chicago for a ten year period.

Once the RUNOFF and EXTRAN models are set up, a calibration process is required. The system is calibrated by obtaining actual flow data throughout the system and comparing it to the flow, level and volume generated by the SWMM model. Unit hydrographs are created at manhole junctions throughout the combined sewer system to determine water surface elevations during wet weather events. HNTB first prepared a SWMM model for East Chicago in the Year 2000, when system flow data was collected, and calibration and verification of the model were conducted.

For development of the Long Term Control Plan, updating the model to current conditions was necessary due to sewer separation projects that have occurred since the model was prepared. The updated model represents the construction of the North Side Pumping Station and separate storm sewers to serve Tod Park, MacArthur Golf Course, Central High School, and the intersection of Indianapolis Boulevard and McShane Drive.

A summary of the three CSO basins is included in Table 4-1.

Table 4-1
Summary of CSO Drainage Basin Characteristics

CSO PUMP STATION / DRAIANGE BASIN	COMBINED SEWER DRAINAGE AREA	AVERAGE % IMPERVIOUS	IMPERVIOUS AREA
Michigan Avenue CSO Pump Station	498 acres	34 %	158 acres
Alder Street Sanitary and CSO Pump Station	723 acres	19 %	137 acres
Magoun Avenue Sanitary and CSO Pump Station	694 acres	38 %	263 acres

System performance was analyzed in the March 2004 LTCP for 3-month, 6-month, 9-month, 1-year, and 5-year frequency rainfall events of 12 hour duration. The design hyetographs were generated using the Rainfall Frequency Atlas of the Midwest, written by the Midwest Climate Control Center and the Illinois State Water Survey. The CSO discharge volume resulting from each of these storms is shown in Figure 4-1. Table 4-2 summarizes each design storm's impact by location and includes an estimate of the percent capture of combined sewage from each design storm.

Figure 4-1
Rainfall vs. CSO Discharge Volume

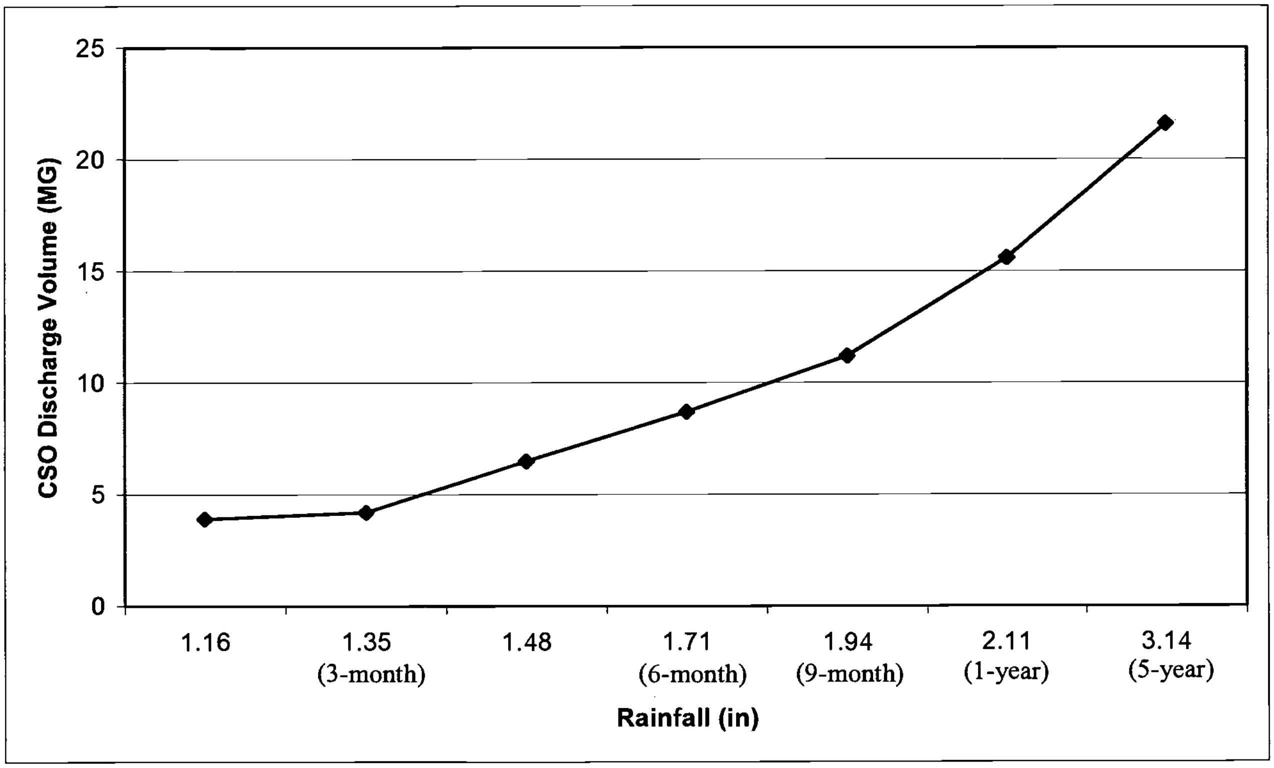


Table 4-2
CSO Rainfall Event Discharge Summary

Rainfall Recurrence Interval	Rainfall Duration (Hours)	Rainfall (inches)	Total Wet Weather Combined Sewer Flow (MG)	Discharge from Alder St. and Michigan Ave. Pump Stations (MG)	CSO Lagoon Discharge (MG)	% Capture
3-month	12	1.35	16.2	4.2	0.0	74%
6-month	12	1.71	20.3	8.7	0.2	57%
9-month	12	1.94	24.9	11.2	0.8	55%
1-year	12	2.11	28.4	15.6	1.1	45%
5-year	12	3.14	38.7	21.6	1.9	44%

For the LTCP Update the SWMM Model was used to calculate the CSO Volume and the CSO Flow that would be generated by a one-year one-hour rainfall event and a ten-year one-hour rainfall event. The results for the Michigan Avenue and Alder Street CSO Pump Stations are presented in Table 4-3.

Table 4-3
CSO Discharge Summary for Design Storm Events

PUMP STATION		RAINFALL	
		1-Year 1-Hour	10-Year 1-Hour
		1.14 inches	1.98 inches
Michigan Avenue CSO Pump Station			
CSO Volume	MG	1.7	6.3
CSO Flow	MGD	65.5 (1)	131 (2)
Sanitary Base Flow	MGD	0	0
Alder Street Sanitary and CSO Pump Station (Existing Conditions)			
CSO Volume	MG	2.3	7.5
CSO Flow	MGD	50.7 (3)	122 (4)
Sanitary Flow to WWTP	MGD	20	20

(1) CSO Flow corresponds to one CSO Pump in operation.
(2) CSO Flow corresponds to two CSO Pumps in operation
(3) CSO Flow corresponds to one small CSO Pump in operation
(4) CSO Flow corresponds to one small CSO Pump and one large CSO Pump in operation.

Combined sewer system flow data as stated in the Monthly Reports of Operation for the period of January 2000 to February 2002 is presented in Appendix I and summarized in Table 4-4. During this period, rainfall occurred on average of 107 days per year and the annual average rainfall was 34 inches. On most days the resulting combined sewage was captured for treatment at the wastewater treatment plant or the CSO Lagoon. The discharge of untreated combined sewage from the Michigan and Alder Street Pump Stations occurred on average of 40 days per year. The MRO data also indicates that approximately 90% of the annual average wet weather flow was captured for treatment.

Table 4-4

East Chicago CSO System Flows from MRO Data

	Total Monthly Precipitation (in)	Number of Days with Precipitation	Influent to WWTP During Wet Weather (MG)	Influent to CSO Lagoon (MG)	Total CSO Discharge at Alder (MG)	Number of Days with Discharge at Alder	Total CSO Discharge at Michigan (MG)	Number of Days with Discharge at Michigan	Total Volume of Combined Sewage (MG)	% of Wet Weather Flow to Lagoon	% of CSO into Alder and Michigan	Total % Captured
Jan-00	0.39	6	111.13	0.00	0.29	0	0.00	1	111.42	0.0%	0.3%	99.7%
Feb-00	0.74	2	27.28	0.00	0.00	0	0.00	0	27.28	0.0%	0.0%	100.0%
Mar-00	1.21	11	115.10	0.00	0.00	1	0.63	0	115.73	0.0%	0.5%	99.5%
Apr-00	4.48	11	139.96	5.20	7.14	7	6.90	5	159.20	3.3%	8.8%	91.2%
May-00	4.12	12	171.63	7.98	8.07	7	4.47	7	192.16	4.2%	6.5%	93.5%
Jun-00	6.64	13	249.63	26.53	27.56	8	7.48	7	311.20	8.5%	11.3%	88.7%
Jul-00	2.55	8	122.28	5.51	8.36	3	2.71	3	138.86	4.0%	8.0%	92.0%
Aug-00	2.58	6	84.61	8.50	25.89	4	2.01	5	121.01	7.0%	23.1%	76.9%
Sep-00	5.41	9	172.76	31.53	32.96	4	27.04	5	264.30	11.9%	22.7%	77.3%
Oct-00						*no data available*						
Nov-00	2.81	10	131.82	57.62	6.00	2	4.52	4	199.96	28.8%	5.3%	94.7%
Dec-00	0.02	1	10.36	0.00	0.00	0	0.00	0	10.36	0.0%	0.0%	100.0%
Jan-01	1.29	6	87.95	3.56	2.16	1	0.38	1	94.05	3.8%	2.7%	97.3%
Feb-01	2.89	9	137.82	41.08	9.00	5	15.37	4	203.27	20.2%	12.0%	88.0%
Mar-01	0.90	8	108.45	0.00	0.00	0	0.00	0	108.45	0.0%	0.0%	100.0%
Apr-01						*no data available*						
May-01	4.46	14	174.43	8.61	6.70	5	9.10	4	198.84	4.3%	7.9%	92.1%
Jun-01	3.68	8	121.26	12.72	11.77	3	10.80	3	156.55	8.1%	14.4%	85.6%
Jul-01	4.71	8	137.34	16.33	11.10	5	13.10	5	177.87	9.2%	13.6%	86.4%
Aug-01	2.99	12	170.64	7.58	6.50	8	9.77	6	194.49	3.9%	8.4%	91.6%
Sep-01	4.19	12	154.29	9.34	8.60	7	7.20	7	179.43	5.2%	8.8%	91.2%
Oct-01	6.84	13	193.94	22.81	24.80	7	25.60	7	267.15	8.5%	18.9%	81.1%
Nov-01	2.61	12	135.40	4.47	6.30	3	4.42	2	150.59	3.0%	7.1%	92.9%
Dec-01	1.06	8	85.42	0.00	0.00	0	0.00	0	85.42	0.0%	0.0%	100.0%
Jan-02	1.21	7	60.81	0.00	0.00	0	0.00	0	60.81	0.0%	0.0%	100.0%
Feb-02	1.07	7	70.32	0.00	0.00	0	0.00	0	70.32	0.0%	0.0%	100.0%
	68.85	213	2974.63	269.38	203.22	80	151.49	76	3598.71	7.5%	9.9%	90.1%
Annual Average Based on 24 Months of Data	34	107	1487	135	102	40	76	38	1799	8%	10%	90%
**typo in MRO was corrected*												

CHAPTER 5

RECEIVING STREAMS / SENSITIVE AREAS

Sensitive areas are receiving streams requiring a higher priority for CSO control. Examples of sensitive areas are:

- Habitat for threatened or endangered species
- Primary Contact or recreational swimming areas such as beaches and other swimming areas
- Drinking water source waters
- Outstanding state resource waters

IDEM, U.S. Fish and Wildlife Services, and DNR were each contacted to determine the presence of sensitive areas impacted by CSO's in East Chicago. None of these agencies have identified any sensitive areas.

The Indiana Harbor Shipping Canal flows into Lake Michigan at the Indiana Harbor. The nearest areas considered as sensitive include the public water supply intake for East Chicago, and Jeorse Park Beach, which are shown on Figure 5-1 Indiana Harbor Area USGS Map.

The water supply intake has been positioned in the Lake such that flows from the Harbor Canal do not adversely impact the quality of water used by the City of East Chicago.

Jeorse Park Beach is a public bathing beach located roughly six coastal miles from the Indiana Harbor Canal. Water quality at the beach is monitored on a regular basis and has been closed on occasions when water quality standards are not met. A summary of the beach monitoring and beach closures as prepared by the Natural Resources Defense Council is included in Appendix II to this report. Jeorse Park Beach is roughly 1.75 miles from the nearest CSO. However, for the Michigan Avenue CSO to have an impact directly on Jeorse Beach, pathogens and other pollutants must travel roughly six miles around Ispat Inland Steel. There is no evidence that East Chicago's CSO discharges have any impact on the water quality at Jeorse Park Beach.

The receiving streams in East Chicago, the Grand Calumet River and the Indiana Harbor Shipping Canal, are classified as general use streams under the State's water quality regulations. A map of the streams and the surrounding area is presented in Chapter 13 CSO Public Notification Procedures. The Shipping Canal was constructed around the time of World War I to facilitate shipping to heavy industry in the region. It is important to note that the current uses for the streams are as urban drainage ways, carrying industrial cooling water, municipal sewage treatment plant effluent, and urban runoff. Public access to these waterways for primary or secondary contact, such as fishing, boating or swimming, is currently restricted. In addition, the stream sediments have been identified for removal to improve water quality and navigability, so that heavy shipping can resume, and Lake Michigan sediment and water quality can be protected.

USGS East Chicago, Indiana, United States 01 Jul 1978

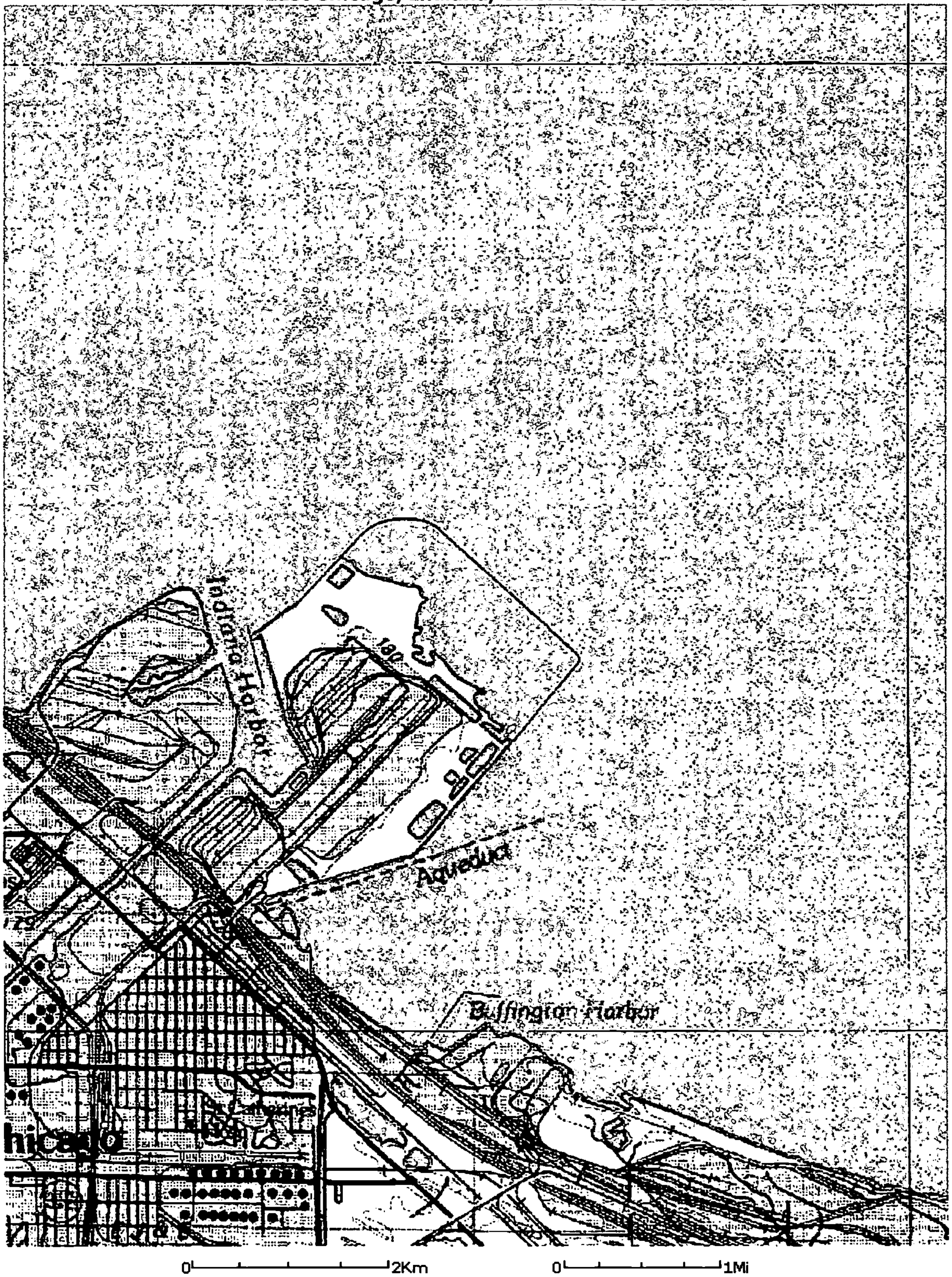


Image courtesy of the U.S. Geological Survey

Figure 5-1
Indiana Harbor Area
USGS Map

The streams have been subjected to study for impacts of CSO's on water quality. Data pertinent to East Chicago from the Grand Calumet River and Indiana Harbor Ship Canal CSO Discharge Impact Initial Assessment Study, dated April 2001, is included in Appendix II. A summary of the CSO discharge analysis (includes Oil and Grease, CBOD, TSS and TVSS) from the Alder Street Pump Station, the Michigan Avenue Pump Station and the CSO Lagoon are presented in Figures 5-2, 5-3 and 5-4 respectively. A summary of the testing for E.coli, which is the primary pollutant of concern for the CSO discharges, is presented in Table 5-1. Review of the data from the three East Chicago CSO discharges indicated that the water quality from the CSO Lagoon is significantly better than the CSO's discharged from the Michigan and Alder Street Pump Stations. The CSO Lagoon effluent water quality is also more consistent during the overflow event.

Table 5-1
Summary of CSO Discharge Analysis for E.coli

				E.-coli (CFU/100mL)							
	Minutes from Start of Overflow			15	30	45	60	75	90	105	120
	Event Date	Rainfall (Inches)	CSO Volume (MG)								
Alder Street Pump Station	April 8 - 10, 1999	1.23	26.71	22,000		20,000		13,000		14,000	
	April 19 - 20, 2000	1.39	5.22	1,200,000		1,000,000		2,000,000		1,600,000	
	June 20 - 21, 2000	1.53	1.76	1,200,000		7,500,000		8,000,000		1,500,000	
Michigan Ave Pump Station	April 8 - 10, 1999	1.23	8.47	28,000		20,000		17,000		24,000	
	April 19 - 20, 2000										
	June 20 - 21, 2000										
CSO Lagoon	April 8 - 10, 1999	1.23	1.08	3,000		3,500		3,000		2,700	
	April 19 - 20, 2000	1.39	0.52	1,000		4,000		2,000		4,000	
	June 20 - 21, 2000	1.53	4.53	87,000		61,000		40,000		70,000	

Review of the water quality data from the assessment study indicates that during wet weather conditions bacterial water quality in the Grand Calumet River at the east and west borders of East Chicago which are upstream of the East Chicago CSO discharge points exceeds current water quality standards. Hence, the reduction of East Chicago CSO discharges will not be sufficient for the Grand Calumet River and the Indiana Harbor Ship Canal to comply with current Water Quality Standards.

The considerations for identifying a receiving stream as a sensitive area were also reviewed and discussed by the Citizens Advisory Committee. In summary it was concluded that there are no known sensitive areas along the Grand Calumet River or the Indiana Harbor Ship Canal within the limits of East Chicago.

Figure 5-2
Alder Street Pump Station CSO Discharge Analysis Summary

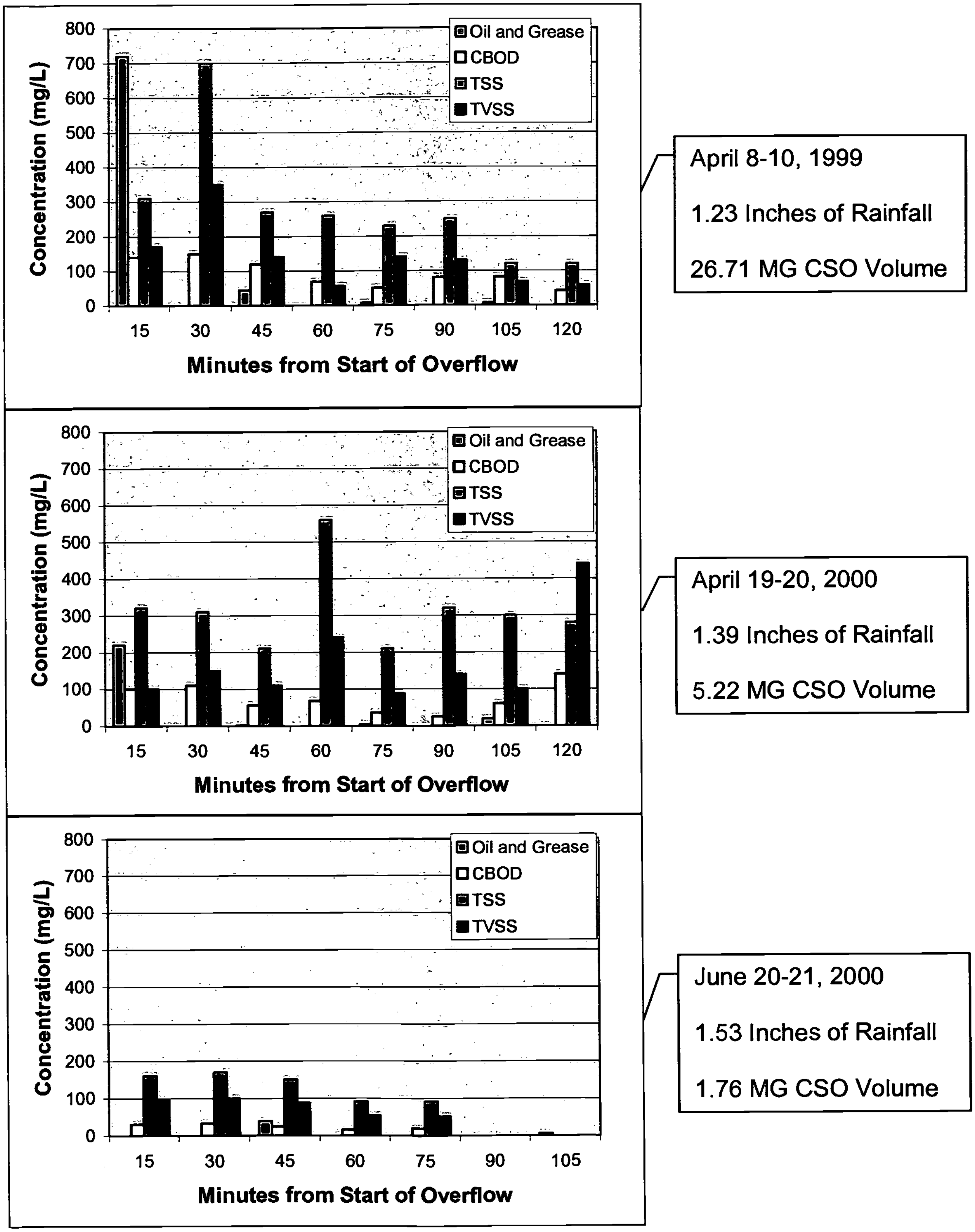


Figure 5-3
Michigan Avenue Pump Station CSO Discharge Analysis Summary

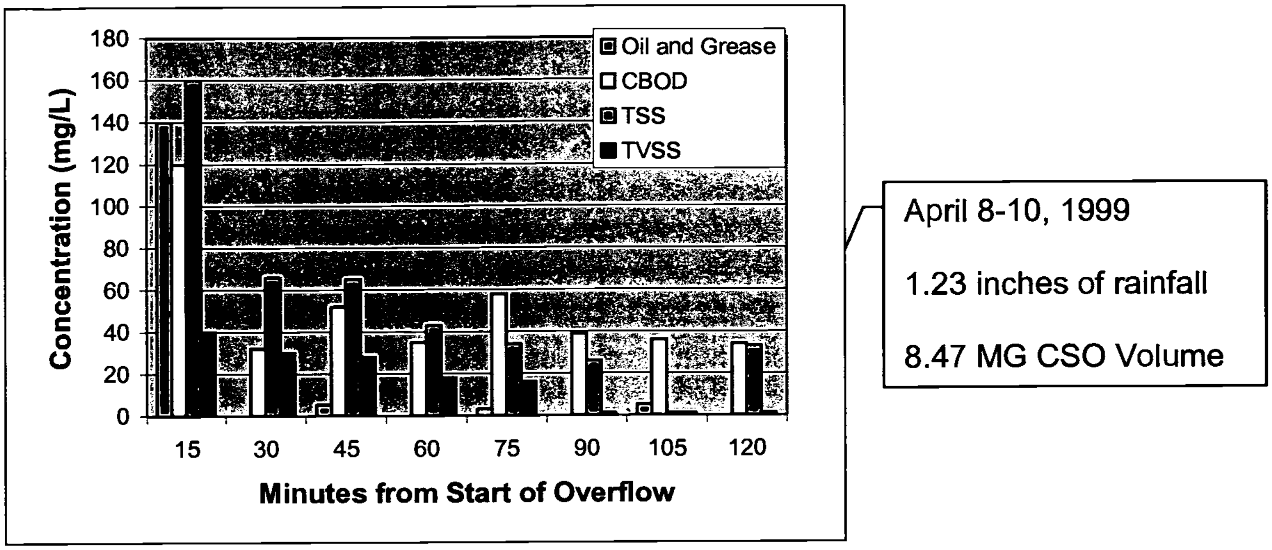
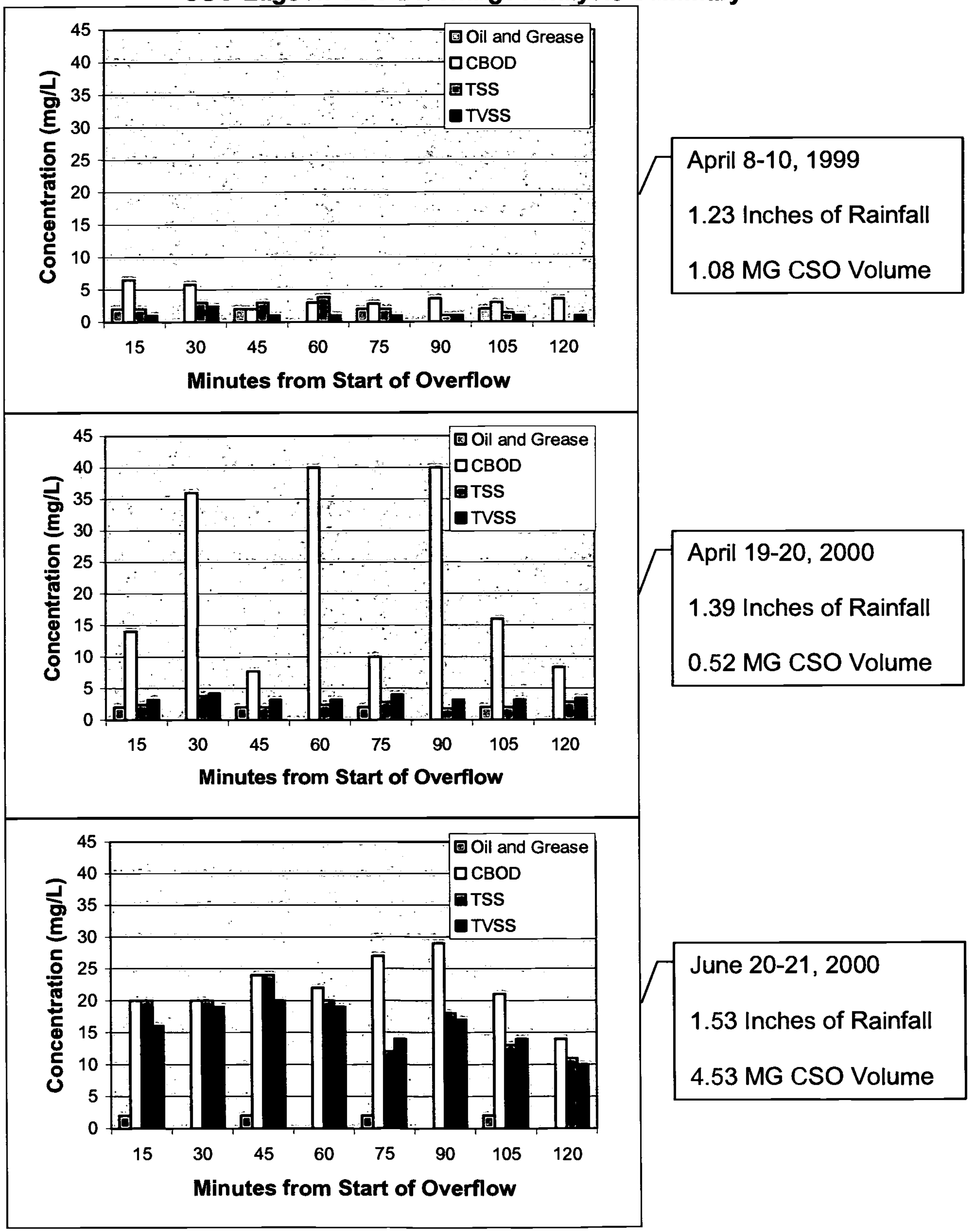


Figure 5-4
CSO Lagoon CSO Discharge Analysis Summary



CHAPTER 6

MAXIMIZATION OF WET WEATHER FLOWS AT THE WASTEWATER TREATMENT PLANT

6.1 DESCRIPTION OF EXISTING INFLUENT PUMPING AND TREATMENT FACILITIES

6.1.1 Influent Pumping

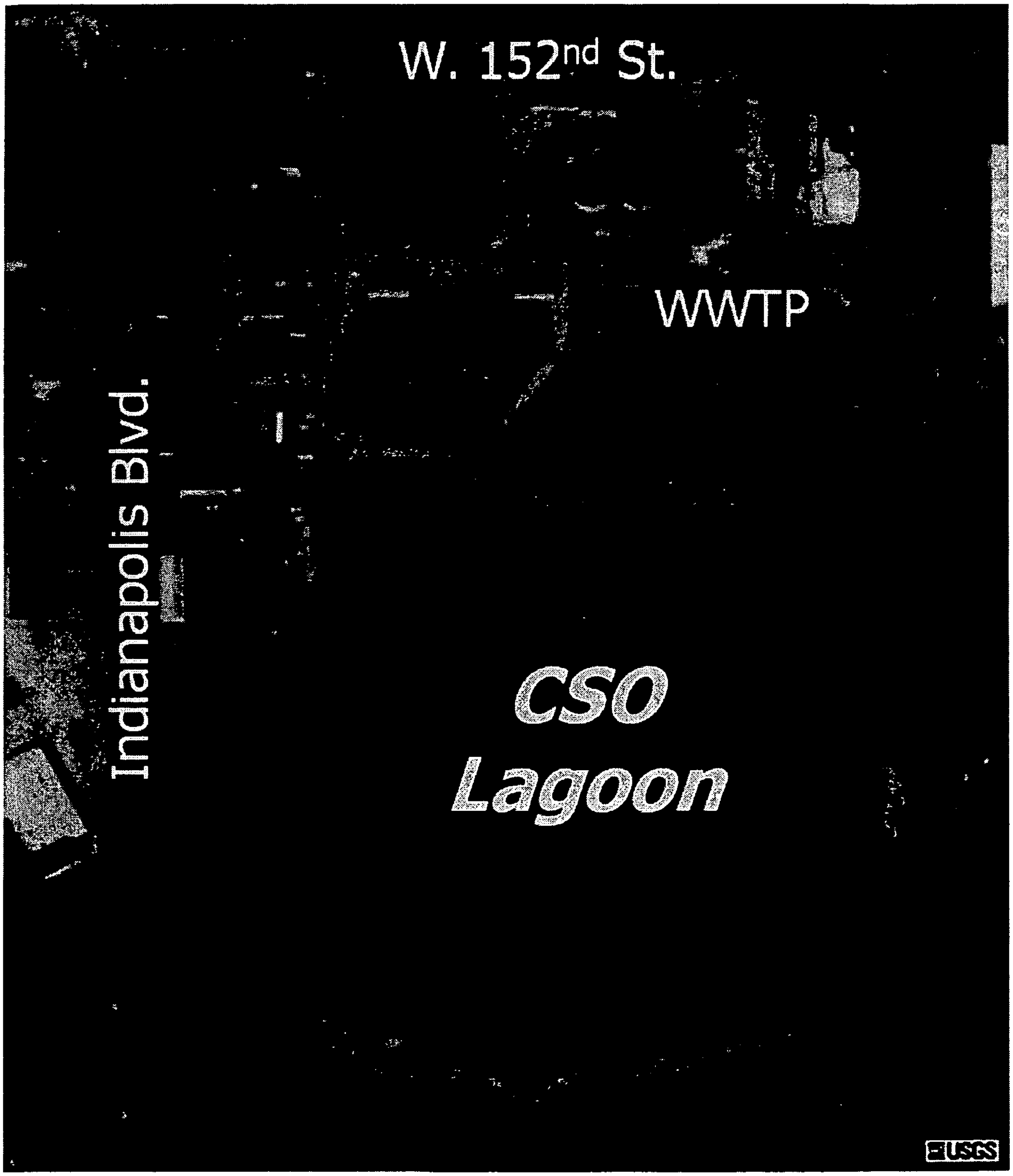
Wastewater is pumped to the wastewater treatment plant from three outlying pump stations that combine into a common forcemain as shown schematically on Figure 3-2. An aerial view of the existing wastewater treatment plant and CSO Lagoon is shown on Figure 6-1. The Alder Street Combined Pump Station pumps wastewater to the plant through a 42-inch forcemain. This 42-inch forcemain also includes a 24-inch forcemain connection from the Magoun Avenue Combined Pump Station and a 14-inch forcemain connection from the Roxanna Sanitary Pump Station. Each of these pump stations was upgraded as part of the Pump Station Improvement Project that was completed in 1999. A description of each pump station and their capacities are presented in Table 6-1 and in the following paragraphs.

Table 6-1
Summary of WWTP Influent Pump Station Capacities

Pump Station	Firm Pump Station Capacity (Assumes Largest Pump is Out of Service)			Peak Capacity (Assumes All Pumps are in Service)	
		Calculated Range (1)		Calculated Range (1)	
	Target Value, MGD	Minimum Flow, MGD	Maximum Flow, MGD	Minimum Flow, MGD	Maximum Flow, MGD
Alder Street Combined Pump Station	20	18.7	21.6	22.3	28.1
Magoun Avenue Combined Pump Station	10	9.4	11.4	10.4	12.8
Roxanna Sanitary Pump Station	3	3.2	3.7	4.2	5.5
Total Capacity at Influent to the WWTP	33	31.3	36.7	36.9	46.4

(1) The calculated range accounts for variation in the wet well water elevations and for variation in the pipe friction.

Figure 6-1
Wastewater Treatment Plant and CSO Lagoon
Aerial View



Alder Street Combined Pump Station - Climber screens are used to screen the influent combined sewage. This station includes three sanitary pumps that pump wastewater to the WWTP and four storm relief pumps that pump combined sewage to the Grand Calumet River. The sanitary pumps are vertical; non-clog design with extended lineshafts. Each pump has a nominal capacity of 11.5 MGD and is equipped with a 125-hp motor and Variable Frequency Drive.

Magoun Avenue Combined Pump Station- Climber screens are used to screen the influent combined sewage. This station includes three sanitary pumps that pump wastewater to the WWTP and four stormwater pumps that pump stormwater and combined sewage to the CSO Lagoon that discharges to the Grand Calumet River. The sanitary pumps are vertical; non-clog design with extended lineshafts. Each pump has a nominal capacity of 5.9 MGD and is equipped with a 60-hp motor and Variable Frequency Drive.

Roxanna Sanitary Pump Station- This station includes two vertical, "chopper" design pumps with extended lineshafts. Each pump has a nominal capacity of 3.0 MGD and is equipped with a 50-hp motor. VFD's were installed in 2003. The installation of these drives should reduce the temporary spikes in the plant flow caused by the abrupt starting and stopping of the pumps.

6.1.2 Wastewater Treatment Plant

The design flows and loads for the wastewater treatment plant are presented in Table 6-2.

Table 6-2
WWTP Design Flows and Loadings

Design Flows and Loads	Units	Quantity
Design Average Flow	MGD	15
Design Peak Hourly Flow	MGD	27
Design Peak Instantaneous Flow	MGD	36
Design Average BOD Concentration	mg/l	117
Design Average BOD Load	lbs/day	14,600
Design TSS Concentration	mg/l	106
Design TSS Load	lbs/day	13,261
Design TKN Concentration	mg/l	28
Design TKN Load	lbs/day	3,500

Comparing the influent pumping capacity to the WWTP design flows indicates the goal for the Total Firm Pump Capacity of 33 MGD is greater than the WWTP Design Peak Hourly Flow of 27 MGD and less than the Design Peak Instantaneous Flow of 36 MGD. Reviewing the calculated range of flows for the firm pump capacity indicates that under conditions of high wet wells and low pipe friction it should be possible to pump the Design Peak Instantaneous Flow of 36 MGD. The range of Peak Capacity with all pumps running at all three stations of 36.9 to 46.4 MGD is greater than the WWTP Design Peak Instantaneous Flow of 36 MGD. Hence running all the pumps at each station may result in wastewater overtopping a channel or tank at the wastewater treatment plant and is not recommended.

The wastewater treatment plant unit processes as shown on Figure 6-2, include screening, grit removal, secondary treatment using oxidation ditches and peripheral feed circular clarifiers, rapid sand filtration, ultraviolet disinfection, and post aeration. Sludge processing includes sludge holding tanks and dewatering using belt filter presses. Scum from the secondary clarifiers is thickened and then added to the sludge holding tanks.

Dewatered sludge is landfilled. Design parameters for each unit process along with typical loading rates are presented in Table 6-3. This information was used in the evaluation of the plant's ability to treat peak wet weather flows as presented in Section 6.4.

6.2 NPDES PERMIT REQUIREMENTS

NPDES Permit No. IN0022829 includes the following requirements:

> "The permittee shall maximize the volume of flows transported to and through the wastewater treatment plant (WWTP) for treatment before and during a CSO discharge. The permittee shall also maximize the volume of flow through the relevant portion of the collection system before collection system overflows may occur. The maximization of flow must continue for the duration of the discharge or diversion."

HNTB reviewed the CSO Operational Plan with the latest revision date of January 5, 1995 in regards to the procedure and strategy for maximizing flow to the WWTP. The CSO Operational Plan described the three influent pump stations as they existed at that time and included recommendations for replacing the pumps along with other improvements that were constructed as part of the Pump Station Improvements Project that was completed in 1999. The control system strategy was stated as follows:

> "The total design capacity of the three pump stations servicing the treatment plant is 44.8 MGD (14.8 MGD from Magoun, 6 MGD from Roxanna, and 24 MGD from Alder), while the peak design capacity of the wastewater treatment plant is 27 MGD hourly peak and 36 MGD instantaneous. Although it is rare that all pumps run at the same time, in the event, the Roxanna Station is most critical due to a lack of any means of diverting flow. Therefore, all of the capacity of Roxanna Sanitary Station must be utilized to prevent basement flooding through sanitary sewer surcharges. Thus, the

Table 6-3
Summary of WWTP Unit Process Design Parameters

Process	Units	Quantity	Typical Values as presented in: Recommended Standards for Wastewater Facilities	Typical Values as presented in: Wastewater Engineering: Treatment, Disposal and Reuse
Screening				
Type: Climber Screens				
Manufacturer: Schloss				
Number of Screens		2		
Opening Between Bars	Inch	5/8		
Channel Width	Feet	6		
Influent Flow Metering				
Type; Parshall Flume				
Throat Width	Inches	48		
Peak Measuring Capability	MGD	40		
Grit Removal				
Type: Pista Grit Chambers				
Manufacturer:				
Number of Chambers		2		
Diameter of Each Chamber	Feet			
Aeration Basins				
Type: Carrousel Oxidation Ditch with two 150-hp low-speed surface aerators per basin				
Manufacturer: Eimco				
Number of Oxidation Ditches		2		
Side Water Depth	Feet	16		
Oxidation Ditch Volume (Each)	MG	4.2		
Oxidation Ditch Volume (Total)	MG	8.4		
Detention Time	Hours			6-15
(at 15 MGD)	Hours	13.4		
(at 27 MGD)	Hours	7.5		
(at 36 MGD)	Hours	5.6		
Design MLSS	mg/l	4,000	3,000-5,000	1,500-3,000
Design MLVSS	mg/l	3,200		
Design F/M Loading Rate at 15 MGD	lb BOD/day per lb MLVSS	0.067	0.05-0.1	0.05-0.20
Design F/M Loading Rate at 27 MGD	lb BOD/day per lb MLVSS	0.134		

Table 6-3 (Continued)

Process	Units	Quantity	Typical Values as presented in: Recommended Standards for Wastewater Facilities	Typical Values as presented in: Wastewater Engineering: Treatment, Disposal and Reuse
Aeration Basins (Continued)				
Organic Loading (at 14,600 lbs/day BOD)	Lbs BOD/d/ 1000 cu ft	13.0	15	5-20
Solids Retention Time (SRT)	Days			
Secondary Clarifiers				
Type: Circular with Peripheral Feed/Takeoff				
Manufacturer: Envirex				
Number		5		
Diameter	Feet	100		
Side Water Depth	Feet	12		
Surface Area (Each)	Sq ft	7,850		
Surface Area (Total)	Sq ft	39,250		
Surface Overflow Rate at 15 MGD	gpd/sq ft	382		400 - 800
Surface Overflow Rate at 27 MGD	gpd/sq ft	688	1000	1,000 - 1,200
Surface Overflow Rate (at 36 MGD)	gpd/sq ft	917		
Solids Loading Rate (at 15 MGD, 4000 mg/l MLSS and 10,000 mg/l RAS)	lb/sq ft/day	21.3		
Solids Loading Rate (at 27 MGD, 4000 mg/l MLSS and 10,000 mg/l RAS)	lb/sq ft/day	38.0	35	
Weir Length (Each assuming 94 ft dia)	Feet	295		
Weir Length (Total)	Feet	1,475		
Weir Loading				
(at 15 MGD)	gal/lin ft d	10,170		
(at 27 MGD)	gal/lin ft d	18,300	30,000	30,000
(at 36 MGD)	gal/lin ft d	24,400		
Return Activated Sludge Pumping				
Type: Variable Speed				
Manufacturer:				
Number of Pumps	Each	5		
Nominal Capacity of each Pump	GPM	3,000		
Nominal Firm Capacity with one pump out of service	MGD	17.3		
Minimum Rate as a % of Design Average Flow		<50	50	50
Maximum Rate as a % of Design Average Flow		115	150	150

Table 6-3 (Continued)

Process	Units	Quantity	Typical Values as presented in: Recommended Standards for Wastewater Facilities	Typical Values as presented in: Wastewater Engineering: Treatment, Disposal and Reuse
Phosphorus Removal				
Type: Ferric Sulfate Addition to Clarifier Influent				
Sand Filters				
Type: Traveling-Bridge				
Manufacturer: Environmental Elements				
Media Depth	Inches	11		
Sand Effective Size	Mm	0.5		0.35 - 0.6
Sand Uniformity Coefficient	UC	1.5		1.2 - 1.6
Number of Cells		6		
Cell Width	Feet	16		
Cell Length	Feet	62		
Surface Area Each Cell	Sq ft	992		
Surface Area with One Cell out of service	Sq ft	4,960		
Surface Area Total	Sq ft	5,952		
Hydraulic Loading Rate (with Six Cells in Service)	gpm/sf			2-6
(at 15 MGD)	gpm/sf	1.8		
(at 27 MGD)	gpm/sf	3.2		
(at 36 MGD)	gpm/sf	4.2		
Hydraulic Loading Rate (with One Cell Out of Service)	gpm/sf			
(at 15 MGD)	gpm/sf	2.1		
(at 27 MGD)	gpm/sf	3.8	5	
(at 36 MGD)	gpm/sf	5.0		
Disinfection				
Type: Ultraviolet Lamps Horizontally Immersed Parallel To Flow				
Manufacturer: UVPS				
Number of Parallel Chambers		2		
Number of Banks per Chamber (One bank is always on and the second bank turns on when the effluent flow is greater than 18 MGD.)		2		

Table 6-3 (Continued)

Process	Units	Quantity	Typical Values as presented in: Recommended Standards for Wastewater Facilities	Typical Values as presented in: Wastewater Engineering: Treatment, Disposal and Reuse
Disinfection (continued)				
Length of Each Bank	Inches	58		
Number of Modules per Bank		41		
Number of Lamps per Module		8		
Total Number of Lamps		1,312		
Ultraviolet Light Wavelength	Nanometer	254.7		
Post Aeration				
Type: Diffused Air with Fine Bubble Diffusers				
Diffuser Manufacturer: Envirex				
Number of Chambers		2		
Number of Blowers		3		
Blower Capacity-Each	SCFM	919		
Effluent Flow Meter				
Type: Cross Sectional Area/Velocity				

peak instantaneous capacity allowed from Alder and Magoun is 30 MGD. Two sanitary pumps at Alder (16 MGD) are allowed to continue to discharge to the treatment plant while the third pump is shut off. In the event the treatment plant cannot handle the incoming flow, the Magoun Avenue Sanitary Station is cut back to either the two smaller pumps, i.e. 7.8 MGD, or the largest pump, i.e. 7 MGD."

Operating personnel indicate that the three influent pump stations are operated according to this strategy. Completion of the Pump Station Improvement Project in 1999 has provided new pumps with slightly different capacities as previously described and a new control system, which makes it easier to implement the control strategy and monitor the results. The stated treatment plant capacities of 27 MGD for a peak hourly flow and 36 MGD for a peak instantaneous flow are consistent with the original design values for the treatment plant.

A summary of the concentrations and mass loading limitations as contained in the NPDES Permit for key parameters is presented in Table 6-4. The monthly average and the weekly average mass loading limitations are calculated based on the stated concentrations and a design average flow of 15 MGD. Operating the plant at its peak capacity during wet weather can result in weekly and, in extreme wet weather periods, monthly average flows that are greater than 15 MGD, which may result in exceeding the mass loading limitations.

6.3 REVIEW OF MONTHLY REPORTS OF OPERATIONS (MRO) DATA

Monthly Reports of Operations (MRO) from January 2000 to February 2002 were reviewed and summarized to document plant performance during wet weather conditions, to compare actual performance with typical design loading criteria and to determine if any process modifications are needed to maximize treatment at the WWTP during wet weather.

A summary of the monthly precipitation and the average influent flow to the wastewater treatment plant is presented in Table 6-5. The average monthly influent ranged from a low of 8.33 MGD in January 2002 to a high of 15.38 MGD in June 2000. The average dry weather flow was estimated to be 9.1 MGD and was calculated by averaging the lowest 3 months flow during the most recent 12-month period. Comparing the plants rated peak hourly flow 27 MGD to the estimated average dry weather flow of 9.1 MGD indicates there is an approximate 3 to 1 available peaking factor. At the plant rated instantaneous peak flow of 36 MGD, the approximate peaking factor is 4 to 1. These peaking factors are important in the evaluation of the plant's ability to treat the first flush of combined sewage that occurs at the start of a rain event. Based on experience with other municipal wastewater treatment plants these peaking factors are high enough that it is likely that the East Chicago Sanitary District Wastewater Treatment Plant is capturing and treating the first flush.

Table 6-4
NPDES Permit Effluent Limitations

Parameter	Quantity or Loading			Quality or Concentration			
	Monthly Average	Weekly Average	Units	Monthly Average	Weekly Average	Daily	Units
Flow	Report	Report	MGD	-----	----		
$CBOD_5$ Interim	888.7	1339.4	lbs/day	7.1	10.7		mg/l
$CBOD_5$ Final							
Summer	625.9	938.9	lbs/day	5.0	7.5		mg/l
Winter	888.7	1,339.4	lbs/day	7.1	10.7		mg/l
TSS	1064.0	1602.2	lbs/day	8.5	12.8		mg/l
pH (minimum)						6.0	s.u.
pH (maximum)						9.0	s.u.
Dissolved Oxygen							
Summer							
Interim (minimum)						6.0	mg/l
Final (minimum)						7.0	mg/l
Winter (minimum)						6.0	mg/l
Oil & Grease (Maximum)						10.0	mg/l
E. coli							
Summer	----	----	----	125		235	col/100ml
Winter	----	----	----	----	----		
Phosphorus				1.0			mg/l
Ammonia-Nitrogen							
Interim	187.8	751.1	lbs/day	1.5	6.0		mg/l
Final							
Summer	150.2	349.2	lbs/day	1.2	2.79		mg/l
Winter	185.3	431.9	lbs/day	1.48	3.45		mg/l

Table 6-5
Summary of Monthly Precipitation and WWTP Influent

Month	Year	Precipitation (Inches)	Average Influent Flow To WWTP (MGD)
January	2000	0.39	9.22
February	2000	0.74	9.77
March	2000	1.21	10.22
April	2000	4.48	11.61
May	2000	4.12	12.39
June	2000	6.64	15.38
July	2000	2.55	14.49
August	2000	2.58	12.77
September	2000	5.41	14.18
October	2000	Not Available	Not Available
November	2000	2.81	10.97
December	2000	0.02	9.61
January	2001	1.29	11.29
February	2001	2.89	14.70
March	2001	0.90	13.31
April	2001	Not Available	Not Available
May	2001	4.46	11.65
June	2001	3.68	13.83
July	2001	4.71	13.69
August	2001	2.99	13.40
September	2001	4.19	12.01
October	2001	6.84	13.77
November	2001	2.61	10.67
December	2001	1.06	9.88 *
January	2002	1.21	8.33 *
February	2002	1.07	9.05 *

* Indicates the lowest three months average flow during the most recent 12 months.

As influent pollutant loadings can also affect the plant's ability to treat peak wet weather flows, a comparison was made between the design loadings and the actual loadings as contained in the MRO's. This comparison as presented in Table 6-6 shows that in general the actual loadings are less than the design loadings. Hence, the plant's influent loadings do not currently appear to limit the ability to treat peak wet weather flows.

Table 6-6
Comparison of WWTP Design Loadings to Actual Loadings

Pollutant	Design Loadings		Actual Loadings (monthly average values)					
	Concentration mg/l	Mass Loading lb/day	Concentration – mg/l			Mass Loading – lb/day		
			Min	Avg	Max	Min	Avg	Max
TBOD5	117	14,600	66	93	141	6,138	8,678	12,748
CBOD5	----	----	35	54	78	4,001	5,048	6,633
TSS	106	13,261	85	123	169	8,571	11,998	17,537
Ammonia-N	----	----	5.56	7.50	10.57	508	715	1,027

More extensive summaries of the Monthly Reports of Operations that document the performance of the wastewater treatment processes are included in Appendix I. Review of the clarifier effluent data indicates that the activated sludge process has performed well, with no reported process upsets. The sand filters also performed well as evidenced by the consistent reduction in BOD and TSS. There were no reported excursions of the NPDES permit limitations for BOD, TSS or Ammonia-N. Review of the performance of the UV Disinfection System indicates that there were excursions of the NPDES permit limitations for fecal coliform and E. coli in 7 of the 12 months during the review period when disinfection was required. Although excursions occurred on both wet weather and dry weather days, the majority of the excursions occurred on days during wet weather conditions with higher than average flows.

6.4 EVALUATION OF WWTP WET WEATHER PEAK FLOW TREATMENT CAPABILITIES

Each wastewater treatment unit process was evaluated with regards to its ability to treat peak wet weather flows. This evaluation was based on review of the WWTP design parameters, review of the plant's operating performance as described in the Monthly Reports of Operations, discussions with plant operating personnel and experience at other wastewater treatment plants.

6.4.1 Screening

Climber screens are used to screen the influent wastewater. The concern during peak wet weather flows is that the screens become blinded with debris which restricts the flow through the bars and may cause wastewater to overtop the influent channel. This is a particular concern during the fall season when leaves enter the combined sewer system. In East Chicago all of the combined sewage is also screened at the influent pump stations (Alder Street and Magoun Avenue). The third influent pump station (Roxanna) only receives sanitary sewage and uses chopper pumps. Operating personnel indicate that it has been difficult to maintain the climber screens at the plant, which at times has resulted in the screens being out of service. As it is not feasible to manually clean bar screens over an extended period, having fully functional mechanically cleaned screens is critical to treating peak wet weather flows. If problems persist or get worse the bar screens should be scheduled for replacement.

6.4.2 Influent Flow Metering

A 48-inch parshall flume with a maximum rated capacity of 40 MGD is used to meter the WWTP influent. Even if flows were greater than 40 MGD the meter would not cause a significant restriction to the flow and thus is not considered to be a limiting factor in the plant's ability to treat peak wet weather flows. When reviewing the plant's influent flow data it should be noted that the plant's recycle flows, including sand filter backwash, scum thickening subnatent and belt press filtrate are discharged upstream of the influent flow meter and thus are also recorded as part of the plant's influent flow.

6.4.3 Grit Removal

Two vortex type grit chambers are used to remove grit from the influent wastewater. In general the concern with grit chambers during high flow conditions is that they can create a hydraulic bottleneck that restricts the flow and that the high flow can wash the grit out of the grit chamber and into downstream process units. With a vortex type grit chamber, higher flows increase the vortex action which should keep most of the grit in the chamber while causing only a slight increase to the headloss through the unit. Hence, the grit removal process should not be a limiting factor in the plant's ability to treat peak wet weather flows.

6.4.4 Oxidation Ditch Aeration Basin

Wastewater effluent from the grit tanks is mixed with return activated sludge from the secondary clarifiers and the resulting mixed liquor is aerated in the two oxidation ditches. The two oxidation ditch aeration basins are operated in parallel and were designed as a single stage nitrification process. One of the key factors in the oxidation ditches' ability to treat peak wet weather flows is the tank volume. In East Chicago each tank has a volume of 4.2 million gallons for a total volume of 8.4 million gallons. Review of the specific unit process parameters in Table 6-3 indicates this volume provides for sufficient detention time, low Food-to-Microorganism ratios and low organic loading rates as needed to maintain the activated sludge process during most operating conditions. Review of the monthly reports of operations indicates that the process has performed well. One of the most difficult times to maintain the nitrification process is during peak wet weather flows that occur during cold weather conditions. For example rainfall that occurs when there is snow cover on the ground results in very low influent wastewater temperatures. As microorganisms are less active at low temperatures it becomes difficult to treat higher flows. During these conditions the influent peak flows should be reduced as needed to maintain the nitrification process and to keep the effluent ammonia nitrogen concentration in compliance with the NPDES permit requirements.

6.4.5 Secondary Clarifiers

Mixed liquor from the oxidation ditches flows to a chamber that is used to split the flow among the five secondary clarifiers. The plant was originally designed with six clarifiers; however it was decided to construct only five clarifiers. Hence, a sixth clarifier could easily be added if needed in the future. The clarifiers are circular peripheral feed type. Mixed liquor enters the peripheral feed channel and flows into the clarifier through a serious of orifices that are located in the bottom of the channel. A vertical baffle wall directs the flow toward the bottom of the clarifier. The general flow pattern then continues to the center of the clarifier and then back to the effluent weirs along the periphery of the tank. Settled sludge is removed from the tank bottom and scum is removed from the water surface.

Operating personnel have observed that when plant flows exceed the design peak hourly flow of 27 MGD and approach the design peak instantaneous flow of 36 MGD the water level in the peripheral feed channel rises and at times has spilled over the wall that separates the feed channel with effluent channel. This results in mixed liquor, which is the combination of the peak influent flow and the return activated sludge flow, being discharged with the clarifier effluent. When this occurs, mixed liquor flows directly into the effluent channel and onto the sand filters where the high solids content quickly blinds the sand filters. This is the primary reason that peak wet weather flows can not be sustained above 27 MGD.

Another potential concern during peak flow conditions is the plugging of the orifices in the bottom of the peripheral feed channel. Operating personnel have reported than at times an unknown substance collects in these orifices. Since cleaning these orifices has become part of the normal maintenance routine, no further problems have been reported.

Review of design parameters in Table 6-3 indicates that the clarifiers are adequately sized for peak flow conditions. For example at the design peak hourly flow of 27 MGD the actual surface overflow rate of 688 gpd/ sq ft is less than the recommended values of 1,000 to 1,200 gpd/sq ft. Also the weir loading at 27 MGD is 18,300 gal/lin ft d, which is also less than the recommended value of 30,000 gal/lin ft d. Review of the clarifier effluent data as contained in the monthly reports of operation indicates that the clarifiers have performed well during average and peak flow conditions.

6.4.6 Phosphorus Removal

Phosphorus removal is accomplished by adding ferric sulfate to the mixed liquor entering the secondary clarifiers. An iron phosphorus precipitate is formed that settles in the secondary clarifiers. The current Total Phosphorus effluent limit of 1.0 mg/l should be achievable during dry and wet weather flow conditions.

6.4.7 Sand Filters

Clarifier effluent is conveyed to a junction chamber and then to six sand filters. The sand filters have a shallow bed of granular media and operate continuously. As the sand collects solids the water level above the filter rises and at a set point the backwash cycle is started. Backwash pumps and other equipment are mounted on a bridge that travels on rails and moves across the entire filter bed. A small portion of the overall filter is backwashed while the balance of the filter remains in service. The key factors for treating peak wet weather flows are the solids concentration of the wastewater that enters the filter, the hydraulic loading rate and the resulting headloss through the filter. High flows and high solids loadings increase the headloss and can result in wastewater backing up into the secondary clarifiers. If an abnormal situation such as mixed liquor spilling over in the clarifier effluent occurs, the filters quickly become blinded, causing increased headloss that backs up wastewater into the secondary clarifiers. Review of the design parameters in Table 6-3 indicates that at the design peak hourly flow of 27 MGD the actual hydraulic loading rate with one filter out of service is 3.8 gpm/sf, which is less than the recommended rate of 5 gpm/sf. Normally all six filters are in operation and the hydraulic loading rate decreases to 3.2 gpm/sf. Review of the filter effluent data as contained in the monthly reports of operation indicate that the sand filters have performed well during average and peak wet weather flow conditions.

6.4.8 UV Disinfection

Sand filter effluent is split between two ultraviolet disinfection chambers. Each chamber contains two banks of horizontally immersed, parallel to flow ultraviolet emitting lamps. Each set of banks was designed so that one bank would be on continuously and the second bank would turn on when the effluent flow is greater than 18 MGD. A weighted flap gate located at the discharge of each chamber controls the flow and depth of water in the disinfection chambers. The gate is designed to maintain a minimum water level during low flows to keep all of the UV lamps submersed in waster. During high flows the gate the gate opens wider to allow the higher flows to pass through the chambers. However, operating experience during peak wet weather flows indicates that at flows greater than 27 MGD the restriction caused by the weighted flap gate causes water to back up in the disinfection chambers and sand filters. To avoid overtopping any channel walls or tanks the gate is manually operated to allow the peak flow to pass through the system.

Review of the effluent data as reported in the MRO's indicate that on some occasions values for fecal coliform and E. coli have exceeded the NPDES criteria. The UV Disinfection system contains a total of 1,312 ultraviolet lamps. Replacement of the ultraviolet lamps was completed in 2004.

The key factor in the UV Disinfection system's ability to treat peak flows is the corresponding reduction in exposure time. As exposure time decreases, the UV dose received by the microorganisms may no longer be a lethal dose. Another factor that may affect treatment during peak wet weather flows is the possibility of increased solids which may shield microorganisms from the UV light. However, the final filters should keep effluent solids low enough so that the UV system remains effective.

The UV system in East Chicago was designed for a peak flow of 36 MGD, which is also the peak instantaneous flow capacity of the plant. However based on actual operating experience it appears that the weighted flap gates at the discharge of each disinfection chamber need to be modified or replaced to allow the peak flow of 36 MGD to pass through the system without manual operation of the gates. It is also noted that as disinfection is only required from April 1 through October 31, disinfection of peak wet weather flows is not a factor during the winter period.

6.4.9 Post Aeration

Plant effluent is aerated in the post aeration chambers that are equipped with fine bubble diffusers. Review of MRO data indicates the effluent dissolved oxygen routinely complies with the standard of 6 mg/l. The post aeration chambers are the location that has developed a fresh water sponge ecosystem. The continuing presence and growth of this sponge ecosystem is a further indication of the high quality of water that is discharged from the East Chicago Sanitary District wastewater treatment plant.

6.4.10 Effluent Flow Meter

WWTP effluent is measured using a cross sectional area/velocity type of meter. This meter should be capable of measuring peak wet weather flows without causing any restrictions that would limit the peak flow.

6.5 CSO LAGOON

The storm relief pumps located in the Magoun Avenue Pump Station, pump combined sewage into the CSO Lagoon, as described in Chapter 3. The CSO Lagoon has a water surface area of 14.4 acres, an average water depth of 30 feet and a volume of 142 million gallons.

The lagoon is operated as a flow through treatment facility with its discharge controlled by a rectangular sharp crested weir. The height of the water flowing over the weir is measured and used to calculate the discharge flow rate. The discharge weir arrangement which restricts the flow leaving the lagoon increases the detention time and the degree of treatment provided by the lagoon. The flow equalization provided by the lagoon results in lower discharge rates over a longer period of time as compared to the short duration high flow rates that are pumped into the lagoon from the Magoun Avenue Pump Station. Review of the peak daily discharge rates from the lagoon over a two year period indicated a peak rate of 4.8 mgd, which corresponds to a detention time of approximately 30 days.

6.6 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS FOR WWTP MAXIMIZATION

The East Chicago Wastewater Treatment Plant is a well operated facility that has demonstrated good performance during average and peak wet weather flow conditions. Based on review of the plant's loading criteria and the Monthly Reports of Operations from January 2000 to February 2002, 27 MGD should be considered the maximum sustainable wet weather flow capability with 36 MGD as the instantaneous peak flow capability. As several process capacity limits are 36 MGD, it is not practical to higher flows.

Treating peak wet weather flows requires that all of the equipment continue to be maintained so that it remains in service. Considering that the majority of the equipment has been in continuous operation for over 18 years (since 1988), some of the equipment will soon be considered to have served its useful life and plans should be implemented to replace equipment when needed. In other areas improvements to the existing system can improve the operation of the plant during peak wet weather flows as well as the overall performance. Specific items that should be considered for replacement and/or improvement are listed below:

- The replacement of the bar screens to reduce future maintenance costs and to ensure that peak wet weather flows can flow to the plant.
- A hydraulic analysis of the influent piping to the secondary clarifiers along with the peripheral feed channel should be conducted to determine if modifications are possible that can avoid overflows into the adjoining effluent channel during peak flow situations.
- The addition of a sixth secondary clarifier to improve performance during peak flow situations and to provide further redundancy in the event one of the existing clarifiers is taken out of service for maintenance.
- Modification or replacement of the ultraviolet disinfection system to improve the operation of the system and to avoid the need for manual operation of the discharge regulating gates during peak flow conditions.

CHAPTER 7

MINIMIZATION OF INDUSTRIAL DISCHARGES DURING WET WEATHER

The East Chicago Sanitary District works with its industrial users to minimize the amount of wastewater that is discharged during wet weather. Two specific examples are Buckeye Pipeline and Phillips Petroleum. These industries have ground water remediation projects that discharge water to the City's combined sewer system. When rainfall occurs the industries are notified and the pumps are turned off. Industry personnel then contact the East Chicago Sanitary District and do not restart the pumps until the sanitary district personnel indicate that the combined sewer overflows have stopped.

CHAPTER 8

DEVELOPMENT OF ALTERNATIVES

8.1 GENERAL

Development of alternatives includes considering available means of controlling CSO's. Numerous control methods are practiced for combined sewer overflows. Each method is initially screened for consideration in East Chicago, Indiana. Criteria to be used for further consideration include:

- Cost of technology compared with financial capability of the community,
- Ability of technology to reduce or eliminate adverse water quality impacts from CSO's,
- Ability of technology to relieve flooding conditions,
- Relative complexity of operation and maintenance of technology,
- Indirect impacts of technology on community, such as extent of construction activity, land use, general public perception, and energy and utility use, and
- Adaptability of technology to potential future regulatory changes.

The March 2004 LTCP developed alternatives to provide for treatment of various amounts of CSO as measured as a percent capture on an annual average basis. Based on revised guidance from IDEM the current strategy as used in this LTCP Update is to develop alternatives that provide for the capture and treatment of CSO's from certain design storm events as follows;

1. Retention, for transportation and treatment at the wastewater treatment plant, of combined sewage flows generated during storms up to the one-year, one-hour storm;
2. Primary treatment of combined sewage flows generated during storms up to the ten-year, one-hour storm (30 minutes detention or equivalent for settling, skimming, and disinfection) and
3. Treatment of combined sewage flows generated during storms in excess of the ten-year, one-hour storm to the extent possible with facilities designed for lesser flows.

IDEM also allows for alternative facilities to be considered on a case specific demonstration that will achieve equivalent or better treatment and control or that an alternative level of protection is adequate or necessary to achieve the water quality objectives. Demonstrations must consider receiving stream characteristics, discharge characteristic and cost/benefit information.

8.2 CSO RETENTION/PRIMARY TREATMENT and DISINFECTION FACILITIES

This alternative includes the end of pipe treatment facilities as per the IDEM Guidelines as described above. CSO Retention/Primary Treatment and Disinfection facilities will be evaluated for the CSO Discharges from the Michigan Avenue and Alder Street Pump Stations.

The lagoon treatment that is currently provided for the Magoun Avenue CSO is considered to be equivalent or better than primary treatment and thus will be retained. Alternatives for disinfection of the CSO Lagoon effluent will be considered.

The regulatory guidance describes the minimum level of CSO treatment as including primary treatment and disinfection. Primary treatment technology includes conventional primary settling tanks, ballasted flocculation, or vortex particle separators. For conventional primary treatment the same tanks that are used for retention of a one-year, one hour storm event would also be used for primary settling tanks and for chlorine contact tanks. The tanks would be equipped with overflow weirs and baffles along with facilities to flush the tanks after a storm event. For disinfection chlorine solution would be added to the influent channel and a dechlorinating chemical would be added to the effluent channel.

The use of ballasted flocculation, which is a high rate clarification process, was also considered as an option to conventional primary settling tanks. Ballasted flocculation is a physical-chemical treatment process that uses continuously recycled media and a variety of additives to improve the settling properties of suspended solids through improved floc bridging. Faster floc formation and decreased particle settling time allow clarification to occur up to ten times faster than with conventional clarification, allowing treatment of flows at a significantly higher rate than allowed by conventional primary treatment. Although, the tankage would be smaller when just considering the function of primary treatment, a ballasted flocculation facility would require separate tankage for retention of the one-year storm event, for disinfection and for temporary sludge storage. The overall tankage and support facilities would be greater than that required for conventional primary treatment. In addition, ballasted flocculation requires additional operation and maintenance as compared to conventional primary treatment. Hence ballasted flocculation was eliminated from further consideration.

Vortex particle separators, also known of swirl concentrators were also considered as an option to conventional primary clarification tanks. Generally the separator is a cylindrical device with no moving parts. Water enters the cylinder from the top and is rotated (or swirls) about a vertical axis. Solids are discharged or pumped out of the outlet located at the bottom of the device. Liquid, on the other hand, is sent back up the vessel prior to discharge. As compared to ballasted flocculation, the swirl concentrator is simpler with less equipment to operate and maintain, the swirl concentrator can also be used a chlorine contact tank. However, given that it also is a compact device; separate tankage would be needed to retain the flow from a one-year one-hour storm event. The use of separate tankage for retention and primary treatment with a swirl concentrator would result in a more complex facility as compared to conventional primary treatment. Hence the use of swirl concentrators was eliminated from further consideration.

While disinfection is needed to meet current water quality standards, stream uses and potential future changes to water quality standards need to be given consideration when weighing the need for disinfection equipment.

8.3 CSO STORAGE

8.3.1 In-System Storage

The March 2004 LTCP evaluated the potential for using various sections of the existing sewer system for temporary storage. In general storage within the existing system is potentially feasible for the storage of flows from the smaller storm events (i.e. 3 month frequency events) and where volume in available in large diameter pipes that have been sized to convey flows from the larger storm events. However runoff from the 1 year and especially the 10 year storm event as being considered in the current analysis produce volumes of stormwater that are greater than the volumes available in the existing piping system. Hence in system storage is not a feasible alternative.

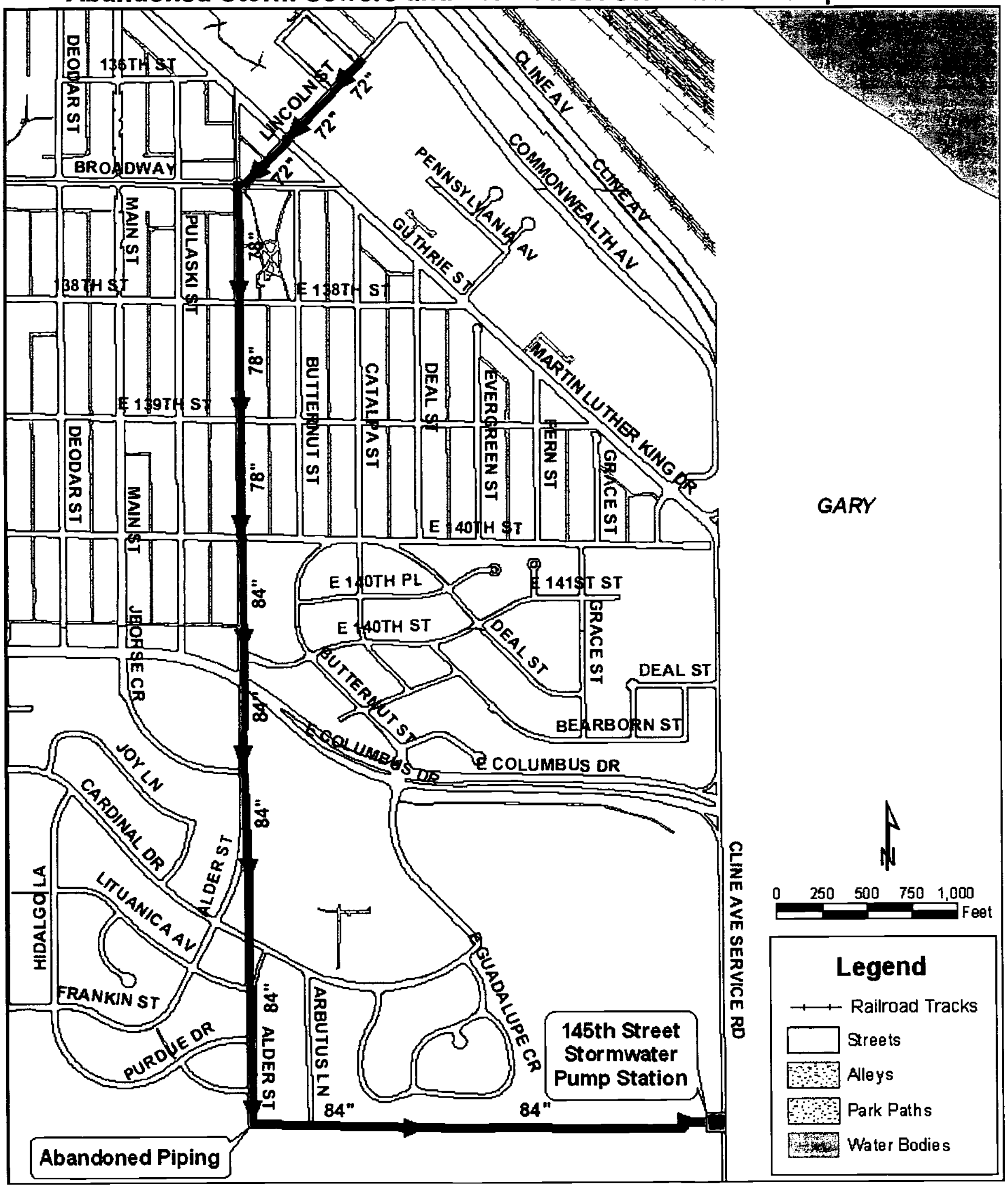
8.3.2 Abandoned Piping Storage

The March 2004 LTCP considered the use of what was believed to be an abandoned storm sewer for the temporary storage of combined sewer overflows. The storm sewer, as shown in Figure 8-1, ranges is size up to 84-inches in diameter and is tributary to the 145th Street Stormwater Pump Station.

To further evaluate the feasibility of reusing this storm sewer for CSO Storage, available sewer records were reviewed and the storm sewer was televised. This investigation revealed that the sewer is constructed of reinforced concrete pipe and no substantial structural defects were noted during the sewer televising. The investigation also revealed various connections to the storm sewer, which indicates that it is not totally abandoned.

The sewer televising also found a connection that allows water to flow from the storm sewer to the adjacent combined sewer that is tributary to the Alder Street Pump Station. This connection was found at the intersection of Alder Street and Jeorse Circle and consists of a pipe connected to the bottom of the storm sewer that allows water to drop vertically through the connecting pipe and then through a bend that directs the flow to the combined sewer that is in a parallel alignment in the Alder Street right of way. Sewer televising indicated that the connecting pipe was 6 to 8-inches in diameter and that there was a continuous flow of what appeared to be groundwater infiltration from the storm sewer into the combined sewer.

Figure 8-1
Abandoned Storm Sewers and 145th Street Stormwater Pump Station



The 145th Street Pump Station consists of a manually cleaned bar screen, a wet well with spaces for six vertically mounted pumps, and a pump control panel mounted in a weather proof enclosure. There are no buildings on the pump station site. Currently there are two pumps installed and four empty spaces. Visual observation indicated the need to upgrade the pump station for continued reliable service.

In summary, based on investigation of the existing 145th Street Pump Station and tributary storm sewers, it is not feasible to use these storm sewers for temporary CSO Storage. Alternatives to be evaluated in Chapter 9 for the future use and operation of the storm sewers and pump station include the no action alternative and an alternative to rehabilitate the pump station and plug the connection between the storm sewer and the combined sewer.

8.3.3 Deep Tunnel Storage

Deep tunnel storage has been used in a variety of large Cities for CSO control. On a large scale where local geology is suitable, this proves to be a cost-effective way to control CSO. However, the relative volume of CSO in East Chicago is miniscule when compared with the typical capacity of deep tunnel construction. This technology is considered prohibitively expensive for East Chicago, and will not be evaluated any further.

8.3.4 Lagoon Storage

An option to providing primary treatment and disinfection of combined sewage flows generated during storm up to the ten-year one-hour storm is to provide facilities that can temporarily store the combined sewage from this design event. The use of a lagoon for storage would involve a fill and draw operation, rather than a flow through treatment operation, for flows generated during a ten-year one hour storm event or less. For storms greater than the ten-year one-hour event, combined sewage would flow through the lagoon and be discharged. As this is an option to the CSO retention and treatment facilities in IDEM's guidelines it would need to reviewed and approved by IDEM as part of the Long Term Control Plan process.

This option will be explored at the two sites previously discussed for end-of-pipe treatment, including the discharge from the Alder Street Pump Station and the discharge from the Michigan Avenue Pump Station. Evaluation will include the relative costs, as well as the relative impacts, as compared to flow-through treatment at these locations. Other facilities, such as screening the influent and other ancillary equipment will be evaluated, as well.

8.3.5 Tank Storage

An option of providing CSO storage for the ten-year one- hour storm in a tank will also be considered. Tank storage would function with the same fill and draw operation as described above for lagoon storage. It would also include an overflow for events larger than the ten-year one-hour event. The difference is that because the tank can be constructed with a deeper water depth and uses vertical walls; the area required for tank storage is significantly less than that required for lagoon storage. Also the use of flushing mechanisms with a tank eliminates the need for screening the influent and reduces the manual labor required to clean the facility after a storm event.

8.4 CONVEYANCE TO THE WWTP and CSO LAGOON

Conveyance to the wastewater treatment plant for treatment can include a variety of transportation and treatment methods. The existing collection system includes a series of pumping stations that currently transport flows to the treatment plant. The existing treatment facility includes a tertiary mechanical wastewater treatment plant, and a parallel CSO Lagoon capable of providing the equivalent of secondary treatment to combined sewage flows.

A variety of options exist for improving conveyance to the plant for treatment. Conveyance options can be developed in logical increments to match existing unit capacities.

The first increment would include using existing pumping and forcemain capacities to transport more flow through the treatment lagoon at the plant site. Currently, flow to the mechanical portion of the plant during wet weather matches the existing treatment capacity. The CSO Lagoon, however, may be able to accommodate additional flows during storm events. Evaluation of this would include determining the impacts of pumping more flow from the Alder Street Pump Station to the plant, and a corresponding amount of additional flow from the Magoun Pump Station to the lagoon, rather than the mechanical portion of the plant. Another option to evaluate is a connection between the existing forcemain from the Alder Street Pump Station to the WWTP and the CSO Lagoon. This would allow the sanitary pumps in the Alder Street Pump Station to pump to the CSO Lagoon in addition to the WWTP. A related improvement would be to use this same section of forcemain after the CSO event subsides to return combined from the CSO Lagoon to the headworks of the WWTP. This would require a new pump station at the CSO Lagoon and the appropriate control valves on the forcemain.

The next increment of increasing conveyance to the plant would be that associated with increasing the treatment plant capacity with the addition of a new final clarifier. The previous plant expansion left space on the plant site for an additional clarifier, if needed in the future. The incremental increase in capacity associated with this addition should be evaluated to determine if additional pumping and forcemain facilities are needed, as well as to characterize the improvement in system performance.

Larger increments in increased transport and treatment capacity would require significant increases in treatment capacity at the plant, including aeration and tertiary filtration. The costs to construct, own and operate these additional facilities are considered excessive, and are not considered to be feasible for additional consideration.

8.5 SEWER SEPARATION

Constructing new storm and/or sanitary sewers as needed to provide a storm sewer system that is separate from the sanitary sewer system was considered in the March 2004 LTCP as the ultimate alternative to eliminate CSO's. The prior analysis indicated that separation of the entire system is cost prohibitive and is no longer being considered as a viable alternative. However because of the unique configuration of sewer system tributary to the Michigan Avenue CSO Pump Station, sewer separation in the area tributary to the pump station will be considered as an alternative to capturing or treating combined sewer overflows that are currently discharged from the Michigan Avenue CSO Pump Station.

The sewer system tributary to the Michigan Ave CSO Pump Station is unique in that during dry weather sanitary sewage flows to the Alder Street Pump Station and no sanitary sewage is tributary to the Michigan Ave Pump Station. During dry weather, groundwater that infiltrates into the sewer system collects in the wet well and two submersible dewatering pumps are used to pump the flow back into the sewer system that is tributary to the Alder Street Pump Station. During wet weather, flows overtop weirs in the combined sewer system that is tributary to the Alder St Pump Station and combined sewage drops into the CSO Interceptor sewers that are tributary to the Michigan Ave CSO Pump Station. Sewer separation is possible in this area by constructing storm sewers that connect to the CSO Interceptor, eliminating the overflow weirs and either keeping the existing combined sewers as separate sanitary sewers or if necessary constructing new sanitary sewers. Reuse of the CSO Interceptor eliminates the need to construct large diameter storm sewer piping and thus reduces the cost of sewer separation. Also since the first flush of separate storm water flows from urban areas can be contaminated, the dewatering pumps would continue to be used such that the most contaminated portion of the storm runoff would be returned to the Alder Street Pump Station and included in the CSO storage/treatment facilities to be constructed at that location.

CHAPTER 9

ALTERNATIVE EVALUATION

9.1 GENERAL

This Chapter evaluates the CSO reduction and treatment strategies that warranted further investigation as discussed in Chapter 8. The facilities needed to implement these strategies at the three CSO outfalls and the wastewater treatment plant are presented along with estimates of the probable project cost and estimates of the additional annual operation and maintenance costs associated with each item. The individual items are grouped into overall system alternatives as part of the comparison and selection of alternatives presented in Chapter 10.

9.2 MAGOUN AVENUE PUMP STATION and TRIBUTARY SEWER SYSTEM

In general the western portion of East Chicago that is south of the Lake George Canal, west of the Indiana Harbor Ship Canal, and north of the Grand Calumet River, is served by a combined sewer system that is tributary to the Magoun Avenue Pump Station. During dry weather, flow is pumped via a 24-inch forcemain directly to the wastewater treatment plant. During wet weather, flow continues to be pumped to the wastewater treatment plant and as the water level rises in the wet well, CSO pumps are started, that pump via a 42-inch forcemain to the CSO Lagoon. The CSO Lagoon provides treatment that is equal to or better than primary treatment. Options for disinfecting the CSO Lagoon effluent are described in the following Section 9.5 Treatment Plant and CSO Lagoon Improvements.

An option to reduce the discharge of untreated combined sewage and to increase the amount of combined sewage that is treated by the CSO Lagoon, involves modifying the operational strategy for pumps at the Magoun Avenue Pump Station and the Alder Street Pump Station.

In the revised strategy, once the plant capacity is met, via the combined pumping from the Magoun Avenue Pump Station, the Alder Street Pump Station and the Roxanna Pump Station, pumping from the Magoun Avenue Pump Station would be reduced and possibly suspended. As the flow to the plant from the Magoun Avenue Pump Station is reduced the flow to the plant from the Alder Street Pump Station would be increased. As the storm event subsides and the flow to the plant falls below its maximum capacity the pumping strategy would revert to normal operation. This revised strategy would reduce the amount of untreated combined sewage discharged from the Alder Street Pump Station and would increase the amount of combined sewage that is pumped from the Magoun Avenue Pump Station to the CSO Lagoon. As treatment is provided by the CSO Lagoon, the net effect would be to reduce the amount of untreated combined sewage that is discharged.

To take full advantage of this strategy, the capacity of the dry weather sanitary pumps at the Alder Street Pump Station would need to be increased from the current firm capacity of 20 mgd to 25 mgd. During wet weather, the plants capacity of 27 mgd would consist of 25 mgd from the Alder Street Pump Station and 2 mgd from the Roxanna Pump Station.

The Probable Project Cost for increasing the capacity of the dry weather sanitary pumps at the Alder Street Pump Station is presented in Section 9.4, which describes other projects associated with the Alder Street Pump Station and its tributary sewer system.

9.3 MICHIGAN AVENUE CSO PUMP STATION and TRIBUTARY SEWER SYSTEM

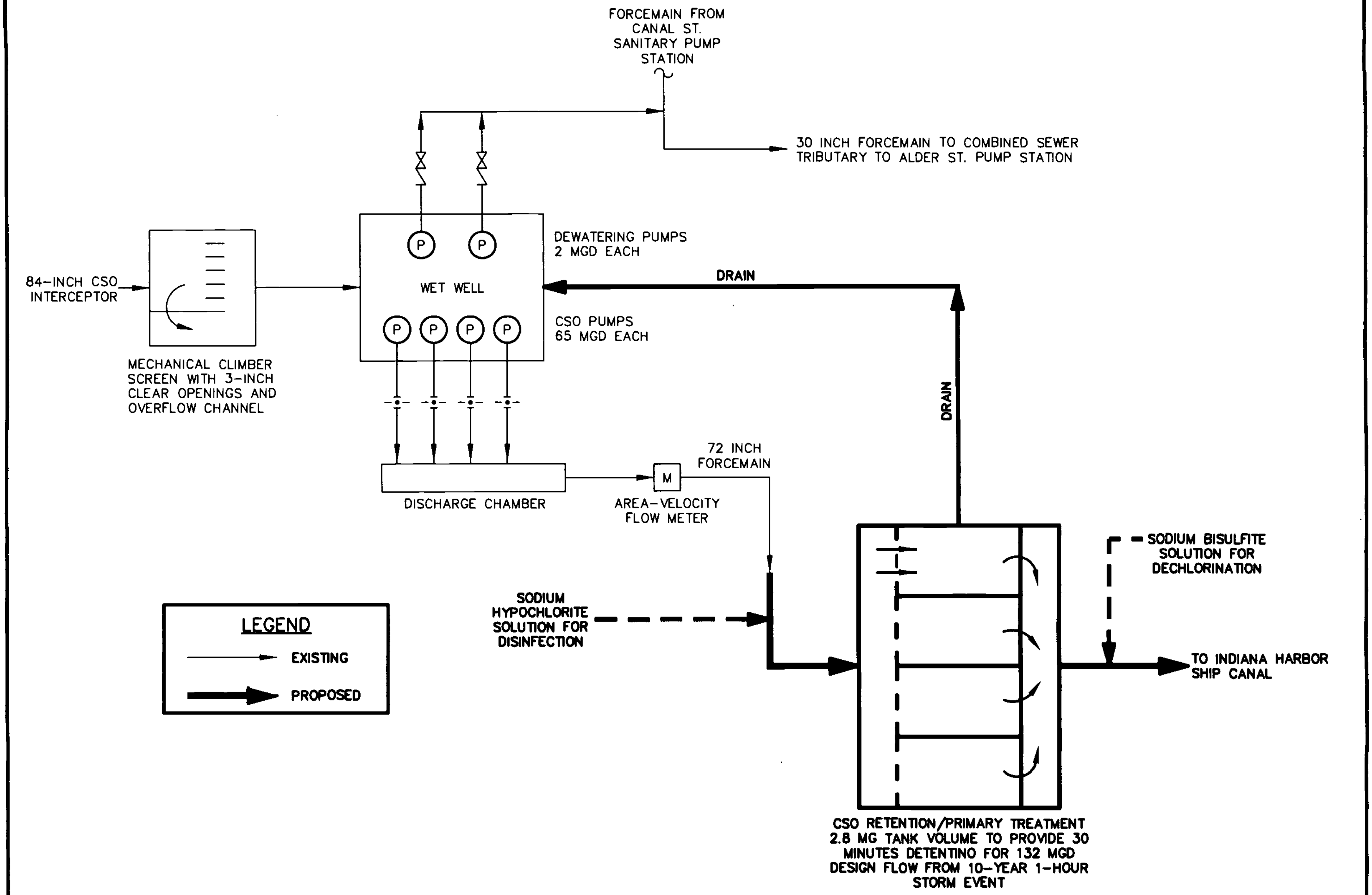
The CSO reduction and treatment strategies that warranted further investigation for the Michigan Avenue CSO Pump Station and Tributary Sewer System included providing various types of treatment facilities at the discharge of the pump station or the separation of the sewer system such that the Michigan Avenue Pump Station becomes a stormwater pump station. These alternatives are further described in the following sections.

9.3.1 CSO Retention/Primary Treatment

This alternative consists of the CSO Retention/ Primary Treatment and Disinfection facilities as per the IDEM guidance to provide:

1. Retention, for transportation and treatment at the wastewater treatment plant, of combined sewage flows generated during storms up to the one-year, one-hour storm;
2. Primary treatment of combined sewage flows generated during storms up to the ten-year, one-hour storm (30 minutes detention or equivalent for settling, skimming, and disinfection) and
3. Treatment of combined sewage flows generated during storms in excess of the ten-year, one-hour storm to the extent possible with facilities designed for lesser flows.

The analysis of the combined sewer system tributary to the Michigan Avenue sewer system as presented in Chapter 4 determined that the one-year one-hour storm event, which consists of 1.14 inches of rain, produces 1.7 million gallons of combined sewage that would need to be retained. A peak CSO flow rate of 132 MGD results from the ten-year one-hour storm, which consists of 1.98 inches of rain. The volume needed to provide 30 minutes of detention for a flow rate of 132 mgd is 2.8 million gallons. As this volume is greater than the volume needed for retention of the one-year one-hour event, tankage that would be constructed to provide for primary treatment of the ten-year one-hour event would also be used to retain flows from the one-year one-hour event.
A process flow diagram of the existing pump station and the proposed CSO Retention/Primary Treatment and Disinfection Facilities is presented in Figure 9-1. The existing pump station would remain as is and the discharge forcemain would be intercepted and directed to the new retention and treatment facilities.



HNTB

HNTB Corporation
The HNTB Companies
Engineers Architects Planners

FIGURE 9-1
PROCESS FLOW DIAGRAM FOR CSO RETENTION/PRIMARY TREATMENT FACILITIES AT THE MICHIGAN AVE. CSO PUMP STATION
APRIL 2006

For smaller storm events, combined sewage would partially fill the primary treatment tankage but would not overflow to the Indiana Harbor Ship Canal. After the rain stops, the tanks would drain by gravity back to the pump station wet well and the existing Dewatering Pumps would pump the combined sewage to the wastewater treatment plant via the combined sewer system that is tributary to the Alder Street Pump Station. For events larger than the ten-year one hour storm event the combined sewage would fill the primary treatment tanks and overflow into the Indian Harbor Ship Canal. When the storm event ends, the combined sewage in the primary treatment tanks would drain by gravity back to the pump station wet well and be pumped back to the wastewater treatment tank.

After the tank is drained, sludge and other materials will remain on the tank floor and must be flushed to the tank drain. To assist in this flushing and to reduce the manual labor required it is recommended that the tanks be equipped with automated flushing mechanisms, such as tipping buckets.

For initial planning purposes, disinfection by the addition of a liquid sodium hypochlorite solution to the pump station forcemain is included in this alternative. Also included is dechlorination by the addition of a sodium bisulfate solution to the discharge piping of the facility.

Currently the City does not own property in the vicinity of the existing pump station or forcemain that could be used for a CSO Retention/ Primary Treatment Facility. A site of approximately 4 acres would have to be acquired to make this a feasible alternative. If it is not feasible to obtain such a site then the sewer separation alternative should be considered.

This alternative was estimated to have a Probable Project Cost of $10,810,000 and result in additional annual operation and maintenance costs of $113,000, as presented in Appendix III Table III-1.

9.3.2 CSO Lagoon Storage

This alternative consists of providing an earthen lagoon to retain the combined sewage flow that is generated during a ten-year one-hour storm event. The analysis of the sewer system as presented in Chapter 4 indicated that a storage volume of 6.4 million gallons would be needed to retain the design storm event. Similar to the above described CSO Retention/Primary Treatment Facility, the existing pump station would remain and the forcemain would be intercepted and directed to the CSO Lagoon. The use of a lagoon for storage would involve a fill and draw operation, rather than a flow through treatment operation, for flows generated during a ten-year one hour storm event or less. For storms greater than the ten-year one-hour event, combined sewage would flow through the lagoon and be discharged. As this is an option to the CSO retention and treatment facilities in IDEM's guidelines it would need to reviewed and approved by IDEM as part of the Long Term Control Plan review process.

Significant constraints in the construction of a lagoon are the soil types and high water table that is found throughout East Chicago. The Recommended Standards for Wastewater Facilities states that a minimum separation of 4 feet between the bottom of the pond and the maximum ground water elevation should be maintained. In East Chicago only a shallow pond or lagoon could be built and still comply with the 4 feet of separation. In addition the bottom of the lagoon would need to be sealed to minimize seepage loss into the existing ground. For planning purposes it is assumed that the depth of water in the lagoon would be limited to five feet and that a one foot thick clay liner would be required.

The CSO Lagoon would fill during rain events and then be drained back to the Michigan Avenue Pump Station wet well, where the dewatering pumps would be used to pump the combined sewage to the wastewater treatment plant via the Alder Street Pump Station. To reduce the manual effort required to clean the lagoon after each rain event, fine screening of the lagoon influent has been included in this alternative. In addition, a watermain would surround the lagoon with hydrants at regular intervals to assist in hosing down the lagoon. As it is not practical to hose down the clay liner directly, a synthetic liner is also recommended in addition to the clay liner.

The construction of a CSO Lagoon requires a site of approximately 10 acres located in the vicinity of the existing pump station or forcemain. As discussed above, the City does not currently own such a site and the potential availability of a suitable site, is a key factor in the feasibility of any type of CSO retention or treatment facility for the Michigan Avenue Pump Station.

This alternative was estimated to have a Probable Project Cost of $11,730,000 and result in additional annual operation and maintenance costs of $135,000, as presented in Appendix III Table III-2.

9.3.3 CSO Tank Storage

The CSO Tank Storage alternative uses concrete tanks instead of earthen lagoons for the 6.4 million gallon storage that is needed to retain the ten-year one-hour storm event. For planning purposes it is assumed that a storage tank would be constructed in a similar fashion as the CSO Retention/Primary Treatment Facility. The tankage would have a side water depth of 10 feet and be equipped with automated flushing mechanisms. The storage tanks would overflow to the Indiana Harbor Ship Canal during events larger than the ten-year one-hour storm, but would not be equipped with disinfection facilities.

A site of approximately 6 acres would be required for a CSO Storage Tank.

The CSO Tank Storage alternative was estimated to have a Probable Project Cost of $14,280,000 and result in addition annual operation and maintenance costs of $65,000, as presented in Appendix III Table III-3.

9.3.4 CSO Weir Structure Rehabilitation

The combined sewer system contains weir structures that divert flow in response to sewer surcharging caused by higher flows during rain events. These weir structures were inspected and found to be in need of various repairs. In the Michigan Avenue basin, repairs are needed to stop dry weather flows from entering the CSO Interceptor that is tributary to the Michigan Avenue Pump Station. If the sewers in the Michigan Avenue basin are separated, the weirs would no longer be needed and would be removed.

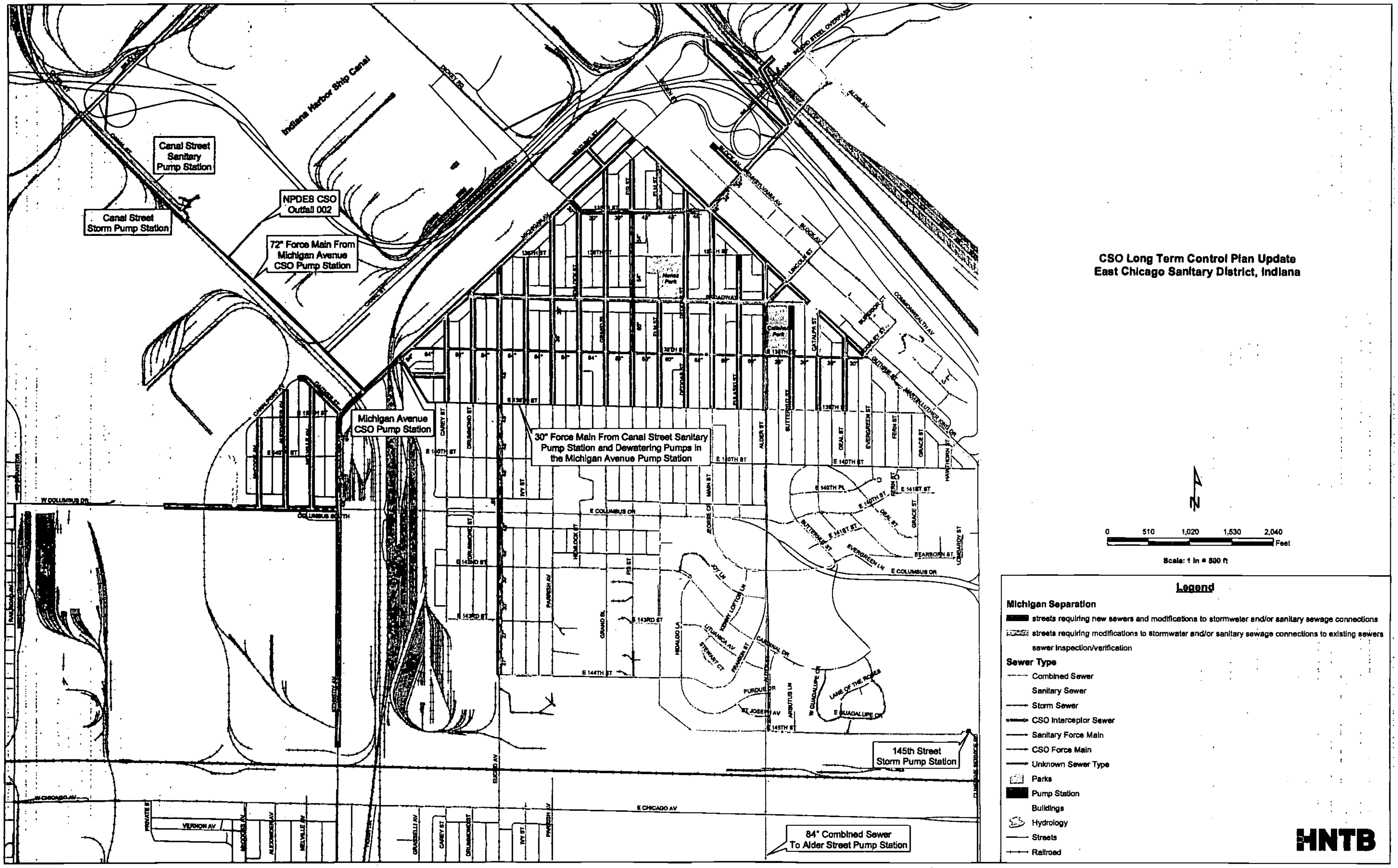
Repairs to the CSO Weir Structures are listed in Appendix III Table III-4 along with the estimated Probable Project Cost of $170,000.

9.3.5 Sewer Separation

This alternative consists of separating the sewers in the area tributary to the Michigan Avenue Pump Station as shown in Figure 9-2. During dry weather sanitary sewage is collected in the combined sewers that flow by gravity to the Alder Street Pump Station, where it is pumped to the wastewater treatment plant. During wet weather the stormwater that enters the combined sewer system causes water levels to rise and the combined flow of stormwater and sewage overtops weirs and drops into the CSO Interceptor Sewers that are tributary to the Michigan Avenue Pump Station. To separate the sewers in this area the CSO Interceptor sewers would remain in place and serve as the backbone of a separate storm sewer system. Stormwater would be directed to the CSO Interceptors and flow to the Michigan Avenue Pump Station and sanitary sewage would continue to flow by gravity to the Alder Street Pump Station.

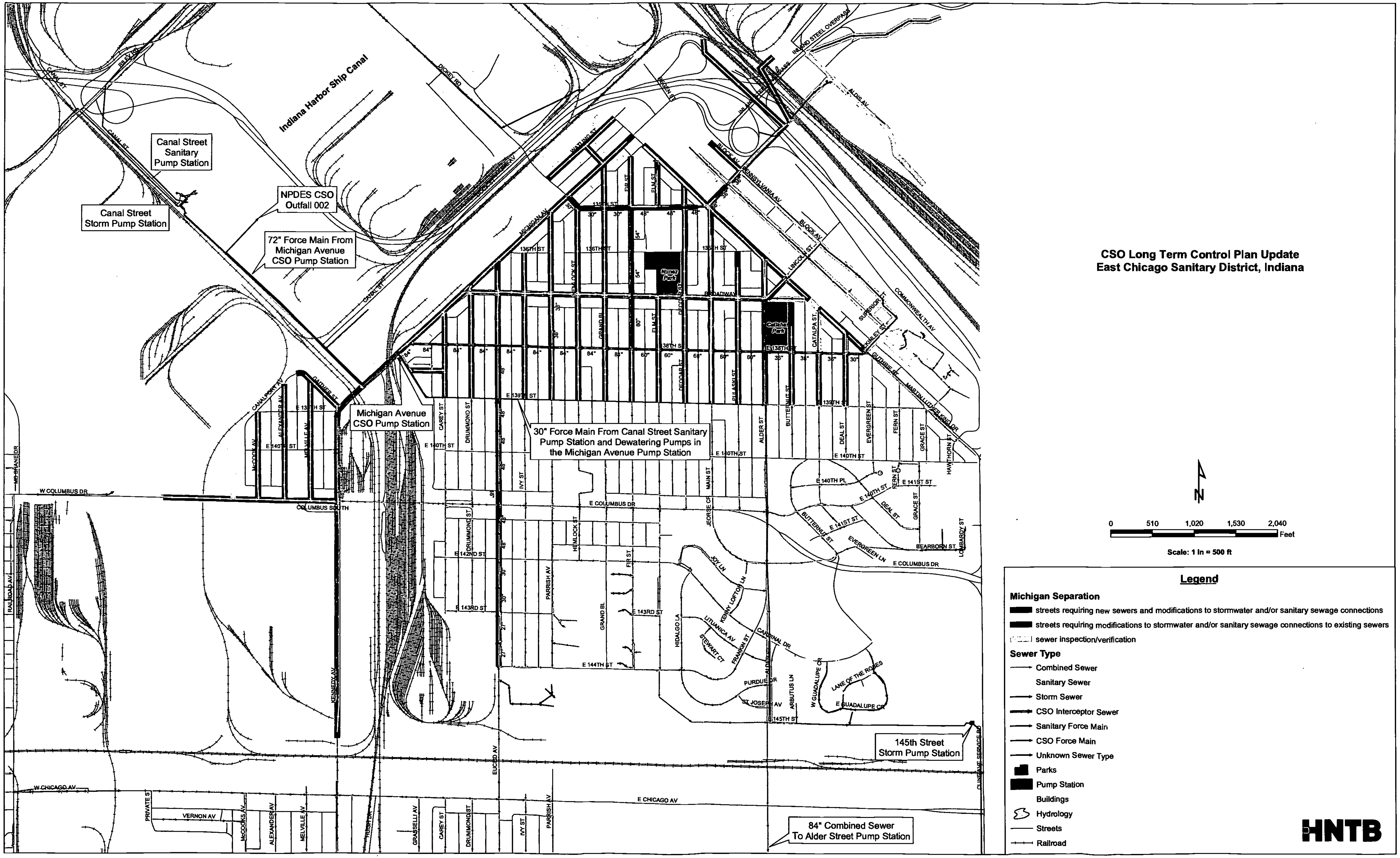
To further evaluate this alternative three categories of sewer construction were identified. The first category consists of streets that have a single combined sewer that collects both sanitary sewage and stormwater. This represents the majority of the streets in the area. For these streets it would be necessary to construct a new sewer and the existing combined sewer could either be reused as is, rehabilitated or replaced. The specific use of the new and existing sewers can vary and will need to be evaluated on a case by case basis during the preliminary engineering phase of the project. For example, the north-south streets between 139th Street and 138th Street generally contain a combined sewer that flows in a northerly direction and has an overflow weir into the CSO Interceptor Sewer at 138th Street. In this instance a new sanitary sewer could be constructed that flows north but with no connection to the CSO Interceptor and the existing combined sewer could remain for use as a storm sewer by simply removing the weir trough in the manhole connection to the CSO Interceptor. However in the north-south streets between 138th and Broadway (137th), the combined sewer flows to the north away from the CSO Interceptor on 138th Street and thus could not be used as a storm sewer.

Figure 9-2: Sewer Separation for Area Tributary to the Michigan Avenue Pump Station



9-7

Figure 9-2: Sewer Separation for Area Tributary to the Michigan Avenue Pump Station



9-7

The second category consists of streets that currently have two sewers within their right of way and could be separated by directing all of the stormwater to one sewer and all of the sanitary sewage to the other sewer. An example of this situation is Euclid Avenue between 144th Street and 138th Street. In this location there are combined sewers and a CSO Interceptor Sewer that flows to the north and is tributary to the CSO Interceptor located on 138th Street that is tributary to the Michigan Avenue Pump Station. To separate these sewers, all of the stormwater catch basins would need to be connected directly to the existing CSO Interceptor, the overflow connections between the combined sewer and the CSO Interceptor would be plugged and the existing combined sewer would remain as a sanitary sewer.

The third category consists of streets that already have separate storm and sanitary sewers. At these locations no sewer construction is required. However it is recommended that the sewers on these streets be televised to verify that none of the storm or sanitary connection were inadvertently made to the wrong sewer and to determine if any maintenance work is needed in these sewer sections.

A summary of the lengths of streets with sewers in each of the three categories is presented in Table 9-1. The lengths in each category were used to calculate the Probable Project Cost for this alternative of $10,360,000 as presented in Appendix III Table III- 5.

Table 9-1
Summary of Sewer Separation for Area Tributary to the Michigan Avenue Pump Station

CATEGORY	LEGNTH (ft)	% of TOTAL
Streets Requiring New Sewer Construction	42,400	53 %
Streets With Two Existing Sewer Requiring Modifications for Separation	23,300	29 %
Streets with Existing Separated Sewers to be Inspected and Verified	15,000	18 %
Total Length	80,700	100 %

Sewer separation is not feasible to complete all at once. It is proposed to be scheduled along with other street and utility improvements and completed over a period of years and in conjunction with redevelopment in the area. In the interim, as more sewers are separated, the CSO discharge from the Michigan Avenue Pump Station will contain less sewage and the water quality will improve.

The physical condition of the existing combined sewer system is a critical factor in the decision to separate the sewers as compared to providing some type of CSO retention or treatment facility at the discharge of the Michigan Avenue Pump Station. If the existing sewers are in poor condition and need to be rehabilitated or replaced, they could be rehabilitated or replaced as part of the sewer separation effort. If it is decided to construct a CSO retention or treatment facility, the sewers must still be rehabilitated or replaced as needed to maintain the sewer system.

The majority of the combined sewers in this area are part of the original combined sewer system that was installed for East Chicago in the early 1900's. According to sewer maintenance personnel the combined sewers in this area are functional and have not required maintenance that is significantly greater than other sewers in East Chicago. Specific information on the structural condition of the piping and the condition of the pipe joints is not available at this time.

9.4 ALDER STREET PUMP STATION and TRIBUTARY SEWER SYSTEM

The CSO reduction and treatment strategies that warranted further investigation for the Alder Street Pump Station and Tributary Sewer System included projects in three categories. The first category involves replacing the sanitary pumps with larger capacity pumps to pump more flow to the wastewater treatment plant. The second category involves various types of CSO treatment facilities to be installed at the discharge of the existing CSO Pumps. The third category involves projects that are a result of the investigations that were made of the piping that is tributary to the 145^{th} Street Pump Station and was being considered for reuse as CSO storage.

9.4.1 Sanitary Pump Alternatives

The Alder Street Pumping Station is equipped with two types of pumps. The first type is a dry weather sanitary pump, used to transport flow via forcemain directly to the wastewater treatment plant. The second type is a wet weather pump, used to pump combined sewer flows exceeding the plant capacity into the Grand Calumet River. The sanitary pumps are vertical; non-clog design with extended line shafts. Each pump has a nominal capacity of 10 MGD and is equipped with a 125-hp motor and Variable Frequency Drive.

As part of the overall evaluation of alternatives, two options were identified for increasing the capacity of the sanitary pumps. The first option involves a revised strategy for pumping to the plant and the CSO Lagoon during wet weather, such that more flow is pumped to the plant from the Alder Street Pump Station and the flow from the Magoun Avenue Pump Station is primarily directed to the CSO Lagoon. This alternative, as described in Section 9.2, assumes there are no changes in the capacity of the wastewater treatment plant. In this first option the firm capacity of the sanitary pumps is increased from the existing 20 mgd to 25 mgd. For initial planning purposes it is assumed that the existing pumps are replaced with new pumps and the estimated Probable Project Cost was estimated to be $540,000 as presented in Appendix III Table III-9. If this option is selected the existing pumps, motors and electrical system should be studied in further detail to determine if the existing system can be modified to increase the pumps capacity instead of being totally replaced.

The second option involves revising the pumping strategy for the Alder Street Pump Station and the Magoun Avenue Pump Station as described for the first option and includes increasing the wastewater treatment plants wet weather flow capacity with the addition of a sixth final clarifier, as described in Section 9.5. In this option the firm capacity of the sanitary pumps is increased from the existing 20 mgd to 30 mgd. The estimated Probable Project Cost for this option is $630,000, as presented in Appendix III Table III-10.

9.4.2 CSO Retention/Primary Treatment and Disinfection

This alternative consists of the CSO Retention/ Primary Treatment and Disinfection facilities as per the IDEM guidance to provide:

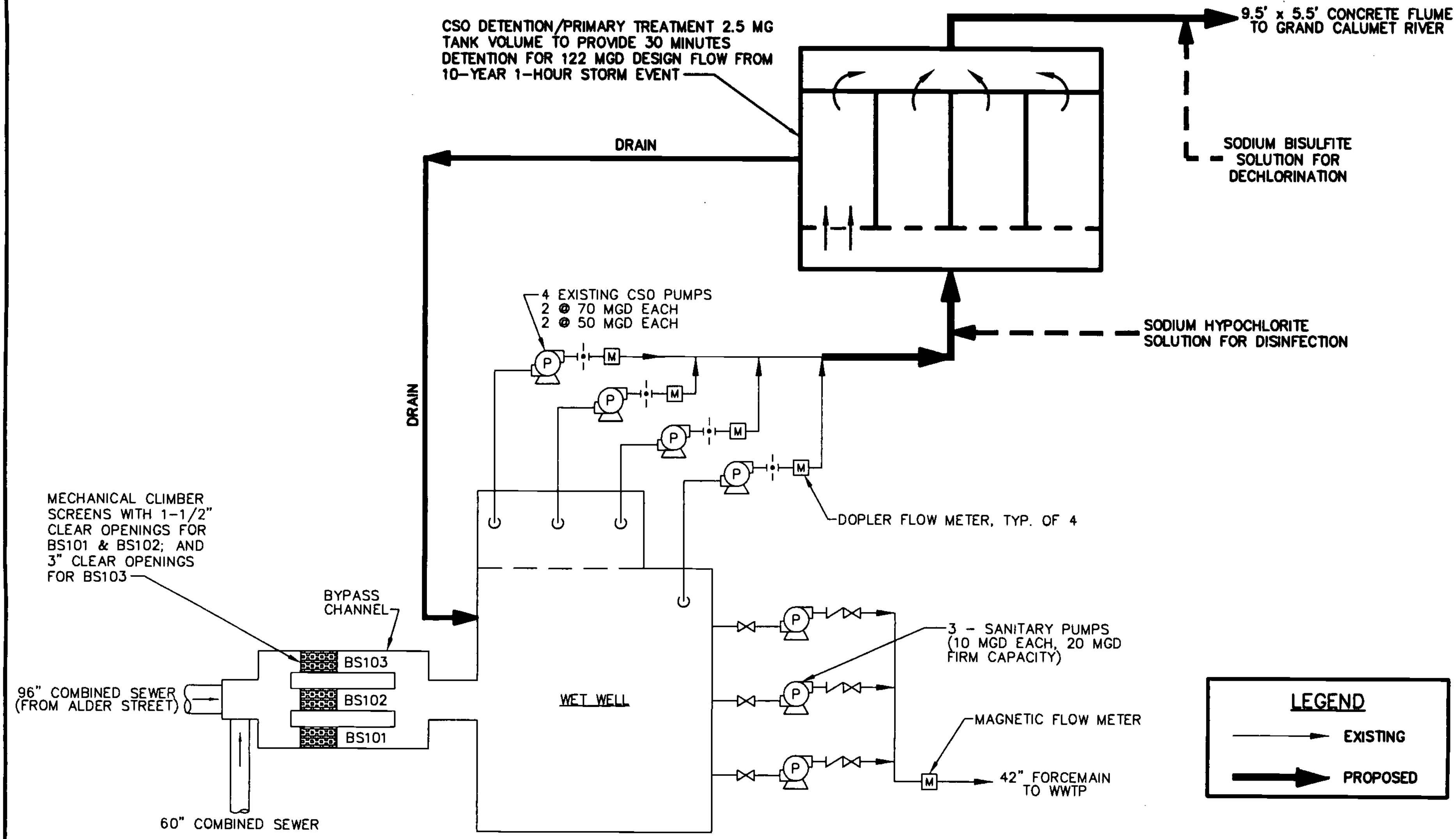
1. Retention, for transportation and treatment at the wastewater treatment plant, of combined sewage flows generated during storms up to the one-year, one-hour storm;
2. Primary treatment of combined sewage flows generated during storms up to the ten-year, one-hour storm (30 minutes detention or equivalent for settling, skimming, and disinfection) and
3. Treatment of combined sewage flows generated during storms in excess of the ten-year, one-hour storm to the extent possible with facilities designed for lesser flows.

The analysis of the combined sewer system tributary to the Alder Street Pump Station as presented in Chapter 4 determined that the one-year one hour storm event consists of 1.14 1inches of rain that produces 2.3 million gallons of combined sewage that would need to be retained. In addition primary treatment must be provided for a CSO flow of 122 MGD that results from a ten-year one hour storm consisting of 1.98 inches of rain. The volume needed to provide 30 minutes of detention for a flow of 122 mgd is 2.5 million gallons. As this volume is greater than the volume needed for retention of the one-year one-hour event, tankage constructed to provide for primary treatment of the ten-year one-hour event would also be used to retain flows from the one-year one-hour event.

For this alternative the sanitary pumps at the Alder Street Pump Station would continue to pump to the wastewater treatment plant and the forcemain on the discharge of the CSO pumps would be intercepted and directed to the new retention and treatment facilities. A process flow diagram of the existing pump station and the proposed CSO Retention/Primary Treatment and Disinfection Facilities is presented in Figure 9-3.

The CSO Retention/Primary Treatment and Disinfection Facility for the Alder Street Pump Station would operate and have similar features as described above for the Michigan Avenue Pump Station.

A CSO Retention/Primary Treatment and Disinfection Facility for the Alder Street Pump Station would require a site of approximately 4 acres. Although no specific site has been selected for this facility there are open land areas adjacent to the pump station and forcemain and it is assumed that property could be acquired as needed.



HNTB

HNTB Corporation
The HNTB Companies
Engineers Architects Planners

FIGURE 9-3
PROCESS FLOW DIAGRAM FOR CSO RETENTION/PRIMARY TREATMENT FACILITIES AT THE ALDER ST. PUMP STATION
APRIL 2006

The CSO Retention/Primary Treatment and Disinfection Facility was estimated to have a Probable Project Cost of $9,810,000 and result in addition annual operation and maintenance costs of $112,000, as presented in Appendix III Table III-6.

9.4.3 CSO Lagoon Storage

This alternative consists of providing an earthen lagoon to retain 7.5 million gallons of combined sewage that is generated during a ten-year one-hour storm event. The forcemain on the discharge of the CSO pumps at the Alder Street Pump Station would be redirected to the CSO Lagoon and the sanitary pumps would continue to pump to the wastewater treatment plant.

The CSO Lagoon for the Alder Street Pump Station would operate and have similar features as described above for the CSO Lagoon alternative for the Michigan Avenue Pump Station. The construction of a CSO Lagoon requires a site of approximately 11 acres located in the vicinity of the existing pump station or forcemain.

The CSO Lagoon was estimated to have a Probable Project Cost of $11,320,000 and result in addition annual operation and maintenance costs of $135,000, as presented in Appendix III Table III-7.

9.4.4 CSO Tank Storage

The CSO Tank Storage alternative uses concrete tanks instead of earthen lagoons for the 7.5 million gallon storage that is needed to retain the ten-year one-hour storm event. For planning purposes it is assumed that a storage tank would be constructed in a similar fashion as the CSO Retention/Primary Treatment Facility. The tankage would have a side water depth of 10 feet and be equipped with automated flushing mechanisms. The tanks would overflow to the Grand Calumet River during events larger than the ten-year one-hour storm, but would not be equipped with disinfection facilities. A site of approximately 7 acres would be required for a CSO Storage Tank.

The CSO Tank Storage alternative was estimated to have a Probable Project Cost of $15,640,000 and result in addition annual operation and maintenance costs of $66,000, as presented in Appendix III Table III-8.

9.4.5 145th Street Pump Station and Tributary Storm Sewers

Alternatives for the 145th Street Stormwater Pump Station and its tributary sewer system include a No Action alternative and an alternative to rehabilitate the pump station and plug the connection between the storm sewer and the combined sewer.

With the No Action alternative, stormwater that enters the sewers tributary to the 145th Street Pump Station will first flow by gravity to the adjacent combined sewer that is tributary to the

Alder Street Pump Station. As the capacity of the connection to the combined sewer is exceeded, water levels in the storm sewer system will rise and when the level reaches the set point elevations in the wet well of the 145th Street Pump Station, pump(s) will start and stormwater will be pumped through a forcemain to the Grand Calumet River. With the No Action alternative, the first flush of stormwater, which typically contains dirt and other materials washed from the surface, is discharged to the combined sewer system and to the extent that treatment is provided for the combined sewage, this practice can result in improved water quality. The overall net water quality benefit depends on the extent of treatment provided for the combined sewage and any combined sewer overflows.

The other alternative is to plug the connection from the storm sewer to the combined sewer, which would leave the 145th Street Pump Station as the only stormwater discharge. For this to be a reliable operation it would be necessary to rehabilitate the pump station.

This alternative would eliminate the flow of ground water infiltration from this section of storm sewers into the combined sewers, which would reduce the flow to the WWTP during dry weather conditions. During wet weather conditions all of the stormwater would be pumped to the river from the 145th Street Pump Station and the amount of combined sewage that is tributary to the Alder Street Pump Station would be reduced.

A preliminary estimate of the probable project cost to rehabilitate the 145th Street Stormwater Pump Station and to plug the connection between the storm sewer and the combined sewer is $1,440,000, as included in Appendix III Table III-1.

9.5 TREATMENT PLANT AND CSO LAGOON IMPROVEMENTS

The development of alternatives as presented in Chapter 8 resulted in various improvements to the wastewater treatment plant and the CSO Lagoon that warranted further evaluation. These improvements involve upgrading existing equipment as needed to maintain the existing plants capacity, improvement to increase the plants wet weather flow treatment capacity, improvements to direct more flow to the CSO Lagoon and improvements to disinfect the effluent from the CSO Lagoon.

9.5.1 Influent Mechanical Bar Screen Replacement

Wastewater treatment plant influent is screened using two mechanically cleaned climber type screens. The screens are critical pieces of equipment that must be operational for the plant to treat dry weather flows and especially peak wet weather flows. Given the maintenance history and the age of this equipment it is recommended that the screens be replaced.

The existing screens are housed in a building and it is expected that the existing screens can be removed and new screens installed in the same building. The estimated Probable Project Cost to replace the existing screen was estimated to be $1,110,000, as presented in Appendix III Table III-12.

9.5.2 Final Clarifier Addition

The existing wastewater treatment plant was constructed with five 100 ft diameter final clarifiers with space provided for a sixth clarifier. The addition of a sixth final clarifier is expected to increase the wet weather flow capacity of the secondary portion of the treatment plant by 20%. This represents an increase of approximately 5 MGD on a peak hourly basis, which would increase the plant's peak hourly flow capacity from 27 mgd to 32 mgd.

The addition of a final clarifier was estimated to have a Probable Project Cost of $2,160,000 and result in additional annual operational and maintenance costs of $20,000, as presented in Appendix III Table III-13.

The combined pumping capacity from the three influent pump stations (Alder Street, Magoun and Roxanna Pump Stations) as presented in Table 6-1 is 33 mgd. As this is greater than the peak hourly flow capacity of 32 mgd, the existing pumps could be used with this alternative. However to take advantage of the revised wet weather flow pumping strategy, as described above for the Alder Street and Magoun Avenue Pump Stations, the capacity of the sanitary pumps at the Alder Street Pump Station would have to be increased from 20 mgd to 30 mgd.

9.5.3 UV Equipment Replacement with Diversion Chamber and Yard Piping

This alternative involves improvements that will allow the discharge of the CSO Lagoon to be disinfected using ultraviolet disinfection equipment.

The large surface area of the CSO Lagoon (approximately 14.4 acres) provides for significant flow equalization and thus it is critical to determine the lagoon effluent flow and not base the UV design on the influent flow to the lagoon. The CSO Lagoon effluent flow rate has been tabulated for a two year period spanning 2000, 2001 and 2002. The data shows that the peak daily discharge rate from the lagoon was 4.8 MGD during this period. In addition, alternatives that are being evaluated to increase flow to the lagoon will also increase the lagoon effluent flow. For planning purposes it is estimated that if these alternatives are selected the lagoon effluent peak hourly flow would increase to approximately 8 MGD.

The CSO Lagoon effluent could be disinfected by combining the lagoon effluent with the wastewater treatment plant effluent and using the same UV equipment to disinfect both flow streams or new UV equipment could be provided to disinfect the lagoon effluent separate from the wastewater treatment plant effluent.

There are advantages and disadvantages to each approach. The decision also depends on the selection of other alternatives that involve increasing flow to the plant and increasing flow to the lagoon.

To have a common UV disinfection facility for both the plant effluent and the CSO Lagoon effluent, the existing UV channels would be used and the lagoon effluent would be routed to the influent chamber for the UV channels. One concern with this option is that the CSO Lagoon effluent is likely to have a higher concentration of suspended solids as compared to the wastewater treatment plant effluent, which is treated by sand filtration prior to disinfection. Solids absorb UV radiation and shields embedded bacteria, and thus can affect the ability of the system to comply with effluent criteria for fecal coliform and E. coli. To accommodate higher solids content, the design of a UV system can be modified to include such items as higher intensity UV bulbs, bulb arrangements that are more compact or otherwise allow for better distribution of the UV radiation, and longer detention times. For planning purposes it is assumed that if the same UV equipment is to be used for both plant effluent and CSO Lagoon effluent the UV equipment will need to be replaced. If this alternative is selected it is recommended that the decision to replace the existing system be revaluated at that time. Items to consider are the expected useful life of the existing UV system (the bulbs in the existing UV system were recently replaced), expected energy savings resulting from installing a new more energy efficient UV system, and the water quality of the lagoon effluent.

The required UV system hydraulic capacity will depend on the alternatives that are selected that would increase the wastewater treatment plant flow and the flow to the CSO Lagoon. The instantaneous peak flow capacity of the existing UV equipment is reportedly 36 MGD. With the existing plant operation, the peak hourly flow currently sent through the UV equipment is limited to 27 MGD, which leaves 9 MGD of capacity available to disinfect the CSO Lagoon effluent. From a hydraulic standpoint this would be sufficient to handle alternatives consisting of the existing plant flow (27 mgd) plus the existing flow from the lagoon (5 MGD); or flow from the existing plant (27 MGD) plus flow from alternatives that increase the lagoon effluent flow (8 MGD); or the increased plant flow that results from the addition of a sixth final clarifier (32 MGD). If alternatives are selected that increase the lagoon effluent flow (8 MGD) and the sixth final clarifier is added to the wastewater treatment plant (32 MGD), a UV hydraulic capacity of 40 MGD would be required.

The estimated Probable Project Cost to install yard piping and valves to direct the CSO Lagoon effluent to the existing UV system influent chamber and to replace the existing UV disinfection equipment is $1,650,000 for a capacity of 36 MGD and $1,700,000 for a capacity of 40 MGD, as presented in Appendix III Tables III-14 and III-15 respectively.

The second option is to provide a separate UV disinfection system for the CSO Lagoon effluent. Keeping the lagoon effluent separate from the plant effluent avoids the potential for the lagoon effluent from interfering with the disinfection of the plant effluent. In addition as there are separate regulatory standards for the two effluent flow streams and the standards for the plant effluent are stricter than for the lagoon effluent, keeping the flow streams separated avoids the potential for permit violations resulting from combining the two effluents. A disadvantage of a separate UV system for CSO Lagoon effluent is that it would only be used in response to rain events during the summer (April to November) and would sit idle for most of the year. For planning purposes it is recommended that alternatives be based on providing a common UV system for both plant effluent and CSO Lagoon effluent as described above. However, if the alternative of disinfecting the CSO Lagoon effluent if selected, it is recommended that the CSO Lagoon effluent be tested as described above and if it appears that there is a high potential for compromising the disinfection of the combined flow then separate disinfection facilities should be reconsidered at that time.

9.5.4 CSO Lagoon Forcemain and Pump Station

This alternative includes improvements that would allow combined sewage from the Alder Street Pump Station to flow directly to the CSO Lagoon and improvement to allow combined sewage that is in the lagoon to be pumped back to the WWTP headworks.

Directing flow from the Alder Street Pump Station directly to the lagoon requires constructing a section of forcemain between the existing Alder Street Pump Station forcemain and the CSO Lagoon. This forcemain would be constructed along with the necessary motorized valves and controls to allow the Sanitary Pumps at the Alder Street Pump Station to pump to both the wastewater treatment plant and the CSO Lagoon. The recommended design flow of 10 mgd would require a 24-inch forcemain. Constructing this forcemain would increase the wet weather flow that is treated and would allow for greater operational flexibility in deciding how flows from the Magoun Ave Pump Station and the Alder St Pump Station are split between the WWTP and the CSO Lagoon. The estimated Probable Project Cost for the forcemain along with the motorized valves and controls is $370,000 as presented in Appendix III Table III-16.

Anther option is to construct a pump station that would take combined sewage from the CSO Lagoon and pump it back through the same section of forcemain described above to the plant headworks. This would be done after flows from the storm event have subsided and would result more flow receiving tertiary treatment and will greatly reduce the discharge from the CSO Lagoon. The estimate Probable Project Cost for the CSO Lagoon Pump Station is $1,010,000, as presented in Appendix III Table III-17.

CHAPTER 10

ALTERNATIVE COMPARISON

10.1 BASIS FOR ALTERNATIVE DEVELOPMENT AND COMPARISON

The manor in which alternatives are developed and compared for selection is the key difference in this LTCP Update as compared to the March 2004 LTCP. The previously completed LTCP was based on the presumption approach along with a knee of the curve analysis that focused on capturing a high percentage of the wet weather flow as measured on an annual average basis.

The previously used presumption approach required that one of the following criteria be met:

1. No more than an average of four overflow events per year, provided that the permitting authority may allow up to two additional overflow events per year.
2. The elimination or the capture for treatment of no less than 85% by volume of the combined sewage collected in the Combined Sewer System during precipitation events on a system-wide annual average basis.
3. The elimination or removal of no less than the mass of the pollutants identified as causing water quality impairment through the sewer system characterization, monitoring, and modeling effort for the volumes that would be eliminated or captured for treatment under criterion 2 above.

The minimum level of treatment applicable to above criteria 1 and 2 is defined in EPA's CSO Control Policy as follows:

- Primary clarification: removal of floatable and settleable solids may be achieved by any combination of treatment technologies or methods that are shown to be equivalent to primary clarification of 30% removal;
- Solids and floatable disposal; and
- Disinfection of effluent, if necessary, to meet water quality standards, protect designated uses and protect human health, including removal of harmful disinfection chemical residuals, where necessary.

Based on revised guidance from IDEM the current strategy as used in this LTCP Update is to develop alternatives that provide for the capture and treatment of CSO's from certain design storm events as follows;

1. Retention, for transportation and treatment at the wastewater treatment plant, of combined sewage flows generated during storms up to the one-year, one-hour storm (1.14 inches of rain);
2. Primary treatment of combined sewage flows generated during storms up to the ten-year, one-hour storm (1.98 inches of rain) (30 minutes detention or equivalent for settling, skimming, and disinfection) and

Treatment of combined sewage flows generated during storms in excess of the ten-year, one-hour storm to the extent possible with facilities designed for lesser flows.

IDEM also allows for alternative facilities to be considered on a case specific demonstration that will achieve equivalent or better treatment and control or that an alternative level of protection is adequate or necessary to achieve the water quality objectives. Demonstrations must consider receiving stream characteristics, discharge characteristic and cost/benefit information.

Alternatives can also be developed based on the procedures associated with a Use Attainability Analysis as explained at the end of this chapter.

10.2 REVIEW OF MARCH 2004 LTCP ALTERNATIVES

A summary of alternatives as included in the March 2004 LTCP is presented in Table 10-1. The previously selected alternative was Alternative C-3, which included various projects in the collection system and the wastewater treatment plant that collectively were calculated to capture 98% of the wet weather flow for treatment; and was estimated to have a Total Probable Project Cost of $7.2 million.

The projects that were included in Alternative C-3 are summarized below:

Collection System Projects

- In-System Storage using Michigan Avenue CSO Pump Station Influent Interceptor
- In-System Storage at Alder Street Pump Station using abandoned piping tributary to the 145th Street Pump Station
- Increase Flow to CSO Lagoon (Replace dry weather sanitary pumps at the Alder Street Pump Station @ 30 MGD capacity and modify operation of the Magoun and Alder Street Pump Stations)
- Rehabilitation of CSO Weir Structures

Wastewater Treatment Plant Projects

- Replace Influent Mechanical Bar Screen
- CSO Lagoon Effluent Disinfection
- Final Clarifier Addition
- CSO Lagoon Forcemain
- CSO Lagoon Pump Station

Table 10-1
March 2004 LTCP
Summary of Alternatives

PROJECTS	PROJECT COST (Million $)	ALTERNATIVE						
		A	B	C-1	C-2	C-3	D	E
COLLECTION SYSTEM PROJECTS								
No Action	$0.0	X						
In-System Storage using Michigan Av. Pump Station Influent Interceptor (Construct Weir Structure at Fir Street and modify pump controls)	$0.02		X	X	X	X		
In-System Storage at Alder St. Pump Station using abandoned piping	$0.75		X	X	X	X		
Increase Flow to CSO Lagoon (Replace dry weather pumps at the Alder St. Pump Station @25 MGD capacity and modify operation of the Magoun and Alder St. Pump Stations)	$0.5		X	X				
Increase Flow to CSO Lagoon (Replace dry weather pumps at the Alder St. Pump Station @30 MGD capacity and modify operation of the Magoun and Alder St. Pump Stations)	$0.6				X	X		
Rehabilitation of CSO Weir Structures	$0.2		X	X	X	X	X	
Remote Storage/Treatment Facilities @ Michigan Av. Pump Station.	$4.2						X	
Remote Storage/Treatment Facilities @ Alder St. Pump Station.	$3.1						X	
Complete Sewer Separation	$70.0							X
WWTP PROJECTS								
No Action	$0.0	X						
Replace Influent Mechanical Bar Screens	$1.1			X	X	X	X	
Disinfect CSO Lagoon Effluent (UV equipment replacement @ 36 MGD capacity w/ necessary diversion chamber and yard piping)	$1.5			X			X	
Disinfect CSO Lagoon Effluent (UV equipment replacement @ 40 MGD capacity w/ necessary diversion chamber and yard piping)	$1.5				X	X		
Final Clarifier Addition	$1.7				X	X		
CSO Lagoon Forcemain	$0.4					X		
CSO Lagoon Pump Station	$0.9					X		
ALTERNATIVE TOTAL PROJECT COST (Million $)		$0.0	$1.5	$4.1	$5.9	$7.2	$10.1	$70.0
% of ANNUAL AVERAGE WET WEATHER FLOW CAPTURED FOR TREATMENT		90%	94%	94%	98%	98%	99%	100%

10.3 LTCP UPDATE DESIGN STORM EVENT ALTERNATIVES

Alternatives to comply with IDEM's revised guidance for the capture and treatment of combined sewer overflows from certain design storm events as needed for the Michigan

Avenue CSO Pump Station and tributary sewer system, the Alder Street Pump Station, the 145th Street Pump Station, the Wastewater Treatment Plant and the CSO Lagoon were presented as individual alternatives in Chapter 9 Alternative Evaluation. Review of the individual alternatives indicates that alternative selections for the Michigan Avenue CSO Pump Station and tributary sewer system, and the CSO Retention/Treatment facilities at the Alder Street Pump Station can be made independently and the choices combined with balance of the improvements to arrive at an overall system alternative.

10.3.1 Michigan Avenue CSO Pump Station and Tributary Sewer System

A summary of the alternatives as developed in Chapter 9 for the Michigan Avenue CSO Pump Station & Tributary Sewer System is presented in Table 10-2.

Alternative A consists of constructing CSO Retention/Primary Treatment and Disinfection Facilities to comply with the IDEM criteria as defined for the one-year one-hour and ten-year one-hour storm events. It is anticipated that the facilities would consist of rectangular concrete tanks that are equipped with overflow weirs and flushing devices. Disinfection would be accomplished with liquid sodium hypochlorite and dechlorination with sodium bisulfate solution. The facility would require a site of approximately 4 acres.

This alternative also includes the rehabilitation of the CSO Weir Structures that are needed to stop the flow of sanitary sewage during dry weather to the CSO Interceptor Sewers that are tributary to the Michigan Avenue CSO Pump Station.

Alternative A was estimated to have a Total Probable Project Cost of $10,980,000 along with an additional probable annual operation and maintenance cost of $113,000.

Table 10-2
Summary of Alternatives for Michigan Avenue CSO Pump Station & Tributary Sewer System

PROJECTS	TABLE NUMBER	PROBABLE PROJECT COST	PROBABLE ADDITIONAL ANNUAL O&M	ALTERNATIVE			
		($)	($)	A	B-1	B-2	C
CSO Retention/Primary Treatment and Disinfection for 10-Year 1-Hour Event (132 MGD) (2.8 MG)	III-1	$ 10,810,000	$ 113,000	X			
Lagoon Storage for 10-Year 1-Hour Event (6.4 MG)	III-2	$ 11,730,000	$ 135,000		X		
Tank Storage for 10-Year 1-Hour Event (6.4 MG)	III-3	$ 14,280,000	$ 65,000			X	
Rehabilitation of CSO Weir Structures	III-4	$ 170,000	$ -	X	X	X	
Sewer Separation	III-5	$ 10,360,000	$ -				X
Total Probable Project Cost				**$ 10,980,000**	**$ 11,900,000**	**$ 14,450,000**	**$ 10,360,000**
Probable Additional Annual O&M				**$ 113,000**	**$ 135,000**	**$ 65,000**	**$ -**
Present Worth O&M				**$ 1,410,000**	**$ 1,680,000**	**$ 810,000**	**$ -**
Total Present Worth				**$ 12,390,000**	**$ 13,580,000**	**$ 15,260,000**	**$ 10,360,000**

20 years at 5% = 12.4622
12.4622

Alternative B consists of two variations that provide storage for a ten-year one-hour event along with the rehabilitation of the CSO Weir Structures. Alternative B-1 uses a lagoon and Alternative B-2 uses a tank to provide 6.4 million gallons of storage as required to retain the ten-year one event.

Alternative B-1 Lagoon Storage has an estimated Total Probable Project Cost of $11,900,000 along with probable additional annual operation and maintenance costs of $135,000.

Alternative B-2 Tank Storage has an estimated Total Probable Project Cost of $14,450,000 along with probable additional annual operation and maintenance costs of $65,000.

Alternative C consists of separating the sewer system that is tributary to the Michigan Avenue Pump Station, such that only stormwater and no sanitary sewage is tributary to the pump station. Sewer separation would consist of retaining the CSO Interceptor Sewers as the backbone of a separate storm sewer system that would be tributary to the Michigan Avenue Pump Station along with the construction of new sanitary or storm sewers as required to direct the storm water to the existing CSO Interceptor Sewer and for the sanitary sewage to continue to flow to the Alder Street Pump Station.

The estimated Total Probable Project Cost to separate the sewers tributary to the Michigan Avenue Pump Station is $10,360,000. No additional operational or maintenance costs are expected as a result of the sewer separation project.

Alternative C Sewer Separation has the lowest Total Probable Project Cost along with no additional operation and maintenance costs. Also in the course of constructing the necessary sewers to separate the system it is expected that the existing combined sewers, which are approximately 100 years old, would be inspected and any needed rehabilitation or replacement would occur as part of the sewer separation. If a CSO Retention/Treatment alternative is selected, sewer repairs or replacement would be done on as needed basis and the costs would be in addition to the costs presented for the CSO Retention/Treatment Alternatives.

In regards to the constructability of the alternatives, the CSO retention/treatment alternatives would need to be constructed at one time, whereas the sewers can be separated a few blocks at a time over a number of years. Sewer separation would be scheduled along with other improvements, such a street reconstruction and water distribution system improvements.

At such point in the future when the sewer separation is complete, the discharge of the Michigan Avenue Pump Station would stop being regulated as a combined sewer overflow and would start being regulated as a stormwater discharge under the City's Stormwater NPDES Permit. Although the full extent of the future stormwater discharge requirements are still being determined, it is expected that any requirements for a separate stormwater discharge will be less stringent and easer to comply with, as compared to combined sewer overflow requirements.

10.3.2 Alder Street Pump Station CSO Retention/Treatment Projects

A summary of the alternatives as developed in Chapter 9 for the retention and treatment of CSO's discharged from the Alder Street Pump Station are presented in Table 10-3. These alternatives are similar to the retention and treatment alternatives that were analyzed for the Michigan Avenue CSO Pump Station.

Alternative A consists of constructing CSO Retention/Primary Treatment and Disinfection facilities to comply with the IDEM guidance as defined for the one-year one-hour and ten-year one-hour storm events. It is anticipated that the facilities would consist of rectangular concrete tanks that are equipped with overflow weirs and flushing devices. Disinfection would be accomplished with liquid sodium hypochlorite and dechlorination with sodium bisulfate solution. The facility would require a site of approximately 4 acres.

The CSO Retention/Primary Treatment and Disinfection Facility was estimate to have a Total Probable Project Cost of $9,840,000, along with an additional probable annual operation and maintenance cost of $112,000.

Alternative B consists of two variations that provide a storage volume of 7.5 million gallons that is needed to retain flows from a ten-year one-hour event. Alternative B-1 uses an earthen lagoon and Alternative B-2 uses concrete tanks. These alternatives were developed to provide options that do not require disinfection. Combined sewage from a ten-year one-hour event would be retained and drained back to the Alder Street Pump Station to be pumped to the wastewater treatment plant. For storm events greater than the ten-year one-hour event, the tanks or lagoons would include an overflow weir that would allow flows to be discharged to the Grand Calumet River. This is an alternate approach that is considered to provide an equivalent level of treatment as compared to projects described in Alternative A, which follows IDEM's guidance directly.

The estimated Total Probable Project Cost for Alternative B-1 is $11,320,000. Annual operation and maintenance costs for the Lagoon Storage Facility were estimated to be $135,000.

The estimated Total Probable Project Cost for Alternative B-2 is $15,640,000. Annual operation and maintenance costs for the Tank Storage Facility were estimated to be $66,000.

Table 10-3
Summary of Alternatives for Alder Street CSO Pump Station and Tributary Sewer System

PROJECTS	TABLE NUMBER	PROBABLE PROJECT COST	PROBABLE ADDITIONAL ANNUAL O&M	ALTERNATIVES		
		($)	($)	A	B-1	B-2
CSO Retention/Primary Treatment and Disinfection for 10-Year 1-Hour Event (122 MGD) (2.5 MG)	III-6	$9,810,000	$112,000	X		
Lagoon Storage for 10-Year 1-Hour Event (7.5 MG, assumes use of existing Sanitary Pumps w/ 20 MGD capacity)	III-7	$11,320,000	$135,000		X	
Tank Storage for 10-Year 1-Hour Event (7.5 MG, assumes use of existing Sanitary Pumps w/ 20 MGD capacity)	III-8	$15,640,000	$66,000			X
Total Probable Project Cost				**$9,810,000**	**$11,320,000**	**$15,640,000**
Probable Additional Annual O&M				**$112,000**	**$135,000**	**$66,000**
Present Worth O&M				**$1,400,000**	**$1,680,000**	**$820,000**
Total Present Worth				**$11,210,000**	**$13,000,000**	**$16,460,000**

20 years at 5% = 12.4622
12.4622

One of the concerns for each of the alternatives is disinfection of the remaining CSO. At the wastewater treatment plant UV disinfection was specially chosen to eliminate the safety concerns associated with the storage and handling of chlorine gas or other chorine compounds along with the elimination of the need for a dechlorination chemical. For the CSO facilities evaluated in this report, the infrequent use and the high flow rates make the use of UV impractical. Alternatives B-1 and B-2 involve constructing facilities with a larger retention volume to eliminate the need for disinfection. Based on current information, Alternative A – CSO Retention/Primary Treatment and Disinfection is the lowest cost alternative.

10.3.3 145TH Street Stormwater Pump Station

Alternatives for the 145th Street Stormwater Pump Station and tributary storm sewer system include the No Action alternative and an alternative to rehabilitate the pump station and plug the connection between the storm sewer system and the combined sewer system. For the No Action alternative there are no project costs. Operation and maintenance costs for the existing pump station is considered part of the operation and maintenance of the existing facilities and not an additional cost resulting from the addition of a new facility. The Total Probable Project Costs for rehabilitating the pump station and plugging the storm sewer connection to the combined sewer is $1,440,000. In regards to operation and maintenance costs, with no stormwater discharge to the combined sewers, the use of the 145th Street Pump Station would increase. However any additional operation and maintenance cost would be offset by the reduced pumping and treatment costs associated with removing this stormwater from the combined sewer system.

10.3.4 Overall System Alternatives

Alternatives for the overall system are based on combining the alternatives that are selected for the Michigan Avenue CSO Pump Station and Tributary Sewer System; and for the Alder Street Pump Station CSO Retention/Treatment Facilities; with alternatives for the sanitary pump capacity at the Alder Street Pump Station, alternatives for the 145th Street Stormwater Pump Station and tributary sewer system and a selection of alternatives for improvements at the wastewater treatment plant and CSO Lagoon. This procedure was used to define four overall system alternatives as summarized in Table 10- 4 and described in the following paragraphs.

Table 10-4
Summary of Overall System Alternatives

PROJECTS	TABLE NUMBER	PROBABLE PROJECT COST	PROBABLE ADDITIONAL ANNUAL O&M	ALTERNATIVE			
		($)	($)	A	B	C	D
Sewer Separation in the Area Tributary to the Michigan Avenue CSO Pump Station		$ 10,360,000	$ -	X	X	X	X
CSO Retention/Primary Treatment and Disinfection at the Alder Street Pump Station		$ 9,810,000	$ 112,000	X	X	X	X
Sanitary Pump Projects at the Alder Street Pump Station							
No Action. Keep Existing Sanitary Pumps (20 MGD Capacity)		$ -	$ -	X	X		
Replacement of the Sanitary Pumps at the Alder Street Pump Station (25 MGD Capacity)	III-9	$ 540,000	$ 5,000			X	
Replacement of the Sanitary Pumps at the Alder Street Pump Station (30 MGD Capacity)	III-10	$ 630,000	$ 8,000				X
145th Street Stormwater Pump Station and Tributary Storm Sewers							
No Action. Continue Existing Operation		$ -	$ -	X			
Rehabilitate Pump Station and Plug Connection to Combined Sewer System	III-11	$ 1,440,000	$ -		X	X	X
WWTP & CSO LAGOON PROJECTS							
Replace Influent Mechanical Bar Screens	III-12	$ 1,110,000	$ -	X	X	X	X
Final Clarifier Addition	III-13	$ 2,160,000	$ 20,000				X
Disinfect CSO Lagoon Effluent (UV equipment replacement @ 36 MGD capacity w/ necessary diversion chamber and yard piping)	III-14	$ 1,650,000	$ 10,000	X	X	X	
Disinfect CSO Lagoon Effluent (UV equipment replacement @ 40 MGD capacity w/ necessary diversion chamber and yard piping)	III-15	$ 1,700,000	$ 15,000				X
CSO Lagoon Forcemain	III-16	$ 370,000	$ 2,000		X	X	X
CSO Lagoon Pump Station	III-17	$ 1,010,000	$ 18,000		X	X	X
Total Probable Project Cost				**$ 22,930,000**	**$25,750,000**	**$26,290,000**	**$ 28,590,000**
Probable Additional Annual O&M				**$ 122,000**	**$ 152,000**	**$ 147,000**	**$ 175,000**
Present Worth O&M				**$ 1,520,000**	**$ 1,890,000**	**$ 1,830,000**	**$ 2,180,000**
Total Present Worth				**$ 24,450,000**	**$27,640,000**	**$28,120,000**	**$ 30,770,000**

20 years at 5% = 12.4622

Alternative A consists of the previously selected improvements along with the No Action alternative for the 145th Street Stormwater Pump Station and projects at the wastewater treatment plant to replace the influent mechanical bar screens and to disinfect the CSO Lagoon effluent by replacing the existing UV equipment at a 36 MGD capacity and construction of the necessary diversion chamber and yard piping to direct the lagoon effluent to the existing UV channels. This alternative retains the existing sanitary pumps at the Alder Street Pump Station.

Replacement of the influent mechanical bar screens is considered a necessity for future reliable operation of the wastewater treatment plant and is included in each of the overall system alternatives. Disinfection of the CSO Lagoon effluent is needed to comply with IDEM's guidance for the control and treatment of combined sewer overflows.

This alternative represents the minimum required facilities to comply with the current IDEM guidance regarding treatment of combined sewer overflows for the one- year one- hour and the ten-year one-hour events.

The estimated Total Probable Project Cost for Alternative A is $22,930,000. Annual operation and maintenance costs were also estimated to increase by $122,000, resulting from the CSO Retention/Treatment Facilities at the Alder Street Pump Station and the disinfection of the CSO Lagoon effluent.

Alternative B consists of all of the facilities as described for Alternative A along with projects; to rehabilitate the 145th Street Stormwater Pump Station and plug the connection to the Combined Sewer System; to construct a section of forcemain to the CSO Lagoon to allow more combined sewage to be pumped to the CSO Lagoon and; a pump station that would take combined sewage from the lagoon after the rain event has ended and pump the combined sewage back through the CSO Lagoon Forcemain, so that it can be treated by the wastewater treatment plant.

The CSO Lagoon Forcemain and Pump Station projects were included as part of the alternative that was selected in the March 2004 LTCP. These projects provide for greater use of the existing CSO Lagoon, which increases the amount of combined sewage that receives full treatment by the WWTP. The ability to return flows from the CSO Lagoon to plant headworks such that the combined sewage receives full treatment also results in improved water quality and flexibility in the operation of the CSO Lagoon and wastewater treatment plant

The estimated Total Probable Project Cost for Alternative B is $25,750,000. Annual operation and maintenance costs were also estimated to increase by $152,000, resulting from the CSO Retention/Treatment Facilities at the Alder Street Pump Station, disinfection of the CSO Lagoon effluent, and the CSO Lagoon Pump Station and Forcemain.

Alternative C consists of all of the facilities as described in Alternative B and the project at the Alder Street Pump Station to increase the capacity of the sanitary pumps from 20 to 25 MGD. As this alternative does not increase the capacity of the wastewater treatment plant the increased flow to the plant from the Alder Street Pump Station during wet weather conditions would be offset by changing the operation of the Magoun Avenue Pump Station such that the majority of flow during wet weather conditions is pumped to the CSO Lagoon and the flow to the plant from the Magoun Avenue Pump Station is reduced.

Alternative C was estimated to have a Total Probable Project Cost of $26,290,000 along with additional annual operation and maintenance costs of $147,000.

Alternative D includes the facilities as described for Alternative C with the addition of a final clarifier at the wastewater treatment plant. As an additional clarifier would increase the plants capacity, this alternative also includes the replacement of the sanitary pumps at the Alder Street Pump Station from 20 to 30 MGD capacity and the disinfection of CSO Lagoon effluent using equipment rated for 40 MGD.

Adding a final clarifier to the wastewater treatment plant increases the plants wet weather flow treatment capacity from 27 to 32 MGD and improves the plants performance during dry weather conditions. The addition of a final clarifier was included as one of the selected projects in the March 2004 LTCP and is an alternative that allows a higher percentage of wet weather flow to be treated on an annual average basis. However, the needed capacity for the CSO Retention/Primary Treatment Facilities at the Alder Street Pump Station would remain at 122 MGD.

Alternative D was estimated to have a Total Probable Project Cost of $26,590,000 along with additional annual operation and maintenance costs of $175,000.

10.4 COMPARISON OF LTCP UPDATE DESIGN STORM EVENT AND MARCH 2004 LTCP ALTERNATIVES

The Total Probable Project Costs for the design storm event alternatives presented in this LTCP Update, range from $22.9 to $28.6 million and are significantly greater than the $7.2 million Total Probable Project Cost for the Alternative C-3 as selected in the March 2004 LTCP. The primary reason for the higher costs is the change in procedure for the development and selection of alternatives from one based primarily on capturing a high percentage of wet weather flow as measured on an average annual basis to one based on providing treatment for designated storm events. In the prior analysis the percent capture for treatment was applied on a system wide basis and was averaged over the three outfalls. The wastewater treatment plant in combination with the CSO Lagoon provided treatment of the CSO's and relatively minor projects were required to reduce overflows at the Michigan Avenue Pump Station and the Alder Street Pump Station. As a majority of storm events over a year's time are smaller events, this resulted in a high degree of capture of the wet weather flows on an annual average basis. By comparison the facilities evaluated in this LTCP Update are designed to treat CSO's from a ten-year one-hour event are more expensive and by design are only fully utilized once every ten years.

10.5 USE ATTAINABILITY ANALYSIS / SELECTED ALTERNATIVE

This LTCP Update was prepared to determine the feasibility and costs associated with complying with IDEM's guidance on providing CSO Retention/Treatment Facilities for certain design storm events. Following this guidance is one approach to obtaining IDEM and USEPA approval of the LTCP. Another approach is based on the State of Indiana Senate Enrolled Act NO. 620, which involves the preparation of a Use Attainability Analysis (UAA) to establish a Wet Weather Limited Use subcategory of the recreational use designation for waters receiving combined sewer overflows. In essence this would allow for the discharge of combined sewer overflows for a limited period after a rain event with a level of treatment to be determined as part of the Use Attainability Analysis. The factors that were considered in the Use Attainability Analysis are presented in Chapter 11Financial Capability Assessment, Implementation Schedule and Use Attainability Analysis. The UAA Alternative is the selected alternative and includes the following specific projects:

- Replacement of the influent mechanical bar screens;
- Disinfection of the CSO Lagoon effluent;
- CSO Lagoon Forcemain; and
- CSO Lagoon Pump Station

In addition to the projects listed above, sewer separation is also anticipated for the North Harbor Area of East Chicago, which has boundaries similar to the boundaries for the combined sewer system that overflows to the Michigan Avenue CSO Pump Station (CSO 002). This area has been targeted for redevelopment and as this redevelopment proceeds, the combined sewer system will be separated as part of the overall infrastructure improvements that will be constructed to accommodate the new development.

CHAPTER 11

FINANCIAL CAPABILITY ASSESSMENT, IMPLEMENTATION SCHEDULE, AND USE ATTAINABILITY ANALYSIS

11.1 WASTEWATER COST PER HOUSEHOLD INDICATOR

The financial capability assessment involved an analysis of the current and future wastewater costs per household. The wastewater cost per household indicator was calculated in accordance with U.S. EPA, Guidance for Financial Capability Assessment and Schedule Development (EPA Guidance), and IDEM Combined Sewer Overflow (CSO) Long Term Control Plan and Use Attainability Analysis Guidance Document (IDEM Guidance).

11.1.1 Total Wastewater Cost per Household

The total wastewater cost per household for the City of East Chicago is defined as the current wastewater costs plus the annualized costs associated with the recommended improvements in the Long Term Control Plan (LTCP) and the annualized costs of planned capital improvements needed to maintain the integrity of the existing wastewater collection and treatment system. Currently, the costs of wastewater collection and treatment are funded by two mechanisms, user rates and property taxes. Generally, user rates fund the expenses associated with the wastewater treatment plant and collection system equipment and maintenance capital. Property taxes are used to fund expenses associated with the collection system O&M (personnel wages and benefits).

For the period January 1 through December 31, 2006, a total of approximately 687 million gallons, were billed to 7,516 residential customers. Dividing the billed gallons by the number of households, results in an average of 91,400 gallons per household per year or 7,600 gallons per household per month. Using the current billing rate of $2.72 per 1,000 gallons, the current rate supported component of wastewater treatment component cost per household is approximately $248 per year or $20.70 per month.

For the same period of January 1 through December 31, 2006, the costs associated with operation and maintenance of the collection system component was $1.23 million. Of this property tax supported component, approximately 49% was funded by residential property owners. Accordingly, $0.605 million of the collection system expenses were funded by the 7,516 residential customers. This results in a property tax supported component of wastewater cost per household of $80 per year or $6.70 per month.

This results in a total cost per household ($248 + 80) is $328 per year. Therefore, the current wastewater cost per household is approximately 1.0 % of the 2006 adjusted median household income (MHI) for the City of East Chicago.

The annualized cost associated with the LTCP Improvements is calculated based on the costs to finance the improvements and the additional costs to operate and maintain the proposed facilities. For the proposed LTCP Alternative selected the Total Probable Project Cost was $4,100,000 and the additional annual operation and maintenance cost was $40,000. The ECSD anticipates that over the 20-year LTCP planning period, capital improvement needs for the existing wastewater collection and treatment system and sewer separation work anticipated in the Michigan Avenue subsystem, were projected to be $1,000,000 per year. For purposes of calculating the wastewater cost per household indicator, it was assumed that the projected LTCP capital costs will be financed. It is anticipated that the general system annual capital improvements will be funded through annual revenue. The projected LTCP cost of $4,100,000 will be financed over a 20-year period at a 5% interest rate, which results in an annual financing cost of $330,000. The total annual cost to implement the LTCP is calculated as $1,370,000 ($330,000 + $40,000 + $1,000,000).

The total annualized costs for the LTCP improvements of $1,370,000 will be paid for by all classes of users (residential, commercial, industrial and governmental). For 2006, water billings by each customer class are summarized below:

Customer Class	Billings ($ million)
Residential	1.19
Commercial	0.20
Industrial	1.63
Governmental (Public Authority)	0.15
Wholesale	0.36
Total	3.53

The total water billings attributable to residential users is approximately 33% of total billings for 2006. Hence, the annualized cost of the LTCP improvements per residential user was calculated to be 33% of the total projected annual cost of $1,370,000. The increased cost for a residential household would be $60 per year or $5 per month.

The total wastewater cost per household is the sum of $328 and $60 for a total of $388 per year.

11.1.2 Wastewater Cost per Household Indicator

The wastewater cost per household indicator (WW_{CPHI}) is determined by dividing the total wastewater cost per household by the median household income and multiplying by 100. The estimated 2006 median household income (MHI) for the City of East Chicago was $31,049 (2000 MHI adjusted as described in Section 11.2.1). The wastewater cost per household indicator that results from the proposed program is calculated below.

$$WW_{CPHI} = \left[\frac{\$388}{\$31{,}049}\right] * 100 = 1.25\ \%\text{ of MHI}$$

11.2 SOCIO-ECONOMIC INDICATORS

The financial capability of a community to afford the controls outlined in the LTCP depends upon several socio-economic factors:

- Median household income
- Average unemployment rate
- Overall net debt per capita
- Bond rating
- Property tax revenue as a percent of full market value
- Property tax collection rate

Each factor received a score on the Socio-Economic Indicators Matrix (SEIM) based upon its relative strength/weakness when compared to a benchmark value (as outlined in IDEM, Combined Sewer Overflow (CSO) Long Term Control Plan and Use Attainability Analysis Guidance Document) The following is a discussion of each of these factors as they apply to the City of East Chicago.

11.2.1 Median Household Income

The median household income (MHI) for The City of East Chicago, Indiana was determined to be $26,538 based on 2000 census data and adjusted to $31,049 for 2006 using the consumer price index (1.17 multiplier from 2000 to 2006). The National MHI based on 2000 census data was $41,994 and was similarly adjusted to $49,132 for 2006. Therefore, the MHI for the City of East Chicago is 37% lower than the National MHI. If the MHI of the City of East Chicago is less than 25% below the National MHI, then the score is 3 (Weak), if the MHI is between 25% below and 25% above the National MHI, then the score is 2 (Mid-Range), and if the MHI is more than 25% of the National MHI, then the score is 1 (Strong). *Since the MHI for the City of East Chicago is 37% lower than the National MHI, the SEIM is 3 (Weak) for the MHI factor.*

11.2.2 Average Unemployment Rate

According to the 2000 census the average unemployment rates for East Chicago and Lake County were 8.0% and 4.7%, respectively. The national average unemployment rate for 2000 was 4.0%. The average unemployment rate in the year 2005 in Lake County was 5.8% (Bureau of Labor Statistics). The national average unemployment rate in the year 2002 was 4.6% (Bureau of Labor Statistics). Updated employment information was not available for the City of East Chicago so the unemployment rate for Lake County was used in this analysis. If the unemployment rate of Lake County is greater than 1 percentage point of the national average, then the score is 3 (Weak), if the unemployment rate is between 1 percentage point above and 1 percentage point below the National average, then the score is 2 (Mid-Range), and if the unemployment rate is less than 1 percentage point of the National average, then the score is 1 (Strong). *Since the average unemployment rate for Lake County is greater than 1 percentage point of the national average, the SEIM score for this factor is 3 (Weak).*

11.2.3 Overall Net Debt Per Capita

Overall net debt is defined as the debt repaid by property taxes, e.g. school debt, library debt, and bridge road debt. The total direct and overlapping debt of $132,663,100 for the period ending

December 31, 2002 was calculated by the City's financial consultant, Clifton Gunderson LLP. Details are included in Appendix V, Exhibit M.

The US Bureau of Census estimated the population of East Chicago in the year 2002 to be 31,731, which is lower than the Year 2000 Census Population of 32,414. Dividing the debt of $132,663,100 by the year 2002 population indicated an overall net debt per capita of $4,181.

If the overall net debt per capita for the City of East Chicago is greater than $3,000, then the score is 3 (Weak), if the overall net debt per capita is between $1,000 and $3,000, then the score is 2 (Mid-Range), and if the overall net debt per capita is less than $1,000, then the score is 1 (Strong). *The overall net debt per capita for the City of East Chicago is equal to $4,181 indicating an SEIM score of 3 (Weak).*

11.2.4 Bond Rating

Bond rating allows for an assessment of a community's credit capacity. The bond rating for the City of East Chicago and the East Chicago Sanitary District is BBB. If the City of East Chicago's bond rating is BB-D (S&P), then the score is 3 (Weak), if the bond rating is BBB (S&P), then the score is 2 (Mid-Range), and if the bond rating is AAA-A (S&P), then the score is 1 (Strong). *The City of East Chicago's bond rating is BBB resulting in a SEIM score of 2.4 (Mid-Range).*

11.2.5 Property Tax Revenue as a Percent of Full Market Property Value

The property tax revenue in the State of Indiana is calculated as a percent of the assessed property value, not the full market property value. Therefore, this socio-economic indicator is not possible to obtain at the current time. As the State of Indiana begins to calculate full market property value, this indicator may be evaluated in future reviews of the Long Term Control Plan

11.2.6 Property Tax Revenue Collection Rate

The property tax revenue collection rate indicates the efficiency of the tax collection system. The collection rate was calculated by dividing the property tax revenue collected ($39,583,890) by the property taxes levied ($40,646,165) for the year 2002 (represents year levy to be collected). If the property tax revenue collection rate is below 94%, then the score is 3 (Weak), if the collection rate is between 94% and 98%, then the score is 2 (Mid-Range), and if the collection rate is above 98%, then the score is 1 (Strong). *The property tax revenue collection rate was 97% for the City of East Chicago for the year 2002. This indicates an SEIM score of 2.25 (Mid-Range) for the property tax revenue collection rate.*

11.3 OVERALL FINANCIAL CAPABILITY AND IMPLEMENTATION SCHEDULE

Table 11.1 is a summary of the SEIM scores. From these scores the average SEIM score was calculated to be 2.7. Table 11.2 is the Overall Financial Capability Matrix and Implementation Schedule Table from the IDEM's Combined Sewer Overflow (CSO) Long Term Control Plan and Use Attainability Analysis Guidance Document. Table 11.2 shows that with a Wastewater Cost per Household Indicator below 1% of the MHI and an SEIM Average score of 2.7, the financial capability burden for the City of East Chicago is high. Therefore, current IDEM guidelines would allow the City of East Chicago 10-20 years for implementation of the proposed CSO control facilities. The anticipated implementation schedule is provided in Table 11.3.

TABLE 11.1
SOCIO-ECONOMIC INDICATORS MATRIX

SEIM Factor	SEIM Value	Weak, Mid-Range, Or Strong	Score
Median Household Income	$31,049	Weak	3
Average Unemployment Rate	6.9%	Weak	3
Overall Net Debt per Capita	$4,181	Weak	3
Bond Rating	BBB	Mid-Range	2.4
Property Tax Revenue Collection Rate	97.4%	Mid-Range	2.25
Total Score			13.65
SEIM Average Score			2.7

TABLE 11-2
FINANCIAL CAPABILITY AND IMPLEMENTATION

SEIM Score	WWCPHI Below 1%	WW CPHI 1% to 2%	WWCPHI Above 2%	Length of Time for LTCP Implementation Schedule
Above 2.5	Medium	High	High	High = 10-20 years
1.5 to 2.5	Low	Medium	High	Medium = 5-10 years
Below 1.5	Low	Low	Medium	Low = 5 years

TABLE 11.3
PROJECTED SCHEDULE OF IMPLEMENTATION

Project	Planning/Design	Initiate Construction	Complete Construction
WWTP Head Works Upgrade	2008	2010	2013
WWTP UV System Upgrade	2008	2010	2013
CSO Lagoon Pump Station and Force Main	2008	2010	2013

11.4 USE ATTAINABILITY ANALYSIS

11.4.1 Introduction

The proposed LTCP provides that residual CSOs will occur during storms that exceed the LTCP design and performance criteria. This will result in limited periods when CSOs would combine with other pollutant sources (and issues, such as stream flow/velocity) to make urban waters unsuitable for recreational use. To address this reality, federal and state laws provide a process for refining designated uses through a Use Attainability Analysis (UAA). The UAA is an analysis to identify attainable use designations for CSO receiving waters.

11.4.2 Regulatory Requirements for UAA

Federal regulations specify that a UAA should be "a structured scientific assessment of the factors affecting the attainment of the use which may include physical, chemical, biological, and economic factors as described in [40 CFR] Sec. 131.10(g)." 40 C.F.R. § 131.10(g) provides that states may establish sub-categories of a use if the State can demonstrate that attaining the designated use is not feasible because:

(1) Naturally occurring pollutant concentrations prevent the attainment of the use; or
(2) Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met; or
(3) Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place; or
(4) Dams, diversions, or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in attainment of the use; or
(5) Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses; or
(6) Controls more stringent than those required by sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact.

11.4.3 State Requirements

Indiana law has developed consistent with EPA's regulation and guidance. During its 2005 session, the Indiana General Assembly approved Senate Enrolled Act (SEA) 620, which was signed into law on April 21, 2005.

Under SEA 620, the requirements for the CSO wet-weather limited use subcategory were based upon the water quality-based requirements in an approved CSO LTCP. The CSO wet weather limited use subcategory and water quality-based requirements may remain in effect for up to four days after the discharge ends. The subcategory is available if: a) the department has approved a community's CSO LTCP, b) the LTCP is incorporated into the NPDES permit or an order of the IDEM commissioner, c) a UAA is performed and approved, and d) the approved LTCP has been implemented. Federal requirements under 40 CFR 131.10, 40 CFR 131.20, and 40 CFR 131.21 also must be met.

11.4.4 Current Recreational Standards and Water Quality Conditions

The State of Indiana currently applies a single primary contact recreational use designation to all its waters. While appropriate for some waters during certain periods, this designation clearly is not attainable in all waters, all of the time – especially during and following wet weather events. To support this designated use, Indiana has adopted the following *E. coli* numeric water quality standards, which are in effect from April to October:

- Geometric mean of 125 colony-forming units per 100 milliliters (cfu/100 ml) based upon five equally spaced samples taken in a one-month period
- Single sample maximum of 235 cfu/100 ml

These water quality standards were intended to protect full-body immersion bathing (swimming). The state currently applies these criteria to all waters, whether or not they are used as bathing beaches.

Many Indiana water bodies have not and do not currently meet the bathing use standard and are considered non-attaining. For example, in 2002 IDEM listed more than 2,900 miles (34 percent) of evaluated stream miles in non-attainment for the recreational use due to bacteria levels. Both streams affected by CSOs from the ECSD (Indiana Harbor Ship Canal and Grand Calumet River) were included in this list of non-attaining waterways.

11.4.5 Determination of Existing Use

Indiana Harbor Ship Canal and the Grand Calumet River were designated "fishable, swimmable" under the Indiana Water Quality Standards.

Both receiving streams were included on IDEM's 2006 303(d) list of waters impaired for bacteria (E. coli). Both also were included on prior 303(d) lists as impaired for bacteria. Monitoring data collected during periods of CSO discharge support the conclusion that the water quality needed to support the full-body contact recreation (swimmable) designated use has not been attained during periods during and following wet weather conditions that result in CSO discharges in either the Indiana Harbor Ship Canal or the Grand Calumet River.

11.4.6 The Wet Weather Limited Use Subcategory is Necessary and Appropriate

The refinement of the recreational designated use to specify a wet weather limited use subcategory pursuant to SEA 620 is both necessary and appropriate for the streams that will receive residual CSO discharges under the City's approved LTCP. The streams that are proposed for the wet weather limited recreation designated use are the Indiana Harbor Ship Canal and the Grand Calumet River.

A wet weather limited use subcategory is supported based upon several of the six factors provided in 40 CFR Sec. 131.10(g):

- Human-caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place.
- Controls more stringent than those required by sections 301(b) and 306 of the Clean Water Act would result in substantial and widespread economic and social impact.

11.4.7 Human-Caused Conditions

Not surprisingly in these urban waters, there are human-caused conditions and sources of pollution that prevent the full attainment of the recreational use during wet weather events. Some of these conditions cannot be remedied or would cause more environmental damage to correct than to leave in place. The wet weather limited use subcategory is justified due to human-caused conditions for the following reasons:

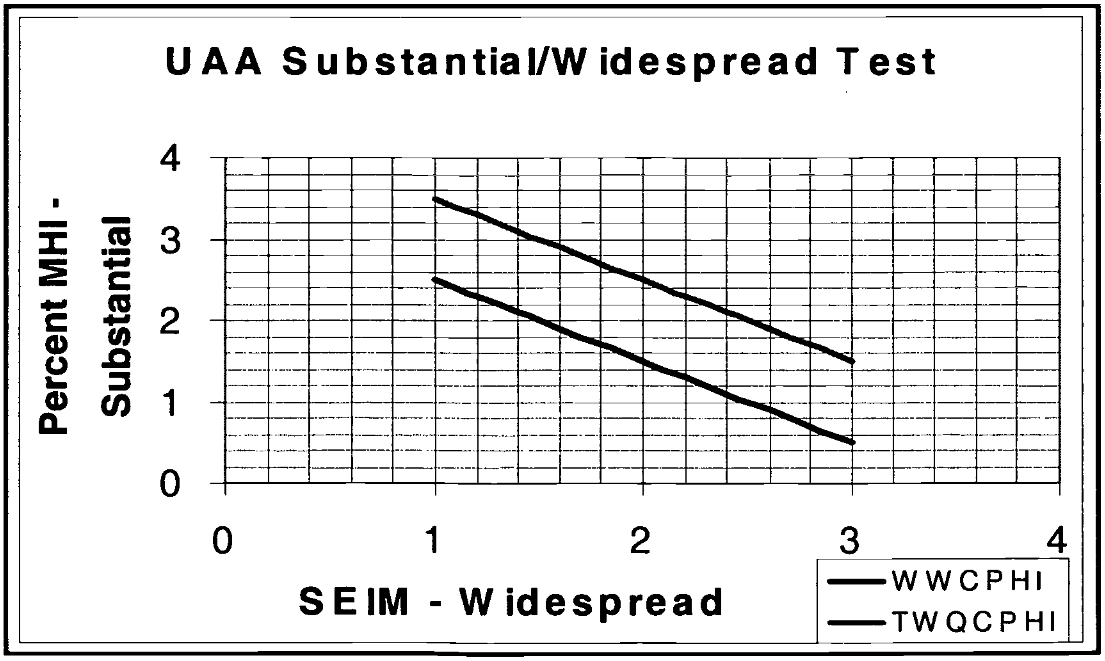
- Effects of urbanization
- Existence of the combined sewer system

Most relevant to the limits of the recreational use are the urbanized conditions that quickly convey pollutants from the land surface to water courses and through the constructed storm conveyance facilities. The condition results in substantial bacteria concentrations delivered to these urban waters. While some of these conditions can be addressed through BMPs, it is not possible to obtain the full protection required by recreational *E. coli* standards without removing the roads and roofs, i.e., the impervious area. To do this would require relocation of the human population (which is impractical) and would simply move the impacts somewhere else, resulting in more environmental damage. Non-CSO sources will continue to cause exceedances of the recreational use standard during large storm events.

11.4.8 Substantial and Widespread Economic and Social Impact

EPA's March 1995 "Interim Economic Guidance for Water Quality Standards" provides guidance to States and EPA Regional Offices on the economic factors that may be considered, and the types of tests that can be used to determine if a designated use cannot be attained or if a variance can be granted. Page 3 of the guidance says, "The regulatory requirement that must be met is that attaining a designated use or obtaining a variance would result in substantial and widespread economic and social impacts."

Based upon the ECSD's analysis, there is no remedy that will attain the designated use of full-body contact recreation 365 days a year. The final proposed LTCP will result in significant reduction in the discharge of combined sewage. The proposed LTCP program will result in a cost per household of approximately 1.25% of MHI, which is greater than the level of substantial and widespread economic and social impact level of approximately 0.9%, based upon the SEIM Score of 2.7, as provided in IDEM Guidance (based upon Figure 3, included below).



1) Chapter 11 Financial Capability Assessment, Implementation Schedule and Use Attainability Analysis was prepared by Greeley and Hansen based on information provided by the East Chicago Sanitary District

CHAPTER 12

POST CONSTRUCTION MONITORING PROGRAM and OPERATIONAL PLAN REVISIONS

12.1 POST CONSTRUCTION MONITORING PROGRAM

The selected CSO controls must include a post-construction water quality monitoring program which is adequate to verify improvement and compliance with water quality standards and protection of designated uses, as well as ascertain the effectiveness of CSO Controls.

The recommended post construction monitoring program varies for each outfall as per the recommend approach for the control of CSO's from each outfall.

For NPDES Outfall 002, which is the discharge from the Michigan Avenue CSO Pump Station, it is anticipated that sewers will be separated a few blocks at a time in conjunction with redevelopment activities and the pump station discharge will eventually become a stormwater discharge. When the sewer separation is complete, monitoring under the Districts MS4 program will be initiated.

NPDES Outfall 003, which is the discharge from the Alder Street Pump Station, will be monitored for flow volume and start and stop of discharge.

For NPDES Outfall 005, which is the discharge from the CSO Lagoon that receives flow from the Magoun Ave Pump Station, the recommended improvements include the disinfection of the CSO Lagoon discharge. It is recommended that the post construction monitoring include start, stop, flow volume and testing of E.coli to assess performance is in accordance with the wet weather limited recreation use. In regards to other water quality parameters the CSO Lagoon effluent has been tested on prior occasions and that data can be referred to as necessary to understand the water quality of the CSO Lagoon effluent.

After the Long Term Control Plan has been approved by IDEM, the East Chicago Sanitary District is required to conduct a periodic review not less than every five years. The review shall:

1. Document to IDEM that the Long Term Control Plan has been reviewed;
2. Update the Long Term Control Plan as necessary to document the results of the post-construction monitoring of installed CSO abatement projects;
3. Document/update financial capability assessment used to support designated use modification; and
4. Submit any amendments to the LTCP to the department for approval.

12.2 OPERATIONAL PLAN REVISIONS

The existing East Chicago Sanitary District CSO Operational Plan, dated January 5, 1995 will be revised as new facilities are constructed and brought on line. The revisions will include the intended operational strategy for proposed improvements as well as other improvements that were implemented since January 1995. Changes in the operation of specific pieces of equipment will be included in revisions to the Operation and Maintenance Manual for the respective pump station and the wastewater treatment plant.

CHAPTER 13

CSO PUBLIC NOTIFICATION PROCEEDURES

13.1 PURPOSE AND BACKGROUND

The Combined Sewer Overflow Public Notification Rule 327 IAC 5-2.1 went into affect on May 9, 2003 and requires that combined sewer overflow communities develop and submit their notification procedures to IDEM by November 9, 2003.

The purpose of this rule concerning community notification of potential health impacts resulting from a combined sewer overflow discharge is to promote and accomplish the following:

(1) Educate the public, in general, and those persons who, specifically, may come into contact with water that may be affected by a combined sewer overflow discharge as to the health implications possible from combined sewer overflow tainted water.
(2) Alert members of the public who may be immediately affected by a combined sewer overflow discharge or the potential for a combined sewer overflow discharge to occur.
(3) Enable members of the public to protect themselves from possible exposure to waterborne pathogens resulting from contact with or ingestion of water to waterborne pathogens resulting from contact with or ingestion of water from a waterway that may be affected by a combined sewer overflow discharge.
(4) Complement the combined sewer overflow discharge requirements contained in a National Pollutant Discharge Elimination System (NPDES) permit but not obviate or supersede any more stringent requirements contained in an NPDES permit.

13.2 AFFECTED WATERS AND PUBLIC ACCESS POINTS

Affected waters, by definition, mean those waters where the E.coli criteria may be exceeded due to a combined sewer overflow discharge. Figure 13-1 (see attached pocket) depicts the waters affected by the East Chicago Sanitary District CSO's. In general the affected waters are the waters downstream of the three overflow points and include portions of the East and West Branches of the Grand Calumet River as well as the Indiana Harbor Ship Canal. These waterways are also affected by CSO discharges from the Hammond Sanitary District and the Gary Sanitary District. In the case of the Grand Calumet River East Branch, there are CSO discharges from the Gary Sanitary District located upstream of the East Chicago Sanitary District CSO Outfall 003 and a CSO discharge from the Hammond Sanitary District at Kennedy Avenue that is downstream of the ECSD CSO Outfall 003. For the Grand Calumet River West Branch there are CSO discharges from the Hammond Sanitary District located upstream of the East Chicago Sanitary District CSO Lagoon Outfall 005. Public notification procedures will need to be coordinated with the Gary Sanitary District and the Hammond Sanitary District. Preliminary discussions with IDEM indicate that the upstream discharges will be responsible for notifying downstream communities and the downstream communities will be responsible for notifying the public within their own jurisdiction.

Public access points to the affected waters may include boat ramps, bridges providing access, parks, school yards, parkways, and greenways on or adjacent to the affected waters. In East Chicago, the majority of the land use adjacent to the affected waters is industrial with no public access allowed. No boat ramps are known to exist on the affected waters. The roadway bridges that cross over the affected waters are listed in Table 13-1. Signs are posted at each bridge location, as described in Section 13.4.3, to discourage the public from accessing the waterways.

Table 13-1
Summary of Road Bridges over Affected Waters

AFFECTED WATERS	STREET
Grand Calumet River East Branch	Cline Ave (Rt 912) Frontage Road
Grand Calumet River East Branch	Kennedy Ave
Grand Calumet River West Branch	Indianapolis Blvd (Rt 20)
Indiana Harbor and Ship Canal	151st St
Indiana Harbor and Ship Canal	Chicago Ave (Rt 312)
Indiana Harbor and Ship Canal	Columbus Dr. (Rt 12)
Indiana Harbor and Ship Canal	Cline Ave (Rt 912)
Indiana Harbor and Ship Canal	Dickey Rd

Two public facilities that border the east bank of the Indiana Harbor and Ship Canal near 148th Street are the Carrie Gosch Elementary School and the adjacent Goodman Park. At each of these facilities a fence has been constructed to prevent public access to the canal.

13.3 AFFECTED PUBLIC

Affected public means those persons who may be exposed to waterborne pathogens through direct contact with or ingestion of water affected by a combined sewer overflow discharge and is limited to:

(a) residents on or adjacent to affected waters;
(b) public and private schools on or adjacent to affected waters;
(c) owners or operators of facilities that provide access to or recreational opportunities in or on affected waters;
(d) owners or operators of public drinking water systems with surface intakes in or on affected waters.

The only residential areas on or adjacent to the affected waters are located on the east bank of the Indiana Harbor and Ship Canal along the west side of Aster Avenue between 149th and 151st Streets. Approximately 24 single family homes are located in this area. The Carrie Gosch Elementary School, which is part of the City of East Chicago School District, is also located on the east bank of the Indiana Harbor and Ship Canal at 148th Street. A fence restricts public access from the residential areas and the school.

There are no known owners or operators of facilities that provide access to or recreational opportunities on the affected waters. There are also no owners or operators of public drinking water systems with surface intakes in or on the affected waters.

Other public groups that may be interested in receiving notification should also be identified. This may include environmental advocacy groups, recreational user groups, or community groups. Potential groups to notify include the Grand Calumet Task Force (www.grandcal.org), the East Chicago Waterway Management District and the Northwestern Indiana Regional Planning Commission (NIRPC) (www.nirpc.org).

13.4 NOTIFICATION METHODS

13.4.1 Annual Public Notice

A public notice will be placed in the Northwest Indiana Times, (601 W. 45th Ave. Munster, IN 46312) at the start of the CSO Notification Program and in March of each year. The public notice will allow the following to request receipt of CSO notification:

(a) Media sources, such as newspapers, television, or radio.
(b) Affected public.
(c) Other interested persons in the CSO community.

13.4.2 CSO Event Notification

For those parties who respond to the public notice and request receipt of CSO notification a notification will be provided when a CSO discharge occurs. Determination that a CSO discharge is occurring will be based on the methods currently used for reporting CSO's in the Monthly Report of Operation and Discharge Monitoring Reports. For CSO Outfall 002 (Michigan Ave.) and Outfall 003 (Alder Street), operation of any of the CSO pumps results in a CSO discharge. For Outfall 005 CSO Lagoon, the flow meter that measures the discharge from the CSO Lagoon will be the basis for determining that CSO is being discharged.

The regulations require that notification be provided in a manner that is mutually agreeable to the recipient and the CSO community. Also, if the recipient and CSO community do not reach agreement on an acceptable manner of notification, then the CSO community shall provide notice by a reasonable, effective means.

The East Chicago Sanitary District's intended method of notification is to post notices on the City of East Chicago web site (www.eastchicago.com).

The notification must be appropriately worded to explain the nature of the potential health effects of a CSO discharge and steps that affected persons can take to avoid exposure.

Suggested wording of the notice is as follows:

"In response to recent rainfall or snow melt stormwater combined with sewage has been discharged from the East Chicago Sanitary District combined sewer system into the Grand Calumet River or the Indiana Harbor and Ship Canal. People who swim in, wade in, or ingest this water may get sick. Do not swim in, wade in or ingest water from the Grand Calumet River or the Indiana Harbor and Ship Canal. "

The East Chicago Sanitary District has assigned the responsibility for implementing the CSO Public Notification Procedures to the Wastewater Division Manager.

It is required that the CSO Public Notification procedure be fully implemented no longer than ninety days after the date of submission of this CSO Notification Procedure to IDEM. Assuming a submittal is made on the November 9 deadline, the procedures would need to be implemented by February 7, 2004

13.4.3 Cautionary CSO Signs

Prominent signs are required to be posted at the following locations:

(1) at access points to an affected water, including boat ramps, bridges, parks, and school yards;
(2) along parkways and greenways on or adjacent to affected waters at locations most likely to provide notification to persons who may come into direct contact with the water based on information available to the CSO community; and
(3) with the language printed in English or any other language common in the locale (including the language necessary to fill in the blanks) that states or is equal in meaning to the following: Caution Sewage or wastewater pollution. Sewage or Wastewater may be in this water during and for several days after periods of rainfall or snow melt. People who swim in, wade in, or ingest this water may get sick. For more information, please call [insert local sewer authority, telephone number, and, if available, a Web site address].

Cautionary signs have been posted by both the East Chicago Sanitary District and the Indiana Department of Environmental Management. The signs post by ECSD are located at CSO Outfall numbers 002, 003 and 005 as shown on the attached map. The signs are worded as follows:

NOTICE
THIS IS A COMBINED SEWER OVERFLOW OUTFALL
THE WATER CAN BE POLLUTED DURING OR AFTER
RAIN EVENTS OR SNOWMELTS. IN THE EVENT OF
DISCHARGES FROM THIS OUTFALL DURING DRY
WEATHER OR FOR MORE INFORMATION,
PLEASE CALL THE EAST CHICAGO SANITARY
DISTRICT AT 219 391-8466
CSO OUTFALL 005

The signs posted by IDEM are located at each road bridge crossing, with one sign visible for each direction of traffic, as shown on the attached map. The signs are worded as follows;

WARNING

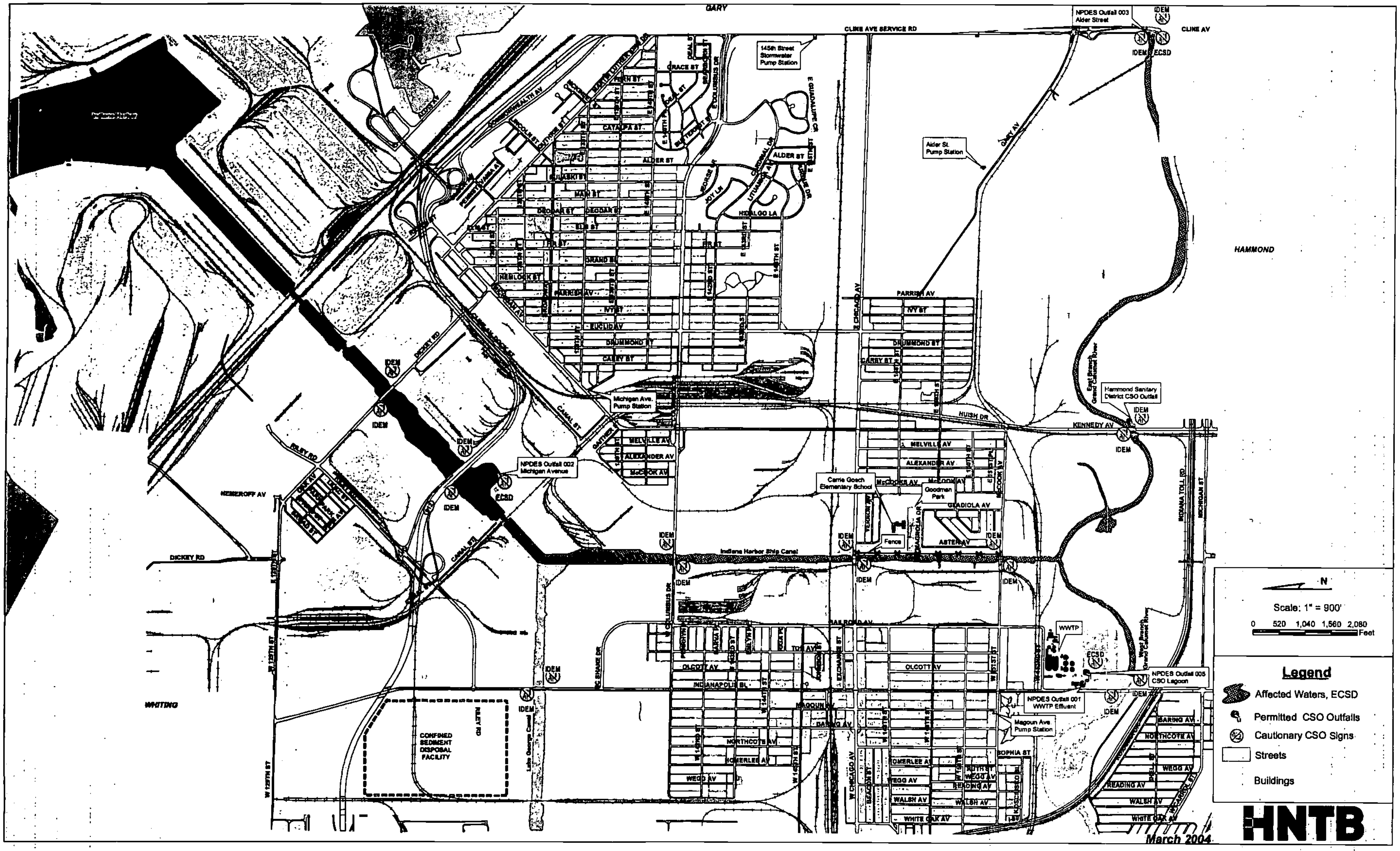
UNSAFE WATERS
YOU SHOULD NOT SWIM
IN THESE WATERS

YOU SHOULD NOT EAT FISH
FROM THESE WATERS

THE INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
IS WORKING ON A REMEDIAL ACTION PLAN (RAP)
TO RESTORE THESE WATERS
FOR MORE INFORMATION, CONTACT IDEM @ 219 881-6712

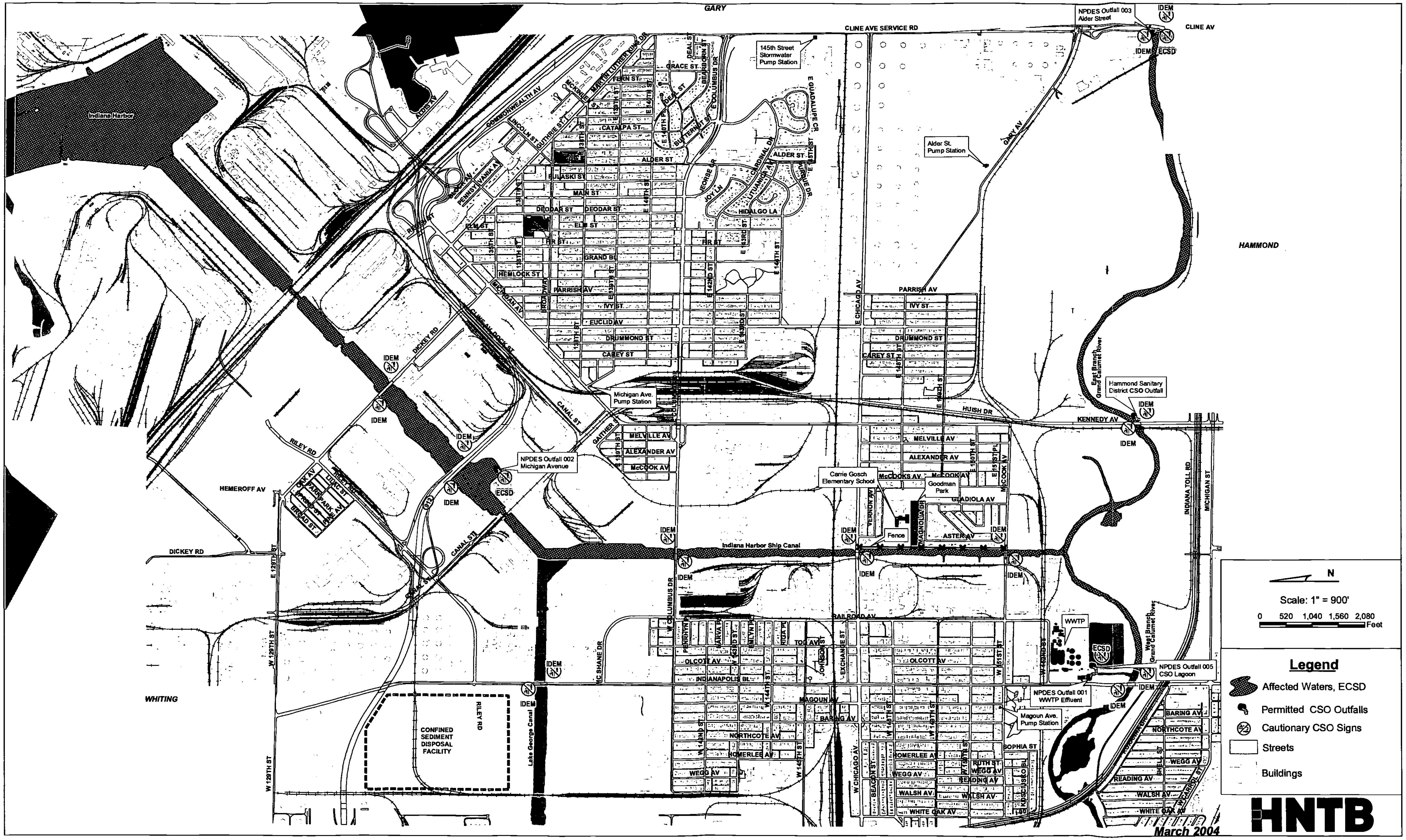
The existing signage is considered to provide adequate warning and no additional signs are proposed.

East Chicago Sanitary District CSO Public Notification



(3-4

East Chicago Sanitary District CSO Public Notification



13-4

CHAPTER 14

PUBLIC PARTICIPATION

14.1 INTRODUCTION

During the preparation of the March 2004 LTCP and this LTCP Update, the East Chicago Sanitary District established a public participation program that included the formation of a Citizen's Advisory Committee (CAC), public information meetings, articles published in the City's newsletter, as well as discussion at the District's Board meetings, which are always open to the public. In addition to keeping the citizens of East Chicago informed on the progress of the LTCP, the District and its consultants have also held informational meetings with personnel from IDEM's Office of Water Quality on several occasions.

14.2 CITIZEN'S ADVISORY COMMITTEE

The CAC was formed to assist in determining sensitive areas, selection of control alternatives for the LTCP, and informing the public of the LTCP. The CAC meeting dates along with the purpose of each meeting are listed below:

February 27, 2004 CAC Meeting. An information package was distributed, including a brief summary of East Chicago's combined sewer system and IDEM's, Combined Sewer Overflow (CSO) Long Term Control Plan and Use Attainability Analysis Guidance Document. The purpose of this meeting was to introduce the requirements of the LTCP, identify and discuss any sensitive areas, review the control alternatives being considered and to plan future public participation activities.

March 5, 2004 CAC Meeting. The purpose of this meeting was to further discuss and select a control alternative, review the financial capability analysis, consider an implementation schedule, review the procedures for certifying the LTCP, and plan for future public participation activities.

March 19, 2004 CAC Meeting. The purpose of this meeting was to discuss the control alternatives in more detail, financial capability analysis and the cost-performance curve. The handouts presented during the meeting are included in Appendix VII. The control alternatives and the points on the cost-performance curve were discussed. The financial expectations as directed by the guidance document and timeframe for implementing the control alternatives were discussed in detail.

September 11, 2006 CAC Meeting. The purpose of this meeting was to inform the committee on the need to update the LTCP

October 18, 2006 CAC Meeting. The purpose of this meeting was to inform the committee on the status of the LTCP Update and the UAA approach.

March 19, 2007 CAC Meeting. The purpose of this meeting was to update the committee on discussions with IDEM

The agenda and summaries from each of the meetings are included in Appendix VI.

14.3 PUBLIC MEETINGS

Public meetings specifically for the purpose of presenting and discussing the Long Term Control Plan were held on July 25, 2002 and on March 11, 2004. Documentation from these meetings is included in Appendix VI.

14.4 BOARD MEETINGS

During the preparation of the Long Term Control Plan various updates and presentations were made to the Board of Sanitary Commissioners at their regularly scheduled board meetings. These meeting are open to the public and the local press. Minutes are kept to document the proceedings. Copies of presentation material for Board Meetings held on January 24, 2002, July24, 2003 and on October 23, 2003 are included in Appendix VI.

14.5 CITY NEWSLETTER

The City of East Chicago publishes a newsletter in both English and Spanish that is distributed to each household within the City. Copies of articles concerning the LTCP that were published in the newsletter are included in Appendix VI.

APPENDIX I

SUMMARY OF MRO DATA

January 2000 to February 2002

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR JANUARY 2000

Date	Day of Week	Precip @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1] Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)	Influent Data TBOD5 (mg/L)	Influent TBOD5 (lb/day)	Influent CBOD5 (mg/L)	Influent CBOD5 (lb/day)	Influent TSS (mg/L)	Influent TSS (lb/day)	Influent Ammonia-N (mg/L)	Influent Ammonia-N (lb/day)	Clarifier Effluent Data TBOD5 (mg/L)	Clarifier CBOD5 (mg/L)	Clarifier TSS (mg/L)	Clarifier Ammonia-N (mg/L)	Final Effluent Data TBOD5 (mg/L)	Final TBOD5 (lb/day)	Final CBOD5 (mg/L)	Final CBOD5 (lb/day)	Final TSS (mg/L)	Final TSS (lb/day)	Final Ammonia-N (mg/L)	Final Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0									<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	7.1 AML 10.7 AWL <MDL	688 AML 1339 AWL	8.5 AML 12.6 AWL	1063 AML 1601 AWL	1.5 AML 2.3 AWL <MDL	188 AML 751 DML		
1	Sat	0.01	8.90	15.0	8.80						0.000	0.00																						
2	Sun	0.02	8.99	14.0	8.88						0.000	0.00	72	5398	41	3074	99	7423	8.72	504					3.6	270	<3.3	247	1.6	120	0.05	3.7		
3	Mon	0.05	9.30	18.3	9.48						0.000	0.00	74	6740	48	3723	109	8454	7.28	565	<5.6	<4.8	11.4	0.02	<5.5	427	<4.6	357	2.6	202	0.04	3.1		
4	Tue	0.00	10.02	15.8	10.45						0.000	0.00	118	9861	71	5933	145	12117	8.63	571	7.0	<3.5	10.0	0.02	4.0	334	<4.0	334	2.7	226	<0.02	1.7		
5	Wed	0.00	9.50	14.6	10.21						0.000	0.00	116	9111	52	4120	156	12360	8.55	619	7.2	<3.3	13.2	0.02	3.9	309	<3.3	261	8.2	491	<0.02	1.6		
6	Thu	0.00	9.32	14.8	9.99						0.000	0.00	123	9561	83	6451	136	10571	9.13	710	8.0	<3.5	10.2	0.03	4.3	334	<3.5	272	2.0	155	<0.02	1.6		
7	Fri	0.00	9.26	14.0	10.61						0.000	0.00			76	5869	112	8650	9.52	735		4.2	11.8	0.04			<4.6	355	3.1	239	<0.02	1.5		
8	Sat	0.07	8.80	14.0	9.94						0.000	0.00																						
9	Sun	0.09	9.74	15.8	10.90						0.000	0.00	81	6580	64	5199	96	7798	8.55	532					5.4	439	2.6	227	2.8	227	0.04	3.2		
10	Mon	0.15	11.04	19.2	12.49						0.000	0.00	96	8839	64	7734	164	15100	7.22	665	6.2	<3.3	10.2	0.05	<3.7	341	<3.3	304	2.4	221	0.07	6.4		
11	Tue	0.00	9.73	15.0	10.64						0.000	0.00	88	7141	75	6086	81	6573	5.60	454	7.3	<3.6	9.2	0.05	<4.0	325	<3.5	284	2.4	195	0.07	5.7		
12	Wed	0.00	9.21	14.3	9.63						0.000	0.00	103	7912	96	7374	88	8759	7.62	585	6.0	<3.5	10.6	0.08	<4.0	307	<3.5	269	2.1	161	0.06	4.6		
13	Thu	snow	9.48	40.0	8.97						0.000	0.00	153	12097	117	9250	337	26644	6.34	859	6.3	<3.3	10.8	0.03	<3.7	293	<3.3	261	4.2	332	0.02	1.6		
14	Fri	0.00	9.06	15.0	9.19						0.000	0.00			44	3325	85	6423	8.78	512		<3.6	11.0	0.06			<3.5	264	2.6	212	0.03	2.3		
15	Sat	0.00	8.87	16.0	8.90						0.000	0.00																						
16	Sun	0.00	8.49	13.5	8.46						0.000	0.00	64	4532	48	3399	63	4461	5.88	416					<3.7	262	<3.3	234	1.8	127	0.06	4.2		
17	Mon	snow	9.01	15.0	9.63						0.000	0.00	64	6312	73	5485	68	5110	7.73	581	3.7	<3.3	11.0	0.06	<3.7	278	<3.3	248	2.6	210	0.03	2.3		
18	Tue	snow	9.18	16.6	10.24	6.000	0.290				0.000	0.00	101	7733	84	6431	66	6584	8.68	665	10.0	3.4	20.2	0.04	3.9	299	<3.5	268	3.4	260	0.03	2.3		
19	Wed	0.00	9.81	22.0	11.58						0.000	0.00	76	6218	54	4418	97	7936	8.72	650	6.7	3.3	16.4	0.05	4.0	327	<3.2	262	2.6	213	0.05	4.1		
20	Thu	0.00	10.65	17.0	12.99						0.000	0.00	79	7017	60	5329	92	6172	8.10	542	6.0	3.3	9.4	0.04	3.7	329	<3.5	311	3.2	284	0.04	3.6		
21	Fri	0.00	8.88	13.0	10.40						0.000	0.00			64	4740	72	5332	6.52	483		3.3	12.8	0.04			2.1	156	3.8	267	0.03	2.2		
22	Sat	0.00	8.74	16.1	9.84						0.000	0.00																						
23	Sun	0.00	8.72	12.1	9.96						0.000	0.00	88	6400	69	5018	63	4582	7.03	511					4.5	327	3.6	255	3.4	247	0.07	6.1		
24	Mon	0.00	8.55	12.9	11.34						0.000	0.00	98	6988	72	5134	86	6132	7.50	535	9.4	3.8	11.7	0.07	5.6	399	3.0	214	4.4	314	0.05	3.6		
25	Tue	snow	8.76	13.8	9.54						0.000	0.00	92	6721	67	4895	118	8694	7.17	524	8.4	2.8	5.2	0.02	3.9	285	<3.5	256	4.0	292	0.02	1.5		
26	Wed	snow	8.84	11.8	10.72						0.000	0.00	68	5013	68	5013	81	5972	7.67	565	5.0	<3.2	10.0	0.07	<3.5	256	<3.2	236	2.8	206	0.05	3.7		
27	Thu	0.00	9.44	12.9	9.67						0.000	0.00	90	7066	74	5826	77	6062	8.90	701	7.4	<3.6	9.2	0.05	<4.0	315	<3.5	276	3.4	268	0.01	0.8		
28	Fri	0.00	8.61	12.3	8.74						0.000	0.00			66	4739	124	8904	8.57	615		<3.3	10.4	0.05			<3.3	237	3.6	259	0.03	2.2		
29	Sat	0.00	8.58	12.5	8.21						0.000	0.00																						
30	Sun	snow	9.09	16.0	9.01						0.000	0.00	76	5762	52	3942	97	7364	7.20	546					<4.0	303	<3.5	265	4.0	303	<0.02	1.5		
31	Mon	0.00	9.14	16.8	9.22						0.000	0.000	93	7089	54	4116	114	8690	6.55	499	9.4	3.3	10.6	0.03	7.9	602	2.9	221	8.0	610	0.02	1.5		
Total		0.39	285.71		306.81	6.00	0.29	0.00	0.00		0.00	0.00																						
Mean			9.22		9.96	6.00	0.29				0.00	0.00	92	7232	68	5255	110	8571	7.32	567	7.3	3.5	11.2	0.04	4.3	335	3.4	264	3.3	256	0.04	2.9		
Maximum		0.15	11.04	40.0	12.99	6.00	0.29	0.00	0.00		0.00	0.00	153	12097	117	9250	337	26644	9.52	735	10.0	4.6	20.2	0.07	7.9	602	4.6	357	8.0	610	0.07	8.4		
Minimum			8.49		8.21	6	0.29	0	0		0	0	64	64	41	41	63	63	5.6	5.6	3.7	2.8	5.2	0.02	3.5	3.5	2.1	2.1	1.6	1.6	0.01	0.01		
# of Data		25	31	31	31	1	1	0	0	0	31	31	22	22	26	26	26	26	28	26	17	21	21	21	22	22	26	26	26	26	26	26		
# of Data<MDL																					1	13			11		21				5			
Wk1: 01/02-01/08/00			9.31		9.93								100	7934	62	4862	126	9929	7.67	601					4.3	348	3.9	323	3.0	255	0.03	2.3		
Wk2: 01/09-01/15/00			9.59		10.10								104	8514	80	6495	142	11543	7.02	568					4.2	366	3.3	284	2.8	236	0.05	4.3		
Wk3: 01/16-01/22/00			9.25		10.48								81	6362	64	4967	80	6266	6.94	539					3.8	337	3.2	279	2.9	259	0.04	3.5		
Wk4: 01/23-01/29/00			8.79		9.74								87	6442	69	5104	92	8724	7.81	575					4.3	370	3.3	277	3.6	301	0.04	3.3		

Total Est. Bypass Flow (MG): 0.29 Total Bypass Occurances (days/month): 1

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR FEBRUARY 2000

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1] Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)	Influent Data TBOD5 (mg/L)	Influent TBOD5 (lb/day)	Influent CBOD5 (mg/L)	Influent CBOD5 (lb/day)	Influent TSS (mg/L)	Influent TSS (lb/day)	Influent Ammonia-N (mg/L)	Influent Ammonia-N (lb/day)	Clarifier Effluent Data TBOD5 (mg/L)	Clarifier CBOD5 (mg/L)	Clarifier TSS (mg/L)	Clarifier Ammonia-N (mg/L)	Final Effluent Data TBOD5 (mg/L)	Final TBOD5 (lb/day)	Final CBOD5 (mg/L)	Final CBOD5 (lb/day)	Final TSS (mg/L)	Final TSS (lb/day)	Final Ammonia-N (mg/L)	Final Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0									<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	7.1 AML 10.7 AWL <MDL	888 AML 1339 AWL	8.5 AML 12.8 AWL	1063 AML 1601 AWL	1.5 AML 2.3 AWL <MDL	188 AML 751 DML		
1	Tue	0.00	9.64	17.0	10.32						0.000	0.00	189	15510	103	8453	1071	87892	8.46	694	9.6	3.3	12.6	0.01	4.4	361	< 3.7	304	3.2	263	0.03	2.5		
2	Wed	0.00	8.19	13.2	8.23						0.000	0.00	110	7514	65	4440	122	6333	8.29	566	12.0	5.3	18.2	0.03	5.1	348	< 4.0	273	8.0	546	0.01	0.7		
3	Thu	0.00	9.33	14.0	9.60						0.000	0.00	93	7237	56	4357	115	8948	7.39	575	8.2	< 4.0	14.8	0.02	< 4.8	358	< 4.0	311	3.6	280	0.03	2.3		
4	Fri	0.00	9.48	14.1	9.19						0.000	0.00			60	4744	68	5376	9.18	726		< 4.0	13.0	0.09			< 4.0	316	2.3	182	0.03	2.4		
5	Sat	0.00	8.62	13.0	9.00						0.000	0.00																						
6	Sun	0.00	8.18	12.0	8.29						0.000	0.00	74	5048	57	3889	65	4434	7.56	516					4.6	314	< 3.5	239	1.6	109	0.01	0.7		
7	Mon	0.00	9.07	14.0	9.36						0.000	0.00	60	4539	47	3555	63	4766	7.73	585	< 4.0	< 3.5	9.8	0.01	< 4.0	303	< 3.5	265	2.6	197	0.03	2.3		
8	Tue	0.00	9.19	13.8	9.52						0.000	0.00	74	5672	72	5518	77	6902	6.94	532	6.3	3.5	12.4	0.08	< 4.0	307	< 3.5	268	3.2	245	0.03	2.3		
9	Wed	0.00	10.22	16.5	11.28						0.000	0.00	118	10058	78	6648	141	12018	9.02	769	9.9	3.5	14.2	0.20	4.2	358	< 3.7	315	2.0	170	0.13	11.1		
10	Thu	0.00	9.14	13.4	10.19						0.000	0.00	70	6336	51	3886	72	5488	7.90	602	8.6	< 4.0	12.0	0.13	< 4.6	351	< 4.0	305	2.4	183	< 0.02	1.5		
11	Fri	0.00	8.93	13.5	9.86						0.000	0.00			51	3798	102	7597	8.88	512		< 3.5	12.8	0.08			< 3.5	261	1.0	74	0.05	3.7		
12	Sat	0.00	8.81	13.0	9.37						0.000	0.00																						
13	Sun	0.00	8.86	12.8	9.27						0.000	0.00	87	4951	48	3547	73	5394	7.22	534					4.6	340	2.1	155	3.7	273	0.04	3.0		
14	Mon	0.00	9.05	14.0	10.42						0.000	0.00	125	9435	59	4453	120	9057	7.56	571	10.5	3.8	16.4	0.22	5.6	423	2.7	204	3.8	287	0.17	12.8		
15	Tue	0.00	9.12	14.0	10.78						0.000	0.00	81	8181	53	4031	83	6313	8.95	529	8.4	2.9	14.2	0.09	2.6	198	< 4.0	304	3.6	274	0.05	3.8		
16	Wed	0.00	9.18	14.0	8.23						0.000	0.00	80	6126	56	4287	113	8651	7.14	547	7.6	< 3.7	11.6	<0.02	< 4.8	352	< 4.0	306	1.8	138	< 0.02	1.5		
17	Thu	0.00	8.87	13.5	9.28						0.000	0.00	74	5474	51	3773	83	8140	8.83	505	8.3	< 3.7	13.6	<0.02	< 4.8	340	< 4.0	296	3.0	222	< 0.02	1.5		
18	Fri	0.00	8.66	15.0	9.38						0.000	0.00			52	3756	96	6934	7.34	530		< 3.7	12.6	<0.02			< 4.0	289	2.5	181	< 0.02	1.4		
19	Sat	0.00	10.01	15.9	10.48						0.000	0.00																						
20	Sun	0.00	9.45	16.2	9.96						0.000	0.00	84	6620	76	5990	74	5832	8.72	530					< 4.6	363	< 4.0	315	2.6	205	0.02	1.6		
21	Mon	0.00	10.91	25.3	12.07						0.000	0.00	99	9008	81	5550	169	17197	10.70	974	9.4	< 3.7	12.2	0.03	< 4.3	391	< 3.7	337	4.0	364	< 0.02	1.8		
22	Tue	0.00	10.15	16.0	12.03						0.000	0.00	114	9650	54	4571	130	11005	7.06	598	8.3	< 3.7	13.2	0.03	< 4.6	389	< 4.0	339	3.2	271	0.01	0.8		
23	Wed	0.00	9.96	15.3	11.55						0.000	0.00	153	12709	66	5482	230	19105	8.94	576	6.4	< 3.7	13.8	0.07	< 4.8	382	< 4.0	332	3.6	299	< 0.02	1.7		
24	Thu	0.40	13.77	40.0	14.75						0.000	0.00	164	18834	74	8498	507	68225	4.98	572	7.0	3.3	18.2	0.10	< 3.7	425	< 3.3	379	3.2	367	0.07	8.0		
25	Fri	0.00	10.26	16.0	11.96						0.000	0.00			51	4364	197	16857	6.55	560		< 3.5	16.8	0.08			< 3.5	299	2.4	205	0.04	3.4		
26	Sat	0.34	13.51	27.5	15.61						0.000	0.00																						
27	Sun	0.00	10.39	14.8	12.11						0.000	0.00	52	4506	44	3813	80	6932	6.38	466					< 4.6	399	< 4.0	347	2.8	243	0.11	9.5		
28	Mon	0.00	10.94	16.0	12.59						0.000	0.00	132	12044	56	5109	169	17244	6.33	576	8.4	< 3.7	10.0	0.17	< 4.3	392	< 3.7	338	2.0	182	0.07	6.4		
29	Tue	0.00	11.38	16.5	13.67						0.000	0.00	119	11294	49	4651	154	14818	7.22	685	7.0	< 3.5	13.2	0.07	< 4.0	380	< 3.5	332	2.7	256	0.04	3.8		
Total		0.74	283.47		308.24	0.00	0.00	0.00	0.00		0.00	0.00																						
Mean			9.77		10.63						0.00	0.00	102	8463	60	4847	169	14410	7.37	593	8.2	3.7	13.8	0.08	4.4	356	3.7	297	3.0	241	0.04	3.6		
Maximum		0.40	13.77	40.0	15.51	0.00	0.00	0.00	0.00		0.00	0.00	189	18834	103	8498	1071	87892	10.70	974	12.0	5.3	18.2	0.22	5.6	425	4.0	379	8.0	546	0.17	12.8		
Minimum			6.18		8.23	0.00	0.00	0.00	0.00		0.00	0.00	52	4506	44	3547	63	4434	4.98	466	4.0	2.9	9.8	0.01	2.6	198	2.1	155	1.0	74	0.01	0.7		
# of Data		29	29	29	29	0	0	0	0	0	29	29	21	21	25	25	25	25	25	25	17	21	21	18	21	21	25	25	25	25	25	25		
# of Data<MDL																					1	14			14		23				6			
Wk1: 01/30-02/05/00			9.10		9.22								112	8622	65	5009	265	21099	7.85	601					52.0	401	3.7	284	4.9	367	0.02	1.8		
Wk2: 02/06-02/12/00			9.06		9.69								79	6130	59	4549	87	6701	7.67	568					43.0	347	3.8	295	2.1	174	0.05	3.9		
Wk3: 02/13-02/19/00			9.11		9.69								85	6429	53	3975	95	7076	7.17	539					44.0	350	3.5	276	3.1	249	0.05	4.6		
Wk4: 02/20-02/26/00			11.14		12.55								123	11364	64	5743	221	21370	7.18	575					44.0	435	3.8	374	3.2	320	0.03	3.2		

Total Est. Bypass Flow (MG): 0.00 Total Bypass Occurances (days/month): 0

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR MARCH 2000

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1]: Michigan - Outfall 002 Run Time Minutes	Michigan - Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)	Influent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)
Design Criteria			15 Avg 27 Max	38 Peak							Metered Lagoon Influent	>Max Q=3.0								
1	Wed	0.04	10.51	19.3	12.20					54.000	0.000	0.00	109	9554	56	4909	145	12710	8.04	529
2	Thu	0.01	10.05	15.0	11.26					54.000	0.000	0.00	85	7124	56	4861	103	8633	8.41	537
3	Fri	0.00	10.78	15.5	12.62						0.000	0.00			60	5394	150	13486	6.76	607
4	Sat	0.00	10.98	16.0	12.73						0.000	0.00								
5	Sun	0.00	10.65	15.2	12.49						0.000	0.00	104	9237	44	3908	187	16610	8.27	557
6	Mon	0.00	10.75	16.8	12.57						0.000	0.00	89	7979	73	6545	150	13448	8.40	753
7	Tue	0.00	10.83	16.2	12.72						0.000	0.00	116	10477	62	5600	124	11200	7.44	872
8	Wed	0.00	10.58	15.2	12.27						0.000	0.00	96	8471	52	4588	132	11647	6.94	812
9	Thu	0.00	10.12	20.8	11.41					8.000	0.000	0.00	84	7090	55	4642	87	7343	8.06	680
10	Fri	0.00	10.36	18.2	11.76						0.000	0.00			50	4320	128	11060	8.54	738
11	Sat	0.00	9.73	15.0	11.20						0.000	0.00								
12	Sun	0.00	9.98	14.9	11.40						0.000	0.00	76	6326	47	3912	72	5993	8.55	545
13	Mon	0.00	9.91	15.8	11.74						0.000	0.00	68	5620	44	3637	100	8265	7.73	639
14	Tue	0.15	10.24	16.9	11.65						0.000	0.00	106	8967	56	4782	161	12896	8.12	693
15	Wed	0.03	10.65	17.0	12.29						0.000	0.00	119	10570	57	5063	141	12524	9.24	821
16	Thu	0.00	9.88	15.2	11.29						0.000	0.00	112	9229	66	5438	123	10135	10.30	849
17	Fri	0.08	9.71	15.8	11.14						0.000	0.00			64	5183			7.98	646
18	Sat	0.00	9.55	15.2	10.85						0.000	0.00								
19	Sun	0.38	11.33	29.8	12.68			18.000	0.630		0.000	0.00	166	15875	59	8545	320	30238	6.48	612
20	Mon	0.19	11.63	20.7	13.84					6.000	0.000	0.00	104	10087	50	4850	153	14840	6.72	662
21	Tue	0.00	9.93	15.9	10.97						0.000	0.00	97	8033	52	4306	123	10186	9.41	779
22	Wed	0.00	9.50	15.0	10.67						0.000	0.00	96	7527	52	4120	115	9111	8.23	652
23	Thu	0.00	9.63	16.0	10.60						0.000	0.00	80	6425	50	4018	102	8192	7.00	562
24	Fri	0.04	10.06	19.2	10.99						0.000	0.00			41	3440	91	7635	7.16	601
25	Sat	0.00	9.81	15.2	10.19						0.000	0.00								
26	Sun	0.12	10.13	24.0	10.26						0.000	0.00	91	7688	45	3802	120	10136	8.31	533
27	Mon	0.12	10.24	22.1	11.19						0.000	0.00	138	11785	57	4868	174	14860	7.37	629
28	Tue	0.05	10.55	21.5	11.26						0.000	0.00	135	11878	63	5543	149	13110	8.28	729
29	Wed	0.00	9.50	11.8	9.46						0.000	0.00	99	7844	60	4754	179	14182	10.10	800
30	Thu	0.00	9.57	15.0	9.45						0.000	0.00	84	8704	43	3432	83	6625	7.62	608
31	Fri	0.00	9.66	16.5	9.41						0.000	0.00			52	4189	75	6042	6.64	535
Total		1.21	316.60		354.58	0.00	0.00	18.00	0.63	120.00	0.00	0.00								
Mean			10.22		11.44			18.00	0.63	30.00	0.00	0.00	102	8841	54	4655	134	11581	7.63	651
Maximum		0.38	11.63	29.8	13.84	0.00	0.00	18.00	0.63	54.00	0.00	0.00	166	15875	73	8545	320	30238	10.30	849
Minimum			9.50		9.41	0.00	0.00	18.00	0.63	6.00	0.00	0.00	68	5620	41	3432	72	5993	6.04	529
# of Data		31	31	31	31	0	0	1	1	4	31	31	22	22	27	27	28	26	27	27
# of Data<MDL																				
Wk1: 02/27-03/04/00			10.72		12.46								99	8904	54	4789	137	12270	6.36	567
Wk2: 03/05-03/11/00			10.43		12.06								98	8651	66	5139	135	11685	7.61	669
Wk3: 03/12-03/18/00			9.99		11.48								96	8142	56	4669	117	9962	8.32	699
Wk4: 03/19-03/25/00			10.27		11.42								109	9589	51	4384	151	13367	7.50	643
Wk5: 03/26-04/01/00			9.87		10.00								109	7650	53	3798	130	9280	7.72	548

Date	Day of Week	Clarifier Effluent Data: TBOD5 (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	Ammonia-N (mg/L)	Final Effluent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria		<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	7.1 AML 10.7 AWL <MDL	888 AML 1339 AWL	8.5 AML 12.8 AWL	1063 AML 1601 AWL	1.5 AML 2.3 AWL <MDL	188 AML 751 DML		
1	Wed	9.1	3.2	13.2	0.10	5.0	438	< 3.5	307	2.8	245	0.06	5.3		
2	Thu	9.0	3.6	14.8	0.09	3.8	319	< 4.0	335	3.6	302	0.04	3.4		
3	Fri		< 4.0	10.4	0.06			< 4.0	360	1.4	128	0.03	2.7		
4	Sat														
5	Sun				0.06	4.4	391	< 3.2	284	1.8	142	0.04	3.8		
6	Mon	3.9	2.8	9.0		< 3.7	332	< 3.3	296	0.6	54	0.04	3.6		
7	Tue	7.3	< 3.6	11.4	0.07	< 4.0	361	< 3.5	318	1.0	90	0.05	4.5		
8	Wed	8.7	3.4	12.0	0.09	3.9	344	< 4.0	353	2.8	247	0.06	5.3		
9	Thu	9.7	2.6	11.8	0.09	3.4	287	< 3.7	312	2.8	236	0.05	4.2		
10	Fri		< 3.7	12.4	0.08			< 3.7	320	2.2	190	0.05	4.3		
11	Sat														
12	Sun					3.8	316	< 3.5	291	2.8	233	0.06	5.0		
13	Mon	8.1	< 4.0	6.8	0.04	< 4.6	380	< 4.0	331	1.0	83	0.08	8.8		
14	Tue	7.4	3.2	10.8	0.08	< 4.2	359	< 3.7	316	1.4	120	< 0.02	1.7		
15	Wed	8.7	< 3.8	11.4	0.34	< 4.3	382	< 3.8	338	1.0	89	0.16	13.3		
16	Thu	9.8	< 4.0	11.4	0.32	5.1	420	< 4.0	330	4.8	396	0.16	13.2		
17	Fri		< 4.0	13.0	0.31			< 4.0	324			0.14	11.3		
18	Sat														
19	Sun					8.6	824	< 3.5	331	8.4	605	0.05	4.7		
20	Mon	9.2	2.8	12.8	0.10	3.3	320	< 3.6	339	3.8	369	0.06	5.6		
21	Tue	6.9	< 3.7	13.2	0.11	< 4.3	356	< 3.7	306	5.8	464	0.05	4.1		
22	Wed	7.4	< 3.7	11.4	0.10	< 4.3	341	< 3.7	293	5.2	412	0.04	3.2		
23	Thu	7.8	< 3.7	11.4	0.06	4.7	377	< 3.7	297	5.6	450	0.04	3.2		
24	Fri		3.1	12.6	0.06			< 3.7	310	4.1	344	0.03	2.5		
25	Sat														
26	Sun					5.6	473	< 3.7	313	8.2	524	0.04	3.4		
27	Mon	10.8	3.3	9.2	0.07	4.4	376	< 3.7	316	4.0	342	0.03	2.6		
28	Tue	7.8	< 3.7	12.1	0.06	< 4.3	378	< 3.7	326	3.6	334	0.03	2.6		
29	Wed	4.8	< 3.5	12.0	0.06	< 4.0	317	< 3.5	277	3.0	238	0.04	3.2		
30	Thu	8.9	< 3.5	11.2	0.06	< 4.0	319	< 3.5	279	2.8	223	0.04	3.2		
31	Fri		< 3.5	9.0	0.06			< 3.5	262	3.4	274	0.03	2.4		
Total															
Mean		7.9	3.5	11.4	0.11	4.4	373	3.7	314	3.2	274	0.06	4.8		
Maximum		10.8	4.0	14.8	0.34	8.6	824	4.0	360	8.4	605	0.16	13.3		
Minimum		3.9	2.6	6.6	0.04	3.3	287	3.2	277	0.6	54	0.02	1.7		
# of Data		16	23	23	23	22	22	27	27	26	26	27	27		
# of Data<MDL		0	14			10		27				1			
Wk1: 02/27-03/04/00						4.3	448	3.8	391	2.6	262	0.06	8.0		
Wk2: 03/05-03/11/00						3.9	399	3.6	362	1.8	184	0.05	4.9		
Wk3: 03/12-03/18/00						4.4	428	3.8	370	2.2	211	0.10	9.6		
Wk4: 03/19-03/25/00						4.6	454	3.6	351	5.1	494	0.05	4.4		
Wk5: 03/26-04/01/00						4.5	321	3.6	262	3.9	262	0.04	2.5		

Total Est. Bypass Flow (MG): 0.63 Total Bypass Occurances (days/month): 1

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR APRIL 2000

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1] Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 006 Run Time Minutes	Magoun - Outfall 006 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)	Influent Data TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Clarifier Effluent Data TBOD5 (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	Ammonia-N (mg/L)	Final Effluent Data TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0									<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	5.0 AML 7.5 AWL <MDL	626 AML 939 AWL	6.0 AML 9 AWL	751 AML 1127 AWL	1.5 AML 2.3 AWL <MDL	188 AML 282 AWL	200 AML 400 AWL <MDL	125 AML <MDL
1	Sat	0.00	9.45	15.0	8.96						0.000	0.00		0		0		0		0						0		0		0		0.0		
2	Sun	0.05	9.09	13.6	8.90						0.000	0.00	83	6292	56	4245	131	9931	5.77	437					< 3.5	265	< 3.2	243	5.0	379	0.01	0.8		
3	Mon	0.00	9.93	16.5	9.72						0.000	0.00	78	6460	64	5300	109	9027	6.16	510	7.9	< 3.5	12.2	0.02	< 4.0	331	< 3.5	290	4.2	348	0.05	4.1	35	30
4	Tue	0.00	9.53	14.9	8.89						0.000	0.00	77	6120	53	4212	110	8743	9.71	772	7.8	2.7	12.8	0.05	< 3.7	294	< 3.3	262	4.2	334	0.05	4.0	60	9
5	Wed	0.00	9.78	14.9	8.64						0.000	0.00	91	7422	60	4894	101	8238	11.30	922	9.0	< 3.5	13.3	0.44	< 4.0	326	< 3.5	285	2.8	228	0.33	26.9	59	49
6	Thu	0.00	9.64	14.0	8.47						0.000	0.00	87	5387	48	3859	82	6593	7.39	594	8.9	< 3.7	12.0	0.09	< 4.3	346	< 3.7	297	4.6	370	0.06	4.8	52	37
7	Fri	0.87	13.30	38.0	14.11	54.000	1.880	92.000	0.310		0.000	0.00		0	70	7765	258	28616	5.38	597		3.8	13.4	0.10		0	< 3.7	410	5.8	843	0.06	8.7	26	25
8	Sat	0.12	11.44	27.0	13.61						0.000	0.00		0		0		0		0						0		0		0		0.0	10400	9700
9	Sun	0.00	9.33	12.7	9.81						0.000	0.00	83	6458	53	4124	129	10038	5.77	449				0.03	< 4.3	335	< 3.7	288	6.0	467	0.05	3.9		
10	Mon	0.16	10.24	19.0	11.03			96.000	0.330		0.000	0.00	68	5607	42	3587	134	11444	6.22	531	6.3	< 3.5	11.8	0.02	< 4.0	342	< 3.5	299	4.0	342	0.05	4.3	47	36
11	Tue	0.04	10.26	19.5	11.44						0.010	0.00	65	5557	40	3419	98	8378	6.89	589	7.8	< 3.7	14.4	0.04	< 4.3	368	< 3.7	316	4.4	376	0.04	3.4	25	15
12	Wed	0.00	9.47	27.9	9.60						0.010	0.00	78	8160	60	4739	146	11531	8.34	859	8.4	6.0	13.4	0.22	< 4.0	316	< 3.5	276	6.0	474	0.09	7.1	33	21
13	Thu	0.00	10.17	15.7	11.45						0.000	0.00	70	5937	44	3732	124	10517	9.52	807	5.9	3.5	10.0	0.08	< 4.0	339	< 3.5	297	3.4	288	0.02	1.7	64	42
14	Fri	0.00	10.02	14.8	10.67						0.000	0.00		0	49	4095	131	10947	8.83	571		< 3.7	11.4	0.18		0	< 3.7	309	1.8	150	0.09	7.5	42	30
15	Sat	0.00	9.82	15.0	9.70						0.000	0.00		0		0		0		0						0		0		0		0.0	12	7
16	Sun	1.13	12.22	38.3	12.53	66.000	1.100	90.000	0.630		2.470	0.00	124	12637	92	9376	94	9580	5.99	610					< 4.3	438	< 3.7	377	5.0	510	0.15	15.3		
17	Mon	0.03	11.36	33.4	13.04	12.000	0.070	60.000	0.080		0.000	0.00	94	8906	67	6348	270	25580	4.31	408	9.0	< 4.0	13.8	0.07	< 4.6	436	< 4.0	379	2.1	199	0.08	7.6	7	12
18	Tue	0.00	10.40	15.0	11.12						0.000	0.00	79	6852	48	4163	115	9975	7.50	651	9.2	3.2	18.6	0.04	< 4.2	384	< 3.6	312	3.0	260	0.04	3.5	1	6
19	Wed	0.40	13.61	33.0	14.67	114.000	0.710	48.000	0.220		0.760	0.00	114	12940	58	6583	262	29739	5.94	674	10.4	3.4	17.2	0.28	< 4.0	454	< 3.5	397	3.6	409	0.17	19.3	10	15
20	Thu	0.99	17.96	37.0	20.04	162.000	3.380	144.000	5.000		1.950	0.52	66	9886	41	6141	165	24715	2.74	410	9.2	< 3.7	15.8	0.11	< 4.3	644	< 3.7	554	2.6	389	0.04	6.0	10	10
21	Fri	0.54	16.39	33.5	16.86			96.000	0.330		0.000	1.56		0	34	4848	112	15310	2.30	314		< 3.5	22.3	0.06		0	< 3.5	478	4.5	615	0.02	2.7	1	1
22	Sat	0.00	12.73	16.0	15.28						0.000	0.59		0		0		0		0						0		0		0		0.0	6	10
23	Sun	0.15	14.10	31.0	15.96						0.000	0.23	49	5762	29	3410	106	12466	8.06	848					< 4.0	470	< 3.5	412	4.4	517	0.02	2.4		
24	Mon	0.00	13.16	16.0	14.72						0.000	0.08	53	5826	36	3957	91	10003	5.21	573	8.3	< 3.7	17.6	0.02	< 4.2	462	< 3.7	407	2.0	220	0.02	2.2	3	11
25	Tue	0.00	13.12	18.0	14.30						0.000	0.00	70	7659	38	4158	116	12693	5.71	625	9.6	< 3.7	18.0	0.09	< 4.2	460	< 3.7	405	7.0	766	0.11	12.0	44	25
26	Wed	0.00	12.99	17.5	13.96						0.000	0.00	83	6825	40	4333	134	14517	7.28	789	8.6	3.2	14.0	0.06	< 3.7	401	< 3.3	358	4.0	433	0.02	2.2	25	19
27	Thu	0.00	12.77	19.0	13.68						0.000	0.00	68	7242	41	4367	137	14591	5.38	573	11.0	< 4.0	14.0	0.21	< 4.6	490	< 4.0	426	5.0	533	0.16	17.0	25	21
28	Fri	0.00	12.34	16.9	13.18						0.000	0.00	47	4837	48	4940	64	8645	6.40	659	< 4.2	3.9	19.0	0.07	4.6	473	3.5	360	5.0	515	0.04	4.1	35	26
29	Sat	0.00	11.94	16.9	12.71						0.000	0.00		0		0		0		0						0		0		0		0.0	26	24
30	Sun	0.00	11.59	16.9	12.36						0.000	0.00	62	5993	40	3866	68	6573	5.94	574					3.3	319	2.8	271	4.4	425	0.09	8.7		
Total		4.48	348.18		371.61	408.00	7.14	626.00	8.90		5.20	2.98																						
Mean			11.61		12.39	81.60	1.43	89.43	0.99		0.17	0.10	78	5232	50	4009	132	10946	6.48	508	8.1	3.7	14.7	0.11	4.1	289	3.6	290	4.2	340	0.07	5.9	460.33	424.21
Maximum		1.13	17.96	38.3	20.04	162.00	3.38	144.00	5.00		2.47	1.56	124	12940	92	9378	270	29739	11.30	948	11.0	6.0	22.3	0.44	4.6	644	4.0	554	7.0	766	0.33		10400.00	9700.00
Minimum			9.09		8.47	12.00	0.07	48.00	0.08		0.00	0.00	47	0	29	0	68	0	2.30	0	4.2	2.7	10.0	0.02	3.3	0	2.8	0	1.8	0	0.01	0.0	1.00	1.00
# of Data		30	30	30	30	5	5	7	7		30	30	22	22	25	25	25	25	25	25	17	20	20	21	22	22	25	25	25	25	25	25	24	24
# of Data<MDL																					1	12			20		23				3		0	0
Wk1: 04/02-04/08/00			10.39		10.38								79	6336	59	5046	132	11858	7.62	6.39					3.9	291	3.5	287	4.4	373	0.09	7.4	110	70
Wk2: 04/09-04/15/00			9.90		10.53								73	5984	48	3949	127	10476	7.26	6.01					4.1	366	3.6	320	4.3	374	0.06	4.9	33	22
Wk3: 04/16-04/22/00			13.52		15.08								95	10244	57	6210	170	19150	4.80	5.11					4.3	509	3.7	459	3.5	435	0.08	9.8	4	7
Wk4: 04/23-04/29/00			12.92		14.07								58	6359	39	4194	111	12152	6.34	694					4.2	502	3.6	431	4.6	542	0.06	7.2	21	20

Total Est. Bypass Flow (MG): 19.21 Total Bypass Occurances (days/month): 7

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR MAY 2000

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1]: Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)	Influent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)
Design Criteria			15 Avg 27 Max	38 Peak							Metered Lagoon Influent	>Max Q=3.0								
1	Mon	0.32	13.75	37.0	14.85						0.000	0.00	122	13990	53	6078	251	28783	4.93	565
2	Tue	0.00	11.72	16.8	13.33						0.000	0.00	55	5376	32	3126	62	8015	5.60	547
3	Wed	0.00	12.16	17.6	14.25						0.002	0.00	66	6693	38	3854	181	16328	5.43	551
4	Thu	0.00	12.99	17.8	13.39						0.000	0.00	87	9425	46	4983	101	10942	10.40	1127
5	Fri	0.00	11.93	17.4	13.12						0.000	0.00		0	45	4477	105	10447	6.64	661
6	Sat	0.00	11.94	16.3	12.92						0.000	0.00		0		0		0		0
7	Sun	0.00	12.42	15.8	12.10						0.000	0.00	60	6215	39	4040	88	9115	5.99	620
8	Mon	0.00	11.87	29.4	13.01	0.100	0.201	0.400	0.180	0.400	2.994	0.00	94	9306	45	4455	168	16631	7.59	751
9	Tue	1.09	18.99	40.0	20.33	2.100	2.361	1.700	0.453	1.700	0.469	0.14	142	22489	66	10453	374	59233	4.45	705
10	Wed	0.00	12.09	18.5	13.05						0.047	0.37	56	5647	36	3630	74	7481	6.89	695
11	Thu	0.23	14.02	38.1	15.20	0.100	0.093	0.300	0.194	0.100	0.105	0.22	91	10840	52	6080	104	12160	7.62	891
12	Fri	0.00	12.79	28.0	13.28						0.000	0.16		0	38	4053	67	7147	5.94	634
13	Sat	0.00	11.57	16.2	12.17						0.000	0.05		0		0		0		0
14	Sun	0.00	11.23	16.0	11.54						0.000	0.00	64	5994	35	3278	62	5807	6.34	594
15	Mon	0.00	11.52	19.5	11.41						0.000	0.00	78	7494	38	3459	118	11145	7.67	737
16	Tue	0.14	12.36	22.1	12.41						0.000	0.00	127	13081	54	5562	127	13081	6.06	830
17	Wed	0.00	11.65	17.0	12.70						0.000	0.00	89	8647	44	4276	98	9522	5.80	564
18	Thu	0.36	13.45	40.0	14.39	1.600	3.310	1.900	0.682	1.600	1.581	0.36	112	12563	49	5496	161	18060	5.66	635
19	Fri	0.02	12.00	21.7	12.57						0.000	1.37		0	31	3102	105	10606	5.68	588
20	Sat	0.00	11.33	16.0	11.40						0.000	1.02		0		0		0		0
21	Sun	0.00	11.18	18.3	11.19						0.000	0.85	85	7926	35	3263	88	8019	5.74	835
22	Mon	0.14	12.09	22.9	12.54						0.000	0.71	71	7159	51	5142	120	12100	6.04	609
23	Tue	0.00	11.76	17.5	12.20						0.000	0.36	91	8925	34	3335	85	8337	5.60	549
24	Wed	0.00	11.80	17.0	11.71						0.000	0.13	85	8365	44	4330	92	9054	6.16	606
25	Thu	0.00	11.53	18.6	11.23						0.000	0.03	102	9808	38	3654	113	10666	7.53	724
26	Fri	0.05	11.32	16.2	11.02						0.000	0.00		0	48	4343	149	14067	8.68	819
27	Sat	0.48	12.29	40.0	12.00		0.301		0.659		1.200	0.00		0		0		0		0
28	Sun	0.53	13.39	38.5	14.49		0.604		1.287		0.000	1.04	176	19654	63	7036	271	30263	5.32	594
29	Mon	0.00	10.71	17.0	10.68						0.000	0.40	56	5002	34	3037	64	5717	6.02	538
30	Tue	0.02	11.56	17.6	11.64						0.000	0.17	69	6652	43	4146	82	7906	9.56	922
31	Wed	0.77	14.55	29.9	15.54	1.900	1.202	3.000	0.814	1.500	1.615	0.86	98	11892	44	5339	169	20508	6.83	829
Total		4.12	383.95		401.64	5.60	8.07	7.30	4.47	5.00	8.03	8.24								
Mean			12.39		12.96	1.18	1.15	1.46	0.64	1.00	0.26	0.27	90	7192	43	4001	129	12297	6.61	594
Maximum		1.09	18.99	40.0	20.33	2.10	3.31	3.00	1.29	2.00	2.99	1.37	176	22489	66	10453	374	59233	10.40	1127
Minimum			10.71		10.66	0.10	0.09	0.30	0.18	0.00	0.00	0.00	55	0	31	0	62	0	4.45	0
# of Data		31	31	31	31	5	7	5	7	5	31	31	23	23	27	27	27	27	27	27
# of Data<MDL																				
Wk1: 04/30-05/06/00			12.06		13.23								68	6872	40	3958	103	10341	6.80	692
Wk2: 05/07-05/13/00			13.39		14.16								89	10659	48	5452	146	19918	6.41	716
Wk3: 05/14-05/20/00			11.93		12.35								94	9556	42	4195	112	10135	6.57	858
Wk4: 05/21-05/27/00			11.97		12.48								94	9556	42	4195	112	10135	6.57	858
Wk5: 05/28-06/03/00			12.40		13.37								96	7200	41	3788	128	12402	6.95	622

Date	Clarifier Effluent Data: TBOD5 (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	Ammonia-N (mg/L)	Final Effluent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria	<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	5.0 AML 7.5 AWL <MDL	626 AML 939 AWL	5.0 AML 9 AWL	751 AML 1127 AWL	1.5 AML 2.3 AWL <MDL	188 AML 282 AWL	200 AML 400 AWL <MDL	125 AML <MDL
1	9.0	< 3.5	18.2	0.09	4.0	459	3.1	355	5.8	665	0.19	21.8	41	36
2	8.0	< 3.5	15.8	0.07	< 4.0	391	< 3.5	342	3.8	371	0.03	2.9	170	190
3	7.5	4.5	19.0	0.07	< 4.0	406	< 3.5	355	5.8	568	0.06	8.1	58	44
4	12.0	< 3.5	18.8	0.91	< 4.0	433	< 3.5	379	4.4	477	0.39	42.3	67	58
5		< 3.5	12.0	0.23		0	< 3.5	348	1.8	179	0.17	16.9	140	110
6						0		0		0		0.0	47	51
7					< 4.3	445	< 3.7	363	4.4	458	0.09	9.3		
8	8.0	< 3.8	19.4	0.05	< 4.0	396	< 3.5	346	5.8	564	0.03	3.0	39	44
9	11.0	3.8	21.4	0.06	5.1	808	< 3.5	554	12.6	1996	0.07	11.1	67	51
10	8.8	< 3.5	14.8	0.02	< 4.0	403	< 3.5	353	5.2	524	0.02	2.0	59	52
11	9.7	< 3.6	13.2	0.41	< 4.0	468	< 3.5	409	5.5	643	0.18	21.0	57	42
12		< 3.5	9.0	0.11		0	< 3.5	373	3.3	352	0.06	6.5	370	180
13						0		0		0		0.0	120	45
14					< 3.3	309	< 3.0	281	5.2	487	0.12	11.2		
15	4.7	< 3.2	11.5	0.03	< 3.5	336	< 3.2	307	1.6	154	0.03	2.9	61	52
16	8.2	< 3.3	13.0	0.18	< 3.7	381	< 3.3	340	4.8	474	0.11	11.3	62	54
17	8.1	< 3.6	11.2	0.07	< 4.0	389	< 3.5	340	1.4	136	0.03	2.9	380	420
18	7.2	< 3.3	11.8	0.13	< 3.9	437	< 3.3	370	3.6	404	0.07	7.9	62	51
19		< 3.3	12.0	0.06		0	< 3.3	330	1.6	160	0.04	4.0	610	110
20						0		0		0		0.0	55	64
21					< 4.2	392	< 3.7	345	3.8	336	0.07	6.5		
22	4.4	< 4.0	14.2	0.06	< 4.8	464	< 4.0	403	3.0	302	0.05	5.0	5	12
23	7.8	< 3.3	16.0	0.10	< 3.7	363	< 3.3	324	2.0	196	0.07	6.9	10	24
24	7.2	< 3.2	14.4	0.06	< 3.6	344	< 3.2	315	1.8	177	0.05	4.9	28	36
25	7.6	< 3.3	12.4	0.18	< 3.7	356	< 3.3	317	3.2	308	0.09	8.7	11	26
26		< 3.1	10.0	0.13		0	< 3.1	293	3.6	340	0.04	3.8	47	30
27						0		0		0		0.0	41	37
28					< 3.7	413	< 3.3	369	3.8	402	0.04	4.5		
29	5.2	< 3.3	10.8	0.09	< 3.7	330	< 3.3	295	3.0	268	0.05	4.5	47	30
30	6.3	< 3.5	10.0	0.03	< 3.5	337	< 3.2	309	3.4	328	0.02	1.9	24	37
31	7.7	< 3.3	11.9	0.18	< 3.7	449	< 3.3		3.8	461	0.18	19.4	53	41
Total														
Mean	7.7	3.5	13.9	0.15	3.9	307	3.4	305	4.0	378	0.09	8.1	101.19	71.37
Maximum	12.0	4.5	21.4	0.91	5.1	808	4.0	554	12.8	1996	0.39	42.3	810.00	420.00
Minimum	4.4	3.1	9.0	0.02	3.3	0	3.0	0	1.4	0	0.02	0.0	5.00	12.00
# of Data	19	23	23	23	23	23	27	27	27	27	27	27	27	27
# of Data<MDL	0	21			21		26				1		0	0
Wk1: 04/30-05/06/00					3.6	427	3.4	374	4.0	446	0.15	18.4	65	77
Wk2: 05/07-05/13/00					4.3	535	3.5	426	6.1	603	0.08	9.7	85	58
Wk3: 05/14-05/20/00					3.7	385	3.3	341	3.0	313	0.07	6.9	56	64
Wk4: 05/21-05/27/00					3.7	385	3.3	341	3.0	313	0.07	8.9	50	47
Wk5: 05/28-06/03/00					3.6	267	3.3	303	3.1	313	0.07	5.3	31	35

Total Est. Bypass Flow (MG): 21.13 Total Bypass Occurances (days/month): 5

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR JUNE 2000

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1]: Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)	Influent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Clarifier Effluent Data: TBOD5 (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	Ammonia-N (mg/L)	Final Effluent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria			15 Avg 27 Max	38 Peak							Metered Lagoon Influent	>Max Q=3.0									<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	5.0 AML 7.5 AWL <MDL	626 AML 939 AWL	6.0 AML 9 AWL	751 AML 1127 AWL	1.5 AML 2.3 AWL <MDL	188 AML 282 AWL	200 AML 400 AWL <MDL	125 AML <MDL
1	Thu	0.00	13.00	18.4	14.63							1.29	83	8999	30	3253	84	9107	8.85	710	7.3	< 3.2	12.2	0.13	< 3.5	379	< 3.2	347	1.8	195	0.05	5.4	27	38
2	Fri	0.01	12.26	18.5	13.84							0.64			31	3170	98	10020	7.44	761		< 3.3	14.8	0.07			< 3.3	337	3.0	307	0.04	4.1	20	20
3	Sat	0.00	11.33	17.5	12.59							0.44																					47	61
4	Sun	0.00	11.65	16.8	12.30							0.31	68	6720	32	3163	67	6622	7.17	709					< 4.3	425	< 3.7	366	4.0	395				
5	Mon	1.05	17.04	34.0	19.25	180.000	2.883	4.100	1.551	138.000	2.194	< 2.02	84	11938	33	4690	155	22028	3.75	533	5.4	< 3.7	12.4	0.04	< 4.3	811	< 3.7	526	2.2	313	< 0.02	2.8	150	300
6	Tue	0.00	13.64	20.5	14.86							< 2.33	56	6370	33	3754	80	9101	5.88	669	7.1	< 3.7	13.2	0.07	< 4.3	489	< 3.7	421	5.0	569	< 0.06	6.8	48	180
7	Wed	0.00	13.96	21.0	14.94							0.88	83	9663	30	3493	107	12458	5.48	638	7.7	< 3.5	11.6	0.03	< 4.3	501	< 3.5	407	5.0	582	0.03	3.5	32	240
8	Thu	0.00	13.70	18.6	14.84							0.43	77	8798	30	3428	92	10512	5.77	659	8.2	< 3.7	11.8	0.04	< 4.3	491	< 3.7	423	4.0	457	0.04	4.6	29	150
9	Fri	0.00	13.15	23.2	13.72							0.31			38	4167	126	13819	5.96	654		< 3.7		0.04			< 3.7	406	1.7	186	0.02	2.2	35	180
10	Sat	0.00	12.34	17.3	12.73							0.19																					54	54
11	Sun	0.07	12.47	17.8	12.87							0.07	74	7696	33	3432	110	11440	4.62	501					< 3.7	385	3.1	322	3.0	312	0.09	9.4		
12	Mon	0.91	17.48	40.0	19.32					139.600	2.457	< 1.61	78	11371	43	6269	82	11954	8.15	751	8.2	< 4.0	12.8	0.04	< 4.6	871	< 4.0	583	5.3	773	< 0.02	2.9	110	180
13	Tue	0.68	15.73	35.5	16.58	114.000	3.958	192.000	1.096	144.000	2.355	< 4.61	72	9446	34	4460	137	17973	3.58	470	6.8	< 3.7	15.0	0.02	< 4.3	564	< 3.7	485	3.4	446	< 0.02	2.6	310	320
14	Wed	0.38	18.23	34.0	16.49	57.400	1.993	49.800	0.255	71.400	0.042	< 3.22	64	12771	40	6082	171	26999	4.88	742	7.8	3.5	10.2	0.05	< 4.3	654	< 3.7	563	3.2	487	0.05	7.6	80	310
15	Thu	0.00	15.67	21.0	15.91							1.55	99	13103	37	4897	127	16809	5.20	688	8.4	< 3.7	8.8	0.02	< 4.3	569	< 3.7	490	1.6	212	0.02	2.8	140	260
16	Fri	0.05	15.63	20.9	15.75							0.55			45	5886	231	30112	5.10	665		< 3.5	13.0	0.05			< 3.5	456	1.4	182	0.03	3.9	50	190
17	Sat	0.00	14.12	19.0	15.00							0.24																					52	67
18	Sun	0.00	13.35	18.0	14.20							0.13	79	8796	34	3786	88	9798	6.61	736					< 4.3	479	< 3.7	412	3.8	423	0.08	6.9		
19	Mon	0.00	14.14	20.0	14.97							0.05	84	9906	32	3774	126	14859	8.79	1037	8.1	< 3.7	11.0	0.24	< 4.3	507	< 3.7	436	2.2	259	0.14	16.5	160	390
20	Tue	1.52	17.69	33.0	17.92	165.000	5.729	220.000	1.225	197.000	7.486	< 0.74	120	17704	46	6787	107	15786	4.20	620	7.4	< 3.7	11.4	0.02	< 4.3	634	< 3.7	546	2.0	295	0.02	3.0	220	150
21	Wed	0.01	17.58	29.3	17.51	5.400	0.188	99.600	0.530	12.600	0.479	< 3.79	102	14955	44	6451	138	19793	5.10	748	7.4	< 3.7	10.2	0.13	< 4.2	616	< 3.7	542	2.2	323	0.05	7.3	74	36
22	Thu	0.00	16.04	20.0	16.98							1.25	92	12307	42	5618	133	17792	6.02	805	7.6	< 3.7	15.2	0.05	< 4.3	575	< 3.7	495	3.2	428	0.03	4.0	89	75
23	Fri	0.05	15.97	28.0	16.15							0.45			39	5194	445	59269	6.63	883		< 3.7	16.2	0.07			< 3.7	493	2.6	333	0.03	4.0	230	140
24	Sat	1.82	17.05	30.0	16.87	297.000	10.313	357.000	1.623	279.600	10.625	< 1.24																					92	78
25	Sun	0.00	17.02	21.0	17.73			207.000	1.136	23.400	0.689	< 4.05	47	6671	22	3123	70	9936	3.30	468					< 4.2	596	< 3.7	525	2.0	264	0.04	5.7		
26	Mon	0.00	20.17	29.5	19.81			14.400	0.060			1.45	95	15981	35	5888	157	26410	4.59	772	8.2	< 3.7	12.0	0.04	< 4.3	723	< 3.7	622	4.4	740	0.05	8.4	280	
27	Tue	0.00	16.65	30.5	16.59							0.61	79	12420	35	5502	123	19337	5.10	802	7.3	< 3.7	10.6	0.06	< 4.3	676	< 3.7	582	4.4	692	0.03	4.7	320	340
28	Wed	0.04	16.63	30.0	16.95							0.34	80	11229	29	4071	116	16282	4.65	653	7.9	< 3.7	11.2	0.02	< 4.3	604	< 3.7	519	2.5	361	< 0.02	2.8	33	41
29	Thu	0.05	16.48	30.0	18.24	72.000	2.500					0.47	76	11713	36	5548	95	14642	7.00	1079	8.1	< 3.7	12.8	0.01	< 4.3	663	< 3.7	570	1.8	277	< 0.02	3.1	62	71
30	Fri	0.00	16.49	28.4	16.54							0.20			36	4951	109	14990	5.85	805		3.7	12.8	0.04			< 3.7	509	2.4	330	0.01	1.4	20	12
Total		6.64	461.46		482.06	890.80	27.66	1143.90	7.48		26.53	35.65																						
Mean			15.38		16.07	127.26	3.94	142.99	0.93		3.32	1.19	82	10684	35	4647	130	17186	5.56	714	7.4	3.6	12.3	0.06	4.2	562	3.6	476	3.0	390	0.04	5.1	106.31	158.96
Maximum		1.82	20.17	40.0	19.81	297.00	10.31	357.00	1.62		10.63	4.81	120	17704	46	6787	445	59269	8.79	1079	8.2	4.0	16.2	0.24	4.6	723	4.0	622	5.3	773	0.14	16.5	320.00	390.00
Minimum			11.33		12.30	5.40	0.19	4.10	0.06		0.04	0.05	47	6370	22	3123	67	6622	3.30	468	5.4	3.2	8.8	0.01	3.5	379	3.1	322	1.4	182	0.01	1.4	20.00	12.00
# of Data		30	30	30	30	7	7	8	6	6	8	30	21	21	26	26	26	26	26	26	17	22	21	22	21	21	26	26	26	26	25	25	26	26
# of Data<MDL																					0	20			21		25				6		0	0
Wk1: 06/04-06/10/00			13.67		14.66								74	8698	33	3782	104	12413	5.67	644					4.3	546	3.7	458	3.7	449	0.03	3.6	48	163
Wk2: 06/11-06/17/00			15.65		16.27								81	10677	39	5168	143	19048	4.79	636					4.2	593	3.6	502	3.0	423	0.04	5.0	104	180
Wk3: 06/18-06/24/00			15.97		16.66								95	12734	40	5268	172	22883	6.23	605					4.3	562	3.7	503	2.7	356	0.06	7.6	130	110
Wk4: 06/25-07/01/00			17.50		17.62								78	9669	32	4155	112	14514	5.08	654					4.3	543	3.7	475	2.9	380	0.03	3.7	70	78

Total Est. Bypass Flow (MG): 70.69 Total Bypass Occurances (days/month): 10

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR JULY 2000

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1] Michigan Outfall 002 Run Time Minutes	Michigan Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun Flow (MGD)	Outfall 006 CSO Lagoon (MGD)	Influent TBOD5 (mg/L)	Influent TBOD5 (lb/day)	Influent CBOD5 (mg/L)	Influent CBOD5 (lb/day)	Influent TSS (mg/L)	Influent TSS (lb/day)	Influent Ammonia-N (mg/L)	Influent Ammonia-N (lb/day)	Clarifier Effluent TBOD5 (mg/L)	Clarifier Effluent CBOD5 (mg/L)	Clarifier Effluent TSS (mg/L)	Clarifier Effluent Ammonia-N (mg/L)	Final Effluent TBOD5 (mg/L)	Final Effluent TBOD5 (lb/day)	Final Effluent CBOD5 (mg/L)	Final Effluent CBOD5 (lb/day)	Final Effluent TSS (mg/L)	Final Effluent TSS (lb/day)	Final Effluent Ammonia-N (mg/L)	Final Effluent Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0									<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	5.0 AML 7.5 AWL <MDL	626 AML 939 AWL	6.0 AML 9 AWL	751 AML 1127 AWL	1.5 AML 2.3 AWL <MDL	188 AML 282 AWL	200 AML 400 AWL <MDL	125 AML <MDL
1	Sat	0.00	14.67	19.0	15.47							0.01		0		0		0		0						0		0		0		0.0	33	78
2	Sun	0.00	14.27	19.0	15.42							0.01	41	4879	26	3094	67	7974	4.42	526					3.5	417	< 3.2	381	2.0	238	0.02	2.4		
3	Mon	0.92	20.95	32.0	21.22	218.400	6.308	255.000	1.594	182.400	3.167 >	2.72	110	19220	49	6561	231	40361	5.71	998	4.8	< 3.5	9.8	0.05	4.0	699	< 3.5	612	2.6	454	0.03	5.2	60	75
4	Tue	0.00	16.13	27.8	16.57							1.77	35	4706	21	2825	40	5381	4.14	557	7.8	< 4.0	13.0	0.07	4.6	619	< 4.0	538	2.8	377	< 0.02	2.7	60	120
5	Wed	0.00	16.24	30.0	16.25							1.23	40	5418	16	2187	57	7720	4.37	592	7.7	< 3.7	14.2	0.07	4.3	582	< 3.7	501	4.2	569	0.02	2.7	28	150
6	Thu	0.00	15.83	28.3	16.09							0.97	134	17691	61	8053	184	21652	4.54	599	9.5	< 3.2	12.0	0.14	3.3	436	2.6	343	3.0	396	0.05	8.8	190	170
7	Fri	0.00	15.96	20.0	15.73							0.70		0	54	7188	123	16372	4.48	596		< 3.7	10.6	0.11		0	< 3.7	492	2.5	333	0.06	8.0	60	92
8	Sat	0.00	15.02	19.6	15.60							0.45		0		0		0		0						0		0		0		0.0	250	200
9	Sun	0.00	14.81	20.3	15.44							0.15	119	14500	62	7555	110	13403	4.97	606					4.0	487	< 3.5	426	4.2	512	0.05	6.1		
10	Mon	0.81	17.71	32.4	16.50	99.000	2.406	166.200	0.997	106.200	1.644 >	1.64	70	10339	47	6942	132	19497	5.16	761	7.9	< 4.0	11.4	0.09	4.6	679	< 4.0	591	5.4	798	0.05	7.4	27	16
11	Tue	0.00	16.01	28.6	15.60							0.96	85	11349	30	4006	126	16824	5.15	688	4.8	< 4.0	10.8	0.05	4.6	614	< 4.0	534	2.8	374	0.02	2.7	210	
12	Wed	0.00	15.35	23.0	16.06							0.30	59	7553	34	4353	126	16130	5.38	669	6.2	< 4.0	12.2	0.02	3.3	422	3.0	384	2.8	358	< 0.02	2.6	220	
13	Thu	0.00	15.04	20.0	15.11							0.06	81	10160	43	5394	143	17937	6.05	759	< 4.6	< 4.0	13.2	0.27	4.8	577	< 4.0	502	3.6	452	0.06	7.5	350	180
14	Fri	0.01	14.57	19.8	16.19							0.00		0	36	4374	106	12680	6.04	734		< 4.0	7.0	0.35		0	< 4.0	488	2.0	243	0.12	14.6	1500	300
15	Sat	0.00	13.25	19.3	14.44							0.00		0		0		0		0						0		0		0		0.0	73	160
16	Sun	0.00	13.03	18.0	14.45							0.00	69	7498	40	4347	88	9563	4.93	536					4.0	435	3.3	359	2.8	304	0.01	1.1		
17	Mon	0.00	13.32	19.0	14.25							0.00	60	6665	51	5666	108	11998	7.66	861	< 4.8	< 4.0	13.8	0.06	4.6	511	< 4.0	444	3.6	400	< 0.02	2.2	49	200
18	Tue	0.01	13.37	19.8	14.07							0.00	76	8363	51	5687	92	10259	8.72	749	8.1	3.7	17.7	0.18	3.8	424	3.3	368	2.8	312	0.04	4.6	34	37
19	Wed	0.00	14.10	20.9	14.03							0.00	64	7526	53	6232	112	13171	8.55	770	2.4	< 3.4	18.0	0.09	2.5	294	1.8	212	2.8	306	0.04	4.7	44	110
20	Thu	0.00	13.45	19.4	13.40							0.00	69	7740	54	6057	125	14022	8.38	716	4.0	< 4.0	20.2	0.16	4.8	518	< 4.0	449	3.2	359	0.04	4.5	43	160
21	Fri	0.00	13.15	19.2	12.65							0.00		0	47	5155	144	16793	4.45	486		< 3.7	15.8	0.15		0	< 3.7	406	3.1	340	0.11	12.1	250	60
22	Sat	0.00	12.60	17.3	12.48							0.00		0		0		0		0						0		0		0		0.0	30	70
23	Sun	0.00	12.10	16.9	11.60							0.00	52	5248	42	4238	88	8880	6.18	622					3.6	353	3.1	313	1.0	101	0.04	4.0		
24	Mon	0.00	13.02	18.0	11.96							0.00	81	6624	54	5864	91	9881	7.75	842	< 4.8	< 4.0	13.4	0.34	4.8	499	< 4.0	434	0.4	43	0.11	11.9	65	34
25	Tue	0.00	12.99	19.1	12.18							0.00	73	7909	54	5850	95	10292	7.09	768	3.1	< 4.0	13.2	0.22	3.1	336	< 4.3	466	8.8	737	0.06	8.5	29	100
26	Wed	0.00	13.18	19.1	12.73							0.00	85	9343	73	8024	56	8156	6.72	739	8.8	2.9	12.9	0.19	4.0	440	< 3.5	385	1.2	132	0.06	8.6	65	38
27	Thu	0.00	13.04	23.0	12.72							0.00	81	6634	42	4568	122	13268	5.49	597	< 4.3	< 3.7	15.2	0.15	4.3	468	< 3.7	402	1.6	174	0.02	2.2	310	150
28	Fri	0.42	15.56	40.0	14.97	28.200	0.648	36.000	0.120	66.000	0.499	0.00		0	60	7786	214	27771	5.54	719		< 3.7	14.0	0.11		0	< 3.7	480	2.7	350	0.07	9.1	750	650
29	Sat	0.04	12.88	20.8	13.16							0.00		0		0		0		0						0		0		0		0.0	670	530
30	Sun	0.21	12.79	21.3	12.64							0.00	38	4053	25	2667	61	6507	4.37	486					4.0	427	< 3.5	373	3.8	405	0.08	8.5		
31	Mon	0.13	14.45	31.2	13.11							0.00	57	6869	37	4459	103	12413	7.56	911	7.3	< 3.7	14.2	0.09	4.3	518	< 3.7	446	8.8	819	0.05	8.0	110	210
Total		2.55	448.64		452.26	345.60	8.36	457.20	2.71		5.61	10.97																						
Mean			14.48		14.59	115.20	2.79	152.40	0.90		1.84	0.35	70	6138	45	4552	112	11810	5.68	577	5.9	3.8	13.4	0.14	4.0	347	3.6	365	3.1	319	0.05	4.9	208.08	180.38
Maximum		0.92	20.95	40.0	21.22	218.40	5.31	255.00	1.59		3.17	2.72	134	19220	73	6561	231	40361	7.75	998	9.5	4.0	20.2	0.35	4.8	699	4.3	812	6.8	819	0.12	14.8	1500.00	650.00
Minimum			12.10		11.60	28.20	0.65	36.00	0.12		0.50	0.00	35	0	16	0	40	0	4.14	0	2.4	2.9	7.0	0.02	2.5	0	1.8	0	0.4	0	0.01	0.0	27.00	18.00
# of Data		31	31	31	31	3	3	3	3		3	31	22	22	26	25	26	26	26	26	17	21	21	21	22	22	26	26	26	26	26	26	28	26
# of Data<MDL																					4	19			15		20				3		0	0
Wk1: 07/02-07/08/00			16.34		16.70								72	10383	36	5315	114	16577	4.61	601					3.9	564	3.5	487	2.9	401	0.03	4.7	81	127
Wk2: 07/09-07/15/00			15.22		15.62								83	10780	42	5437	124	16112	5.48	668					4.2	563	3.8	498	3.5	466	0.05	7.0	191	167
Wk3: 07/16-07/22/00			13.32		13.64								67	7558	49	5524	111	12458	8.12	539					3.9	456	3.4	386	3.0	348	0.04	4.9	54	90
Wk4: 07/23-07/29/00			13.25		12.78								66	7151	54	6055	111	12708	8.48	575					3.9	399	3.7	394	2.3	244	0.06	8.4	159	137

Total Est. Bypass Flow (MG): 15.58 Total Bypass Occurances (days/month): 3

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR AUGUST 2000

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1]: Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)	Influent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Clarifier Effluent Data: TBOD5 (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	Ammonia-N (mg/L)	Final Effluent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0									<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	5.0 AML 7.5 AWL <MDL	626 AML 939 AWL	6.0 AML 9 AWL	751 AML 1127 AWL	1.5 AML 2.3 AWL <MDL	188 AML 282 AWL	200 AML 400 AWL <MDL	125 AML 235 DML <MDL
1	Tue	0.00	12.49	18.1	11.59							0.00	44	4583	24	2500	54	5625	6.79	707	7.3	< 3.5	12.8	0.12	4.0	417	< 3.5	365	2.0	208	0.07	7.3	180	170
2	Wed	0.02	12.81	19.5	12.02							0.00	56	5983	36	3846	96	10256	7.07	755	6.8	< 3.3	14.2	0.07	3.7	395	< 3.3	353	4.8	513	0.04	4.3	140	128
3	Thu	0.00	12.09	17.4	12.25							0.00	46	4638	31	3126	62	6251	7.17	723	8.0	< 3.7	11.5	0.17	3.6	363	< 3.7	373	2.6	262	0.03	3.0	190	200
4	Fri	0.00	12.06	17.4	10.51							0.00			43	4325	80	8046	8.94	898		< 3.7	12.0	0.09			< 3.7	372	2.7	272	0.06	8.0	62	81
5	Sat	0.30	13.45	34.8	13.38	25.800	1.174	37.800	0.164	35.400	1.356	0.00																					250	200
6	Sun	0.75	14.42	39.8	15.16	177.600	8.061	115.200	0.815	164.400	3.152	0.54	123	14792	53	6374	271	32591	5.21	627					3.7	445	< 3.3	397	3.8	433				
7	Mon	0.00	13.72	19.8	13.37							1.16	41	4691	39	4463	75	8582	5.94	680	6.1	< 4.0	12.8	0.20	4.8	526	< 4.0	458	2.1	240	0.10	11.4	190	
8	Tue	0.00	13.69	20.1	14.16							0.45	69	7676	41	4681	65	7421	8.34	952	9.1	< 3.7	12.2	0.11	4.3	491	< 3.7	422	2.4	274	0.04	4.8	390	
9	Wed	0.00	13.48	19.2	13.76							0.24	83	9331	53	5958	125	14053	7.62	857	7.5	3.1	14.0	0.22	4.0	450	< 3.5	393	7.0	787	0.07	7.9	540	
10	Thu	0.00	11.60	19.4	12.00							0.13	54	5314	35	3444	98	9644	5.60	551	5.9	< 3.3	12.8	0.14	3.7	364	< 3.3	325	2.8	276	0.02	2.0	220	
11	Fri	0.00	12.95	19.0	13.18							0.07			76	8208	141	15226	7.11	768		8.7	11.7	0.41			< 3.5	378	5.0	540	0.23	24.8	1200	
12	Sat	0.00	11.98	19.8	12.20							0.00																					2400	
13	Sun	0.00	11.92	17.0	11.81							0.00	48	4772	43	4275	81	8052	8.78	674					4.8	457	< 4.0	398	3.8	378	0.05	5.0		
14	Mon	0.00	12.67	18.5	12.64							0.00	33	3487	30	3170	110	11623	8.96	947	< 4.6	< 4.0	9.4	0.18	4.5	486	< 4.0	423	3.4	359	0.06	8.3	360	
15	Tue	0.00	12.94	19.2	12.36							0.01	72	7770	59	6367	109	11763	8.55	707	8.5	< 4.0	10.6	0.14	4.6	496	< 4.0	432	2.4	259	0.04	4.3	500	
16	Wed	0.00	12.36	19.4	11.58							0.03	102	10614	80	8247	94	9690	7.44	767	7.0	< 3.5	9.8	0.18	4.0	412	< 3.5	361	2.8	266	0.05	5.2	270	
17	Thu	1.21	15.89	40.0	18.06	178.400	8.026	156.600	0.898	180.000	3.148	> 1.78	99	13120	62	8216	276	36576	5.74	781	5.3	< 3.7	8.0	0.06	4.3	570	< 3.7	490	0.8	106	0.04	5.3	3400	4600
18	Fri	0.02	12.82	18.5	12.86	176.400	8.026					1.04			28	2994	100	10692	4.91	525		< 3.5	8.2	0.09			< 3.5	374	0.4	43	0.04	4.3	51	40
19	Sat	0.00	12.00	16.2	12.00							0.41																					58	
20	Sun	0.00	12.24	18.3	12.46							0.16	45	4594	33	3369	67	6639	6.32	645					4.0	408	< 3.5	357	2.8	265	0.06	6.1		
21	Mon	0.00	12.53	18.5	12.67							0.07	48	5016	30	3135	94	9823	8.96	936	6.0	< 4.0	18.0	0.16	4.8	481	< 4.0	418	2.0	209	0.06	8.3	290	
22	Tue	0.00	12.52	20.9	12.61							0.04	66	7100	38	3968	95	9920	7.79	812	5.8	< 3.5	9.8	0.15	4.0	418	< 3.5	385	3.2	334	0.06	8.3	460	
23	Wed	0.28	15.22	40.0	16.21	25.800	0.587	55.200	0.329	63.000	0.647	0.50	69	11297	63	7997	171	21706	5.99	760	6.5	< 3.2	8.6	0.17	3.6	444	< 3.2	406	1.5	190	0.04	5.1	640	700
24	Thu	0.00	12.55	22.2	13.73							0.27	36	3768	27	2826	60	6280	6.27	656	3.7	< 3.0	11.0	0.11	3.3	345	< 3.0	314	0.6	63	0.04	4.2	110	
25	Fri	0.00	12.30	18.5	13.34							0.18			34	3488	82	6412	7.81	801		< 3.7	11.8	0.33			< 3.7	380	2.0	205	0.08	8.2	230	
26	Sat	0.00	12.22	16.1	13.24							0.09																					150	
27	Sun	0.00	11.74	17.0	12.99							0.04	47	4602	32	3133	65	6364	5.32	521					3.7	362	< 3.3	323	5.2	509	0.11	10.8		
28	Mon	0.00	12.41	19.0	13.53							0.00	87	9004	56	5796	122	12627	9.18	950	7.6	< 3.3	11.0	0.12	3.7	383	< 3.3	342	3.0	310	0.04	4.1	150	210
29	Tue	0.00	12.16	17.1	13.36							0.02	103	10437	82	8309	109	11045	8.64	896	7.4	< 3.3	13.0	0.15	3.7	375	< 3.3	334	3.8	385	0.04	4.1	22	13
30	Wed	0.00	12.18	18.4	13.02							0.03	87	8838	63	6400	100	10158	8.48	859	9.2	4.7	13.2	0.14	3.3	335	2.9	295	4.2	427	0.04	4.1	25	27
31	Thu	0.00	12.20	21.0	12.87							0.03	113	11498	79	8038	116	11803	9.07	923	8.5	< 4.0	12.0	0.13	4.8	468	< 4.0	407	3.8	387	0.06	6.1	8	24
Total		2.58	395.80		403.13	582.00	25.89	364.80	2.01		8.50	7.24																						
Mean			12.77		13.00	116.40	5.18	91.20	0.50		2.13	0.23	69	7523	47	5081	106	11892	7.12	758	6.6	3.8	11.6	0.16	4.0	430	3.6	380	3.0	315	0.06	8.4	462.44	477.69
Maximum		1.21	15.89	40.0	16.21	177.60	8.06	156.60	0.90		3.15	1.78	123	14792	62	8309	276	36576	9.18	952	9.2	8.7	18.0	0.41	4.8	570	4.0	490	7.0	787	0.23	24.8	3400.00	4600.00
Minimum			11.74		10.51	25.80	0.59	37.80	0.16		0.65	0.00	33	3487	24	2500	54	5625	4.91	521	3.7	3.0	8.0	0.07	3.3	335	2.9	295	0.4	43	0.02	2.0	8.00	13.00
# of Data		31	31	31	31	5	5	4	4		4	31	23	23	27	27	27	27	27	27	19	23	23	23	23	23	27	27	27	27	28	28	27	27
# of Data<MDL																					1	20			21		28				1		0	0
Wk1: 07/30-08-05			12.68		12.21								48	5225	33	3487	76	8183	8.55	710					3.9	403	3.8	357	3.8	387	0.06	5.5	149	148
Wk2: 08/06-08-12			13.15		13.40								74	8401	50	5521	129	14587	6.64	739					4.1	464	3.8	403	3.8	434	0.09	10.2	542	556
Wk3: 08/13-08-19			12.94		12.79								71	7933	50	5545	128	14733	8.73	730					4.4	477	3.8	407	2.2	231	0.05	5.0	281	352
Wk4: 08/20-08-26			12.80		13.47								57	6355	38	4131	95	10497	7.19	769					3.9	435	3.5	390	2.0	219	0.06	6.3	262	313
Wk5: 08/27-09-02			12.04		12.73								87	6340	62	5393	104	10535	8.21	714					3.8	347	3.4	307	3.5	411	0.06	5.3	33	32

Total Est. Bypass Flow (MG): 955.30 Total Bypass Occurances (days/month): 5

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR SEPTEMBER 2000

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1]: Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)	Influent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0								
1	Fri	0.00	12.14	16.6	12.38							0.00			60	6075	142	14377	8.40	850
2	Sat	0.00	11.48	17.0	10.95							0.03								
3	Sun	0.00	11.59	16.5	10.45							0.03	73	7056	48	4640	77	7443	8.62	833
4	Mon	0.00	8.37	16.0	9.49							0.01	59	4119	36	2513	88	6143	6.55	457
5	Tue	0.00	11.26	25.0	9.91							0.00	148	13735	70	6585	241	22672	10.80	1016
6	Wed	0.02	11.26	22.0	9.91							0.00	96	9015	81	5728	112	10516	10.10	948
7	Thu	0.00	11.42	17.0	10.39							0.00	107	10191	81	7715	109	10381	8.40	800
8	Fri	0.00	8.20	16.0	11.13							0.02			72	4924	142	9711	6.28	566
9	Sat	0.00	11.25	16.5	10.03							0.01								
10	Sun	0.55	12.84	40.0	11.93	34.800	0.792	55.200	0.424	71.400	0.385	0.00	102	11008	75	8094	249	26872	5.48	589
11	Mon	2.96	16.81	40.0	17.06	454.200	20.666	418.200	15.857	491.400	18.821 >	1.68	100	13186	57	7516	144	18987	5.22	668
12	Tue	0.33	24.92	31.0	26.33	216.400	9.937	283.200	10.293	238.200	9.123 >	3.60	27	5611	15	3117	64	13301	3.14	653
13	Wed	0.00	22.13	32.0	20.99					11.400	0.218	1.26	35	6460	18	3322	49	9044	3.06	566
14	Thu	0.31	21.76	33.8	20.82			20.400	0.464	43.200	0.827	0.72	23	4174	27	4900	52	9437	4.48	613
15	Fri	0.00	17.88	30.0	16.29							0.34			41	6114	92	13719	5.66	844
16	Sat	0.00	15.79	29.0	16.96							0.11								
17	Sun	0.00	16.55	20.6	16.27							0.04	41	6317	21	2723	54	7003	4.31	559
18	Mon	0.00	14.99	20.1	15.69							0.00	52	6501	26	3250	75	9376	6.75	844
19	Tue	0.00	14.58	22.0	15.20							0.01	51	6201	30	3648	74	8998	5.07	616
20	Wed	0.58	17.41	38.3	17.71	33.600	0.764			72.000	1.379	0.04	79	11471	39	5663	162	23522	6.44	935
21	Thu	0.00	12.31	20.0	15.67							0.01	22	2259	13	1335	49	5031	6.16	632
22	Fri	0.41	16.40	38.5	16.32	35.400	0.806			40.800	0.781	0.08			24	3263	123	16823	4.67	666
23	Sat	0.00	14.86	30.0	15.22							0.28								
24	Sun	0.24	16.65	31.6	15.99							0.13	38	5277	31	4305	67	9304	3.64	505
25	Mon	0.01	13.48	19.6	14.00							0.00	59	6633	33	3710	78	8769	5.99	673
26	Tue	0.00	13.62	19.0	14.28							0.00	69	7836	29	3294	66	7724	4.24	482
27	Wed	0.00	12.53	18.0	13.53							0.00	100	10450	44	4598	121	12645	8.13	850
28	Thu	0.00	11.63	17.7	12.46							0.00	75	7278	38	3666	97	9408	8.57	631
29	Fri	0.00	11.97	17.0	12.60							0.00			44	4393	95	9484	4.76	475
30	Sat	0.00	11.21	16.5	11.86							0.00								
Total		5.41	425.41		434.02	776.40	32.96	777.00	27.04		31.53	8.35								
Mean			14.18		14.47	155.28	6.59	194.25	6.76		4.50	0.28	68	7689	41	4606	105	12028	6.28	706
Maximum		2.96	24.92	40.0	26.33	454.20	20.67	418.20	15.86		18.82	3.60	148	13735	81	8094	249	26872	10.80	1016
Minimum			8.20		9.49	33.60	0.78	20.40	0.42		0.22	0.00	22	2259	13	1335	49	5031	3.06	457
# of Data		30	30	30	30	5	5	4	4		7	30	20	20	26	25	25	25	25	25
# of Data<MDL																				
Wk1: 9/03-9/09/2000			10.48		10.19								96	8823	61	5351	128	11145	8.79	601
Wk2: 9/10-9/16/2000			16.75		18.91								57	6088	39	5511	108	15227	4.51	566
Wk3: 9/17-9/23/2000			15.16		16.01								49	6350	26	3317	89	11782	5.60	539
Wk4: 9/24-9/30/2000			15.29		16.26								49	6350	26	3317	89	11762	5.60	575

Date	Clarifier Effluent Data: TBOD5 (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	Ammonia-N (mg/L)	Final Effluent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria	<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	5.0 AML 7.5 AWL <MDL	626 AML 939 AWL	8.0 AML 9 AWL	751 AML 1127 AWL	1.5 AML 2.3 AWL <MDL	188 AML 282 AWL	200 AML 400 AWL <MDL	125 AML 235 DML <MDL
1		< 3.7	10.4	0.11			< 3.7	375	1.6	162	0.06	6.1	15	15
2													12	11
3					4.0	387	< 3.5	338	3.0	290	0.07	6.8		
4	< 4.0	< 3.5	11.4	0.06	4.0	279	< 3.5	244	2.8	195	0.04	2.8	13	17
5	8.4	< 3.5	16.8	0.57	4.0	376	< 3.5	329	3.6	357	0.20	18.8	200	250
6	6.5	< 3.5	14.0	0.16	4.0	376	< 3.5	329	5.2	488	0.11	10.3	61	48
7	7.6	< 3.5	14.2	0.06	4.0	381	< 3.5	333	3.6	362	0.09	8.6	25	30
8		3.7	13.0	0.14			< 3.7	253	3.0	205	0.16	10.9	50	80
9					4.0	375	< 3.5	328					49	31
10					4.6	496	< 3.7	399	4.0	432	0.13	14.0		
11	13.0	6.3	11.6	0.19	6.6	1134	7.2	949	2.8	369	0.11	14.5	36	31
12	6.1	< 3.7	9.3	0.09	4.3	894	< 3.7	769	2.8	582	0.06	12.5	71	54
13	7.6	< 3.7	9.6	0.07	4.2	775	< 3.7	683	2.6	480	0.12	22.1	220	
14	5.6	< 3.5	11.2	0.09	4.0	726	< 3.5	635	3.4	617	0.03	5.4	290	360
15		< 3.7	8.8	0.10			< 3.7	552	1.1	164	0.02	3.0	59	70
16													31	37
17					4.0	519	< 3.5	454	3.0	389	0.02	2.6		
18	< 4.3	< 3.7	11.4	0.12	4.3	538	< 3.7	463	2.6	325	0.03	3.8	43	39
19	7.9	< 3.7	10.6	0.11	4.3	523	< 3.7	450	2.6	340	0.04	4.9	51	39
20	6.0	< 3.7	13.9	0.09	4.2	610	< 3.7	537	3.8	552	0.03	4.4	32	28
21	4.2	< 3.5	11.4	0.06	4.0	411	< 3.5	359	7.0	719	0.06	6.2	36	31
22		< 3.7	9.4	0.06			< 3.7	506	4.2	574	0.06	10.9	15	15
23													23	18
24					4.0	555	< 3.5	486	4.0	555	0.16	22.2		
25	5.2	< 3.5	11.4	0.06	4.0	450	< 3.5	393	3.2	360	0.09	10.1	34	27
26	7.7	< 3.3	11.2	0.08	3.7	420	< 3.3	375	2.6	295	0.13	14.8	26	22
27	7.2	< 3.7	16.2	0.09	4.3	449	< 3.7	387	3.8	397	0.14	14.6	32	26
28	8.1	< 3.5	13.3	0.12	4.0	388	< 3.5	339	3.2	310	0.10	9.7	100	32
29		< 3.7	15.2	0.08			< 3.7	369	2.2	220	0.09	9.0	47	37
30													35	31
Total														
Mean	8.8	3.8	12.1	0.12	4.3	527	3.7	448	3.3	390	0.09	10.0	81.77	62.27
Maximum	13.0	8.3	16.8	0.57	6.6	1134	7.2	949	7.0	719	0.20	22.2	290.00	360.00
Minimum	4.0	3.3	8.8	0.06	3.7	279	3.3	244	1.1	162	0.02	2.6	12.00	11.00
# of Data	16	21	21	21	21	21	26	26	25	25	25	25	26	26
# of Data<MDL	2	20			19		25				0		0	0
Wk1: 9/03-9/09/2000					4.0	335	3.5	301	3.6	306	0.11	9.6	66	76
Wk2: 9/10-9/16/2000					5.1	811	4.3	671	2.8	437	0.08	11.8	118	132
Wk3: 9/17-9/23/2000					4.2	559	3.6	489	3.9	525	0.05	6.2	33	28
Wk4: 9/24-9/30/2000					4.2	559	3.6	489	3.9	525	0.05	6.2	35	32

Total Est. Bypass Flow (MG): 91.54 Total Bypass Occurances (days/month): 7

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR NOVEMBER 2000

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1]: Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0
1	Wed	0.00	10.83	15.0	10.99							0.01
2	Thu	0.00	10.30	14.0	10.58							0.00
3	Fri	0.00	10.28	14.0	10.00							0.00
4	Sat	0.00	9.95	15.0	9.62							0.00
5	Sun	0.00	9.92	14.0	9.33							0.00
6	Mon	0.35	11.98	36.0	11.79	34.200	0.800	27.600	0.480	50.400	11.030	0.00
7	Tue	0.00	10.33	36.0	10.76							0.00
8	Wed	0.04	10.04	14.0	10.13							0.00
9	Thu	1.40	16.42	40.0	19.17	195.600	4.800	232.800	4.040	196.800	43.050	0.92
10	Fri	0.00	11.42	16.0	12.07							1.54
11	Sat	0.00	11.27	16.0	12.38							1.35
12	Sun	0.10	11.43	19.0	13.50							1.13
13	Mon	0.32	16.28	29.5	16.91	9.600	0.200			16.200	3.540	1.15
14	Tue	0.01	11.47	16.0	12.52							1.00
15	Wed	0.00	11.32	16.0	12.47	9.600	0.200					0.65
16	Thu	0.00	11.20	16.0	12.14							0.60
17	Fri	0.00	10.89	15.0	11.46							0.35
18	Sat	0.00	10.65	15.0	11.19							0.24
19	Sun	0.02	10.48	16.0	10.90							0.16
20	Mon	0.00	10.37	15.0	10.71							0.08
21	Tue	0.00	10.45	14.0	10.82							0.01
22	Wed	0.00	10.46	15.0	10.92							0.00
23	Thu	0.00	9.93	15.0	9.98							0.00
24	Fri	0.00	9.77	14.0	9.78							0.00
25	Sat	0.32	12.06	27.0	12.19							0.00
26	Sun	0.07	10.14	16.0	10.91							0.00
27	Mon	0.00	9.71	14.0	9.93							0.00
28	Tue	0.00	9.70	14.0	9.55							0.00
29	Wed	0.18	11.20	15.0	11.68							0.00
30	Thu	0.00	9.87	14.0	9.90							0.00
Total		2.81	329.14		344.30	249.00	6.00	260.40	4.52		57.62	9.39
Mean			10.97		11.48	62.25	1.50	130.20	2.26		19.21	0.31
Maximum		1.40	16.42	40.0	19.17	195.60	4.80	232.80	4.04		43.05	1.54
Minimum			9.70		9.33	9.60	0.20	27.80	0.48		3.54	0.00
# of Data		30	30	30	30	4	4	2	2		3	30
# of Data<MDL												
Wk1: 10/29-11/04/00			10.43									
Wk2: 11/05-11/11/00			11.63									
Wk3: 11/12-11/18/00			11.75									
Wk4: 11/19-11/25/00			10.51									
Wk5: 11/26-12/01/00			10.46									

Total Est. Bypass Flow (MG): 68.14 Total Bypass Occurances (days/month): 2

Date	Influent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Clarifier Effluent Data: TBOD5 (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	Ammonia-N (mg/L)
Design Criteria									<MDL	<MDL	10	1.5
1	112	10116	87	6052		0	10.00	903	6.3	< 3.6	13.0	0.06
2	79	6786	59	5068	130	11167	9.63	827	8.6	5.2	14.2	0.06
3		0	47	4030	112	9602	9.52	816		< 3.7	15.8	0.08
4		0		0		0						
5	74	8122	71	6874	100	8273	7.92	655				
6	121	12069	97	9692	223	22281	6.97	696	8.0	< 3.2	18.8	0.07
7	93	8012	84	7237	193	16627	5.94	512	5.5	< 3.5	12.8	0.06
8	68	5526	62	5191	67	5610	8.34	698	9.2	8.3	12.2	0.05
9	94	12873	48	6573	147	20131	5.49	752	8.7	< 4.0	13.4	0.06
10		0	44	4191	83	7906	7.50	714		< 4.0	11.0	0.11
11		0		0		0						
12	93	8865	49	4671	90	8579	7.28	694				
13	101	12871	71	9048	146	16860	6.22	793	5.6	4.2	9.6	0.07
14	82	7844	63	6027	73	6983	5.89	563	9.8	8.4	9.4	0.03
15	102	9630	60	5665	106	10196	8.90	840	8.8	4.3	13.2	0.06
16	158	14758	75	7006	106	10088	7.62	712	9.2	8.3	11.0	0.08
17		0	48	4359	104	9446	7.50	681		3.8	10.0	0.05
18		0		0		0						
19	56	5069	40	3496	89	7779	8.95	607				
20	80	6919	56	4643	92	7967	7.84	678	6.3	< 4.0	28.6	0.05
21	79	6885	54	4706	125	10894	8.82	769	6.2	< 4.0	16.4	0.05
22	84	7342	45	3933	119	10401	8.63	754	19.0	< 4.0	0.0	0.08
23	107	8661	68	5632	108	8944	7.34	608	8.2	< 3.5	14.0	0.06
24		0	54	4400	88	7007	8.90	725		< 4.6	9.8	0.06
25		0		0		0						
26	69	5835	52	4398	78	6596	6.18	521				
27	65	5264	57	4616	92	7450	6.96	726	6.1	< 3.8	10.2	0.03
28	103	8332	71	5744	120	9706	7.78	629	5.8	3.4	10.2	0.07
29	130	12143	77	7192	171	15973	8.68	829	5.0	4.0	10.8	0.10
30	149	12265	83	6832	132	10666	7.66	631	7.7	3.2	9.6	0.06
Total												
Mean	95	6480	62	4882	116	8977	7.79	706	7.9	4.4	12.3	0.06
Maximum	158	14758	97	9692	223	22281	10.00	903	19.0	8.4	28.6	0.11
Minimum	58	0	40	0	67	0	5.49	512	5.0	3.2	0.0	0.03
# of Data	22	22	26	26	25	25	26	26	18	22	22	22
# of Data<MDL									0	12		

Date	Final Effluent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria	Report Only <MDL	Report Only	7.1 AML 10.7 AWL <MDL	888 AML 1339 AWL	8.5 AML 12.8 AWL	1063 AML 1601 AWL	1.5 AML 2.3 AWL <MDL	188 AML 751 DML		
1	2.3	208	< 3.5	318	4.6	415	0.03	2.7		
2	5.4	464	4.7	404	4.8	395	0.02	1.7		
3	< 3.7	317		0	3.2	274	0.05	4.3		
4		0		0		0		0.0		
5	< 4.6	381	< 4.0	331	7.8	645	0.04	3.3		
6	4.2	420	< 3.2	320	5.2	520	0.04	4.0		
7	< 4.0	345	< 3.6	302	5.8	482	0.04	3.4		
8	3.4	285	2.9	243	4.0	335	0.03	2.6		
9	< 4.6	630	< 4.0	548	2.8	383	0.02	2.7		
10		0	< 4.0	381	2.1	200	0.05	4.8		
11		0		0		0		0.0		
12	< 4.0	381	< 3.5	334	3.4	324	0.07	6.7		
13	4.0	510	< 3.5	446	3.0	382	0.06	6.4		
14	8.6	622	4.8	459	3.2	308	0.03	2.9		
15	< 4.3	406	< 3.7	349	3.4	321	0.03	2.8		
16	6.3	588	5.4	504	3.4	318	0.06	5.8		
17		0	< 3.5	318	4.0	363	0.02	1.8		
18		0		0		0		0.0		
19	4.9	428	< 4.0	350	3.6	306	0.08	6.2		
20	< 4.6	398	< 4.0	346	4.2	363	0.03	2.6		
21	< 4.6	401	< 4.0	349	7.6	662	0.05	4.4		
22	< 5.0	437	< 4.0	350	3.6	315	0.03	2.6		
23	< 4.0	331	< 3.5	290	4.2	348	0.01	0.8		
24		0	< 4.8	375	2.1	171	0.02	1.8		
25		0		0		0		0.0		
26	< 4.0	338	< 3.5	296	3.6	304	0.02	1.7		
27	< 4.3	348	< 3.7	300	2.8	227	0.01	0.8		
28	< 4.6	372	< 4.0	324	3.2	259	0.05	4.0		
29	3.9	364	3.2	299	3.0	280	0.04	3.7		
30	3.3	272	< 3.1	255	2.4	198	0.03	2.5		
Total										
Mean	4.4	308	3.8	293	3.9	303	0.04	2.9		
Maximum	8.5	630	5.4	548	7.8	662	0.07	6.7		
Minimum	2.3	0	2.9	0	2.1	0	0.01	0.0		
# of Data	23	23	25	25	26	26	25	26		
# of Data<MDL	13		20				0			

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR DECEMBER 2000

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1] – Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)	Influent Data TBOD5 (mg/L)	Influent TBOD5 (lb/day)	Influent CBOD5 (mg/L)	Influent CBOD5 (lb/day)	Influent TSS (mg/L)	Influent TSS (lb/day)	Influent Ammonia-N (mg/L)	Influent Ammonia-N (lb/day)	Clarifier Effluent Data TBOD5 (mg/L)	Clarifier CBOD5 (mg/L)	Clarifier TSS (mg/L)	Clarifier Ammonia-N (mg/L)	Final Effluent Data TBOD5 (mg/L)	Final TBOD5 (lb/day)	Final CBOD5 (mg/L)	Final CBOD5 (lb/day)	Final TSS (mg/L)	Final TSS (lb/day)	Final Ammonia-N (mg/L)	Final Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0									<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	7.1 AML 10.7 AWL <MDL	888 AML 1339 AWL	8.5 AML 12.8 AWL	1063 AML 1601 AWL	1.5 AML 2.3 AWL <MDL	188 AML 751 DML		
1	Fri	0.00	9.85	14.0	9.86	0.000	0.000	0.000	0.000	0.000	0.000	0.00			62	5093	121	9940	8.74	718		< 3.5	11.4	0.14			3.5	288	3.2	263	0.04	3.3		
2	Sat	0.00	9.63	14.0	10.20	0.000	0.000	0.000	0.000	0.000	0.000	0.00																						
3	Sun	0.00	9.68	13.5	9.58	0.000	0.000	0.000	0.000	0.000	0.000	0.00	174	14047	79	6378	200	16148	8.61	534					3.7	299	3.3	266	1.5	129	0.05	4.0		
4	Mon	0.00	9.63	14.0	9.70	0.000	0.000	0.000	0.000	0.000	0.000	0.00	122	9798	64	5140	129	10361	8.96	720	8.9	< 3.7	11.9	0.06	4.3	345	3.7	297	3.2	257	0.09	7.2		
5	Tue	0.00	9.79	14.0	9.38	0.000	0.000	0.000	0.000	0.000	0.000	0.00	132	10778	81	6614	143	11676	8.18	668	10.5	3.7	12.0	0.07	6.2	506	3.4	278	3.7	302	0.06	4.9		
6	Wed	0.02	10.36	15.0	10.28	0.000	0.000	0.000	0.000	0.000	0.000	0.00	212	16317	98	8467	208	17972	9.80	847	10.3	3.2	11.0	0.14	5.2	449	3.6	311	3.2	276	0.05	4.3		
7	Thu	0.00	9.90	14.0	9.82	0.000	0.000	0.000	0.000	0.000	0.000	0.00	172	14201	91	7514	158	13045	10.10	834	9.6	5.3	12.0	0.06	8.2	677	5.3	438	3.6	297	0.04	3.3		
8	Fri	0.00	10.20	14.0	9.71	0.000	0.000	0.000	0.000	0.000	0.000	0.00			52	4424	157	13356	8.57	729	11.6	4.8	11.8	0.07			5.2	442	4.4	374	0.03	2.6		
9	Sat	0.00	9.78	14.0	9.09	0.000	0.000	0.000	0.000	0.000	0.000	0.00																						
10	Sun	0.00	9.76	15.0	9.55	0.000	0.000	0.000	0.000	0.000	0.000	0.00	124	10093	60	4884	103	8384	7.95	647					5.2	423	3.3	269	4.0	326	0.03	2.4		
11	Mon	0.00	9.48	14.0	9.39	0.000	0.000	0.000	0.000	0.000	0.000	0.00	136	10753	76	6009	127	10041	11.60	917	9.1	4.6	13.0	0.06	6.0	474	3.3	261	6.0	474	0.05	4.0		
12	Tue	0.00	9.95	14.5	9.12	0.000	0.000	0.000	0.000	0.000	0.000	0.00	160	13277	66	5477	166	13775	8.51	706	7.2	< 3.0	11.6	0.04	3.9	324	3.0	249	5.9	481	0.02	1.7		
13	Wed	0.00	9.62	13.0	9.21	0.000	0.000	0.000	0.000	0.000	0.000	0.00	177	14201	65	5215	181	14522	8.40	674	6.8	< 3.2	13.6	0.06	3.9	313	3.2	257	7.0	562	0.04	3.2		
14	Thu	0.00	9.54	13.5	9.06	0.000	0.000	0.000	0.000	0.000	0.000	0.00	151	12014	125	9945	113	8991	12.60	1003	7.3	3.4	11.2	0.03	4.8	382	3.3	263	5.2	414	0.02	1.6		
15	Fri	0.00	9.63	13.5	9.77	0.000	0.000	0.000	0.000	0.000	0.000	0.00			59	4739	163	13091	10.20	819		< 4.6	9.8	0.04			4.6	369	4.9	394	0.02	1.6		
16	Sat	0.00	10.61	17.0	10.73	0.000	0.000	0.000	0.000	0.000	0.000	0.00																						
17	Sun	0.00	10.57	14.5	11.62	0.000	0.000	0.000	0.000	0.000	0.000	0.00	65	5730	53	4672	177	15603	9.74	859					8.7	591	5.0	441	6.2	547	0.10	8.8		
18	Mon	0.00	10.31	15.0	11.64	0.000	0.000	0.000	0.000	0.000	0.000	0.00	141	12124	77	6621	140	12038	9.48	813	11.0	5.0	14.0	0.24	6.8	585	3.3	284	5.4	464	0.14	12.0		
19	Tue	0.00	10.72	16.0	11.98	0.000	0.000	0.000	0.000	0.000	0.000	0.00	182	16272	76	6795	267	23871	8.34	746	9.0	4.1	10.2	0.22	6.4	572	3.2	286	5.4	483	0.18	16.1		
20	Wed	0.00	9.92	13.5	10.85	0.000	0.000	0.000	0.000	0.000	0.000	0.00	148	12079	71	5874	172	14230	7.78	644	10.6	4.6	11.0	0.06	6.6	548	4.0	331	4.2	347	0.06	5.0		
21	Thu	0.00	9.74	13.6	10.19	0.000	0.000	0.000	0.000	0.000	0.000	0.00	175	14216	87	7067	193	15678	7.64	637	10.3	4.7	11.6	0.06	6.6	536	3.2	260	5.8	471	0.04	3.2		
22	Fri	0.00	9.29	13.0	10.89	0.000	0.000	0.000	0.000	0.000	0.000	0.00			131	10150	172	13326	9.18	711		4.4	9.8	0.09			3.9	302	6.2	480	0.06	4.6		
23	Sat	0.00	8.79	12.5	10.55	0.000	0.000	0.000	0.000	0.000	0.000	0.00																						
24	Sun	0.00	8.91	12.0		0.000	0.000	0.000	0.000	0.000	0.000	0.00	120	8917	60	4459	137	10160	9.74	724					3.7	275	3.3	245	5.8	431	0.04	3.0		
25	Mon	0.00	8.59	12.0		0.000	0.000	0.000	0.000	0.000	0.000	0.00	89	6376	65	4657			12.40	888	8.3	6.2	8.0	0.05	5.1	365	4.0	287	5.2	373	0.02	1.4		
26	Tue	0.00	8.55	12.0		0.000	0.000	0.000	0.000	0.000	0.000	0.00	118	8414	71	5063	134	9555	8.68	619	7.9	3.1	9.4	0.07	4.4	314	3.3	235	4.6	328	0.04	2.9		
27	Wed	0.00	8.94	13.0		0.000	0.000	0.000	0.000	0.000	0.000	0.00	84	6263	64	4772	116	8649	7.28	543	8.2	3.7	9.0	0.06	5.6	418	3.2	239	4.8	358	0.04	3.0		
28	Thu	0.00	8.83	13.0		0.000	0.000	0.000	0.000	0.000	0.000	0.00	194	14287	126	9279	177	13035	10.00	736	11.0	5.1	11.0	0.10	5.8	427	3.1	228	5.4	398	0.06	4.4		
29	Fri	0.00	8.88	13.0	10.22	0.000	0.000	0.000	0.000	0.000	0.000	0.00			87	6443			8.12	601		5.3	10.0	0.08			4.4	326	4.6	341	0.07	5.2		
30	Sat	0.00	8.89	14.0	10.10	0.000	0.000	0.000	0.000	0.000	0.000	0.00																						
31	Sun	0.00	9.31	13.0	9.74	0.000	0.000	0.000	0.000	0.000	0.000	0.00	88	6833	76	5901	115	6929	8.53	662					5.0	366	3.2		5.2	404	0.07	5.4		
Total		0.02	297.65		262.25	0.00	0.00	0.00	0.00		0.00	0.00																						
Mean			9.61		10.09	0.00	0.00	0.00	0.00		0.00	0.00	141	11380	78	6217	157	12766	9.13	731	9.1	4.2	11.1	0.09	5.4	439	3.7	298	4.8	384	0.06	4.6		
Maximum		0.02	10.72	17.0	11.98	0.00	0.00	0.00	0.00		0.00	0.00	212	16317	131	10150	267	23871	12.60	1003	11.6	6.2	14.0	0.24	8.2	677	5.3	442	7.0	562	0.18	16.1		
Minimum			8.55		9.06	0.00	0.00	0.00	0.00		0.00	0.00	65	5730	52	4424	103	8384	6.61	534	6.8	3.0	8.0	0.03	3.7	275	3.0	228	1.6	129	0.02	1.4		
# of Data		31	31	31	26	31	31	31	31		31	31	21	21	26	26	24	24	26	26	17	21	21	21	21	21	26	26	26	26	26	26		
# of Data<MDL																					0	5			3		17				0			
Wk1: 12/03-12/09/00			9.91		9.65								162	13428	78	6423	166	13759	8.70	722					5.5	449	4.1	332	3.3	267	0.05	4.3		
Wk2: 12/10-12/16/00			9.80		9.55								150	12068	75	6045	142	11467	9.88	794					4.8	369	3.5	270	5.5	427	0.03	2.3		
Wk3: 12/17-12/23/00			9.91		11.10								142	12084	83	6863	187	15791	8.72	735					6.6	621	3.8	352	5.5	517	0.10	9.3		
Wk4: 12/24-12/30/00			10.17		11.13								142	12084	83	6863	187	15791	8.72	735					5.6	621	3.8	352	5.5	517	0.10	9.3		

Total Est. Bypass Flow (MG): 0.00 Total Bypass Occurances (days/month): 0

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR JANUARY 2001

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1] Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)
Design Criteria			15 Avg 27 Max	38 Peak							Metered Lagoon Influent	>Max Q=3.0
1	Mon	0.00	8.38	13.0	8.52							0.00
2	Tue	0.00	8.81	12.0	9.38							0.00
3	Wed	0.00	8.98	13.0	9.62							0.00
4	Thu	0.00	8.37	12.5	8.72							0.00
5	Fri	0.00	8.79	13.5	9.06							0.00
6	Sat	0.00	8.50	12.0	8.86							0.00
7	Sun	0.00	8.79	12.5	9.01							0.00
8	Mon	0.00	8.72	14.5	9.25							0.00
9	Tue	0.00	8.78	12.0	9.50							0.00
10	Wed	0.00	10.42	17.0	10.00							0.00
11	Thu	0.00	10.94	17.0	9.86							0.00
12	Fri	0.00	10.77	16.0	9.48							0.00
13	Sat	0.00	10.71	19.0	9.19							0.00
14	Sun	0.20	13.65	20.0	12.85							0.00
15	Mon	0.30	12.91	16.0	13.31							0.00
16	Tue	0.00	12.22	17.0	11.71							0.00
17	Wed	0.00	12.25	17.0	12.01							0.00
18	Thu	0.00	12.07	17.0	11.52							0.00
19	Fri	0.01	12.02	17.0	11.31							0.00
20	Sat	0.00	12.00	17.0	11.45							0.00
21	Sun	0.00	11.57	16.0	10.89							0.00
22	Mon	0.00	11.87	16.5	11.20							0.00
23	Tue	0.00	11.71	17.0	10.93							0.00
24	Wed	0.00	11.69	17.0	11.00							0.00
25	Thu	0.00	11.60	16.0	10.23							0.00
26	Fri	0.00	11.58	17.0	10.32							0.00
27	Sat	0.00	11.59	17.5	9.79							0.00
28	Sun	0.00	10.87	16.5	9.53							0.00
29	Mon	0.57	19.33	40.0	16.90	88.800	2.160	21.600	0.375	162.600	3.560	0.00
30	Tue	0.20	15.87	30.0	15.55							0.00
31	Wed	0.01	14.17	19.5	13.13							0.00
Total		1.29	350.13		334.10	88.80	2.16	21.60	0.38		3.58	0.00
Mean			11.29		10.78	88.80	2.16	21.60	0.38		3.56	0.00
Maximum		0.57	19.33	40.0	16.90	88.80	2.16	21.60	0.38		3.58	0.00
Minimum			8.37		8.52	88.80	2.16	21.60	0.38		3.56	0.00
# of Data		31	31	31	31	1	1	1	1		1	31
# of Data<MDL												
			8.70		9.15							
			11.66		10.92							
			11.93		11.33							
			12.00		11.44							

Date	Influent Data TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Clarifier Effluent Data TBOD5 (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	Ammonia-N (mg/L)
Design Criteria									<MDL	<MDL	10	1.5
1	113	7897	56	3914	112	7828	6.72	470	6.7	3.8	10.4	0.05
2	87	6392	53	3894	84	6172	8.06	592	10.3	3.5	9.0	0.03
3	182	13631	97	7265	189	14155	10.60	794	12.0	5.5	11.4	0.34
4	108	7539	69	4817	83	5794	6.44	450	10.1	4.4	11.6	0.07
5			53	3885	170	12462	5.94	435		4.4	12.8	0.21
6												
7	87	6378	59	4325	82	6011	10.53	772				
8	188	13672	70	5091	191	13890	7.62	554	7.4	< 3.7	15.4	0.06
9	147	10764	72	5272	134	9812	8.13	595	11.0	4.0	10.8	0.38
10	187	16251	67	5822	144	12514	9.52	827	11.0	4.5	10.1	0.40
11	106	9671	64	5839	96	8759	6.33	578	9.1	4.1	11.0	0.20
12			73	6557	103	9252	12.40	1114		3.9	9.4	0.54
13												
14	89	10132	46	5237	94	10701	8.09	693				
15	70	7537	40	4307	77	8291	4.77	514	8.0	2.7	10.4	0.05
16	106	10803	65	6624	79	8051	7.17	731	8.8	3.4	10.4	0.14
17	107	10932	64	6539	90	9195	7.78	795	10.1	4.8	9.2	0.09
18	103	10368	83	6342	76	7650	8.90	896	9.1	3.3	9.4	0.04
19			58	5814	74	7418	7.95	797		2.9	10.0	0.05
20												
21	98	9456	57	5500	58	5597	7.76	749				
22	88	8712	58	5544	116	11464	9.07	898	4.9	< 3.5	9.3	0.06
23	84	8204	68	6641	87	8497	7.06	689	6.5	< 3.5	6.8	0.04
24	100	9818	61	6049	105	10412	6.89	683	6.9	< 3.5	9.0	0.06
25	132	12770	79	7643	116	11222	7.00	877	7.2	3.3	9.6	0.05
26			46	4443	102	9851	10.20	985		< 3.1	8.4	0.04
27												
28	83	7524	74	6709	72	6527	8.15	739				
29	132	21280	90	14509	232	37401	7.72	1245	22.0	8.2	55.8	0.26
30	234	30971	106	14030	530	70149	6.38	844	14.0	6.3	15.7	0.83
31	72	8509	54	6382	75	8863	6.33	748	6.9	3.5	9.4	0.02
Total												
Mean	118	11274	65	6259	125	12517	7.83	736	9.6	4.1	12.4	0.17
Maximum	234	30971	106	14509	530	70149	12.40	1245	22.0	8.2	55.8	0.83
Minimum	70	6378	40	3885	58	5597	4.77	435	4.9	2.7	6.8	0.02
# of Data	23	23	27	27	27	27	27	27	19	23	23	23
# of Data<MDL									0	5		
	142	10397	70	5109	142	10354	8.21	600				
	112	10679	59	5731	98	9595	7.71	743				
	96	9534	61	6063	84	8307	8.09	804				
	100	10054	61	6061	82	8232	8.11	811				

Date	Final Effluent Data TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria	Report Only <MDL	Report Only	7.1 AML 10.7 AWL <MDL	888 AML 1339 AWL	8.5 AML 12.8 AWL	1063 AML 1601 AWL	1.5 AML 2.3 AWL <MDL	188 AML 751 DML		
1	3.6	252	< 3.1	217	3.8	266	0.05	3.5		
2	5.7	419	2.7	198	4.0	294	0.02	1.5		
3	8.1	607	4.1	307	4.0	300	0.20	15.0		
4	6.1	426	3.0	209	3.8	265	0.04	2.8		
5			< 5.4	396	3.5	257	0.09	6.6		
6										
7	5.3	389	2.4	176	4.0	293	0.02	1.5		
8	4.3	313	< 3.9	284	4.4	320	0.05	3.6		
9	5.2	381	2.7	198	4.0	293	0.22	16.1		
10	7.5	652	3.2	278	4.4	382	0.38	33.0		
11	4.5	411	2.2	201	4.4	401	0.08	7.3		
12			2.2	198	2.5	225	0.14	12.6		
13										
14	6.7	763	< 5.5	626	2.3	262	0.02	2.3		
15	3.8	409	2.5	269	3.0	323	0.03	3.2		
16	3.5	367	< 3.3	336	3.4	347	0.10	10.2		
17	6.1	623	3.7	378	3.2	327	0.08	8.2		
18	4.3	433	< 3.7	372	2.8	282	0.03	3.0		
19			< 3.0	301	2.0	200	0.03	3.0		
20										
21	3.8	367	< 3.3	318	0.4	39	0.03	2.9		
22	4.3	426	< 3.5	346	0.5	59	0.04	4.0		
23	3.0	293	< 3.5	342	1.4	137	0.03	2.9		
24	3.1	307	< 3.5	347	3.2	317	0.03	3.0		
25	3.6	348	< 4.0	387	3.0	290	0.03	2.9		
26			< 3.2	309	2.4	232	0.03	2.9		
27										
28	3.7	335	< 3.1	281	3.0	272	0.04	3.6		
29	16.0	2579	5.5	887	30.6	4933	0.23	37.1		
30	6.9	913	4.4	582	4.2	558	0.41	54.3		
31	4.1	485	< 3.5	414	0.6	71	< 0.02	2.4		
Total										
Mean	5.4	543	3.5	339	4.0	442	0.09	9.2		
Maximum	16.0	2579	5.5	887	30.6	4933	0.41	54.3		
Minimum	3.0	252	2.2	176	0.4	39	0.02	1.5		
# of Data	23	23	27	27	27	27	27	27		
# of Data<MDL	4		15				1			
	5.8	447	3.6	275	4.0	303	0.10	8.1		
	5.2	498	3.2	302	3.3	306	0.13	10.8		
	4.3	409	3.5	326	1.7	166	0.04	3.8		
	4.4	424	3.4	326	2.1	200	0.05	5.0		

Total Est. Bypass Flow (MG): 6.10 Total Bypass Occurances (days/month): 1

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR FEBRUARY 2001

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1]: Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0
1	Thu	0.00	13.43	19.0	12.66							0.00
2	Fri	0.00	13.32	19.0	12.90							0.00
3	Sat	0.00	12.78	17.0	12.29							0.00
4	Sun	0.03	12.92	17.0	12.31							0.00
5	Mon	0.00	12.65	18.0	11.64							0.00
6	Tue	0.14	14.06	22.0	12.96	0.190	0.200					0.00
7	Wed	0.02	12.57	17.0	11.73							0.00
8	Thu	0.43	16.06	40.0	13.74	1.910	1.900	12.000	1.470	109.200	23.690	0.00
9	Fri	0.66	18.48	39.5	18.37	1.200	1.200	337.800	5.860	78.600	17.190	0.00
10	Sat	0.00	17.44	29.0	16.64			12.600	0.220			0.00
11	Sun	0.00	16.37	28.0	15.92							0.00
12	Mon	0.00	16.32	26.0	15.83							0.00
13	Tue	0.05	15.76	28.0	15.05							0.00
14	Wed	0.11	16.92	30.5	15.79							0.00
15	Thu	0.00	15.27	20.0	14.79							0.00
16	Fri	0.00	14.91	19.6	15.56							0.00
17	Sat	0.00	14.07	16.5	14.69							0.00
18	Sun	0.00	13.72	16.0	14.09							0.00
19	Mon	0.00	13.58	18.0	13.57							0.00
20	Tue	0.00	13.37	20.0	13.19							0.00
21	Wed	0.00	13.31	16.6	13.02							0.00
22	Thu	0.00	12.92	17.0	12.27							0.00
23	Fri	0.00	12.75	17.0	11.81							0.00
24	Sat	1.43	17.19	40.0	17.35	5.420	5.700	381.200	6.270	19.200		0.74
25	Sun	0.02	14.86	19.0	14.97			89.400	1.550			1.33
26	Mon	0.00	16.01	21.0	15.66							0.56
27	Tue	0.00	15.97	20.0	16.20							0.28
28	Wed	0.00	15.56	14.0	15.74							0.06
Total		2.89	411.59		400.96	8.72	9.00	813.00	16.37		41.08	2.98
Mean			14.70		14.32	2.18	2.25	162.60	3.07		20.54	0.11
Maximum		1.43	18.48	40.0	18.37	5.42	5.70	361.20	6.27		23.69	1.33
Minimum			12.57		11.73	0.19	0.20	12.00	0.22		17.19	0.00
# of Data		28	28	28	28	4	4	5	5		2	28
# of Data<MDL												
Wk1: 02/03-02/09/00			14.07		13.32							
Wk2: 02/10-02/16/00			16.14		15.66							
Wk3: 02/17-02/23/00			13.39		13.23							
Wk4: 02/24-02/28/00			13.70		13.77							

Date	Influent TBOD5 (mg/L)	Influent TBOD5 (lb/day)	Influent CBOD5 (mg/L)	Influent CBOD5 (lb/day)	Influent TSS (mg/L)	Influent TSS (lb/day)	Influent Ammonia-N (mg/L)	Influent Ammonia-N (lb/day)	Clarifier Effluent TBOD5 (mg/L)	Clarifier Effluent CBOD5 (mg/L)	Clarifier Effluent TSS (mg/L)	Clarifier Effluent Ammonia-N (mg/L)	Final Effluent TBOD5 (mg/L)	Final Effluent TBOD5 (lb/day)	Final Effluent CBOD5 (mg/L)	Final Effluent CBOD5 (lb/day)	Final Effluent TSS (mg/L)	Final Effluent TSS (lb/day)	Final Effluent Ammonia-N (mg/L)	Final Effluent Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria									<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	7.1 AML 10.7 AWL <MDL	888 AML 1339 AWL	8.5 AML 12.8 AWL	1063 AML 1601 AWL	1.5 AML 2.3 AWL <MDL	188 AML 751 DML		
1	82	9185	53	5936	61	6832	8.38	715	9.0	<4.0	12.0	0.11	5.6	627	4.6	515	1.8	202	0.04	4.5		
2			49	5443	100	11109	6.16	684		<4.6	10.6	0.05			<4.6	511	2.7	300	0.02	2.2		
3																						
4	102	10991	66	7112	79	8512	4.03	434					5.4	582	4.1	442	1.2	129	<0.02	2.2		
5	76	8018	48	5064	95	10023	4.64	490	8.4	<4.6	9.8	<0.02	4.0	422	<4.6	485	2.4	253	<0.02	2.1		
6	69	8091	48	5628	72	8443	5.43	637	6.6	<4.6	7.4	0.05	4.6	539	<4.6	539	0.4	47	0.07	8.2		
7	107	11217	56	5766	101	10588	5.68	616	8.2	4.6	8.6	0.03	4.7	493	<3.7	388	1.2	126	0.05	5.2		
8	64	10650	42	5275	64	10650	3.98	500	4.8	3.8	10.4	0.03	5.4	878	4.2	528	2.8	352	0.04	5.0		
9			62	9556	266	40997	3.58	552		<4.3	12.1	0.11			<4.3	663	1.8	247	0.04	6.2		
10																						
11	69	9420	38	4915	71	9693	4.26	582					5.0	683	<4.6	828	2.2	300	0.04	5.5		
12	90	12250	47	6397	100	13811	4.03	549	7.6	<4.6	8.2	0.03	5.0	681	<4.6	626	1.0	136	0.02	2.7		
13	109	14327	54	7098	127	16693	3.92	516	7.1	<4.6	8.6	0.03	5.4	710	<4.6	605	1.5	197	0.07	9.2		
14	104	14676	70	9878	131	18486	4.59	648	7.2	<4.6	6.6	0.04	4.6	649	<4.6	649	1.2	169	<0.01	1.4		
15	90	11462	48	6113	104	13246	4.00	509	6.5	<4.0	6.0	0.03	4.6	586	<4.0	509	1.4	178	0.01	1.3		
16			58	7212	193	23999	7.06	680		<4.6	8.2	0.04			<4.6	572	1.9	236	<0.02	2.5		
17																						
18	162	18537	51	5836	124	14189	5.04	577					5.0	572	<4.2	481	2.2	252	0.03	3.4		
19	131	14837	67	7588	165	18687	7.56	856	5.6	<4.3	6.6	0.06	5.0	566	<4.3	487	2.2	249	0.03	3.4		
20	132	14719	74	8251	207	23062	7.22	805	4.7	3.5	9.6	0.11	3.3	368	2.9	323	1.6	178	0.10	11.2		
21	135	14986	54	5994	151	16762	4.87	541	6.6	<4.3	10.2	0.04	5.0	555	<4.3	477	1.8	200	0.07	7.8		
22	90	9698	62	6681	172	18533	6.22	670	3.0	<4.3	6.6	0.13	5.0	539	<4.3	463	3.2	345	0.07	7.5		
23			57	6061	146	15525	5.91	628		3.4	5.6	0.06			3.4	362	2.0	213	0.03	3.2		
24																						
25	62	10162	45	5577	137	16979	3.06	382					5.0	620	<4.3	533	2.8	347	0.04	5.0		
26	109	14554	64	8545	135	18026	3.76	501	6.6	<4.6	9.4	0.11	5.2	694	<4.2	561	2.2	294	0.03	4.0		
27	121	16116	46	6127	190	25306	4.26	667	5.0	<4.2	9.2	0.06	5.0	666	<4.2	559	1.8	240	0.06	8.0		
28	120	15592	55	7147	166	21570	4.65	604	6.5	<4.2	7.6	0.04	5.0	650	<4.2	546	1.4	162	0.04	5.2		
Total																						
Mean	103	12469	55	6633	132	16310	5.02	602	6.5	4.3	8.6	0.06	4.9	594	4.3	519	1.9	224	0.04	4.9		
Maximum	162	18537	74	9878	266	40997	7.56	880	9.0	4.6	12.1	0.13	5.6	710	4.6	663	3.2	352	0.10	11.2		
Minimum	69	8018	36	4915	61	6832	3.08	382	3.0	3.4	5.6	0.03	3.3	368	2.9	323	0.4	47	0.01	1.3		
# of Data	20	20	24	24	24	24	24	24	16	20	20	19	20	20	24	24	24	24	24	24		
# of Data<MDL									0	16			13		19				4			
Wk1: 02/03-02/09/00	88	9773	54	6400	116	14843	4.59	538					4.8	505	4.3	479	1.6	181	0.04	4.5		
Wk2: 02/10-02/16/00	92	12427	52	6935	121	15954	4.65	814					4.9	635	4.5	562	1.5	198	0.03	3.6		
Wk3: 02/17-02/23/00	130	14555	61	6736	181	17796	6.14	680					4.7	514	3.9	424	2.2	234	0.06	5.9		
Wk4: 02/24-02/28/00	130	14555	81	6735	169	17796	6.33	680					4.7	514	4.1	424	2.2	242	0.05	5.9		

Total Est. Bypass Flow (MG): 65.45 Total Bypass Occurances (days/month): 5

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR MARCH 2001

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1]: Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)	Influent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Clarifier Effluent Data: TBOD5 (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	Ammonia-N (mg/L)	Final Effluent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0									<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	7.1 AML 10.7 AWL <MDL	886 AML 1339 AWL	8.5 AML 12.8 AWL	1063 AML 1601 AWL	1.5 AML 2.3 AWL <MDL	188 AML 751 DML		
1	Thu		15.08	19.0	14.88							0.08	96	12074	59	7420	102	12828	5.38	677	8.5	< 4.2	7.4	0.03	< 5.0	629	< 4.2	528	1.9	239	0.04	5.0		
2	Fri		14.73	25.0	13.90										99	12162	153	18796	7.00	860		< 4.2	8.0	0.05			< 4.2	516	0.9	111	0.02	2.5		
3	Sat		14.13		13.75							0.03																						
4	Sun		13.51		12.95							0.01	79	8901	44	4958	64	7211	5.10	575					2.7	304	< 3.6	394	1.2	135	0.03	3.4		
5	Mon		13.27	18.5	13.28								81	6751	48	5312	79	8743	8.50	719	< 4.6	< 4.0	11.8	0.03	< 4.6	509	< 4.0	443	3.0	332	0.02	2.2		
6	Tue		13.36	18.0	12.64								78	8691	60	6685	66	7354	8.38	711	7.1	< 4.0	10.0	0.04	4.0	446	< 4.0	446	1.2	134	0.02	2.2		
7	Wed		13.69	20.0	13.22								125	14480	51	5908	151	17492	5.49	636	8.0	< 4.0	13.2	0.04	3.6	417	< 4.0	463	1.0	118	0.03	3.5		
8	Thu		13.35	18.0	12.50								138	15365	48	5344	245	27278	8.44	717	6.6	< 4.2	13.0	0.21	< 5.0	557	< 4.2	468	2.6	269	0.08	8.9		
9	Fri		12.90	18.0	12.28										85	9145	242	26036	9.44	1016		< 4.2	10.2	0.04			< 4.2	452	1.0	108	0.03	3.2		
10	Sat		12.65	17.5	12.01																													
11	Sun	0.12	13.59	22.0	13.16								146	16548	55	6234	242	27428	5.99	679					3.2	363	< 3.0	340	2.2	249	0.03	3.4		
12	Mon	0.10	13.48	23.8	12.99								145	16301	58	6521	206	23169	5.04	567	6.9	2.2	13.4	0.04	2.7	304	1.6	180	3.0	337	0.03	3.4		
13	Tue		12.39	19.0	12.14								106	10953	74	7647	96	9920	6.78	701	10.4	3.4	13.2	0.03	4.3	444	< 4.2	434	2.4	248	0.02	2.1		
14	Wed	0.07	12.84	19.0	12.39								139	14865	61	6632	163	17456	6.83	731	7.7	4.0	13.6	0.05	< 4.8	493	< 4.0	428	2.8	278	0.04	4.3		
15	Thu	0.33	14.94	32.0	14.95								110	13706	59	7351	168	20933	6.38	795	13.2	3.9	15.6	0.06	4.9	811	< 4.2	523	2.7	336	0.04	5.0		
16	Fri	0.13	14.88	22.0	15.44										45	5584	67	8315	5.21	647		< 4.2	12.8	0.08			< 4.2	521	1.8	223	0.02	2.5		
17	Sat	0.09	14.73	28.0	14.23																													
18	Sun		13.45	21.0	14.52								78	8749	43	4823	87	9759	4.96	556					4.4	494	< 4.0	449	2.4	269	0.04	4.5		
19	Mon		12.92	19.0	13.39								117	12607	53	5711	138	14870	7.39	796	11.0	5.0	2.8	0.05	6.0	647	4.0	431	2.2	237	0.02	2.2		
20	Tue		13.23	19.0	13.47								151	16661	64	7062	221	24385	7.73	853	9.9	< 4.8	16.8	0.05	< 5.5	607	< 4.6	508	2.4	265	0.04	4.4		
21	Wed		13.43	19.0	13.38								114	12769	60	6720	114	12769	7.56	847	11.7	10.2	18.4	0.03	< 5.4	605	< 4.8	515	3.0	336	0.02	2.2		
22	Thu		13.12	19.0	12.68								136	14861	62	6784	168	20571	8.01	876	10.8	< 4.6	17.8	0.04	< 5.4	591	< 4.6	503	2.6	284	0.03	3.3		
23	Fri		13.20	17.0	12.59										54	5945	166	18275	7.84	863		< 4.2	18.8	0.10			< 4.2	462	2.8	308	0.07	7.7		
24	Sat		12.72	17.5	11.74																													
25	Sun		12.81	17.0	11.95								130	13889	58	6196	233	24893	5.63	601					< 3.3	353	< 3.0	321	3.0	321	0.03	3.2		
26	Mon		12.68	18.0	11.91								85	9131	49	5264	115	12353	5.03	540	9.4	3.3	19.4	0.06	< 4.3	462	< 3.7	397	1.6	172	0.02	2.1		
27	Tue		12.67	18.0	11.37								121	12786	46	4861	138	14582	7.84	828	5.0	< 4.2	19.3	0.04	< 5.0	528	< 4.2	444	2.6	275	0.02	2.1		
28	Wed		12.51	17.0	11.26								136	14189	62	6469	232	24205	7.45	777	10.0	3.8	20.6	0.04	4.4	459	2.8	292	2.2	230	0.03	3.1		
29	Thu	0.01	12.25	17.0	10.89								131	13384	61	6232	233	23804	8.62	881	8.0	< 3.7	20.2	0.08	< 4.3	439	< 3.7	378	3.0	306	0.07	7.2		
30	Fri		12.01	19.0	10.70										77	7713	225	22537	8.23	824		< 5.0	17.2	0.07			< 5.0	501	1.3	130	0.02	2.0		
31	Sat	0.05	11.74	17.0	10.36																													
Total		0.90	412.86		397.11	0.00	0.00	0.00	0.00		0.00	0.12																						
Mean			13.31		12.81							0.04	115	12748	59	6561	159	17537	6.70	741	8.8	4.3	14.2	0.06	4.4	489	3.9	436	2.2	241	0.03	3.7		
Maximum		0.33	15.08	32.0	15.44	0.00	0.00	0.00	0.00		0.00	0.08	151	16661	99	12162	245	27428	9.44	1016	13.2	10.2	20.6	0.21	6.0	647	5.0	528	3.0	337	0.08	8.9		
Minimum			11.74		10.36	0.00	0.00	0.00	0.00		0.00	0.01	81	6751	43	4823	64	7211	4.96	540	4.6	2.2	2.8	0.03	2.7	304	1.6	180	0.9	108	0.02	2.0		
# of Data		8	31	29	31	0	0	0	0		0	3	21	21	26	28	26	26	28	28	17	22	22	22	21	21	28	26	26	28	26	26		
# of Data<MDL																					1	14			11		23				0			
Wk1: 10/03-10/09/01			13.49		12.97								96	10838	58	8152	141	15686	6.56	729					4.0	430	4.0	426	1.7	179	0.04	3.7		
Wk2: 10/10-10/16/01			13.54		13.30								129	14479	59	6880	157	17868	6.04	687					3.9	433	3.5	401	2.5	274	0.03	3.4		
Wk3: 10/17-10/23/01			13.44		13.46								118	13134	56	6174	152	16771	7.25	799					5.3	599	4.3	481	2.6	285	0.04	4.1		
Wk4: 10/24-10/30/01			13.68		13.87								119	13134	55	6149	136	15111	6.81	763					5.3	599	4.3	496	2.4	274	0.03	3.3		

Total Est. Bypass Flow (MG): 0.00 Total Bypass Occurances (days/month): 0

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR MAY 2001

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1]: Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0
1	Tue	0.00	11.10	11.0	10.34							0.00
2	Wed	0.00	10.40	17.0	11.26							0.01
3	Thu	0.00	11.02	17.0	9.90							0.01
4	Fri	0.00	11.07	15.5	9.66							0.00
5	Sat	0.19	11.76	32.5	11.41							0.00
6	Sun	0.14	11.49	29.0	11.18							0.00
7	Mon	0.00	11.00	18.0	10.52							0.00
8	Tue	0.00	10.81	18.0	10.06							0.00
9	Wed	0.00	10.71	18.0	9.74							0.00
10	Thu	0.11	11.75	22.0	11.34							0.00
11	Fri	0.17	11.50	22.5	11.47							0.01
12	Sat	0.00	9.90	15.0	8.81							0.00
13	Sun	0.00	10.48	15.0	8.47							0.00
14	Mon	0.38	12.51	40.0	11.01							0.00
15	Tue	0.00	11.04	17.0	9.22							0.00
16	Wed	0.47	13.37	40.0	12.48	46.200	1.100	79.200	1.400	84.000	1.810	0.09
17	Thu	0.00	11.45	19.0	10.75							0.00
18	Fri	0.03	11.12	17.0	10.74							0.00
19	Sat	0.00	11.55	16.0	9.46							0.00
20	Sun	0.00	10.62	18.0	9.58							0.00
21	Mon	0.73	16.65	40.0	16.03			27.000	0.500	67.200	1.500	0.13
22	Tue	0.00	10.45	48.0	9.79							0.11
23	Wed	0.14	11.14	19.0	10.81							0.04
24	Thu	0.13	11.19	27.0	10.77							0.00
25	Fri	0.29	11.54	21.0	11.16							0.00
26	Sat	0.89	13.75	24.6	14.49	121.200	2.900	202.800	3.500	130.800	2.900	0.29
27	Sun	0.37	14.10	26.0	16.16	61.200	1.500	153.000	2.700	57.000	1.200	1.01
28	Mon	0.00	11.48	22.5	12.33							0.51
29	Tue	0.00	11.81	18.5	12.59							0.31
30	Wed	0.00	11.93	16.5	12.55							0.13
31	Thu	0.42	13.56	40.0	14.46	50.400	1.200	55.800	1.000	52.800	1.200	0.18
Total		4.46	361.25		348.51	279.00	6.70	517.60	9.10		8.61	2.83
Mean			11.65		11.24	69.75	1.68	103.56	1.82		1.72	0.09
Maximum		0.89	16.65	48.0	16.16	121.20	2.90	202.80	3.50		2.90	1.01
Minimum			9.90		8.47	46.20	1.10	27.00	0.50		1.20	0.00
# of Data		31	31	31	31	4	4	5	5		5	31
# of Data<MDL												
Wk1:			11.12		10.35							
Wk2:			11.51		10.40							
Wk3:			11.71		11.02							
Wk4:			12.03		11.26							

Date	Influent TBOD5 (mg/L)	Influent TBOD5 (lb/day)	Influent CBOD5 (mg/L)	Influent CBOD5 (lb/day)	Influent TSS (mg/L)	Influent TSS (lb/day)	Influent Ammonia-N (mg/L)	Influent Ammonia-N (lb/day)	Clarifier Effluent TBOD5 (mg/L)	Clarifier Effluent CBOD5 (mg/L)	Clarifier Effluent TSS (mg/L)	Clarifier Effluent Ammonia-N (mg/L)
Design Criteria									<MDL	<MDL	10	1.5
1	164	15162	72	6665	212	19626	11.00	1018	7.7	2.7	12.0	0.19
2	124	10755	71	6158	205	17781	9.01	781	8.2	< 3.5	10.8	0.29
3	136	12499	61	5606	186	17095	7.34	675	8.5	3.4	12.0	0.48
4			71	6555	220	20311	11.20	1034		< 4.0	13.8	0.25
5												
6	86	8241	78	7474	68	6326	10.60	1016				
7	62	5688	57	5229	96	8807	10.20	936	8.7	< 3.0	13.6	0.17
8	171	15417	68	6131	230	20736	10.20	920	8.0	2.9	12.6	0.34
9	159	14202	60	5359	194	17328	6.33	565	6.0	2.6	10.4	0.12
10	125	12249	48	4704	196	19207	8.23	808	7.7	< 3.5	9.4	0.11
11			49	4700	83	7961	7.64	752		< 5.0	11.0	0.27
12												
13	103	9003	56	4895	144	12586	6.69	585				
14	100	10433	67	6990	324	33804	9.55	996	4.2	< 3.6	13.9	0.40
15	68	6261	59	5432	106	9944	7.87	706	8.3	2.6	12.8	0.59
16	95	10593	50	5576	186	20963	8.85	987	9.6	3.6	16.8	0.36
17	153	14610	65	6207	203	19385	11.80	1127	7.2	< 3.0	9.2	0.34
18			68	6306	233	21609	8.96	831		< 4.0	10.0	0.29
19												
20	88	7794	70	6200	89	7883						
21	110	14367	64	8353	195	25452	7.82	1021	7.3	< 3.0	17.4	0.17
22	72	6275	50	4358	58	4881	10.30	898	8.8	2.8	10.9	0.11
23	76	7061	69	6411	122	11335	8.34	775	9.3	3.0	12.0	0.75
24	104	9706	75	6999	117	10919	9.52	888	5.2	2.6	10.8	0.33
25			60	5775	55	5293	9.30	695		< 5.0	9.4	0.46
26												
27	72	8467	51	5997	50	5880	9.07	1067				
28	57	5457	45	4306	64	6128	7.32	701	3.1	< 3.0	13.0	0.06
29	70	6895	46	4531	69	6796	9.14	900	7.9	< 4.0	11.0	0.26
30	98	9751	66	6567	135	13432	6.50	647	3.2	< 3.0	12.6	0.30
31	178	20130	79	8934	311	35171	7.64	887	9.1	7.7	17.2	0.37
Total												
Mean	107	10479	62	6016	154	15061	8.87	862	7.1	3.5	12.3	0.31
Maximum	178	20130	79	8934	324	35171	11.80	1127	9.8	7.7	17.4	0.75
Minimum	57	5457	45	4306	50	4881	6.33	565	3.1	2.8	9.2	0.06
# of Data	23	23	27	27	27	27	26	26	19	23	23	23
# of Data<MDL									0	13		
Wk1:	123	11209	66	6059	165	15100	9.31	858				
Wk2:	98	8090	55	5363	174	17411	8.14	805				
Wk3:	100	10020	64	6306	150	15083	9.44	664				
Wk4:	104	10726	61	5187	181	16688	9.55	695				

Date	Final Effluent TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria	Report Only <MDL	Report Only	5.0 AML 7.5 AWL <MDL	626 AML 939 AWL	6.0 AML 8 AWL	751 AML 1127 AWL	1.5 AML 2.3 AWL <MDL	188 AML 282 AWL	200 AML 400 AWL <MDL	125 AML <MDL
1	< 3.3	305	< 3.0	278	4.4	407	0.10	9.3	17	10
2	< 4.0	347	< 3.5	304	2.2	191	0.12	10.4		
3	< 3.5	322	< 3.2	294	2.0	184	0.21	19.3	19	14
4			< 4.0	369	1.6	148	0.17	15.7	4	3
5									37	26
6	5.2	498	3.0	287	5.8	556	0.04	3.6		
7	< 3.3	303	< 3.0	275	5.4	495	0.10	9.2	3	7
8	2.8	252	< 3.2	288	3.0	270	0.21	16.9	22	15
9	< 3.3	295	< 3.0	268	3.0	268	0.11	9.8	4	13
10	< 4.0	392	< 3.5	343	2.3	225	0.11	10.8	5	4
11			< 5.0	480	2.0	192	0.13	12.5	1	< 1
12									3	6
13	< 3.5	306	< 3.1	271	2.0	175	0.07	8.1		
14	< 4.0	417	< 3.5	365	3.2	334	0.23	24.0	3	1
15	< 3.3	304	< 3.0	276	3.2	295	0.38	35.0	7	12
16	< 3.7	413	< 3.3	368	4.4	491	0.35	39.0	16	12
17	< 3.3	315	< 3.0	286	1.0	95	0.18	17.2	4	9
18			< 4.0	371	2.5	232	0.14	13.0	4	20
19									6	8
20	< 4.6	407	< 4.0	354	1.8	159	0.07	6.2		
21	< 3.3	431	< 3.0	392	3.2	418	0.05	8.5	24	21
22	< 4.0	349	< 3.5	305	1.8	157	0.11	9.6	7	10
23	< 3.3	307	< 3.0	279	2.2	204	0.54	50.2	11	8
24	2.7	252	2.2	205	2.2	205	0.23	21.5	4	3
25			< 5.0	481	1.0	96	0.30	28.9	3	8
26									8	2
27	< 5.0	568	< 4.2	494	0.8	94	0.11	12.9		
28	< 3.3	316	< 3.0	287	1.6	153	0.08	7.7	26	21
29	< 5.0	492	< 4.0	394	4.6	453	0.09	8.9	2	7
30	< 3.3	328	< 3.0	296	4.6	478	0.22	21.9	6	14
31	2.8	317	2.7		3.0	339	0.26	29.4	9	10
Total										
Mean	3.7	359	3.4	331	2.8	271	0.17	16.9	9.81	10.27
Maximum	5.2	588	5.0	494	5.9	556	0.54	50.2	37.00	28.00
Minimum	2.7	252	2.2	205	0.8	94	0.04	3.8	1.00	1.00
# of Data	23	23	27	27	27	27	27	27	26	26
# of Data<MDL	19		24				0		0	1
Wk1:	3.6	313	3.2	274	3.5	301	0.14	11.7	15	13
Wk2:	3.7	326	3.6	321	2.9	258	0.21	19.1	6	6
Wk3:	3.7	346	3.4	317	2.1	205	0.18	18.4	9	13
Wk4:	3.8	363	3.5	329	2.5	248	0.15	14.4	10	13

Total Est. Bypass Flow (MG): 24.41 Total Bypass Occurances (days/month): 5

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR JUNE 2001

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1]: Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)	Influent Data: TBOD5 (mg/L)	Influent TBOD5 (lb/day)	Influent CBOD5 (mg/L)	Influent CBOD5 (lb/day)	Influent TSS (mg/L)	Influent TSS (lb/day)	Influent Ammonia-N (mg/L)	Influent Ammonia-N (lb/day)	Clarifier Effluent Data: TBOD5 (mg/L)	Clarifier CBOD5 (mg/L)	Clarifier TSS (mg/L)	Clarifier Ammonia-N (mg/L)	Final Effluent Data: TBOD5 (mg/L)	Final TBOD5 (lb/day)	Final CBOD5 (mg/L)	Final CBOD5 (lb/day)	Final TSS (mg/L)	Final TSS (lb/day)	Final Ammonia-N (mg/L)	Final Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0									<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	5.0 AML 7.5 AWL <MDL	826 AML 939 AWL	6.0 AML 9 AWL	751 AML 1127 AWL	1.5 AML 2.3 AWL <MDL	188 AML 282 AWL	200 AML 400 AWL <MDL	125 AML <MDL
1	Fri	0.06	13.66	26.0	14.96							0.35			56	6380	122	13899	7.84	893		3.8	12.8	0.21			< 4.3	490	1.8	205	0.13	14.8	9	10
2	Sat	0.08	11.87	18.0	12.69							0.20																					4	2
3	Sun	0.00	11.41	18.0	11.82							0.12	50	4758	40	3806	35	3331	8.18	586					< 5.5	523	< 4.6	438	0.6	57	0.04	3.8		
4	Mon	0.00	11.96	17.0	12.45							0.08	143	14264	54	6384	219	21644	6.72	870	12.0	3.3	12.2	0.20	< 5.0	499	< 4.3	429	4.6	459	0.12	12.0	4	7
5	Tue	0.95	16.49	37.0	16.92	170.400	4.100	252.000	4.400	169.600	3.750	0.95	83	11415	62	8527	138	18979	4.76	655	12.0	< 4.3	22.6	0.27	< 5.0	688	< 4.3	591	3.6	495	0.27	37.1	56	48
6	Wed	0.06	13.97	20.0	14.43							0.91	83	7340	50	5825	70	8156	4.40	513	9.1	< 4.3	13.8	0.42	< 5.0	583	< 4.3	501	2.6	326	0.30	35.0	6	8
7	Thu	0.00	15.06	19.0	13.22							0.39	104	13080	38	4779	125	15721	5.04	634	8.7	< 4.3	8.7	0.19	< 5.0	629	< 4.3	541	0.6	75	0.16	20.1	12	8
8	Fri	0.00	13.33	20.0	13.18							0.17			56	6226	226	25347	6.10	678		< 4.3	12.4	0.21			< 4.3	478	0.8	69	0.12	13.3	7	12
9	Sat	0.00	12.63	19.0	12.06							0.60																					13	21
10	Sun	0.00	12.63	18.0	11.58							0.40	125	13167	38	4003	127	13377	7.84	826					< 4.6	485	< 4.0	421	2.2	232	0.11	11.6		
11	Mon	0.00	12.98	19.0	12.11							0.12	97	10501	35	3789	146	15806	6.78	734	7.0	< 4.3	11.2	0.89	< 5.0	541	< 4.3	465	2.4	260	0.65	70.4	24	15
12	Tue	1.40	20.50	40.0	20.15	193.200	4.720	161.200	3.200	237.600	6.460	3.00	107	18294	38	6497	158	27013	5.77	986	13.0	< 4.3	20.0	0.53	< 5.0	855	< 4.3	735	3.2	547	0.42	71.8	340	280
13	Wed	0.00	16.00	27.5	16.69							1.10	42	5604	24	3203	57	7606	5.68	758	7.8	4.3	6.6	0.65	< 5.0	667	< 4.3	574	1.4	187	0.26	34.7	260	
14	Thu	0.16	15.98	33.5	16.54							0.44	96	12794	35	4666	141	16792	4.54	605	7.4	< 4.3	6.0	0.11	< 5.0	668	< 4.3	573	1.8	240	0.09	12.0	30	32
15	Fri	0.00	14.95	27.5	15.64							0.02			32	3990			4.70	586		< 4.3	10.3	0.34			< 4.3	536	2.0	249	0.06	7.5	270	100
16	Sat	0.00	13.78	19.5	14.32							0.01																					210	240
17	Sun	0.06	13.09	18.0	13.08							0.00	45	4913	35	3821	50	5459	6.49	699					< 5.0	546	< 4.3	469	5.6	633	0.06	6.6		
18	Mon	0.00	13.69	19.0	13.73							0.00	56	6394	46	5252	86	9819	6.61	755	7.4	< 4.3	6.0	0.26	< 5.0	571	4.5	514	0.8	91	0.14	18.0	75	39
19	Tue	0.00	13.83	19.0	13.98							0.00	55	6344	33	3806	65	7497	5.15	594	7.6	< 4.3	9.8	0.10	< 5.0	577	< 4.3	496	1.0	115	0.05	5.8	98	85
20	Wed	0.00	13.26	18.5	13.73							0.00	62	6856	44	4866	74	8164	7.50	829	8.4	< 4.3	9.4	0.22	< 5.0	553	< 4.3	476	2.0	221	0.08	6.8	74	70
21	Thu	0.93	15.70	36.0	15.52	121.200	2.950	148.200	3.200	114.600	2.510	0.66	40	5236	34	4452	60	7856	5.32	697	9.6	< 4.3	11.4	0.20	< 5.0	655	< 4.3	563	0.4	52	0.08	10.5	76	69
22	Fri	0.00	13.55	23.0	13.69							0.56			42	4746	90	10171	7.96	900		< 4.3	10.0	0.19			< 4.3	488	1.6	181	0.07	7.9	56	38
23	Sat	0.00	12.94		13.28							0.27																					17	23
24	Sun	0.00	12.75	17.0	12.98							0.12	51	5423	38	4041	47	4998	8.06	857					< 5.4	574	< 4.6	469			0.07	7.4		
25	Mon	0.00	13.18	19.0	14.14							0.00	80	8794	33	3627	112	12311	10.14	1115	7.2	< 4.0	15.4	0.20	< 4.6	506	< 4.0	440	0.8	88	0.11	12.1	17	16
26	Tue	0.00	13.15	18.0	13.96							0.00	98	10748	39	4277	106	11625	11.62	1296	6.6	< 4.3	10.8	0.32	< 5.0	548	< 4.3	472	0.4	44	0.19	20.8	12	7
27	Wed	0.00	13.56	18.0	13.77							0.00	167	18886	52	5881	129	14589	5.66	640	16.0	6.2	12.2	0.81	8.2	927	6.2	701	1.6	181	0.42	47.5	26	30
28	Thu	0.00	13.00	19.0	13.03							0.00	130	14098	55	5963	83	8999	6.44	698	18.0	7.8	9.8	0.33	10.4	1128	7.8	846	1.2	130	0.19	20.6	52	25
29	Fri	0.00	13.09	18.0	13.14							0.00			42	4585	97	10590	6.98	762		< 4.3	14.4	0.26			< 4.3	469	1.8	175	0.09	9.8	30	18
30	Sat	0.00	12.64	17.0	12.64							0.00																					48	33
Total		3.68	414.85		419.81	484.80	11.77	581.40	10.80		12.72	10.67																						
Mean			13.83		13.99	161.60	3.92	193.80	3.60		4.24	0.36	65	9945	42	4936	107	12582	6.54	755	9.9	4.5	11.7	0.32	5.4	636	4.6	528	1.9	222	0.17	20.7	70.23	58.31
Maximum		1.40	20.50	40.0	20.15	193.20	4.72	252.00	4.40		6.46	3.00	167	18886	64	8527	228	27013	11.62	1296	18.0	7.8	22.6	0.89	10.4	1128	7.8	846	5.8	633	0.65	71.8	340.00	280.00
Minimum			11.41		11.58	121.20	2.95	148.20	3.20		2.51	0.00	40	4756	24	3203	35	3331	4.40	513	6.6	3.3	6.0	0.10	4.6	485	4.0	421	0.4	44	0.04	3.8	4.00	2.00
# of Data		30	30	29	30	3	3	3	3		3	30	20	20	25	25	24	24	25	25	18	21	21	21	20	20	25	25	24	24	25	25	26	26
# of Data<MDL																					0	16			18		22				0		0	0
Wk1: 06/03-06/09/2001			13.58		13.44								89	10171	52	5925	136	15563	5.53	623					5.1	584	4.4	500	2.2	256	0.17	20.2	16	17
Wk2: 06/10-06/16/2001			15.26		15.32								93	12072	34	4358	126	16519	5.89	749					4.9	637	4.3	550	2.2	283	0.27	34.0	189	158
Wk3: 06/17-06/23/2001			13.72		13.86								52	5949	39	4491	71	8164	6.34	729					5.0	584	4.3	504	1.9	217	0.08	7.8	66	54
Wk4: 06/24-06/30/2001			13.64		14.01								52	5949	39	4491	71	8164	6.34	729					5.0	584	4.3	504	1.9	217	0.08	7.8	98	90

Total Est. Bypass Flow (MG): 35.29 Total Bypass Occurances (days/month): 3

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR JULY 2001

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1] – Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0
1	Sun	0.00	12.12	16.0	11.17							0.02
2	Mon	0.00	12.24	17.0	10.97							
3	Tue	0.42	14.26	40.0	13.80	64.800	1.600	80.400	1.400	87.200	1.470	
4	Wed	0.00	12.05	16.5	11.77							
5	Thu	0.00	11.79	16.0	11.69							
6	Fri	0.00	12.28	17.0	9.81							
7	Sat	0.15	13.38	29.5	14.29							
8	Sun	0.00	11.73	16.0	11.31							
9	Mon	0.00	12.60	18.0	12.51							
10	Tue	0.00	12.28	17.5	11.59							
11	Wed	0.00	12.41	17.0	12.28							
12	Thu	0.00	12.32	17.0	11.21							
13	Fri	0.00	12.45	17.0	10.59							
14	Sat	0.00	12.01	16.0	10.88							
15	Sun	0.00	11.98	16.0	10.82							
16	Mon	0.00	12.41	17.0	11.74							
17	Tue	0.69	14.02	34.0	13.22					40.200	0.900	
18	Wed	0.02	12.72	17.0	13.03							
19	Thu	0.00	12.47	17.0	12.29							
20	Fri	0.00	12.54	17.0	12.26							
21	Sat	0.95	14.27	29.0	13.36	51.000	1.200	81.600	1.400	112.800	2.450	0.15
22	Sun	0.62	15.06	31.0	14.77	14.400	0.400	327.600	5.700	99.600	2.150	1.03
23	Mon	1.56	17.50	35.5	16.84	284.800	5.400	249.000	4.300	271.600	7.960	2.68
24	Tue	0.00	17.86	30.0	15.86			19.800	0.300			4.83
25	Wed	0.30	18.25	30.5	16.68	103.200	2.500			64.800	1.400	4.63
26	Thu	0.00	16.83	28.0	14.86							3.89
27	Fri	0.00	16.30	20.0	14.04							2.63
28	Sat	0.00	14.66	16.0	13.58							2.19
29	Sun	0.00	14.53	16.0	13.77							2.03
30	Mon	0.00	14.59	29.0	13.94							1.52
31	Tue	0.00	14.45	19.0	13.93							0.79
Total		4.71	424.38		398.84	518.20	11.10	758.40	13.10		16.33	28.39
Mean			13.69		12.87	103.64	2.22	151.66	2.62		2.72	2.20
Maximum		1.56	18.25	40.0	16.64	284.80	5.40	327.60	5.70		7.96	4.63
Minimum			11.73		9.81	14.40	0.40	19.80	0.30		0.90	0.00
# of Data		31	31	31	31	5	5	5	5		6	12
# of Data<MDL												
Wk1: 07/1-07/7/01			12.56		12.17							
Wk2: 07/8-07/14/01			12.27		11.30							
Wk3: 07/15-07/21/01			14.09		13.68							
Wk4: 07/22-07/28/01			13.36		12.95							

Date	Influent Data – TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Clarifier Effluent Data – TBOD5 (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	Ammonia-N (mg/L)
Design Criteria									<MDL	<MDL	10	1.5
1	96	9704	38	3841	134	13545	7.39	747				
2	119	12148	46	4696	179	18273	8.72	686	8.3	< 4.0	14.2	0.11
3	63	7492	44	5233	104	12369	8.40	999	6.4	< 4.0	12.4	0.19
4	39	3919	38	3818	35	3517	8.22	625	8.2	< 4.0	13.4	0.10
5	35	3442	29	2852	47	4621	7.64	771	8.7	< 4.0	13.0	0.65
6		0	39	3994	128	13109	9.18	940		< 4.0	12.0	0.22
7												
8	64	6261	42	4109	101	9881	7.64	787				
9	108	11349	44	4624	189	19861	8.94	729	7.2	< 4.0	9.2	0.12
10	77	7686	37	3789	112	11471	8.72	688	7.7	< 4.0	13.8	0.08
11	117	12109	40	4140	164	18974	8.44	687	8.4	< 4.0	8.0	0.24
12	78	8014	25	2589	71	7295	7.64	806	5.5	< 3.5	7.4	0.71
13		0	38	3738	272	28243	10.10	1049		< 4.0	8.4	0.24
14												
15	64	6394	29	2897	81	8093	8.77	878				
16	101	10453	34	3519	131	13558	8.48	876	6.7	< 4.0	10.2	0.28
17	102	11927	61	7133	160	18706	7.28	851	7.7	3.4	10.2	0.15
18	92	9760	81	8471	70	7426	8.51	903	8.9	< 3.5	9.4	0.14
19	141	14664	57	5928	130	13520	7.06	734	8.4	< 4.0	8.8	0.09
20		0	50	5229	165	19348	10.00	1046		< 4.0	8.6	0.23
21					135	16067						
22	54	6791	38	4779			6.15	648				
23	31	4524	21	3065	78	11092	4.17	609	< 4.6	< 4.0	8.8	0.48
24	47	7001	32	4766	64	9533	2.63	392	3.9	< 3.5	7.2	0.08
25	38	5784	31	4718	63	9589	1.87	285	< 4.8	< 4.0	9.8	0.05
26	47	6597	39	5474	85	9124	7.62	1070	4.9	< 3.7	6.8	0.17
27			41	5574	102	13866	5.60	781		< 4.3	11.2	0.09
28												
29	56	6786	50	6059	55	6665	6.44	780				
30	63	7666	48	5841	82	9978	5.80	681	8.2	< 3.0	9.8	5.88
31	68	7954	30	3815	101	12172	4.58	552	5.7	< 3.0	8.8	0.14
Total												
Mean	74	7255	40	4529	112	12515	8.87	781	8.4	3.8	10.1	0.47
Maximum	141	14664	61	7133	272	28243	10.10	1070	8.7	4.3	14.2	5.88
Minimum	31	0	21	2569	35	3517	1.87	285	3.9	3.0	8.8	0.05
# of Data	23	23	27	27	27	27	27	27	18	22	22	22
# of Data<MDL									2	21		
Wk1: 07/1-07/7/01	82	5411	39	4071	101	10560	7.74	877				
Wk2: 07/8-07/14/01	87	7478	34	3442	139	12923	8.06	827				
Wk3: 07/15-07/21/01	84	7944	48	5434	128	11682	7.03	798				
Wk4: 07/22-07/28/01	98	8933	50	5510	135	12093	7.74	843				

Date	Final Effluent Data – TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Effluent Fecal coliform (col/100 mLs)	Effluent E. coli (col/100 mLs)
Design Criteria	Report Only <MDL	Report Only	5.0 AML 7.5 AWL <MDL	628 AML 939 AWL	8.0 AML 9 AWL	751 AML 1127 AWL	1.5 AML 2.3 AWL <MDL	188 AML 282 AWL	200 AML 400 AWL <MDL	125 AML <MDL
1	< 5.0	505	< 4.3	435	3.8	364	0.07	7.1		
2	< 4.8	470	< 4.0	408	1.0	102	0.03	3.1	32	24
3	< 4.8	547	< 4.0	476	5.2	818	0.11	13.1	400	300
4	< 4.8	482	< 4.0	402	2.4	241	0.02	2.0	250	110
5	< 4.8	452	< 4.0	393	1.8	177	0.29	28.5	23	20
6			< 4.0	410	1.6	164	0.04	4.1	360	75
7									33	32
8	< 3.3	323	< 3.0	293	2.0	196	0.07	8.8		
9	< 4.6	483	< 4.0	420	2.2	231	0.06	8.3	44	36
10	< 4.8	471	< 4.0	410	5.8	594	0.04	4.1	300	130
11	< 4.6	478	< 4.0	414	0.7	72	0.13	13.5	250	130
12	< 4.0	411	< 3.5	360	1.5	154	0.32	32.9	26	18
13			< 4.0	415	2.0	208	0.29	30.1	40	33
14						0			11	5
15	< 4.3	430	< 3.7	370	1.5	150	0.03	3.0		
16	3.7	383	3.3	342	3.4	352	0.12	12.4	19	40
17	< 4.3	503	< 3.7	433	2.2	257	0.07	8.2	59	55
18	< 4.0	424	< 3.5	371	2.4	255	0.06	8.5	230	100
19	< 4.8	478	< 4.0	418	2.8	270	0.03	3.1	130	140
20			< 4.0	418	2.0	209	0.11	11.5	47	48
21									8	12
22	< 5.0	829	< 3.7	465	3.2	402	0.06	10.1		
23	< 4.8	671	< 4.0	584	3.6	525	0.24	35.0	26	27
24	< 4.0	596	< 3.5	521	3.3	492	0.03	4.5	48	8
25	< 4.6	700	< 4.0	609	2.2	335	0.02	3.0	290	210
26	< 4.3	604	< 3.7	519	4.4	818	0.03	4.2	220	150
27			< 4.3	585	5.8	781	0.03	4.1	170	100
28									510	
29	< 3.7	448	< 3.3	400	3.4	412	0.03	3.8		
30	< 3.3	402	< 3.0	385	7.2	878	0.50	60.8	220	170
31	< 3.3	398	< 3.0	382	3.8	434	0.08	9.6	270	210
Total										
Mean	4.3	490	3.8	429	3.0	338	0.11	12.3	154.38	105.50
Maximum	5.0	700	4.3	609	7.2	878	0.50	60.8	510.00	560.00
Minimum	3.3	323	3.0	293	0.7	0	0.02	2.0	6.00	5.00
# of Data	23	23	27	27	27	27	27	27	28	26
# of Data<MDL	22		28				0		0	0
Wk1: 07/1-07/7/01	4.3	370	3.8	378	2.5	260	0.10	9.8	185	98
Wk2: 07/8-07/14/01	4.2	340	3.8	356	2.5	238	0.18	14.5	108	59
Wk3: 07/15-07/21/01	4.5	440	3.8	437	2.7	312	0.10	12.4	83	64
Wk4: 07/22-07/28/01	4.3	393	3.7	398	2.8	284	0.08	8.7	82	66

Total Est. Bypass Flow (MG): 40.33 Total Bypass Occurances (days/month): 7

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR AUGUST 2001

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1] – Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)	Influent Data – TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0								
1	Wed	0.00	14.12	18.0	13.77							0.00	71	8361	52	6124	75	8832	8.66	1020
2	Thu	0.44	15.41	32.0	13.67	18.600	0.500	70.600	1.200	80.400	1.800	0.04	51	8554	44	5665	48	8169	5.60	720
3	Fri	0.02	14.13	19.0	14.20							0.00			43	5067	117	13788	7.59	894
4	Sat	0.00	13.33	18.0	12.30							0.00								
5	Sun	0.00	13.46	17.0	12.01							0.00	64	7164	36	4041	74	8307	5.10	573
6	Mon	0.00	13.68	19.0	12.01							0.00	116	13235	77	8785	154	17570	19.00	2168
7	Tue	0.00	13.58	18.0	12.39							0.00	81	9174	54	8116	107	12119	15.00	1699
8	Wed	0.00	13.59	18.0	12.73							0.00	69	7821	57	6460	85	9634	8.29	940
9	Thu	0.28	14.96	39.5	14.78	38.400	0.900	27.000	0.500	43.800	1.010	0.00	81	10106	64	8737	139	17343	8.31	1037
10	Fri	0.00	13.33	28.0	12.63							0.00			43	4780	137	15231	5.60	623
11	Sat	0.00	12.32	18.0	12.37							0.00								
12	Sun	0.00	12.42	18.0	11.19							0.00	38	3936	25	2590	122	12637	8.78	702
13	Mon	0.00	12.43	16.8	10.71							0.00	38	3939	26	2695	82	8501	12.00	1244
14	Tue	0.00	12.42	17.5	11.97							0.00	66	6836	42	4350	112	11601	11.10	1150
15	Wed	0.00	12.14	18.5	9.22							0.00	54	5467	39	3949	70	7087	10.20	1033
16	Thu	0.39	15.63	37.0	14.81			20.400	0.400	20.400	0.450	0.00	64	8343	40	5214	282	36760	7.87	1026
17	Fri	0.00	12.30	17.5	11.09							0.00			50	5129	53	5437	8.34	856
18	Sat	0.51	15.25	38.0	13.96	51.600	2.600	65.600	4.170	56.800	1.290	0.00								
19	Sun	0.32	13.82	33.0	13.08	23.400	1.100	33.600	1.630	40.200	0.880	0.03	47	6417	39	4496	57	6570	5.38	620
20	Mon	0.00	12.09	17.0	11.12							0.00	55	5546	45	4537	59	5949	7.67	773
21	Tue	0.12	13.52	34.5	12.30	24.000	1.200	24.000	1.170	25.200	0.550	0.00	53	5976	47	5300	51	5751	7.39	833
22	Wed	0.00	12.94	21.0	12.38							0.00	99	10684	71	7662	163	17591	5.88	635
23	Thu	0.00	12.44	17.0	11.51							0.00	53	5499	39	4046	115	11931	7.06	732
24	Fri	0.14	12.42	29.0	13.62							0.00			78	8079	125	12948	9.77	1012
25	Sat	0.27	14.57	33.0	13.12	12.000	0.300	13.800	0.200	33.000	0.720	0.00								
26	Sun	0.02	12.47	16.0	10.57							0.00	41	4264	28	2912	65	6760	7.61	791
27	Mon	0.00	12.77	18.0	11.56							0.00	76	8307	52	5538	91	9692	11.20	1193
28	Tue	0.00	12.33	17.5	10.47							0.00	59	6067	48	4730	94	9666	7.18	738
29	Wed	0.00	13.07	17.5	10.86							0.00	72	7848	45	4905	142	15479	12.70	1384
30	Thu	0.30	14.38	37.0	12.41					28.200	0.620	0.00	92	11033	66	7915	174	20888	14.70	1763
31	Fri	0.18	14.06	27.0	14.26			29.400	0.500	12.000	0.260	0.00			69	6928	127	14913	13.38	1571
Total		2.99	415.40		383.37	168.00	6.50	304.60	9.77		7.56	0.07								
Mean			13.40		12.37	28.00	1.08	38.10	1.22		0.84	0.00	66	7345	48	5361	108	12190	9.23	1027
Maximum		0.51	15.63	39.5	14.81	51.60	2.60	65.60	4.17		1.80	0.04	116	13235	78	8785	282	36760	19.00	2168
Minimum			12.09		9.22	12.00	0.30	13.80	0.20		0.26	0.00	38	3936	25	2590	48	5437	5.10	573
# of Data		31	31	31	31	6	6	6	6		9	31	22	22	27	27	27	27	27	27
# of Data<MDL				-																
Wk1: 07/29-08/04/2001			13.82		12.92								82	9504	54	6201	113	13127	10.55	1218
Wk2: 08/05-08/11/2001			12.96		11.63								52	5704	36	3930	134	15303	8.93	963
Wk3: 08/12-08/18/2001			13.19		12.21								61	6624	49	5195	63	6871	6.95	742
Wk4: 08/19-08/25/2001			13.65		12.88								64	7193	49	5390	111	13009	7.09	790

Date	Clarifier Effluent Data – TBOD5 (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	Ammonia-N (mg/L)	Final Effluent Data – TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria	<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	5.0 AML 7.5 AWL <MDL	626 AML 939 AWL	6.0 AML 9 AWL	751 AML 1127 AWL	1.5 AML 2.3 AWL <MDL	186 AML 282 AWL	200 AML 400 AWL <MDL	125 AML <MDL
1	6.2	< 3.5	8.0	0.28	< 4.0	471	< 3.5	412	8.6	1013	0.11	13.0	26	34
2	4.8	< 3.5	9.0	0.13	< 4.0	514	< 3.5	450	4.2	540	0.05	8.4	160	210
3		< 4.3	6.8	0.31			< 4.3	507	3.7	436	0.06	7.1	80	230
4													47	41
5					3.2	359	3.0	337	1.8	202	0.04	4.5		
6	4.7	< 3.3	7.6	0.60	< 3.7	422	< 3.3	377	2.6	297	0.38	43.4	340	260
7	5.2	< 3.2	9.2	0.22	< 3.5	396	< 3.2	362	3.4	385	0.20	22.7	47	38
8	4.5	< 3.0	8.4	0.11	< 3.3	374	< 3.0	340	5.2	589	0.06	6.8	160	120
9	< 4.0	< 3.5	8.0	0.18	< 4.0	499	< 3.5	437	3.0	374	0.05	8.2	26	17
10		< 3.6	6.0	0.08			< 3.5	389	1.2	133	0.02	2.2	44	45
11													9	8
12					< 3.5	363	< 3.1	321	3.0	311	0.02	2.1		
13	4.9	< 3.0	18.8	0.14	< 3.3	342	< 3.0	311	2.6	270	0.10	10.4	190	240
14	6.5	< 3.2	13.4	0.28	< 3.5	363	< 3.2	331	2.2	226	0.12	12.4	22	17
15	6.9	< 3.5	10.2	0.14	< 4.0	405	< 3.5	354	2.2	223	0.07	7.1	68	51
16	4.4	< 4.0	10.4	0.06	< 4.6	600	< 4.0	521	2.6	339	0.02	2.6	82	54
17		< 4.0	11.2	0.43			< 4.0	410	2.4	246	0.13	13.3	6	14
18													19	60
19					< 5.0	578	< 4.2	484	4.0	461	0.05	5.6		
20	5.7	< 3.0	8.8	0.34	< 3.0	302	< 3.0	302	2.4	242	0.07	7.1	18	12
21	6.0	< 3.3	9.8	0.06	4.4	496	< 3.3	372	3.0	338	0.01	1.1	77	64
22	< 3.5	< 3.2	9.4	0.13	< 3.5	378	< 3.2	345	2.7	291	0.02	2.2	57	41
23	3.5	< 3.0	13.4	0.06	< 3.3	342	< 3.0	311	3.6	373	0.05	5.2	68	41
24		< 4.3	9.4	0.08			< 4.3	445	3.0	311	0.03	3.1	14	12
25													690	510
26					< 3.3	343	< 3.0	312	3.0	312	0.06	6.2		
27	4.3	2.9	6.8	0.84	3.5	373	3.2	341	1.2	128	0.39	41.5	30	21
28	< 4.0	< 3.5	4.4	0.20	< 4.0	411	< 3.5	360	2.8	288	0.11	11.3	90	110
29	< 4.6	< 4.0	6.0	0.04	< 4.6	501	< 4.0	436	3.0	327	0.02	2.2	23	6
30	4.9	2.8	7.0	0.69	< 3.3	398	< 3.0	360	3.5	420	0.31	37.2	32	210
31	-	< 4.2	7.4	0.73			< 4.2	493	1.7	200	0.58	68.1	37	5
Total														
Mean	4.9	3.5	9.1	0.27	3.8	419	3.5	386	3.1	344	0.12	13.0	91.26	91.59
Maximum	6.9	4.3	18.8	0.84	5.0	600	4.3	521	8.6	1013	0.58	68.1	690.00	510.00
Minimum	3.5	2.8	4.4	0.04	3.0	302	3.0	302	1.2	126	0.01	1.1	8.00	5.00
# of Data	16	23	23	23	22	22	27	27	27	27	27	27	27	27
# of Data<MDL	4	21			19		25				0		0	1
Wk1: 07/29-08/04/2001					3.5	379	3.4	370	3.3	359	0.13	13.7	120	118
Wk2: 08/05-08/11/2001					3.6	369	3.4	334	2.3	225	0.06	5.5	66	69
Wk3: 08/12-08/18/2001					3.6	282	3.5	344	3.0	302	0.06	3.3	41	39
Wk4: 08/19-08/25/2001					4.1	332	3.6	378	2.9	296	0.05	2.9	40	41

Total Est. Bypass Flow (MG): 23.85 Total Bypass Occurances (days/month): 9

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR SEPTEMBER 2001

						CSO Pump Station Discharges [1]							Influent Data							
						Michigan Outfall 002		Alder - Outfall 003		Magoun - Outfall 005										
Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	Run Time Minutes	Est. Flow (MGD)	Run Time Minutes	Est. Flow (MGD)	Run Time Minutes	Flow (MGD)	Outfall 006 CSO Lagoon (MGD)	TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0								
1	Sat	0.00	11.69	16.0	10.00							0.00								
2	Sun	0.00	11.31	17.0	9.36							0.00	48	4528	40	3773	62	5848	7.71	727
3	Mon	0.00	11.86	18.0	9.67							0.00	49	4847	41	4055	64	6330	8.74	864
4	Tue	0.00	12.09	17.0	9.91							0.00	75	7562	52	5243	80	8066	19.50	1966
5	Wed	0.00	12.41	19.0	9.95							0.00	72	7452	48	4968	99	10246	11.00	1138
6	Thu	0.61	13.45	38.5	11.74	91.200	2.200	105.000	1.800	95.400	2.430	0.00	81	9066	55	6170	116	13012	5.60	628
7	Fri	0.08	14.01	23.8	13.65	15.000	0.400	37.800	0.700	15.000	0.330	0.06			89	10399	167	19513	12.50	1461
8	Sat	0.00	12.39	16.0	10.20							0.64								
9	Sun	0.59	15.06	32.0	14.14	25.200	0.600	53.400	0.900	83.600	1.390	0.21	49	6154	40	5024	74	9294	4.90	615
10	Mon	0.00	12.36	17.5	9.84							0.79	68	7010	49	5051	80	8247	10.70	1103
11	Tue	0.00	12.02	17.0	9.45							1.02	74	7418	49	4912	101	10125	17.50	1754
12	Wed	0.00	12.32	17.0	9.82							0.41	85	8734	52	5343	95	9781	14.80	1521
13	Thu	0.01	12.39	18.0	9.88							0.11	74	7647	48	4960	62	6407	11.10	1147
14	Fri	0.00	11.91	17.0	9.16							0.04			44	4370	72	7152	8.00	795
15	Sat	0.00	11.53	15.8	8.63							0.00								
16	Sun	0.00	11.63	15.0	8.96							0.00	94	9117	57	5529	89	8632	8.29	804
17	Mon	0.45	13.73	33.0	11.42	29.400	0.700	63.600	1.100	46.800	1.020	0.00	101	11565	65	7443	127	14543	12.00	1374
18	Tue	0.28	11.09	21.0	10.68	94.200	2.300	82.800	1.400	91.800	2.010	0.00	64	7769	81	5642	115	10636	6.46	597
19	Wed	0.36	12.68	32.0	14.01							1.01	93	9836	46	4865	102	10787	6.78	717
20	Thu	0.02	9.74	13.0	9.77							0.60	93	7556	66	5361	62	5036	7.45	605
21	Fri	0.04	9.94	14.5	10.33							0.28			47	3896	87	7212	7.26	604
22	Sat	0.00	9.33	14.0	9.16							0.12								
23	Sun	0.72	13.57	34.0	14.36	86.200	2.100	53.400	0.900	82.800	1.810	83.00	82	7017	48	5432	68	7696	7.22	817
24	Mon	0.63	15.12	29.5	16.29							1.41	70	8827	43	5422	78	9836	9.24	1165
25	Tue	0.21	13.61	28.5	15.48	14.400	0.300	20.400	0.400	16.200	0.350	1.40	52	5659	27	3042	87	7549	8.57	628
26	Wed	0.00	10.82	16.5	12.30							0.99	54	4873	39	3519	56	5053	8.42	579
27	Thu	0.00	11.02	14.0	11.46							0.07	68	6250	50	4595	88	8088	10.10	928
28	Fri	0.00	10.83	15.0	9.94							0.50			58	5239	74	6684	9.69	875
29	Sat	0.00	10.34	14.5	10.21							0.34								
30	Sun	0.00	10.29	15.0	10.24							0.23	39	3347	30	2575	45	3862	8.94	596
Total		4.19	360.44		330.02	354.60	6.60	416.40	7.20		9.34	93.15								
Mean			12.01		11.00	50.66	1.23	59.49	1.03		1.33	3.11	71	7260	50	5073	85	8785	9.42	960
Maximum		0.81	15.12	38.5	16.29	94.20	2.30	105.00	1.80		2.43	83.00	101	11565	89	10399	167	19513	19.50	1966
Minimum			9.33		8.63	14.40	0.30	20.40	0.40		0.33	0.00	39	3347	27	2575	45	3862	4.90	579
# of Data		30	30	30	30	6	7	7	7		7	30	21	21	25	25	25	25	25	28
# of Data<MDL																				
Wk1: 09/02-09/08/2001			13.04		11.32								65	7020	54	5977	100	11077	10.37	1112
Wk2: 09/09-09/15/2001			12.02		9.39								79	7985	50	5028	83	8387	11.73	1187
Wk3: 09/16-09/22/2001			11.44		11.39								87	8748	58	5440	94	9318	7.87	786
Wk4: 09/23-09/29/2001			11.16		10.62								93	9168	57	5456	97	9474	8.04	784

	Clarifier Effluent Data				Final Effluent Data									
Date	TBOD5 (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	Ammonia-N (mg/L)	TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria	<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	5.0 AML 7.5 AWL <MDL	626 AML 939 AWL	6.0 AML 9 AWL	751 AML 1127 AWL	1.5 AML 2.3 AWL <MDL	188 AML 282 AWL	200 AML 400 AWL <MDL	125 AML <MDL
1													37	61
2					3.3	311	< 3.0	283	1.6	151	0.22	20.8		
3	6.2	< 4.0	8.6	0.06	4.6	455	< 4.0	396	1.1	109	0.04	4.0	10	6
4	6.6	< 4.0	11.0	0.70	4.6	464	< 4.0	403	1.2	121	0.33	33.3	32	28
5	7.3	< 4.0	10.6	0.13	4.6	476	< 4.0	414	2.4	248	0.02	2.1	28	23
6	7.8	< 4.0	12.2	0.12	4.8	518	< 4.0	449	2.2	247	0.09	10.1	140	90
7		2.9	10.0	0.27			< 3.7	432	1.2	140	0.04	4.7	32	28
8													360	
9					4.3	540	< 3.7	465	1.2	151	0.01	1.3		
10	6.0	< 4.0	10.6	0.04	4.8	474	< 4.0	412	2.0	206	< 0.02	2.1	41	40
11	9.2	3.9	10.7	0.76	4.3	431	3.9	391	1.8	180	0.30	30.1	56	48
12	8.3	< 4.0	9.8	0.52	4.6	473	< 4.0	411	2.2	226	0.36	37.0	83	75
13	6.2	< 4.0	12.4	0.14	4.6	475	< 4.0	413	2.8	289	0.13	13.4	53	88
14		< 3.5	10.8	0.11			< 3.5	348	2.2	219	0.08	7.9	76	61
15													34	39
16					4.0	388	< 3.5	339	2.4	233	0.04	3.9		
17	5.6	< 4.6	9.4	0.24	6.4	618	< 4.6	527	2.0	229	0.07	8.0	92	85
18	5.5	< 4.0	9.8	0.15	4.6	425	< 4.0	370	2.0	185	0.08	7.4	72	81
19	8.1	< 4.0	10.0	0.08	4.6	486	< 4.0	423	2.0	212	0.06	6.3	33	26
20	< 4.2	< 3.7	8.2	0.06	4.2	341	< 3.7	301	1.8	148	< 0.02	1.6	33	23
21		< 3.1	8.2	0.07			< 3.1	257	1.4	116	0.01	0.8	26	53
22													51	43
23					4.0	453	3.7	419	2.9	328	0.03	3.4		
24	6.8	< 4.0	9.6	0.95	4.6	580	< 4.0	504	3.0	378	0.65	82.0	68	41
25	7.4	< 3.7	9.8	<0.02	4.3	484	< 3.7	417	1.4	168	< 0.02	2.3	41	33
26	6.4	< 3.7	9.2	<0.02	4.3	388	< 3.7	334	1.0	90	0.03	2.7	42	59
27	5.5	< 3.5	10.4	0.04	4.0	368	< 3.5	322	1.4	129	0.06	5.5	24	31
28		< 5.0	8.2	0.06			< 5.0	452	0.5	45	0.02	1.8	34	29
29														
30					5.4	463	< 4.8	395	1.0	86	0.09	7.7	1800	1900
Total														
Mean	6.8	3.9	9.9	0.25	4.5	458	3.9	395	1.8	185	0.11	12.0	131.92	128.84
Maximum	9.2	5.0	12.4	0.95	5.4	618	5.0	527	3.0	378	0.65	82.0	1800.00	1900.00
Minimum	4.2	2.9	6.2	0.04	3.3	311	3.0	257	0.5	45	0.01	0.8	10.00	6.00
# of Data	18	20	20	18	21	21	25	25	25	25	25	25	25	25
# of Data<MDL	1	18			20		23				3		0	0
Wk1: 09/02-09/08/2001					4.5	418	3.9	372	1.6	147	0.09	7.8	100	71
Wk2: 09/09-09/15/2001					4.4	354	3.8	304	2.2	177	0.16	12.4	57	55
Wk3: 09/16-09/22/2001					4.6	456	3.9	379	2.0	203	0.05	4.5	51	52
Wk4: 09/23-09/29/2001					4.6	421	3.8	349	1.9	175	0.05	4.4	51	52

Total Est. Bypass Flow (MG): 24.64 Total Bypass Occurances (days/month): 7

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR OCTOBER 2001

						CSO Pump Station Discharges [1]							Influent Data								Clarifier Effluent Data				Final Effluent Data									
						Michigan Outfall 002		Alder - Outfall 003		Magoun - Outfall 005																								
Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	Run Time Minutes	Est. Flow (MGD)	Run Time Minutes	Est. Flow (MGD)	Run Time Minutes	Flow (MGD)	Outfall 006 CSO Lagoon (MGD)	TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	TBOD5 (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	Ammonia-N (mg/L)	TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0									<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	5.0 AML 7.5 AWL <MDL	626 AML 939 AWL	6.0 AML 9 AWL	751 AML 1127 AWL	1.5 AML 2.3 AWL <MDL	188 AML 282 AWL	200 AML 400 AWL <MDL	125 AML <MDL
1	Mon	0.00	10.52	17.0	10.42							0.15	48	4211	41	3597	87	5878	8.74	787	7.4	< 4.8	9.4	0.56	< 5.5	483	< 4.8	404	0.9	79	0.28	24.6	160	140
2	Tue	0.00	10.56	17.0	11.04							0.13	36	3171	27	2378	74	6517	6.10	537	7.7	< 4.6	8.6	0.20	< 5.5	484	< 4.8	405	2.2	194	0.19	16.7	200	160
3	Wed	0.00	10.45	15.0	13.03							0.10	94	8192	48	4009	103	8977	8.54	744	9.2	< 4.8	12.2	0.17	< 5.5	479	< 4.8	401	1.8	139	0.08	7.0	80	26
4	Thu	1.18	12.83	32.0	13.91	133.200	3.200	294.800	5.100	133.200	2.910	0.38	94	10058	53	5671	133	14231	7.37	789	10.5	< 4.8	13.8	0.26	< 5.4	578	< 4.8	492	0.8	86	0.11	11.8	30	21
5	Fri	0.92	14.13	20.0	18.25	111.600	2.700	328.800	5.700	106.600	2.380	2.80			24	2828	99	11667	4.20	495		< 4.3	13.0	0.13			< 4.3	507	1.2	141	0.03	3.5	37	25
6	Sat	0.00	12.63	17.0	14.75							1.04																					150	70
7	Sun	0.00	12.22	15.0	14.39							0.40	83	8459	37	3771	77	7647	5.86	599					< 5.5	561	< 4.6	469	1.7	173	0.07	7.1		
8	Mon	0.00	12.03	17.0	14.20							0.19	104	10434	39	3913	125	12541	7.78	781	9.7	< 4.8	13.4	0.03	< 5.5	552	< 4.8	462	1.4	140	0.02	2.0	29	20
9	Tue	0.00	11.89	16.0	13.62							0.14	104	10313	44	4363	90	8925	10.64	1055	11.0	< 4.8	14.0	0.72	< 5.5	545	< 4.8	458	2.0	198	0.43	42.8	40	34
10	Wed	0.06	11.69	16.0	13.34							0.03	78	7606	34	3316	98	9554	7.34	716	10.0	< 4.6	17.8	0.21	< 5.5	536	< 4.8	448	1.8	175	0.19	18.5	35	25
11	Thu	0.15	11.12	16.5	11.92							0.06	81	7512	36	3339	83	7697	7.70	714	8.9	< 4.3	16.8	0.11	< 5.0	464	< 4.3	399	1.2	111	0.05	4.8	36	28
12	Fri	1.04	18.03	32.5	19.81	237.600	5.600	269.400	4.700	186.000	4.070	1.97			72	9626	118	15775	5.49	734		< 4.8	16.0	0.11			< 4.6	815	2.2	294	0.07	9.4	47	36
13	Sat	1.49	16.71	31.0	20.20	284.400	6.900	268.200	4.700	264.000	5.770	2.24																					17	25
14	Sun	0.23	19.94	27.0	22.86	25.800	0.600	26.400	0.500	12.600	0.280	3.52	34	5654	19	3160	74	12306	3.19	530					< 5.5	915	< 4.8	765	2.2	366	0.04	6.7		
15	Mon	0.04	17.24	25.0	19.90							1.23	32	4601	20	2876	81	11646	4.03	579	12.0	6.0	18.4	0.05	< 5.5	791	< 4.8	681	1.8	259	0.03	4.3	210	38
16	Tue	0.20	16.45	26.0	20.93							0.70	78	11694	31	4770	121	18619	3.14	483	9.3	< 4.8	11.4	0.79	< 5.5	848	< 4.8	708	2.2	339	0.71	109.2	250	160
17	Wed	0.00	15.66	24.0	18.50							0.38	63	8228	31	4049	81	10579	6.94	906	11.0	< 4.8	15.0	0.02	< 5.5	718	< 4.8	601	1.8	235	0.02	2.6	150	58
18	Thu	0.00	15.95	24.5	18.03							0.26	84	8513	35	4856	57	7582	8.23	1095	12.0	< 4.8	12.8	0.22	< 5.5	732	< 4.6	612	1.0	133	0.10	13.3	28	22
19	Fri	0.00	14.07	24.5	16.81							0.14			37	4342	87	10209	6.56	770		< 3.2	12.0	0.09			< 3.2	376	1.2	141	0.03	3.5	59	42
20	Sat	0.00	13.15	17.0	15.99							0.13																					18	16
21	Sun	0.00	10.21	16.0	15.87							0.01	86	7323	41	3491	80	6812	8.74	744					< 5.5	468	< 4.8	392	3.2	272	0.03	2.8		
22	Mon	0.03	12.37	17.0	15.39							0.11	135	13927	48	4952	174	17951	12.99	1340	12.0	< 4.6	18.0	0.32	< 5.5	567	< 4.8	475	1.4	144	0.20	20.6	54	43
23	Tue	0.85	16.29	39.0	19.04	120.000	2.900	123.000	2.100	127.600	3.340	2.13	79	10733	32	4347	114	15488	5.38	731	10.0	< 4.0	15.6	0.09	< 5.5	747	< 4.8	625	1.2	163	0.14	19.0	67	50
24	Wed	0.63	14.28	29.0	16.99	111.600	2.700	163.200	2.800	146.400	4.060	2.50	77	9170	43	5121	84	10004	5.15	613	12.0	< 4.6	12.6	0.31	< 5.5	656	< 4.6	548	3.8	429	0.25	29.8	27	20
25	Thu	0.00	15.52	25.0	17.50							2.19	59	7637	37	4789	66	8543	8.56	848	10.0	< 4.8	16.8	0.03	< 5.5	712	< 4.8	595	1.4	181	0.03	3.9	51	44
26	Fri	0.00	14.46	18.0	16.66							0.68			29	3497	123	14833	5.24	632		< 4.6	11.6	0.18			< 4.6	555	1.0	121	0.12	14.5	100	140
27	Sat	0.00	13.90	17.0	16.12							0.26																					32	18
28	Sun	0.00	14.04	17.0	16.33							0.17	85	9953	32	3747	90	10538	5.65	662					< 5.4	632	< 4.6	539	6.0	703	< 0.02	2.3		
29	Mon	0.00	13.06	17.0	14.81							0.00	82	6931	39	4248	124	13506	8.85	964	8.0	< 4.6	16.0	0.26	< 5.5	599	< 4.6	501	1.2	131	< 0.17	16.5	17	14
30	Tue	0.03	12.86	18.0	14.83							0.00	121	12978	39	4163	125	13407	10.64	1141	11.1	< 4.8	18.4	0.09	< 5.5	590	< 4.8	493	3.2	343	0.16	17.2	14	7
31	Wed	0.00	12.57	17.0	14.26							0.06	101	10588	33	3460	87	9121	10.14	1063	11.2	< 4.8	15.4	0.10	< 5.5	577	< 4.8	482	1.8	168	0.10	10.5	12	6
Total		6.64	426.63		499.72	1024.20	24.80	1473.60	25.60		22.81	24.12																						
Mean			13.77		16.12	146.31	3.54	210.51	3.66		3.26	0.78	79	8691	37	4187	98	11139	7.06	779	10.2	4.5	14.1	0.22	5.5	619	4.5	518	1.9	217	0.14	15.6	72.22	47.63
Maximum		1.49	19.94	39.0	22.86	284.40	6.90	328.80	5.70		5.77	3.52	135	13927	72	9626	174	18819	12.99	1340	12.0	6.0	18.4	0.79	5.5	915	4.6	765	6.0	703	0.71	109.2	250.00	160.00
Minimum			10.21		10.42	25.80	0.60	26.40	0.50		0.28	0.00	32	3171	19	2378	57	5878	3.14	483	7.4	3.2	8.6	0.02	5.0	464	3.2	376	0.8	79	0.02	2.0	12.00	6.00
# of Data		31	31	31	31	7	7	7	7		7	31	23	23	27	27	27	27	27	27	19	23	23	23	23	23	27	27	27	27	27	27	27	27
# of Data<MDL																					0	22			23		27				2		0	0
Wk1: 9/30-10/06/01			12.31		14.48								96	7909	41	4093	105	10698	7.40	744					5.5	625	4.6	546	1.5	173	0.12	14.3	81	33
Wk2: 10/07-10/13/01			15.88		18.39								60	6178	35	4514	96	12600	5.15	626					5.4	804	4.8	689	1.9	297	0.18	29.0	99	52
Wk3: 10/14-10/20/01			13.96		17.06								85	8121	37	4306	99	11437	8.14	931					5.5	797	4.4	629	1.6	225	0.09	12.4	63	39
Wk4: 10/21-10/27/01			14.27		17.33								85	8261	37	4377	100	11959	7.77	890					5.5	814	4.4	641	1.8	264	0.18	29.3	93	57

Total Est. Bypass Flow (MG): 73.21 Total Bypass Occurances (days/month): 7

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR NOVEMBER 2001

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1]: Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)	Influent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0						
1	Thu	0.06	12.12	16.5	13.31							0.09	101	10209	39	3942	138	13949
2	Fri	0.36	14.42	37.0	16.04			37.600	0.700	21.600	0.470	0.02			45	5412	77	9260
3	Sat	0.00	11.42	15.0	12.42							0.00						
4	Sun	0.00	11.12	15.5	12.01							0.00	66	7976	74	6863	90	8347
5	Mon	0.00	11.52	16.0	12.64							0.00	90	8647	67	6437	106	10088
6	Tue	0.00	11.37	16.0	12.68							0.00	76	7207	54	5121	83	7871
7	Wed	0.00	11.28	16.0	12.88							0.00	60	5645	37	3481	76	7150
8	Thu	0.10	11.11	15.0	12.50							0.00	96	8895	51	4726		
9	Fri	0.00	10.74	15.0	12.35							0.00			42	3762	143	12809
10	Sat	0.00	10.26	14.0	11.78							0.00						
11	Sun	0.00	10.18	13.0	12.11							0.00	90	7641	38	3226	88	7471
12	Mon	0.00	10.11	14.0	11.41							0.00	49	4132	26	2192	53	4469
13	Tue	0.00	10.16	15.0	10.96							0.00	106	8982	52	4406	106	8982
14	Wed	0.15	11.04	26.5	11.94							0.00	69	6195	42	3867	98	9023
15	Thu	0.00	9.69	12.5	10.13							0.00	64	5172	39	3152	68	5495
16	Fri	0.00	9.73	17.0	10.06							0.00			50	4057	81	6573
17	Sat	0.00	9.32	12.0	9.35							0.00						
18	Sun	0.08	9.66	14.0	9.48							0.00	100	8056	85	6848	88	7090
19	Mon	0.23	11.71	31.0	12.38							0.00	68	6641	48	4688	64	6204
20	Tue	0.00	9.45	13.5	9.81							0.00	86	6778	65	5123	74	5832
21	Wed	0.00	9.75	15.0	10.36							0.00	131	10652	89	7237	106	6782
22	Thu	0.00	9.40	14.0	10.41							0.00	125	9800	68	5331	78	6115
23	Fri	0.00	9.45	13.0	10.13							0.00			61	4806	120	9458
24	Sat	0.58	10.78	31.0	12.30	54.000	1.300	85.200	1.500	76.800	2.100	0.24						
25	Sun	0.11	10.24	16.0	11.90							0.23	80	6832	37	3160	94	8028
26	Mon	0.07	10.01	17.0	11.47							0.14	65	5426	43	3590	64	5343
27	Tue	0.00	9.85	13.5	10.89							0.12	100	8215	43	3532	159	13062
28	Wed	0.06	9.86	14.5	10.76							0.09	101	8305	61	5016	98	8069
29	Thu	0.45	12.28	28.0	13.82							0.10	128	13109	74	7579	127	13007
30	Fri	0.34	12.17	27.0	15.91	103.200	5.000	45.600	2.220	67.000	1.900	0.88			61	6191	240	24359
Total		2.61	320.20		354.16	157.20	6.30	168.60	4.42	185.40	4.47	1.91						
Mean			10.67		11.81	78.60	3.15	56.20	1.47	61.80	1.49	0.06	90	7929	54	4759	102	9153
Maximum		0.58	14.42	37.0	16.04	103.20	5.00	85.20	2.22	87.00	2.10	0.88	131	13109	89	7579	240	24359
Minimum			9.32		9.35	54.00	1.30	37.80	0.70	21.60	0.47	0.00	49	4132	26	2192	53	4469
# of Data		30	30	30	30	2	2	3	3		3	30	21	21	26	26	25	25
# of Data<MDL																		
Wk1: 10/28-11/03/2001			11.22		12.50								82	5481	54	4341	99	7711
Wk2: 11/04-11/10/2001			10.17		11.20								80	4874	41	2986	82	7002
Wk3: 11/11-11/17/2001			9.82		10.27								102	5990	69	4891	92	7580
Wk4: 11/18-11/24/2001			9.86		10.26								102	5990	68	4766	86	7099

Date	Influent Ammonia-N (mg/L)	Influent Ammonia-N (lb/day)	Clarifier Effluent Data: TBOD5 (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	Ammonia-N (mg/L)	Final Effluent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria			<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	7.1 AML 10.7 AWL <MDL	888 AML 1339 AWL	8.5 AML 12.8 AWL	1063 AML 1601 AWL	1.5 AML 2.3 AWL <MDL	188 AML 751 DML		
1	8.12	821	11.8	< 4.6	16.4	0.08	< 5.5	556	< 4.8	465	0.6	61	0.12	12.1		
2	7.22	888		< 4.8	13.8	0.06			< 4.8	553	2.4	289	0.03	3.6		
3																
4	9.24	857					< 3.3	306	< 3.0	278	2.6	241	0.03	2.8		
5	9.77	939	6.6	< 3.0	12.0	0.09	3.5	336	< 3.0	288	2.0	192	0.02	1.9		
6	10.40	986	8.5	< 3.5	15.0	0.10	4.2	398	< 3.5	332	1.8	171	0.07	6.6		
7	9.40	884	6.4	< 4.0	13.8	0.07	< 4.6	433	< 4.0	376	1.8	169	0.04	3.8		
8	10.70	991	7.4	< 3.0	14.2	0.10	4.8	445	< 3.0	278	3.4	315	0.03	2.8		
9	11.67	1063		< 4.0	12.0	0.33			< 4.0	358	2.4	215	0.19	17.0		
10																
11	8.40	713					< 4.6	391	< 4.0	340	1.4	119	0.04	3.4		
12	8.18	522	10.4	< 4.6	13.4	0.07	< 5.5	464	< 4.6	388	2.8	236	0.02	1.7		
13	8.69	736	7.6	< 5.0	12.2	0.03	< 5.0	424	< 4.3	364	2.0	169	0.01	0.8		
14	6.83	629	11.1	< 4.6	13.4	0.04	< 5.5	506	< 4.6	424	4.2	387	0.04	3.7		
15	6.72	543	10.4	< 4.6	14.0	0.01	< 5.5	444	< 4.6	372	3.0	242	0.05	4.0		
16	4.98	404		< 4.3	15.8	0.05			< 4.3	349	3.6	292	0.07	5.7		
17																
18	8.74	704					< 3.3	266	< 3.0	242	3.6	290	0.04	3.2		
19	5.88	574	6.3	< 4.0	14.4	0.03	4.4	430	< 4.0	391	2.6	254	0.06	7.8		
20	8.69	527	7.2	< 3.0	14.8	0.02	5.5	512	< 3.0	236	1.2	95	0.04	3.2		
21	15.40	1252	9.9	< 3.3	17.4	0.39	4.0	325	< 3.3	268	3.2	260	0.19	15.4		
22	7.67	601	12.1	< 4.6	16.8	0.18	< 5.5	431	< 4.6	361	3.0	235	0.16	12.5		
23	8.51	671		< 4.3	21.8	0.10			< 4.3	339	1.8	142	0.06	4.7		
24																
25	7.73	660					< 3.5	299	< 3.1	265	2.6	222	0.06	5.1		
26	11.09	926	6.2	< 4.0	15.8	0.03	< 4.6	384	< 4.0	334	2.3	192	0.08	6.7		
27	10.81	888	7.7	3.2	14.8	0.07	3.7	304	< 3.0	246	2.2	181	0.07	5.8		
28	11.47	943	11.0	< 4.6	14.0	0.14	< 5.5	452	< 4.6	378	1.2	99	0.08	6.6		
29	11.61	1189	7.3	< 3.0	14.6	0.13	< 3.3	338	< 3.0	307	1.0	102	0.15	15.4		
30	9.74	989		< 4.0	13.6	0.18			< 4.0	406	2.0	203	0.13	13.2		
Total																
Mean	9.00	803	8.9	4.0	14.7	0.10	4.6	402	3.6	344	2.3	207	0.07	6.5		
Maximum	15.40	1252	12.1	5.0	21.8	0.39	6.5	556	4.6	553	4.2	387	0.19	17.0		
Minimum	4.98	404	6.3	3.0	12.0	0.01	3.3	266	3.0	236	0.6	61	0.01	0.8		
# of Data	26	26	17	22	22	22	21	21	26	26	26	26	26	26		
# of Data<MDL			0	21			14		26				0			
Wk1: 10/28-11/03/2001	10.23	953					4.1	428	3.4	357	2.3	243	0.06	6.6		
Wk2: 11/04-11/10/2001	6.97	591					5.2	491	4.4	407	2.8	261	0.04	3.5		
Wk3: 11/11-11/17/2001	8.82	722					4.7	414	3.7	324	2.6	223	0.10	8.3		
Wk4: 11/18-11/24/2001	8.23	877					4.7	414	3.7	323	2.9	248	0.10	8.5		

Total Est. Bypass Flow (MG): 15.19 Total Bypass Occurances (days/month): 3

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR DECEMBER 2001

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1] Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)
Design Criteria			15 Avg 27 Max	38 Peak							Metered Lagoon Influent	>Max Q=3.0
1	Sat	0.01	10.33	12.0	12.19	0.000	0.000	0.000	0.000	0.000	0.000	0.47
2	Sun	0.00	10.32	13.0	12.04	0.000	0.000	0.000	0.000	0.000	0.000	0.25
3	Mon	0.00	10.24	13.0	12.15	0.000	0.000	0.000	0.000	0.000	0.000	0.15
4	Tue	0.00	10.39	13.0	12.13	0.000	0.000	0.000	0.000	0.000	0.000	0.14
5	Wed	0.14	11.30	28.0	12.97	0.000	0.000	0.000	0.000	0.000	0.000	0.14
6	Thu	0.00	10.04	16.0	11.39	0.000	0.000	0.000	0.000	0.000	0.000	0.00
7	Fri	0.00	10.04	14.0	11.23	0.000	0.000	0.000	0.000	0.000	0.000	0.00
8	Sat	0.00	9.60	13.0	10.21	0.000	0.000	0.000	0.000	0.000	0.000	0.00
9	Sun	0.00	9.33	15.0	9.47	0.000	0.000	0.000	0.000	0.000	0.000	0.00
10	Mon	0.00	9.94	16.0	10.06	0.000	0.000	0.000	0.000	0.000	0.000	0.00
11	Tue	0.00	9.60	16.0	9.80	0.000	0.000	0.000	0.000	0.000	0.000	0.00
12	Wed	0.12	10.00	14.5	9.85	0.000	0.000	0.000	0.000	0.000	0.000	0.00
13	Thu	0.00	10.43	18.0	10.70	0.000	0.000	0.000	0.000	0.000	0.000	0.00
14	Fri	0.28	11.75	28.0	12.00	0.000	0.000	0.000	0.000	0.000	0.000	0.00
15	Sat	0.00	9.33	13.0	9.07	0.000	0.000	0.000	0.000	0.000	0.000	0.00
16	Sun	0.22	10.65	18.5	11.34	0.000	0.000	0.000	0.000	0.000	0.000	0.00
17	Mon	0.14	11.38	18.0	13.21	0.000	0.000	0.000	0.000	0.000	0.000	0.00
18	Tue	0.00	9.79	14.0	10.70	0.000	0.000	0.000	0.000	0.000	0.000	0.00
19	Wed	0.05	10.06	16.0	10.91	0.000	0.000	0.000	0.000	0.000	0.000	0.00
20	Thu	0.00	9.53	13.0	10.16	0.000	0.000	0.000	0.000	0.000	0.000	0.00
21	Fri	0.00	9.49	14.5	10.48	0.000	0.000	0.000	0.000	0.000	0.000	0.00
22	Sat	0.10	9.93	16.0	11.47	0.000	0.000	0.000	0.000	0.000	0.000	0.00
23	Sun	0.00	9.74	13.0	10.24	0.000	0.000	0.000	0.000	0.000	0.000	0.00
24	Mon	0.00	9.42	11.0	9.62	0.000	0.000	0.000	0.000	0.000	0.000	0.00
25	Tue	0.00	9.25	11.0	9.14	0.000	0.000	0.000	0.000	0.000	0.000	0.00
26	Wed	0.00	9.61	11.0	9.54	0.000	0.000	0.000	0.000	0.000	0.000	0.00
27	Thu	0.00	9.25	13.0	9.09	0.000	0.000	0.000	0.000	0.000	0.000	0.00
28	Fri	0.00	9.13	12.0	9.41	0.000	0.000	0.000	0.000	0.000	0.000	0.00
29	Sat	0.00	8.78	12.0	8.98	0.000	0.000	0.000	0.000	0.000	0.000	0.00
30	Sun	0.00	8.94	13.0	8.83	0.000	0.000	0.000	0.000	0.000	0.000	0.00
31	Mon	0.00	8.32	12.5	8.36	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Total		1.06	306.13		326.73	0.00	0.00	0.00	0.00		0.00	1.15
Mean			9.88		10.54	0.00	0.00	0.00	0.00		0.00	0.04
Maximum		0.28	11.75	28.0	13.21	0.00	0.00	0.00	0.00		0.00	0.47
Minimum			8.32		8.36	0.00	0.00	0.00	0.00		0.00	0.00
# of Data		31	31	31	31	31	31	31	31		31	31
# of Data<MDL												
Wk1: 12/2-12/08/2001			10.13		11.36							
Wk2: 12/09-12/15/2001			10.27		10.40							
Wk3: 12/16-12/22/2001			9.99		11.02							
Wk4: 12/23-12/29/2001			10.12		11.18							

Date	Influent Data TBOD5 (mg/L)	Influent TBOD5 (lb/day)	Influent CBOD5 (mg/L)	Influent CBOD5 (lb/day)	Influent TSS (mg/L)	Influent TSS (lb/day)	Influent Ammonia-N (mg/L)	Influent Ammonia-N (lb/day)	Clarifier Effluent Data TBOD5 (mg/L)	Clarifier CBOD5 (mg/L)	Clarifier TSS (mg/L)	Clarifier Ammonia-N (mg/L)	Final Effluent Data TBOD5 (mg/L)	Final TBOD5 (lb/day)	Final CBOD5 (mg/L)	Final CBOD5 (lb/day)	Final TSS (mg/L)	Final TSS (lb/day)	Final Ammonia-N (mg/L)	Final Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria									<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	7.1 AML 10.7 AWL <MDL	888 AML 1339 AWL	8.5 AML 12.8 AWL	1063 AML 1601 AWL	1.5 AML 2.3 AWL <MDL	188 AML 751 DML		
1																						
2	104	8951	58	4820	112	9640	10.30	887					< 4.8	396	< 4.0	344	2.0	172	0.05	4.3		
3	83	7088		0	83	7088	10.52	898	8.4	< 4.6	11.2	0.06	< 5.5	470	< 4.6	393	1.0	85	0.02	1.7		
4	125	10832		0	164	14211	9.63	834	< 8.0	< 5.0	13.4	0.32	< 15.0	1300	< 7.5	650	1.4	121	0.30	26.0		
5	150	14136	92	8670	134	12628	10.20	961	< 4.3	< 3.7	15.8	0.16	< 12.0	1131	< 8.5	801	2.0	188	0.05	4.7		
6	97	8122	68	5694	160	13397	7.76	650	8.7	< 5.5	11.4	0.06	< 8.5	712	< 6.6	553	0.4	33	0.05	4.2		
7			88	7369	119	9964	13.02	1090		< 6.0	10.4	0.23			< 6.0	502	3.8	318	0.38	31.8		
8																						
9	127	9882	90	7003	72	5602	11.40	887					< 10.0	778	< 7.5	584	2.0	156	0.08	8.2		
10	150	12435	88	7295	154	12767	12.30	1020	< 8.5	< 6.8	12.2	0.11	< 8.5	705	< 8.6	547	1.4	116	0.06	5.0		
11	148	12096	77	6293	139	11361	10.70	875	< 10.0	< 6.0	12.2	0.06	< 20.0	1635	< 12.0	981	3.2	252	0.05	4.1		
12	181	15095	98	8173	198	16513	12.00	1001	< 4.3	< 3.3	13.8	0.34	< 4.3	359	< 3.3	275	1.5	125	0.07	5.8		
13	181	15745	78	6785	150	13048	11.90	1035	< 4.3	< 3.3	12.6	0.05	< 4.3	374	< 3.3	287	1.8	157	0.05	4.3		
14			77	7546	203	19893	8.94	876		< 7.5	12.2	0.27			< 7.5	735	1.4	137	0.03	2.9		
15																						
16	148	13146	89	7905	140	12435	10.90	968					< 4.6	409	< 4.0	355	2.2	195	0.20	17.8		
17	132	12528	102	9681	133	12623	10.25	973	6.9	< 3.5	24.8	0.05	< 4.0	380	< 3.5	332	0.8	76	0.05	4.7		
18	163	13309	107	8736	113	9226	10.64	869	7.2	< 3.6	11.4	0.05	< 4.0	327	< 3.5	286	2.2	180	0.05	4.1		
19	127	10677	77	6473	94	7902	9.80	824	10.0	< 4.0	12.8	0.45	< 4.6	387	< 4.0	336	1.0	84	0.13	10.9		
20	63	5007	54	4292	48	3815	5.04	401	< 5.0	< 3.7	14.6	0.17	< 5.0	397	< 3.7	294	2.2	175	0.16	12.7		
21			62	4907	100	7915	5.10	404		< 5.0	12.0	0.09			< 5.0	396	1.5	119	0.08	6.3		
22																						
23	106	8773	48	3899	107	8692	10.60	861					4.7	382	< 4.0	325	1.2	97	0.06	4.9		
24	113	8878	50	3928	104	8171	8.34	655	13.5	5.2	19.5	0.09	10.0	786	8.1	479	22.7	1783	0.09	7.1		
25	136	10646	62	4783	126	9720	10.50	810	12.9	< 5.4	12.8	0.10	< 6.6	509	< 5.4	417	15.8	1219	0.10	7.7		
26	148	11862	54	4328	172	13785	11.40	914	11.0	< 4.3	11.2	0.15	< 6.0	481	< 4.3	345	8.4	873	0.08	8.4		
27	92	7097	53	4089	67	5169	12.50	964	12.1	4.1	9.0	0.05	5.1	471	< 4.2	324	2.6	201	0.04	3.1		
28			46	3503	67	5102	12.30	937		< 4.2	8.8	0.13		0	< 4.2	320	3.7	282	0.10	7.6		
29																						
30	50	3728	35	2610	63	4697	8.96	668					2.6	194	< 4.0	298	2.6	209	0.06	6.0		
31	57	3955	48	3331	73	5065	19.90	1381	< 15.0	< 8.5	86.0	0.19	< 6.0	416	< 4.3	298	4.1	284	0.06	4.2		
Total																						
Mean	122	10181	71	5466	119	10017	10.57	871	8.6	4.9	18.5	0.15	7.1	565	5.3	441	3.6	286	0.10	7.9		
Maximum	181	16745	107	9681	203	19893	19.90	1381	15.0	8.5	86.0	0.45	20.0	1635	12.0	981	22.7	1783	0.38	31.8		
Minimum	50	3728	36	0	48	3815	5.04	401	4.3	3.3	8.8	0.05	2.6	0	3.3	275	0.4	33	0.02	1.7		
# of Data	22	22	24	24	26	26	28	28	17	21	21	21	22	22	26	26	26	26	26	26		
# of Data<MDL									8	19			18		25				0			
Wk1: 12/2-12/08/2001	116	10012	85	4789	122	10482	10.42	867					10.2	994	8.8	654	1.8	169	0.15	14.1		
Wk2: 12/09-12/15/2001	162	13703	85	7333	164	14336	11.12	962					8.3	704	6.1	538	1.9	169	0.08	6.9		
Wk3: 12/16-12/22/2001	119	10059	75	6331	99	8362	8.57	722					4.5	408	4.0	359	1.5	133	0.09	7.9		
Wk4: 12/23-12/29/2001	127	10933	82	6999	105	8986	8.62	740					4.4	415	4.0	365	1.7	160	0.11	10.2		

Total Est. Bypass Flow (MG): 0.00 Total Bypass Occurances (days/month): 0

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR JANUARY 2002

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1]: Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)	Influent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Clarifier Effluent Data: TBOD5 (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	Ammonia-N (mg/L)	Final Effluent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0									<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	7.1 AML 10.7 AWL <MDL	888 AML 1339 AWL	8.5 AML 12.8 AWL	1063 AML 1601 AWL	1.5 AML 2.3 AWL <MDL	188 AML 751 DML		
1	Tue	0.00	8.55	11.5	8.50	0.000	0.000	0.000	0.000	0.000	0.000	0.00	63	4492	46	3280	95	8774	9.91	707	7.8	< 4.3	11.9	0.07	< 5.0	357	< 4.3	307	4.2	299	0.03	2.1		
2	Wed	0.00	8.92	13.0	8.70	0.000	0.000	0.000	0.000	0.000	0.000	0.00	105	7811	53	3943	149	11085	10.40	774	7.8	< 4.0	10.8	0.03	< 4.6	342	< 4.0	298	3.6	268	0.01	0.7		
3	Thu	0.00	8.69	13.0	8.62	0.000	0.000	0.000	0.000	0.000	0.000	0.00	129	9349	89	6450	106	7682	13.30	964	7.4	< 4.2	9.2	0.09	< 4.1	297	< 4.2	304	11.8	855	0.03	2.2		
4	Fri	0.00	8.59	13.0	8.43	0.000	0.000	0.000	0.000	0.000	0.000	0.00			58	4155	153	10961	11.20	802		< 4.8	8.8	0.24			< 4.6	330	1.8	129	0.04	2.9		
5	Sat	0.00	8.61	12.0	8.08	0.000	0.000	0.000	0.000	0.000	0.000	0.00																						
6	Sun	0.00	9.03	14.5	8.54	0.000	0.000	0.000	0.000	0.000	0.000	0.00	151	11372	50	3766	193	14535	11.03	831					< 8.0	452	< 4.3	324	2.2	166	0.23	17.3		
7	Mon	0.00	8.55	12.0	8.20	0.000	0.000	0.000	0.000	0.000	0.000	0.00	144	10268	49	3494	176	12550	10.17	725	12.0	< 4.6	13.0	0.20	< 5.4	385	< 4.6	328	2.6	185	0.06	4.3		
8	Tue	0.00	8.56	12.0	8.39	0.000	0.000	0.000	0.000	0.000	0.000	0.00	129	9199	88	6275	100	7131	9.83	701	11.1	3.8	9.4	0.24	6.3	449	< 4.0	285	2.6	185	0.09	6.4		
9	Wed	0.00	8.70	12.0	8.36	0.000	0.000	0.000	0.000	0.000	0.000	0.00	39	2830	25	1814	41	2975	5.04	366	9.7	< 4.0	9.8	0.10	5.8	421	< 4.0	290	2.6	189	0.13	9.4		
10	Thu	0.00	8.33	12.0	8.02	0.000	0.000	0.000	0.000	0.000	0.000	0.00	73	5071	26	1806	80	5558	4.65	323	11.0	< 4.2	9.4	0.03	5.5	382	< 4.2	292	3.0	208	0.03	2.1		
11	Fri	0.00	8.29	12.0	8.18	0.000	0.000	0.000	0.000	0.000	0.000	0.00			53	3664	64	4425	8.23	569		4.8	8.2	0.11			< 4.8	318	2.0	138	0.31	21.4		
12	Sat	0.00	8.16	12.0	7.63	0.000	0.000	0.000	0.000	0.000	0.000	0.00																						
13	Sun	0.00	7.98	12.0	7.72	0.000	0.000	0.000	0.000	0.000	0.000	0.00	88	5724	65	4326	44	2928	7.73	514					4.6	306	< 4.0	266	3.0	200	0.03	2.0		
14	Mon	0.05	7.99	14.0	7.50	0.000	0.000	0.000	0.000	0.000	0.000	0.00	102	6797	60	3998	79	5264	9.41	627	11.0	< 4.6	12.4	0.06	6.0	400	< 4.6	307	3.0	200	0.02	1.3		
15	Tue	0.00	7.98	12.0	7.31	0.000	0.000	0.000	0.000	0.000	0.000	0.00	88	5857	55	3660	82	5457	7.39	492	11.0	< 4.0	10.0	0.03	5.5	366	< 4.0	266	2.2	148	0.01	0.7		
16	Wed	0.00	8.56	14.0	8.20	0.000	0.000	0.000	0.000	0.000	0.000	0.00	152	10851	96	6853	128	9138	8.04	431	10.8	< 4.0	10.4	0.03	5.5	393	< 4.0	286	3.6	257	0.02	1.4		
17	Thu	0.00	8.36	13.0	7.68	0.000	0.000	0.000	0.000	0.000	0.000	0.00	183	12759	107	7460	109	7600	5.60	390	9.7	< 4.2	12.7	0.04	< 5.0	349	< 4.2	293	3.8	265	0.04	2.8		
18	Fri	0.00	8.13	12.5	8.43	0.000	0.000	0.000	0.000	0.000	0.000	0.00			90	6102	90	8102	7.34	498		< 5.0	11.4	0.06			< 5.0	339	3.5	237	0.02	1.4		
19	Sat	0.00	7.79	12.0	7.44	0.000	0.000	0.000	0.000	0.000	0.000	0.00																						
20	Sun	0.00	7.64	11.5	6.90	0.000	0.000	0.000	0.000	0.000	0.000	0.00	49	3122	38	2294	43	2740	4.20	268					< 5.4	344	< 4.6	293	1.6	102	0.04	2.5		
21	Mon	0.09	7.98	13.0	7.92	0.000	0.000	0.000	0.000	0.000	0.000	0.00	91	6058	61	4060	85	5657	8.68	578	8.9	< 4.6	9.4	0.12	< 5.4	359	< 4.8	306	2.9	193	0.03	2.0		
22	Tue	0.02	7.75	12.0	7.38	0.000	0.000	0.000	0.000	0.000	0.000	0.00	159	10277	89	5753	94	6076	11.98	774	9.4	< 4.3	9.2	0.13	< 6.0	323	< 4.3	278	2.2	142	0.04	2.6		
23	Wed	0.03	7.55	12.0	7.28	0.000	0.000	0.000	0.000	0.000	0.000	0.00	174	10956	106	6675	126	7934	10.20	642	8.5	< 4.8	8.2	0.04	< 5.4	340	< 4.8	290	1.8	113	0.02	1.3		
24	Thu	0.00	7.79	12.0	7.26	0.000	0.000	0.000	0.000	0.000	0.000	0.00	156	10135	104	6757	118	7666	10.00	650	10.4	< 4.0	10.8	0.15	< 4.6	299	< 4.0	260	2.0	130	0.26	16.9		
25	Fri	0.00	7.61	12.0	7.43	0.000	0.000	0.000	0.000	0.000	0.000	0.00			73	4765	100	6514	8.93	582		< 4.8	14.8	0.07			< 4.8	300	2.2	143	0.06	3.9		
26	Sat	0.00	7.52	12.0	7.31	0.000	0.000	0.000	0.000	0.000	0.000	0.00																						
27	Sun	0.00	7.57	12.0	7.43	0.000	0.000	0.000	0.000	0.000	0.000	0.00	99	6250	63	3977	106	6692	8.54	539					4.7	297	< 4.0	253	2.4	152	0.04	2.5		
28	Mon	0.00	7.43	13.0	6.92	0.000	0.000	0.000	0.000	0.000	0.000	0.00	88	5453	75	4647	104	6444	8.34	517	11.0	< 4.0	13.2	0.03	< 4.7	291	< 4.0	248	2.6	161	0.04	2.5		
29	Tue	0.08	7.92	20.0	7.99	0.000	0.000	0.000	0.000	0.000	0.000	0.00	88	5813	41	2708	122	8058	8.40	555	9.4	< 4.0	12.6	0.06	4.4	291	< 4.0	264	2.4	159	0.20	13.2		
30	Wed	0.33	10.77	26.5	11.15	0.000	0.000	0.000	0.000	0.000	0.000	0.00	89	7994	88	8108	184	16527	5.38	483	8.7	< 4.8	11.6	0.26	< 5.5	494	< 4.8	413	3.2	287	1.01	90.7		
31	Thu	0.61	10.85	18.0	12.65	0.000	0.000	0.000	0.000	0.000	0.000	0.00	78	6877	42	3801	94	8506	5.94	538	12.0	4.8	12.8	0.16	6.3	570	< 4.6	418	2.8	253	0.06	5.4		
Total		1.21	258.24		251.71	0.00	0.00	0.00	0.00		0.00	0.00																						
Mean			8.33		8.12	0.00	0.00	0.00	0.00		0.00	0.00	109	7622	65	4540	106	7518	8.44	587	9.9	4.3	10.7	0.10	5.2	370	4.3	302	3.0	213	0.11	8.2		
Maximum		0.61	10.85	26.5	12.65	0.00	0.00	0.00	0.00		0.00	0.00	183	12759	107	7460	193	16527	13.30	964	12.0	5.0	14.5	0.26	8.3	570	5.0	416	11.8	855	1.01	90.7		
Minimum			7.43		6.90	0.00	0.00	0.00	0.00		0.00	0.00	39	2830	25	1806	41	2740	4.20	268	7.4	3.8	6.2	0.03	4.1	291	4.0	248	1.8	102	0.01	0.7		
# of Data		25	31	31	31	31	31	31	31		31	31	23	23	27	27	27	27	27	27	19	23	23	23	23	23	27	27	27	27	27	27		
# of Data<MDL																					0	21			13		27				0			
Wk1: 01/01-01/05/00			8.66		8.37								116	8604	60	4326	128	9306	10.10	731					5.5	387	4.3	301	3.9	279	0.10	8.8		
Wk2: 01/06-01/12/00			8.18		7.82								100	6860	59	4051	80	5462	7.24	493					5.4	350	4.2	276	2.8	183	0.07	4.7		
Wk3: 01/13-01/19/00			7.89		7.56								131	8634	82	5391	91	6018	8.00	525					5.2	325	4.6	289	2.6	170	0.03	2.0		
Wk4: 01/20-01/26/00			8.03		7.71								127	8613	80	5420	92	6219	7.31	490					5.3	334	4.5	288	2.9	192	0.03	2.0		

Total Est. Bypass Flow (MG): 0.00 Total Bypass Occurances (days/month): 0

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR FEBRUARY 2002

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1]: Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)	Influent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0								
1	Fri	0.15	9.76	15.0	12.50	0.000		0.000		0.000		0.00			50	4070	83	6758	5.32	433
2	Sat	0.00	8.49	13.0	9.72	0.000		0.000		0.000		0.00								
3	Sun	0.00	8.73	13.0	10.23	0.000		0.000		0.000		0.00	49	3568	43	3131	34	2475	3.73	272
4	Mon	0.00	8.36	12.0	9.40	0.000		0.000		0.000		0.00	74	5159	54	3765	81	5648	9.40	655
5	Tue	0.00	8.36	12.0	9.25	0.000		0.000		0.000		0.00	86	5989	51	3552		0	7.56	526
6	Wed	0.00	8.76	13.0	9.64	0.000		0.000		0.000		0.00	135	9863	95	6941	137	10009	13.40	979
7	Thu	0.00	8.74	13.0	10.00	0.000		0.000		0.000		0.00	94	6852	52	3790	101	7362	11.20	818
8	Fri	0.00	8.61	13.5	9.90	0.000		0.000		0.000		0.00			56	4021	103	7396	9.41	676
9	Sat	0.00	9.10	15.5	10.33	0.000		0.000		0.000		0.00								
10	Sun	0.02	8.69	13.5	10.12	0.000		0.000		0.000		0.00	155	11492	63	4671	234	17349	7.16	531
11	Mon	0.00	8.76	13.0	10.61	0.000		0.000		0.000		0.00	144	10520	81	5916	150	10959	9.52	696
12	Tue	0.00	8.64	13.0	10.86	0.000		0.000		0.000		0.00	130	9584	58	4129	156	11501	8.32	613
13	Wed	0.00	8.86	12.5	11.13	0.000		0.000		0.000		0.00	222	16404	92	6798	252	18621	11.00	813
14	Thu	0.00	8.81	13.0	10.17	0.000		0.000		0.000		0.00	136	10106	48	3567	235	17463	8.12	603
15	Fri	0.00	8.80	12.5	10.04	0.000		0.000		0.000		0.00			49	3596	105	7706	10.30	756
16	Sat	0.00	8.72	12.5	9.80	0.000		0.000		0.000		0.00								
17	Sun	0.00	8.35	12.0	8.89	0.000		0.000		0.000		0.00	114	7939	67	4666	147	10237	7.22	503
18	Mon	0.00	8.61	12.0	9.16	0.000		0.000		0.000		0.00	87	6247	36	2585	132	9479	6.06	435
19	Tue	0.50	12.46	23.0	15.00	0.000		0.000		0.000		0.00	95	9872	66	6858	177	18393	5.66	588
20	Wed	0.20	10.64	22.0	13.35	0.000		0.000		0.000		0.00	84	7454	45	3993	130	11536	5.15	457
21	Thu	0.02	9.10	13.0	9.82	0.000		0.000		0.000		0.00	123	9335	48	3643	177	13433	8.40	638
22	Fri	0.00	8.94	13.0	10.12	0.000		0.000		0.000		0.00			75	5592	194	14465	8.12	606
23	Sat	0.00	8.72	13.0	9.96	0.000		0.000		0.000		0.00								
24	Sun	0.00	8.77	13.0	9.90	0.000		0.000		0.000		0.00	57	4169	36	2779	67	4901	3.41	249
25	Mon	0.04	9.40	15.0	11.54	0.000		0.000		0.000		0.00	89	6977	39	3057	97	7604	7.34	575
26	Tue	0.14	10.07	17.0	10.93	0.000		0.000		0.000		0.00	83	6971	36	3023	155	13017	6.47	543
27	Wed	0.00	8.94	14.0	9.85	0.000		0.000		0.000		0.00	94	7009	36	2684	127	9469	5.42	404
28	Thu	0.00	8.63	14.0	9.09	0.000		0.000		0.000		0.00	70	5038	25	1799	117	8421	4.06	294
Total		1.07	253.31		291.45	0.00	0.00	0.00	0.00		0.00	0.00								
Mean			9.05		10.41			0.00				0.00	106	8027	54	4110	139	10175	7.57	569
Maximum		0.50	12.46	23.0	15.00	0.00	0.00	0.00	0.00		0.00	0.00	222	16404	95	6941	252	18621	13.40	979
Minimum			8.35		8.89	0.00	0.00	0.00	0.00		0.00	0.00	49	3568	25	1799	34	0	3.41	249
# of Data		28	28	28	28	28	0	28	0		0	28	20	20	24	24	23	23	24	24
# of Data<MDL																				
Wk1: 02/03-02/09/00			8.66		9.82								86	6286	59	4200	91	7604	9.12	654
Wk2: 02/10-02/16/00			8.63		10.41								157	11621	65	4780	189	13933	9.07	669
Wk3: 02/17-02/23/00			9.55		10.90								101	8169	56	4556	160	12924	6.77	538
Wk4: 02/24-02/28/00			9.55		10.88								101	8169	56	4556	160	12924	6.77	538

Date	Day of Week	Clarifier Effluent Data: TBOD5 (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	Ammonia-N (mg/L)	Final Effluent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria		<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	7.1 AML 10.7 AWL <MDL	888 AML 1339 AWL	8.5 AML 12.8 AWL	1063 AML 1601 AWL	1.5 AML 2.3 AWL <MDL	188 AML 751 DML		
1	Fri		< 4.0	11.4	0.10			< 4.0	326	2.0	163	0.03	2.4		
2	Sat														
3	Sun					5.0	364	< 4.3	313	1.0	73	0.10	7.3		
4	Mon	7.1	< 4.0	12.6	0.15	4.6	321	< 4.0	279	3.0	209	0.02	1.4		
5	Tue	11.0	< 4.3	11.0	0.04	5.4	376	< 4.3	299	4.0	279	0.03	2.1		
6	Wed	7.9	< 4.0	11.4	0.15	4.6	336	< 4.0	292	2.2	161	0.13	9.5		
7	Thu	6.6	< 4.0	10.8	0.13	4.6	335	< 4.0	292	2.4	175	0.05	3.6		
8	Fri		< 3.7	9.4	0.09			< 3.7	266	2.2	158	0.04	2.9		
9	Sat														
10	Sun					4.7	348	< 3.7	274	3.4	252	0.05	3.7		
11	Mon	8.6	< 3.5	12.4	0.24	4.0	292	< 3.5	256	2.0	146	0.09	6.6		
12	Tue	8.3	4.4	17.0	0.11	4.0	295	< 3.5	258	4.0	295	0.03	2.2		
13	Wed	8.5	< 3.7	11.0	0.17	4.0	296	< 3.5	259	1.0	74	0.08	5.9		
14	Thu	8.9	< 3.7	11.6	0.14	4.3	320	< 3.7	275	1.8	134	0.07	5.2		
15	Fri		< 3.5	10.0	0.15			< 3.5	257	1.7	125	0.04	2.9		
16	Sat														
17	Sun					3.7	258	< 3.3	230	2.3	160	0.04	2.8		
18	Mon	6.6	6.2	9.2	0.07	4.0	287	< 3.5	251	2.5	180	0.06	4.3		
19	Tue	9.4	< 3.6	10.8	0.26	4.0	416	< 3.5	364	2.4	249	0.16	18.7		
20	Wed	8.4	< 3.5	10.5	0.04	4.0	356	< 3.5	311	1.9	169	0.03	2.7		
21	Thu	6.8	< 3.5	9.8	0.05	4.0	304	< 3.5	266	2.1	159	0.04	3.0		
22	Fri		< 4.8	10.0	0.15			< 4.6	343	2.6	194	0.07	5.2		
23	Sat														
24	Sun					5.0	366	< 3.5	256	2.1	154	0.06	4.4		
25	Mon	20.0	4.4	12.0	0.10	4.3	337	< 3.7	290	5.0	392	0.04	3.1		
26	Tue	8.2	< 3.7	30.8	1.06	4.6	386	< 4.0	336	1.0	84	0.07	5.9		
27	Wed	13.0	3.6	23.0	0.53	4.3	321	< 3.7	276	2.0	149	0.43	32.1		
28	Thu	7.6	< 3.7	16.0	0.08	4.3	309	< 3.7	266	5.0	360	0.05	3.6		
Total															
Mean		9.4	4.0	13.0	0.19	4.4	331	3.8	285	2.5	187	0.08	5.9		
Maximum		20.0	6.2	30.8	1.06	5.4	416	4.6	364	5.0	392	0.43	32.1		
Minimum		6.6	3.5	9.2	0.04	3.7	258	3.3	230	1.0	73	0.02	1.4		
# of Data		16	20	20	20	20	20	24	24	24	24	24	24		
# of Data<MDL		0	16			16		24				0			
Wk1: 02/03-02/09/00						4.8	391	4.1	329	2.5	159	0.06	5.1		
Wk2: 02/10-02/16/00						4.2	371	3.8	312	2.3	203	0.06	5.3		
Wk3: 02/17-02/23/00						3.9	371	3.7	336	2.3	211	0.07	7.1		
Wk4: 02/24-02/28/00						3.9	371	3.7	336	2.3	211	0.07	7.1		

Total Est. Bypass Flow (MG): 0.00 Total Bypass Occurances (days/month): 0

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR JANUARY 2000

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1]: Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0
1	Sat	0.01	8.90	15.0	8.80						0.000	0.00
2	Sun	0.02	8.99	14.0	8.88						0.000	0.00
3	Mon	0.05	9.30	16.3	9.46						0.000	0.00
4	Tue	0.00	10.02	15.8	10.45						0.000	0.00
5	Wed	0.00	9.50	14.5	10.21						0.000	0.00
6	Thu	0.00	9.32	14.8	9.99						0.000	0.00
7	Fri	0.00	9.26	14.0	10.61						0.000	0.00
8	Sat	0.07	8.80	14.0	9.94						0.000	0.00
9	Sun	0.09	9.74	15.8	10.90						0.000	0.00
10	Mon	0.15	11.04	19.2	12.49						0.000	0.00
11	Tue	0.00	9.73	15.0	10.64						0.000	0.00
12	Wed	0.00	9.21	14.3	9.63						0.000	0.00
13	Thu	snow	9.48	40.0	8.97						0.000	0.00
14	Fri	0.00	9.06	15.0	9.19						0.000	0.00
15	Sat	0.00	8.87	15.0	8.90						0.000	0.00
16	Sun	0.00	8.49	13.5	8.46						0.000	0.00
17	Mon	snow	9.01	15.0	9.83						0.000	0.00
18	Tue	snow	9.18	16.6	10.24	6.000	0.290				0.000	0.00
19	Wed	0.00	9.81	22.0	11.58						0.000	0.00
20	Thu	0.00	10.65	17.0	12.99						0.000	0.00
21	Fri	0.00	8.88	13.0	10.40						0.000	0.00
22	Sat	0.00	8.74	15.1	9.84						0.000	0.00
23	Sun	0.00	8.72	12.1	9.96						0.000	0.00
24	Mon	0.00	8.55	12.9	11.34						0.000	0.00
25	Tue	snow	8.76	13.8	9.54						0.000	0.00
26	Wed	snow	8.84	11.8	10.72						0.000	0.00
27	Thu	0.00	9.44	12.9	9.67						0.000	0.00
28	Fri	0.00	8.61	12.3	8.74						0.000	0.00
29	Sat	0.00	8.58	12.5	8.21						0.000	0.00
30	Sun	snow	9.09	16.0	9.01						0.000	0.00
31	Mon	0.00	9.14	16.8	9.22						0.000	0.000
Total		0.39	285.71		308.81	6.00	0.29	0.00	0.00		0.00	0.00
Mean			9.22		9.96	6.00	0.29				0.00	0.00
Maximum		0.15	11.04	40.0	12.99	6.00	0.29	0.00	0.00		0.00	0.00
Minimum			8.49		8.21	6	0.29	0	0		0	0
# of Data		25	31	31	31	1	1	0	0	0	31	31
# of Data<MDL												
Wk1: 01/02-01/08/00			9.31		9.93							
Wk2: 01/09-01/15/00			9.59		10.10							
Wk3: 01/16-01/22/00			9.25		10.48							
Wk4: 01/23-01/29/00			8.79		9.74							

Date	Influent TBOD5 (mg/L)	Influent TBOD5 (lb/day)	Influent CBOD5 (mg/L)	Influent CBOD5 (lb/day)	Influent TSS (mg/L)	Influent TSS (lb/day)	Influent Ammonia-N (mg/L)	Influent Ammonia-N (lb/day)	Clarifier Effluent TBOD5 (mg/L)	Clarifier Effluent CBOD5 (mg/L)	Clarifier Effluent TSS (mg/L)	Clarifier Effluent Ammonia-N (mg/L)	Final Effluent TBOD5 (mg/L)	Final Effluent TBOD5 (lb/day)	Final Effluent CBOD5 (mg/L)	Final Effluent CBOD5 (lb/day)	Final Effluent TSS (mg/L)	Final Effluent TSS (lb/day)	Final Effluent Ammonia-N (mg/L)	Final Effluent Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria									<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	7.1 AML 10.7 AWL <MDL	888 AML 1339 AWL	8.5 AML 12.8 AWL	1063 AML 1601 AWL	1.5 AML 2.3 AWL <MDL	188 AML 751 DML		
1																						
2	72	5398	41	3074	99	7423	6.72	504					3.6	270	< 3.3	247	1.6	120	0.05	3.7		
3	74	5740	48	3723	109	8454	7.28	565	< 5.5	< 4.6	11.4	0.02	< 5.5	427	< 4.6	357	2.6	202	0.04	3.1		
4	118	9861	71	5933	145	12117	6.83	571	7.0	< 3.5	10.0	0.02	4.0	334	< 4.0	334	2.7	226	< 0.02	1.7		
5	115	9111	52	4120	156	12360	6.55	519	7.2	< 3.3	13.2	0.02	3.9	309	< 3.3	261	6.2	491	< 0.02	1.6		
6	123	9561	83	6451	136	10571	9.13	710	8.0	< 3.5	10.2	0.03	4.3	334	< 3.5	272	2.0	155	< 0.02	1.6		
7			76	5869	112	8650	9.52	735		4.2	11.6	0.04			< 4.6	355	3.1	239	< 0.02	1.5		
8																						
9	81	6580	64	5199	96	7798	6.55	532					5.4	439	2.8	227	2.8	227	0.04	3.2		
10	96	8839	84	7734	164	15100	7.22	665	6.2	< 3.3	10.2	0.05	< 3.7	341	< 3.3	304	2.4	221	0.07	6.4		
11	88	7141	75	6086	81	6573	5.60	454	7.3	< 3.5	9.2	0.05	< 4.0	325	< 3.5	284	2.4	195	0.07	5.7		
12	103	7912	96	7374	88	6759	7.62	585	6.0	< 3.5	10.8	0.06	< 4.0	307	< 3.5	269	2.1	161	0.06	4.6		
13	153	12097	117	9250	337	26644	8.34	659	6.3	< 3.3	10.6	0.03	< 3.7	293	< 3.3	261	4.2	332	0.02	1.6		
14			44	3325	85	6423	6.78	512		< 3.5	11.0	0.06			< 3.5	264	2.8	212	0.03	2.3		
15																						
16	64	4532	48	3399	63	4461	5.88	416					< 3.7	262	< 3.3	234	1.8	127	0.06	4.2		
17	84	6312	73	5485	68	5110	7.73	581	3.7	< 3.3	11.0	0.06	< 3.7	278	< 3.3	248	2.8	210	0.03	2.3		
18	101	7733	84	6431	86	6584	8.68	665	10.0	3.4	20.2	0.04	3.9	299	< 3.5	268	3.4	260	0.03	2.3		
19	76	6218	54	4418	97	7936	6.72	550	8.7	3.3	16.4	0.05	4.0	327	< 3.2	262	2.6	213	0.05	4.1		
20	79	7017	60	5329	92	8172	6.10	542	8.0	3.3	9.4	0.04	3.7	329	< 3.5	311	3.2	284	0.04	3.6		
21			64	4740	72	5332	6.52	483		3.3	12.8	0.04			2.1	156	3.6	267	0.03	2.2		
22																						
23	88	6400	69	5018	63	4582	7.03	511					4.5	327	3.5	255	3.4	247	0.07	5.1		
24	98	6988	72	5134	86	6132	7.50	535	9.4	3.8	11.7	0.07	5.6	399	3.0	214	4.4	314	0.05	3.6		
25	92	6721	67	4895	119	8694	7.17	524	8.4	2.8	5.2	0.02	3.9	285	< 3.5	256	4.0	292	0.02	1.5		
26	68	5013	68	5013	81	5972	7.67	565	5.0	< 3.2	10.0	0.07	< 3.5	258	< 3.2	236	2.8	206	0.05	3.7		
27	90	7086	74	5826	77	6062	8.90	701	7.4	< 3.5	9.2	0.05	< 4.0	315	< 3.5	276	3.4	268	0.01	0.8		
28			66	4739	124	8904	8.57	615		< 3.3	10.4	0.05			< 3.3	237	3.6	259	0.03	2.2		
29																						
30	76	5762	52	3942	97	7354	7.20	546					< 4.0	303	< 3.5	265	4.0	303	< 0.02	1.5		
31	93	7089	54	4116	114	8690	6.55	499	9.4	3.3	10.6	0.03	7.9	602	2.9	221	8.0	610	0.02	1.5		
Total																						
Mean	92	7232	68	5255	110	8571	7.32	567	7.3	3.5	11.2	0.04	4.3	335	3.4	264	3.3	255	0.04	2.9		
Maximum	153	12097	117	9250	337	26644	9.52	735	10.0	4.6	20.2	0.07	7.9	602	4.6	357	8.0	610	0.07	6.4		
Minimum	64	64	41	41	63	63	5.6	5.6	3.7	2.8	5.2	0.02	3.5	3.5	2.1	2.1	1.6	1.6	0.01	0.01		
# of Data	22	22	26	26	26	26	26	26	17	21	21	21	22	22	26	26	26	26	26	26		
# of Data<MDL									1	13			11		21				5			
Wk1: 01/02-01/08/00	100	7934	62	4862	126	9929	7.67	601					4.3	348	3.9	323	3.0	255	0.03	2.3		
Wk2: 01/09-01/15/00	104	8514	80	6495	142	11543	7.02	568					4.2	366	3.3	284	2.8	236	0.05	4.3		
Wk3: 01/16-01/22/00	81	6362	64	4967	80	6266	6.94	539					3.8	337	3.2	279	2.9	259	0.04	3.5		
Wk4: 01/23-01/29/00	87	6442	69	5104	92	6724	7.81	575					4.3	370	3.3	277	3.6	301	0.04	3.3		

Total Est. Bypass Flow (MG): 0.29 Total Bypass Occurances (days/month): 1

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR FEBRUARY 2000

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1] — Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)	Influent Data TBOD5 (mg/L)	Influent TBOD5 (lb/day)	Influent CBOD5 (mg/L)	Influent CBOD5 (lb/day)	Influent TSS (mg/L)	Influent TSS (lb/day)	Influent Ammonia-N (mg/L)	Influent Ammonia-N (lb/day)	Clarifier Effluent Data TBOD5 (mg/L)	Clarifier CBOD5 (mg/L)	Clarifier TSS (mg/L)	Clarifier Ammonia-N (mg/L)	Final Effluent Data TBOD5 (mg/L)	Final TBOD5 (lb/day)	Final CBOD5 (mg/L)	Final CBOD5 (lb/day)	Final TSS (mg/L)	Final TSS (lb/day)	Final Ammonia-N (mg/L)	Final Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0									<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	7.1 AML 10.7 AWL <MDL	888 AML 1339 AWL	8.5 AML 12.8 AWL	1063 AML 1601 AWL	1.5 AML 2.3 AWL <MDL	188 AML 751 DML		
1	Tue	0.00	9.84	17.0	10.32						0.000	0.00	189	15510	103	8453	1071	87892	8.46	694	9.6	3.3	12.8	0.01	4.4	361	< 3.7	304	3.2	263	0.03	2.5		
2	Wed	0.00	8.19	13.2	8.23						0.000	0.00	110	7514	65	4440	122	8333	8.29	566	12.0	5.3	18.2	0.03	5.1	348	< 4.0	273	8.0	546	0.01	0.7		
3	Thu	0.00	9.33	14.0	9.60						0.000	0.00	93	7237	56	4357	115	8948	7.39	575	8.2	< 4.0	14.8	0.02	< 4.6	358	< 4.0	311	3.6	280	0.03	2.3		
4	Fri	0.00	9.48	14.1	9.19						0.000	0.00			60	4744	68	5376	9.18	726		< 4.0	13.0	0.09			< 4.0	316	2.3	182	0.03	2.4		
5	Sat	0.00	8.62	13.0	9.00						0.000	0.00																						
6	Sun	0.00	8.18	12.0	8.29						0.000	0.00	74	5048	57	3889	65	4434	7.56	516					4.6	314	< 3.5	239	1.6	109	0.01	0.7		
7	Mon	0.00	9.07	14.0	9.35						0.000	0.00	60	4539	47	3555	63	4766	7.73	585	< 4.0	< 3.5	9.8	0.01	< 4.0	303	< 3.5	265	2.6	197	0.03	2.3		
8	Tue	0.00	9.19	13.8	9.52						0.000	0.00	74	5672	72	5518	77	5902	6.94	532	6.3	3.5	12.4	0.08	< 4.0	307	< 3.5	268	3.2	245	0.03	2.3		
9	Wed	0.00	10.22	16.5	11.28						0.000	0.00	118	10058	78	6648	141	12018	9.02	769	9.9	3.5	14.2	0.20	4.2	358	< 3.7	315	2.0	170	0.13	11.1		
10	Thu	0.00	9.14	13.4	10.19						0.000	0.00	70	5336	51	3888	72	5488	7.90	602	8.6	< 4.0	12.0	0.13	< 4.6	351	< 4.0	305	2.4	183	< 0.02	1.5		
11	Fri	0.00	8.93	13.5	9.86						0.000	0.00			51	3798	102	7597	6.88	512		< 3.5	12.8	0.08			< 3.5	261	1.0	74	0.05	3.7		
12	Sat	0.00	8.81	13.0	9.37						0.000	0.00																						
13	Sun	0.00	8.86	12.8	9.27						0.000	0.00	67	4951	48	3547	73	5394	7.22	534					4.6	340	2.1	155	3.7	273	0.04	3.0		
14	Mon	0.00	9.05	14.0	10.42						0.000	0.00	125	9435	59	4453	120	9057	7.56	571	10.5	3.8	16.4	0.22	5.6	423	2.7	204	3.8	287	0.17	12.8		
15	Tue	0.00	9.12	14.0	10.78						0.000	0.00	81	6161	53	4031	83	6313	6.95	529	8.4	2.9	14.2	0.09	2.6	198	< 4.0	304	3.6	274	0.05	3.8		
16	Wed	0.00	9.18	14.0	8.23						0.000	0.00	80	6125	56	4287	113	8651	7.14	547	7.6	< 3.7	11.6	<0.02	< 4.6	352	< 4.0	306	1.8	138	< 0.02	1.5		
17	Thu	0.00	8.87	13.5	9.28						0.000	0.00	74	5474	51	3773	83	6140	6.83	505	8.3	< 3.7	13.5	<0.02	< 4.6	340	< 4.0	296	3.0	222	< 0.02	1.5		
18	Fri	0.00	8.66	15.0	9.38						0.000	0.00			52	3756	96	6934	7.34	530		< 3.7	12.6	<0.02			< 4.0	289	2.5	181	< 0.02	1.4		
19	Sat	0.00	10.01	15.9	10.48						0.000	0.00																						
20	Sun	0.00	9.45	16.2	9.96						0.000	0.00	84	6620	76	5990	74	5832	6.72	530					< 4.6	363	< 4.0	315	2.6	205	0.02	1.6		
21	Mon	0.00	10.91	25.3	12.07						0.000	0.00	99	9008	61	5550	189	17197	10.70	974	9.4	< 3.7	12.2	0.03	< 4.3	391	< 3.7	337	4.0	364	< 0.02	1.8		
22	Tue	0.00	10.15	16.0	12.03						0.000	0.00	114	9650	54	4571	130	11005	7.06	598	8.3	< 3.7	13.2	0.03	< 4.6	389	< 4.0	339	3.2	271	0.01	0.8		
23	Wed	0.00	9.96	15.3	11.55						0.000	0.00	153	12709	66	5482	230	19105	6.94	576	6.4	< 3.7	13.8	0.07	< 4.6	382	< 4.0	332	3.6	299	< 0.02	1.7		
24	Thu	0.40	13.77	40.0	14.75						0.000	0.00	164	18834	74	8498	507	58225	4.98	572	7.0	3.3	18.2	0.10	< 3.7	425	< 3.3	379	3.2	367	0.07	8.0		
25	Fri	0.00	10.26	16.0	11.96						0.000	0.00			51	4364	197	16857	6.55	560		< 3.5	16.8	0.08			< 3.5	299	2.4	205	0.04	3.4		
26	Sat	0.34	13.51	27.5	15.51						0.000	0.00																						
27	Sun	0.00	10.39	14.8	12.11						0.000	0.00	52	4506	44	3813	80	6932	5.38	466					< 4.6	399	< 4.0	347	2.8	243	0.11	9.5		
28	Mon	0.00	10.94	16.0	12.59						0.000	0.00	132	12044	56	5109	189	17244	6.33	578	8.4	< 3.7	10.0	0.17	< 4.3	392	< 3.7	338	2.0	182	0.07	6.4		
29	Tue	0.00	11.38	16.5	13.67						0.000	0.00	119	11294	49	4651	154	14616	7.22	685	7.0	< 3.5	13.2	0.07	< 4.0	380	< 3.5	332	2.7	256	0.04	3.8		
Total		0.74	283.47		308.24	0.00	0.00	0.00	0.00		0.00	0.00																						
Mean			9.77		10.63						0.00	0.00	102	8463	60	4847	169	14410	7.37	593	8.2	3.7	13.6	0.08	4.4	356	3.7	297	3.0	241	0.04	3.6		
Maximum		0.40	13.77	40.0	15.51	0.00	0.00	0.00	0.00		0.00	0.00	189	18834	103	8498	1071	87892	10.70	974	12.0	5.3	18.2	0.22	5.6	425	4.0	379	8.0	546	0.17	12.8		
Minimum			8.18		8.23	0.00	0.00	0.00	0.00		0.00	0.00	52	4506	44	3547	63	4434	4.98	466	4.0	2.9	9.8	0.01	2.6	198	2.1	155	1.0	74	0.01	0.7		
# of Data		29	29	29	29	0	0	0	0	0	29	29	21	21	25	25	25	25	25	25	17	21	21	18	21	21	25	25	25	25	25	25		
# of Data<MDL																					1	14			14		23				6			
Wk1: 01/30-02/05/00			9.10		9.22								112	8622	65	5009	265	21099	7.85	601					52.0	401	3.7	284	4.9	367	0.02	1.8		
Wk2: 02/06-02/12/00			9.08		9.69								79	6130	59	4549	87	6701	7.67	568					43.0	347	3.6	295	2.1	174	0.05	3.9		
Wk3: 02/13-02/19/00			9.11		9.69								85	6429	53	3975	95	7076	7.17	539					44.0	350	3.5	276	3.1	249	0.05	4.5		
Wk4: 02/20-02/26/00			11.14		12.55								123	11364	64	5743	221	21370	7.16	575					44.0	435	3.8	374	3.2	320	0.03	3.2		

Total Est. Bypass Flow (MG): 0.00 Total Bypass Occurances (days/month): 0

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR MARCH 2000

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1] – Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0
1	Wed	0.04	10.51	19.3	12.20					54.000	0.000	0.00
2	Thu	0.01	10.05	15.0	11.28					54.000	0.000	0.00
3	Fri	0.00	10.78	15.5	12.62						0.000	0.00
4	Sat	0.00	10.98	16.0	12.73						0.000	0.00
5	Sun	0.00	10.65	15.2	12.49						0.000	0.00
6	Mon	0.00	10.75	16.8	12.57						0.000	0.00
7	Tue	0.00	10.83	16.2	12.72						0.000	0.00
8	Wed	0.00	10.58	15.2	12.27						0.000	0.00
9	Thu	0.00	10.12	20.8	11.41					6.000	0.000	0.00
10	Fri	0.00	10.36	18.2	11.76						0.000	0.00
11	Sat	0.00	9.73	15.0	11.20						0.000	0.00
12	Sun	0.00	9.98	14.9	11.40						0.000	0.00
13	Mon	0.00	9.91	15.8	11.74						0.000	0.00
14	Tue	0.15	10.24	18.9	11.65						0.000	0.00
15	Wed	0.03	10.65	17.0	12.29						0.000	0.00
16	Thu	0.00	9.88	15.2	11.29						0.000	0.00
17	Fri	0.08	9.71	15.8	11.14						0.000	0.00
18	Sat	0.00	9.55	15.2	10.85						0.000	0.00
19	Sun	0.38	11.33	29.8	12.68			18.000	0.630		0.000	0.00
20	Mon	0.19	11.63	20.7	13.84					6.000	0.000	0.00
21	Tue	0.00	9.93	15.9	10.97						0.000	0.00
22	Wed	0.00	9.50	15.0	10.67						0.000	0.00
23	Thu	0.00	9.63	16.0	10.60						0.000	0.00
24	Fri	0.04	10.06	19.2	10.99						0.000	0.00
25	Sat	0.00	9.81	15.2	10.19						0.000	0.00
26	Sun	0.12	10.13	24.0	10.26						0.000	0.00
27	Mon	0.12	10.24	22.1	11.19						0.000	0.00
28	Tue	0.05	10.55	21.5	11.26						0.000	0.00
29	Wed	0.00	9.50	11.8	9.46						0.000	0.00
30	Thu	0.00	9.57	15.0	9.45						0.000	0.00
31	Fri	0.00	9.66	15.5	9.41						0.000	0.00
Total		1.21	316.80		354.58	0.00	0.00	18.00	0.63	120.00	0.00	0.00
Mean			10.22		11.44			18.00	0.63	30.00	0.00	0.00
Maximum		0.38	11.63	29.8	13.84	0.00	0.00	18.00	0.63	54.00	0.00	0.00
Minimum			9.50		9.41	0.00	0.00	18.00	0.63	6.00	0.00	0.00
# of Data		31	31	31	31	0	0	1	1	4	31	31
# of Data<MDL												
Wk1: 02/27-03/04/00			10.72		12.46							
Wk2: 03/05-03/11/00			10.43		12.06							
Wk3: 03/12-03/18/00			9.99		11.48							
Wk4: 03/19-03/25/00			10.27		11.42							
Wk5: 03/26-04/01/00			9.87		10.00							

Date	Influent TBOD5 (mg/L)	Influent TBOD5 (lb/day)	Influent CBOD5 (mg/L)	Influent CBOD5 (lb/day)	Influent TSS (mg/L)	Influent TSS (lb/day)	Influent Ammonia-N (mg/L)	Influent Ammonia-N (lb/day)	Clarifier Effluent TBOD5 (mg/L)	Clarifier Effluent CBOD5 (mg/L)	Clarifier Effluent TSS (mg/L)	Clarifier Effluent Ammonia-N (mg/L)	Final Effluent TBOD5 (mg/L)	Final Effluent TBOD5 (lb/day)	Final Effluent CBOD5 (mg/L)	Final Effluent CBOD5 (lb/day)	Final Effluent TSS (mg/L)	Final Effluent TSS (lb/day)	Final Effluent Ammonia-N (mg/L)	Final Effluent Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria									<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	7.1 AML 10.7 AWL <MDL	888 AML 1339 AWL	8.5 AML 12.8 AWL	1063 AML 1601 AWL	1.5 AML 2.3 AWL <MDL	188 AML 751 DML		
1	109	9554	56	4909	145	12710	6.04	529	9.1	3.2	13.2	0.10	5.0	438	< 3.5	307	2.8	245	0.06	5.3		
2	85	7124	58	4861	103	8633	6.41	537	9.0	3.5	14.8	0.09	3.8	319	< 4.0	335	3.6	302	0.04	3.4		
3			60	5394	150	13486	6.75	607		< 4.0	10.4	0.06			< 4.0	360	1.4	126	0.03	2.7		
4																						
5	104	9237	44	3908	187	16610	6.27	557				0.06	4.4	391	< 3.2	284	1.6	142	0.04	3.6		
6	89	7979	73	6545	150	13448	8.40	753	3.9	2.8	9.0		< 3.7	332	< 3.3	296	0.6	54	0.04	3.6		
7	116	10477	62	5600	124	11200	7.44	672	7.3	< 3.5	11.4	0.07	< 4.0	361	< 3.5	316	1.0	90	0.05	4.5		
8	96	8471	52	4588	132	11647	6.94	612	8.7	3.4	12.0	0.09	3.9	344	< 4.0	353	2.8	247	0.06	5.3		
9	84	7090	55	4642	87	7343	8.06	680	9.7	2.6	11.6	0.09	3.4	287	< 3.7	312	2.8	236	0.05	4.2		
10			50	4320	128	11060	8.54	738		< 3.7	12.4	0.08			< 3.7	320	2.2	190	0.05	4.3		
11																						
12	76	6326	47	3912	72	5993	6.55	545					3.8	316	< 3.5	291	2.8	233	0.06	5.0		
13	68	5620	44	3637	100	8265	7.73	639	8.1	< 4.0	6.6	0.04	< 4.6	380	< 4.0	331	1.0	83	0.08	6.6		
14	105	8967	56	4782	151	12896	8.12	693	7.4	3.2	10.8	0.08	< 4.2	359	< 3.7	316	1.4	120	< 0.02	1.7		
15	119	10570	57	5063	141	12524	9.24	821	8.7	< 3.8	11.4	0.34	< 4.3	382	< 3.8	338	1.0	89	0.15	13.3		
16	112	9229	66	5438	123	10135	10.30	849	9.8	< 4.0	11.4	0.32	5.1	420	< 4.0	330	4.8	396	0.16	13.2		
17			64	5183			7.98	646		< 4.0	13.0	0.31			< 4.0	324			0.14	11.3		
18																						
19	168	15875	59	5575	320	30238	6.48	612					6.6	624	< 3.5	331	6.4	605	0.05	4.7		
20	104	10087	50	4850	153	14840	6.72	652	9.2	2.6	12.6	0.10	3.3	320	< 3.5	339	3.8	369	0.06	5.8		
21	97	8033	52	4306	123	10186	9.41	779	6.9	< 3.7	13.2	0.11	< 4.3	356	< 3.7	306	5.6	464	0.05	4.1		
22	95	7527	52	4120	115	9111	8.23	652	7.4	< 3.7	11.4	0.10	< 4.3	341	< 3.7	293	5.2	412	0.04	3.2		
23	80	6425	50	4016	102	8192	7.00	562	7.8	< 3.7	11.4	0.06	4.7	377	< 3.7	297	5.6	450	0.04	3.2		
24			41	3440	91	7635	7.16	601		3.1	12.6	0.06			< 3.7	310	4.1	344	0.03	2.5		
25																						
26	91	7688	45	3802	120	10138	6.31	533					5.6	473	< 3.7	313	6.2	524	0.04	3.4		
27	138	11785	57	4868	174	14860	7.37	629	10.6	3.3	9.2	0.07	4.4	376	< 3.7	316	4.0	342	0.03	2.6		
28	135	11878	63	5543	149	13110	8.28	729	7.8	< 3.7	12.1	0.06	< 4.3	378	< 3.7	326	3.8	334	0.03	2.6		
29	99	7844	60	4754	179	14182	10.10	800	4.6	< 3.5	12.0	0.06	< 4.0	317	< 3.5	277	3.0	238	0.04	3.2		
30	84	6704	43	3432	83	6625	7.62	608	6.9	< 3.5	11.2	0.06	< 4.0	319	< 3.5	279	2.8	223	0.04	3.2		
31			52	4189	75	6042	6.64	535		< 3.5	9.0	0.06			< 3.5	282	3.4	274	0.03	2.4		
Total																						
Mean	102	8841	54	4655	134	11581	7.63	651	7.9	3.5	11.4	0.11	4.4	373	3.7	314	3.2	274	0.06	4.8		
Maximum	168	15875	73	6545	320	30238	10.30	849	10.6	4.0	14.8	0.34	6.6	624	4.0	360	6.4	605	0.16	13.3		
Minimum	68	5620	41	3432	72	5993	6.04	529	3.9	2.6	6.6	0.04	3.3	287	3.2	277	0.6	54	0.02	1.7		
# of Data	22	22	27	27	26	26	27	27	18	23	23	23	22	22	27	27	26	26	27	27		
# of Data<MDL									0	14			10		27				1			
Wk1: 02/27-03/04/00	99	8904	54	4789	137	12270	6.36	567					4.3	448	3.8	391	2.6	262	0.06	6.0		
Wk2: 03/05-03/11/00	98	8651	56	5139	135	11885	7.61	669					3.9	399	3.6	362	1.8	184	0.05	4.9		
Wk3: 03/12-03/18/00	96	8142	56	4669	117	9962	8.32	699					4.4	428	3.8	370	2.2	211	0.10	9.8		
Wk4: 03/19-03/25/00	109	9589	51	4384	151	13367	7.50	643					4.6	454	3.6	351	5.1	494	0.05	4.4		
Wk5: 03/26-04/01/00	109	7650	53	3798	130	9280	7.72	548					4.5	321	3.6	262	3.9	282	0.04	2.5		

Total Est. Bypass Flow (MG): 0.63 Total Bypass Occurances (days/month): 1

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR APRIL 2000

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1] Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Flow (MGD)	Outfall 006 CSO Lagoon (MGD)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0
1	Sat	0.00	9.45	15.0	8.96						0.000	0.00
2	Sun	0.05	9.09	13.8	8.90						0.000	0.00
3	Mon	0.00	9.93	16.5	9.72						0.000	0.00
4	Tue	0.00	9.53	14.9	8.89						0.000	0.00
5	Wed	0.00	9.78	14.9	8.84						0.000	0.00
6	Thu	0.00	9.64	14.0	8.47						0.000	0.00
7	Fri	0.87	13.30	38.0	14.11	54.000	1.880	92.000	0.310		0.000	0.00
8	Sat	0.12	11.44	27.0	13.61						0.000	0.00
9	Sun	0.00	9.33	12.7	9.81						0.000	0.00
10	Mon	0.16	10.24	19.0	11.03			96.000	0.330		0.000	0.00
11	Tue	0.04	10.25	19.5	11.44						0.010	0.00
12	Wed	0.00	9.47	27.9	9.60						0.010	0.00
13	Thu	0.00	10.17	15.7	11.45						0.000	0.00
14	Fri	0.00	10.02	14.8	10.67						0.000	0.00
15	Sat	0.00	9.82	15.0	9.70						0.000	0.00
16	Sun	1.13	12.22	38.3	12.53	66.000	1.100	90.000	0.630		2.470	0.00
17	Mon	0.03	11.36	33.4	13.04	12.000	0.070	60.000	0.080		0.000	0.00
18	Tue	0.00	10.40	15.0	11.12						0.000	0.00
19	Wed	0.40	13.61	33.0	14.67	114.000	0.710	48.000	0.220		0.760	0.00
20	Thu	0.99	17.96	37.0	20.04	162.000	3.380	144.000	5.000		1.950	0.52
21	Fri	0.54	16.39	35.5	18.86			96.000	0.330		0.000	1.56
22	Sat	0.00	12.73	18.0	15.28						0.000	0.59
23	Sun	0.15	14.10	31.0	15.96						0.000	0.23
24	Mon	0.00	13.18	18.0	14.72						0.000	0.08
25	Tue	0.00	13.12	18.0	14.30						0.000	0.00
26	Wed	0.00	12.99	17.5	13.96						0.000	0.00
27	Thu	0.00	12.77	19.0	13.68						0.000	0.00
28	Fri	0.00	12.34	16.9	13.18						0.000	0.00
29	Sat	0.00	11.94	16.9	12.71						0.000	0.00
30	Sun	0.00	11.59	16.9	12.36						0.000	0.00
Total		4.48	348.16		371.61	408.00	7.14	626.00	6.90		5.20	2.98
Mean			11.61		12.39	81.60	1.43	89.43	0.99		0.17	0.10
Maximum		1.13	17.96	38.3	20.04	162.00	3.38	144.00	5.00		2.47	1.56
Minimum			9.09		8.47	12.00	0.07	48.00	0.08		0.00	0.00
# of Data		30	30	30	30	5	5	7	7		30	30
# of Data<MDL												
Wk1: 04/02-04/08/00			10.39		10.36							
Wk2: 04/09-04/15/00			9.90		10.53							
Wk3: 04/16-04/22/00			13.52		15.08							
Wk4: 04/23-04/29/00			12.92		14.07							

Date	Influent Data TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Clarifier Effluent Data TBOD5 (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	Ammonia-N (mg/L)
Design Criteria									<MDL	<MDL	10	1.5
1		0		0		0		0				
2	83	6292	56	4245	131	9931	5.77	437				
3	78	6460	64	5300	109	9027	6.16	510	7.9	< 3.5	12.2	0.02
4	77	6120	53	4212	110	8743	9.71	772	7.8	2.7	12.8	0.05
5	91	7422	60	4894	101	8238	11.30	922	9.0	< 3.5	13.3	0.44
6	67	5387	48	3859	82	6593	7.39	594	8.9	< 3.7	12.0	0.09
7		0	70	7765	258	28618	5.38	597		3.6	13.4	0.10
8		0		0		0		0				
9	83	6458	53	4124	129	10038	5.77	449				0.03
10	68	5807	42	3587	134	11444	6.22	531	5.3	< 3.5	11.8	0.02
11	65	5557	40	3419	98	8378	6.89	589	7.5	< 3.7	14.4	0.04
12	78	6160	60	4739	146	11531	8.34	659	6.4	6.0	13.4	0.22
13	70	5937	44	3732	124	10517	9.52	807	5.9	3.5	10.0	0.08
14		0	49	4095	131	10947	6.83	571		< 3.7	11.4	0.18
15		0		0		0		0				
16	124	12637	92	9376	94	9580	5.99	610				
17	94	8906	67	6348	270	25580	4.31	408	9.0	< 4.0	13.8	0.07
18	79	6852	48	4163	115	9975	7.50	651	9.2	3.2	16.8	0.04
19	114	12940	58	6583	262	29739	5.94	674	10.4	3.4	17.2	0.28
20	66	9886	41	6141	165	24715	2.74	410	9.2	< 3.7	15.8	0.11
21		0	34	4648	112	15310	2.30	314		< 3.5	22.3	0.05
22		0		0		0		0				
23	49	5762	29	3410	106	12465	8.06	948				
24	53	5826	36	3957	91	10003	5.21	573	8.3	< 3.7	17.6	0.02
25	70	7659	38	4158	116	12693	5.71	625	9.5	< 3.7	18.0	0.09
26	63	6825	40	4333	134	14517	7.28	789	8.8	3.2	14.0	0.06
27	68	7242	41	4367	137	14591	5.38	573	11.0	< 4.0	14.0	0.21
28	47	4837	48	4940	84	8645	6.40	659	< 4.2	3.9	19.0	0.07
29		0		0		0		0				
30	62	5993	40	3866	68	6573	5.94	574				
Total												
Mean	75	5232	50	4009	132	10946	6.48	508	8.1	3.7	14.7	0.11
Maximum	124	12940	92	9376	270	29739	11.30	948	11.0	6.0	22.3	0.44
Minimum	47	0	29	0	68	0	2.30	0	4.2	2.7	10.0	0.02
# of Data	22	22	25	25	25	25	25	25	17	20	20	21
# of Data<MDL									1	12		
Wk1: 04/02-04/08/00	79	6336	59	5046	132	11858	7.62	6.39				
Wk2: 04/09-04/15/00	73	5984	48	3949	127	10476	7.26	6.01				
Wk3: 04/16-04/22/00	95	10244	57	6210	170	19150	4.80	5.11				
Wk4: 04/23-04/29/00	58	6359	39	4194	111	12152	6.34	694				

Date	Final Effluent Data TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria	Report Only <MDL	Report Only	5.0 AML 7.5 AWL <MDL	626 AML 939 AWL	6.0 AML 9 AWL	751 AML 1127 AWL	1.5 AML 2.3 AWL <MDL	188 AML 282 AWL	200 AML 400 AWL <MDL	125 AML <MDL
1		0		0		0		0.0		
2	< 3.5	265	< 3.2	243	5.0	379	0.01	0.8		
3	< 4.0	331	< 3.5	290	4.2	348	0.05	4.1	35	30
4	< 3.7	294	< 3.3	262	4.2	334	0.05	4.0	60	9
5	< 4.0	326	< 3.5	285	2.8	228	0.33	26.9	59	49
6	< 4.3	346	< 3.7	297	4.6	370	0.06	4.8	52	37
7		0	< 3.7	410	5.8	643	0.06	6.7	26	25
8		0		0		0		0.0	10400	9700
9	< 4.3	335	< 3.7	288	6.0	467	0.05	3.9		
10	< 4.0	342	< 3.5	299	4.0	342	0.05	4.3	47	36
11	< 4.3	368	< 3.7	316	4.4	376	0.04	3.4	25	15
12	< 4.0	316	< 3.5	276	6.0	474	0.09	7.1	33	21
13	< 4.0	339	< 3.5	297	3.4	288	0.02	1.7	64	42
14		0	< 3.7	309	1.8	150	0.09	7.5	42	30
15		0		0		0		0.0	12	7
16	< 4.3	438	< 3.7	377	5.0	510	0.15	15.3		
17	< 4.6	436	< 4.0	379	2.1	199	0.08	7.6	7	12
18	< 4.2	364	< 3.6	312	3.0	260	0.04	3.5	1	6
19	< 4.0	454	< 3.5	397	3.6	409	0.17	19.3	10	15
20	< 4.3	644	< 3.7	554	2.6	389	0.04	6.0	10	10
21		0	< 3.5	478	4.5	615	0.02	2.7	1	1
22		0		0		0		0.0	6	10
23	< 4.0	470	< 3.5	412	4.4	517	0.02	2.4		
24	< 4.2	462	< 3.7	407	2.0	220	0.02	2.2	3	11
25	< 4.2	460	< 3.7	405	7.0	766	0.11	12.0	44	25
26	< 3.7	401	< 3.3	358	4.0	433	0.02	2.2	25	19
27	< 4.6	490	< 4.0	426	5.0	533	0.16	17.0	25	21
28	4.6	473	3.5	360	5.0	515	0.04	4.1	35	26
29		0		0		0		0.0	26	24
30	3.3	319	2.8	271	4.4	425	0.09	8.7		
Total										
Mean	4.1	289	3.6	290	4.2	340	0.07	5.9	460.33	424.21
Maximum	4.6	644	4.0	554	7.0	766	0.33		10400.00	9700.00
Minimum	3.3	0	2.8	0	1.8	0	0.01	0.0	1.00	1.00
# of Data	22	22	25	25	25	25	25	25	24	24
# of Data<MDL	20		23				3		0	0
Wk1: 04/02-04/08/00	3.9	291	3.5	287	4.4	373	0.09	7.4	110	70
Wk2: 04/09-04/15/00	4.1	366	3.6	320	4.3	374	0.06	4.9	33	22
Wk3: 04/16-04/22/00	4.3	509	3.7	459	3.5	435	0.08	9.8	4	7
Wk4: 04/23-04/29/00	4.2	502	3.6	431	4.6	542	0.06	7.2	21	20

Total Est. Bypass Flow (MG): 19.21 Total Bypass Occurances (days/month): 7

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR MAY 2000

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1] Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)	Influent Data TBOD5 (mg/L)	Influent TBOD5 (lb/day)	Influent CBOD5 (mg/L)	Influent CBOD5 (lb/day)	Influent TSS (mg/L)	Influent TSS (lb/day)	Influent Ammonia-N (mg/L)	Influent Ammonia-N (lb/day)	Clarifier Effluent Data TBOD5 (mg/L)	Clarifier CBOD5 (mg/L)	Clarifier TSS (mg/L)	Clarifier Ammonia-N (mg/L)	Final Effluent Data TBOD5 (mg/L)	Final TBOD5 (lb/day)	Final CBOD5 (mg/L)	Final CBOD5 (lb/day)	Final TSS (mg/L)	Final TSS (lb/day)	Final Ammonia-N (mg/L)	Final Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0									<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	5.0 AML 7.5 AWL <MDL	626 AML 939 AWL	6.0 AML 9 AWL	751 AML 1127 AWL	1.5 AML 2.3 AWL <MDL	188 AML 282 AWL	200 AML 400 AWL <MDL	125 AML <MDL
1	Mon	0.32	13.75	37.0	14.85						0.000	0.00	122	13990	53	6078	251	28783	4.93	565	9.0	< 3.5	16.2	0.09	4.0	459	3.1	355	5.8	665	0.19	21.8	41	36
2	Tue	0.00	11.72	16.8	13.33						0.000	0.00	55	5376	32	3128	82	8015	5.60	547	8.0	< 3.5	15.8	0.07	< 4.0	391	< 3.5	342	3.8	371	0.03	2.9	170	190
3	Wed	0.00	12.16	17.6	14.25						0.002	0.00	66	6693	38	3854	161	16328	5.43	551	7.5	4.5	19.0	0.07	< 4.0	406	< 3.5	355	5.6	568	0.06	6.1	58	44
4	Thu	0.00	12.99	17.8	13.39						0.000	0.00	87	9425	46	4983	101	10942	10.40	1127	12.0	< 3.5	18.6	0.91	< 4.0	433	< 3.5	379	4.4	477	0.39	42.3	67	58
5	Fri	0.00	11.93	17.4	13.12						0.000	0.00		0	45	4477	105	10447	6.64	661		< 3.5	12.0	0.23		0	< 3.5	348	1.8	179	0.17	16.9	140	110
6	Sat	0.00	11.94	16.3	12.92						0.000	0.00		0		0		0		0						0		0		0		0.0	47	51
7	Sun	0.00	12.42	15.8	12.10						0.000	0.00	60	6215	39	4040	88	9115	5.99	620					< 4.3	445	< 3.7	383	4.4	456	0.09	9.3		
8	Mon	0.00	11.87	29.4	13.01	0.100	0.201	0.400	0.180	0.400	2.994	0.00	94	9306	45	4455	168	16631	7.59	751	6.0	< 3.5	19.4	0.05	< 4.0	396	< 3.5	346	5.6	554	0.03	3.0	39	44
9	Tue	1.09	18.99	40.0	20.33	2.100	2.361	1.700	0.453	1.700	0.489	0.14	142	22489	66	10453	374	59233	4.45	705	11.0	3.6	21.4	0.08	5.1	808	< 3.5	554	12.6	1996	0.07	11.1	67	51
10	Wed	0.00	12.09	18.6	13.05						0.047	0.37	56	5647	36	3630	74	7461	6.89	695	8.6	< 3.5	14.8	0.02	< 4.0	403	< 3.5	353	5.2	524	0.02	2.0	59	52
11	Thu	0.23	14.02	38.1	15.20	0.100	0.093	0.300	0.194	0.100	0.105	0.22	91	10640	52	6080	104	12160	7.62	891	9.7	< 3.5	13.2	0.41	< 4.0	468	< 3.5	409	5.5	643	0.18	21.0	57	42
12	Fri	0.00	12.79	28.0	13.28						0.000	0.16		0	38	4053	67	7147	5.94	634		< 3.5	9.0	0.11		0	< 3.5	373	3.3	352	0.08	8.5	370	180
13	Sat	0.00	11.57	16.2	12.17						0.000	0.05		0		0		0		0						0		0		0		0.0	120	45
14	Sun	0.00	11.23	16.0	11.54						0.000	0.00	64	5994	35	3278	62	5807	6.34	594					< 3.3	309	< 3.0	281	5.2	487	0.12	11.2		
15	Mon	0.00	11.52	19.5	11.41						0.000	0.00	78	7494	36	3459	116	11145	7.67	737	4.7	< 3.2	11.5	0.03	< 3.5	336	< 3.2	307	1.6	154	0.03	2.9	61	52
16	Tue	0.14	12.35	22.1	12.41						0.000	0.00	127	13081	54	5562	127	13081	8.06	830	8.2	< 3.3	13.0	0.18	< 3.7	381	< 3.3	340	4.6	474	0.11	11.3	62	54
17	Wed	0.00	11.65	17.0	12.70						0.000	0.00	89	8647	44	4275	98	9522	5.80	564	8.1	< 3.5	11.2	0.07	< 4.0	389	< 3.5	340	1.4	136	0.03	2.9	380	420
18	Thu	0.36	13.45	40.0	14.39	1.600	3.310	1.900	0.682	1.600	1.581	0.36	112	12563	49	5496	161	18060	5.66	635	7.2	< 3.3	11.8	0.13	< 3.9	437	< 3.3	370	3.6	404	0.07	7.9	62	51
19	Fri	0.02	12.00	21.7	12.57						0.000	1.37		0	31	3102	105	10508	5.88	588		< 3.3	12.0	0.06		0	< 3.3	330	1.6	160	0.04	4.0	610	110
20	Sat	0.00	11.33	16.0	11.40						0.000	1.02		0		0		0		0						0		0		0		0.0	56	64
21	Sun	0.00	11.18	16.3	11.19						0.000	0.85	85	7926	35	3263	86	8019	5.74	535					< 4.2	392	< 3.7	345	3.6	336	0.07	6.5		
22	Mon	0.14	12.09	22.9	12.54						0.000	0.71	71	7159	51	5142	120	12100	6.04	609	4.4	< 4.0	14.2	0.08	< 4.6	464	< 4.0	403	3.0	302	0.05	5.0	5	12
23	Tue	0.00	11.76	17.5	12.20						0.000	0.36	91	8925	34	3335	85	8337	5.60	549	7.6	< 3.3	16.0	0.10	< 3.7	363	< 3.3	324	2.0	196	0.07	6.9	10	24
24	Wed	0.00	11.80	17.0	11.71						0.000	0.13	85	8365	44	4330	92	9054	6.16	606	7.2	< 3.2	14.4	0.06	< 3.5	344	< 3.2	315	1.8	177	0.05	4.9	28	36
25	Thu	0.00	11.53	18.5	11.23						0.000	0.03	102	9808	38	3654	113	10866	7.53	724	7.6	< 3.3	12.4	0.18	< 3.7	356	< 3.3	317	3.2	308	0.09	8.7	11	26
26	Fri	0.05	11.32	16.2	11.02						0.000	0.00		0	46	4343	149	14067	8.68	819		< 3.1	10.0	0.13		0	< 3.1	293	3.6	340	0.04	3.8	47	30
27	Sat	0.45	12.29	40.0	12.00		0.301		0.859		1.200	0.00		0		0		0		0						0		0		0		0.0	41	37
28	Sun	0.53	13.39	38.5	14.49		0.604		1.287		0.000	1.04	176	19654	63	7035	271	30263	5.32	594					< 3.7	413	< 3.3	369	3.6	402	0.04	4.5		
29	Mon	0.00	10.71	17.0	10.66						0.000	0.40	56	5002	34	3037	64	5717	6.02	538	5.2	< 3.3	10.8	0.09	< 3.7	330	< 3.3	295	3.0	268	0.05	4.5	47	30
30	Tue	0.02	11.56	17.5	11.84						0.000	0.17	69	6652	43	4146	82	7906	9.56	922	6.3	< 3.5	10.0	0.03	< 3.5	337	< 3.2	309	3.4	328	0.02	1.9	24	37
31	Wed	0.77	14.55	29.9	15.54	1.900	1.202	3.000	0.814	1.500	1.615	0.86	98	11892	44	5339	169	20508	6.83	829	7.7	< 3.3	11.9	0.16	< 3.7	449	< 3.3		3.8	461	0.16	19.4	53	41
Total		4.12	383.95		401.84	5.80	8.07	7.30	4.47	5.00	8.03	8.24																						
Mean			12.39		12.96	1.16	1.15	1.46	0.64	1.00	0.26	0.27	90	7192	43	4001	129	12297	6.61	594	7.7	3.5	13.9	0.15	3.9	307	3.4	305	4.0	378	0.09	8.1	101.19	71.37
Maximum		1.09	18.99	40.0	20.33	2.10	3.31	3.00	1.29	2.00	2.99	1.37	176	22489	66	10453	374	59233	10.40	1127	12.0	4.5	21.4	0.91	5.1	808	4.0	554	12.6	1996	0.39	42.3	610.00	420.00
Minimum			10.71		10.66	0.10	0.09	0.30	0.18	0.00	0.00	0.00	55	0	31	0	62	0	4.45	0	4.4	3.1	9.0	0.02	3.3	0	3.0	0	1.4	0	0.02	0.0	5.00	12.00
# of Data		31	31	31	31	5	7	5	7	5	31	31	23	23	27	27	27	27	27	27	19	23	23	23	23	23	27	27	27	27	27	27	27	27
# of Data<MDL																					0	21			21		26				1		0	0
Wk1: 04/30-05/06/00			12.06		13.23								68	6872	40	3958	103	10341	6.80	692					3.8	427	3.4	374	4.0	446	0.15	16.4	85	77
Wk2: 05/07-05/13/00			13.39		14.16								89	10859	46	5452	146	19918	6.41	716					4.3	535	3.5	426	6.1	803	0.08	9.7	85	58
Wk3: 05/14-05/20/00			11.93		12.35								94	9556	42	4195	112	10135	6.57	658					3.7	385	3.3	341	3.0	313	0.07	6.9	56	64
Wk4: 05/21-05/27/00			11.97		12.46								94	9556	42	4195	112	10135	6.57	658					3.7	385	3.3	341	3.0	313	0.07	6.9	50	47
Wk5: 05/28-06/03/00			12.40		13.37								96	7200	41	3788	128	12402	6.95	622					3.6	267	3.3	303	3.1	313	0.07	5.3	31	35

Total Est. Bypass Flow (MG): 21.13 Total Bypass Occurances (days/month): 5

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR JUNE 2000

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1]: Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)	Influent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Clarifier Effluent Data: TBOD5 (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	Ammonia-N (mg/L)	Final Effluent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0									<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	5.0 AML 7.5 AWL <MDL	626 AML 939 AWL	6.0 AML 9 AWL	751 AML 1127 AWL	1.5 AML 2.3 AWL <MDL	188 AML 282 AWL	200 AML 400 AWL <MDL	125 AML <MDL
1	Thu	0.00	13.00	18.4	14.63							1.29	83	8999	30	3253	84	9107	6.55	710	7.3	< 3.2	12.2	0.13	< 3.5	379	< 3.2	347	1.8	195	0.05	5.4	27	38
2	Fri	0.01	12.26	18.5	13.84							0.64			31	3170	98	10020	7.44	761		< 3.3	14.8	0.07			< 3.3	337	3.0	307	0.04	4.1	20	20
3	Sat	0.00	11.33	17.5	12.59							0.44																					47	61
4	Sun	0.00	11.85	16.6	12.30							0.31	68	6720	32	3163	67	6622	7.17	709					< 4.3	425	< 3.7	366	4.0	395				
5	Mon	1.05	17.04	34.0	19.25	180.000	2.883	4.100	1.551	138.000	2.194	< 2.02	84	11938	33	4690	155	22028	3.75	533	5.4	< 3.7	12.4	0.04	< 4.3	611	< 3.7	526	2.2	313	< 0.02	2.8	150	300
6	Tue	0.00	13.64	20.5	14.86							< 2.33	56	6370	33	3754	80	9101	5.88	669	7.1	< 3.7	13.2	0.07	< 4.3	489	< 3.7	421	5.0	569	< 0.06	6.8	48	180
7	Wed	0.00	13.96	21.0	14.94							0.88	83	9663	30	3493	107	12458	5.48	638	7.7	< 3.5	11.6	0.03	< 4.3	501	< 3.5	407	5.0	582	0.03	3.5	32	240
8	Thu	0.00	13.70	18.5	14.84							0.43	77	8798	30	3428	92	10512	5.77	659	8.2	< 3.7	11.8	0.04	< 4.3	491	< 3.7	423	4.0	457	0.04	4.6	29	150
9	Fri	0.00	13.15	23.2	13.72							0.31			38	4167	126	13819	5.96	654		< 3.7		0.04			< 3.7	406	1.7	186	0.02	2.2	35	180
10	Sat	0.00	12.34	17.3	12.73							0.19																					54	54
11	Sun	0.07	12.47	17.6	12.87							0.07	74	7696	33	3432	110	11440	4.82	501					< 3.7	385	3.1	322	3.0	312	0.09	9.4		
12	Mon	0.91	17.48	40.0	19.32					139.800	2.457	< 1.61	78	11371	43	6269	82	11954	5.15	751	8.2	< 4.0	12.8	0.04	< 4.6	671	< 4.0	583	5.3	773	< 0.02	2.9	110	180
13	Tue	0.68	15.73	35.5	16.58	114.000	3.958	192.000	1.096	144.000	2.355	< 4.81	72	9446	34	4460	137	17973	3.58	470	5.8	< 3.7	15.0	0.02	< 4.3	564	< 3.7	485	3.4	446	< 0.02	2.6	310	320
14	Wed	0.38	18.23	34.0	18.49	57.400	1.993	49.800	0.255	71.400	0.042	< 3.22	84	12771	40	6082	171	25999	4.88	742	7.8	3.5	10.2	0.05	< 4.3	654	< 3.7	563	3.2	487	0.05	7.6	80	310
15	Thu	0.00	15.87	21.0	15.91							1.55	99	13103	37	4897	127	16809	5.20	688	6.4	< 3.7	8.8	0.02	< 4.3	569	< 3.7	490	1.6	212	0.02	2.6	140	260
16	Fri	0.05	15.63	20.9	15.75							0.55			45	5866	231	30112	5.10	665		< 3.5	13.0	0.05			< 3.5	456	1.4	182	0.03	3.9	50	190
17	Sat	0.00	14.12	19.0	15.00							0.24																					52	67
18	Sun	0.00	13.35	18.0	14.20							0.13	79	8796	34	3786	88	9798	6.61	736					< 4.3	479	< 3.7	412	3.8	423	0.08	8.9		
19	Mon	0.00	14.14	20.0	14.97							0.05	84	9906	32	3774	126	14859	8.79	1037	8.1	< 3.7	11.0	0.24	< 4.3	507	< 3.7	436	2.2	259	0.14	16.5	160	390
20	Tue	1.52	17.69	33.0	17.92	165.000	5.729	220.000	1.225	197.000	7.486	< 0.74	120	17704	46	6787	107	15786	4.20	620	7.4	< 3.7	11.4	0.02	< 4.3	634	< 3.7	546	2.0	295	0.02	3.0	220	150
21	Wed	0.01	17.58	29.3	17.51	5.400	0.188	99.600	0.530	12.600	0.479	< 3.79	102	14955	44	6451	135	19793	5.10	748	7.4	< 3.7	10.2	0.13	< 4.2	616	< 3.7	542	2.2	323	0.05	7.3	74	36
22	Thu	0.00	16.04	20.0	16.98							1.25	92	12307	42	5618	133	17792	6.02	805	7.6	< 3.7	15.2	0.05	< 4.3	575	< 3.7	495	3.2	428	0.03	4.0	89	75
23	Fri	0.05	15.97	28.0	16.15							0.45			39	5194	445	59269	6.63	883		< 3.7	16.2	0.07			< 3.7	493	2.5	333	0.03	4.0	230	140
24	Sat	1.82	17.05	30.0	18.87	297.000	10.313	357.000	1.623	279.600	10.625	< 1.24																					92	78
25	Sun	0.00	17.02	21.0	17.73			207.000	1.136	23.400	0.889	< 4.05	47	6671	22	3123	70	9936	3.30	468					< 4.2	596	< 3.7	525	2.0	284	0.04	5.7		
26	Mon	0.00	20.17	29.5	19.81			14.400	0.060			1.45	95	15981	35	5888	157	26410	4.59	772	8.2	< 3.7	12.0	0.04	< 4.3	723	< 3.7	622	4.4	740	0.05	8.4	280	
27	Tue	0.00	18.85	30.5	18.59							0.61	79	12420	35	5502	123	19337	5.10	802	7.3	< 3.7	10.6	0.06	< 4.3	676	< 3.7	582	4.4	692	0.03	4.7	320	340
28	Wed	0.04	16.83	30.0	16.95							0.34	80	11229	29	4071	116	16282	4.65	653	7.9	< 3.7	11.2	0.02	< 4.3	604	< 3.7	519	2.5	351	< 0.02	2.8	33	41
29	Thu	0.05	18.48	30.0	18.24	72.000	2.500					0.47	76	11713	36	5548	95	14642	7.00	1079	8.1	< 3.7	12.8	0.01	< 4.3	663	< 3.7	570	1.8	277	< 0.02	3.1	62	71
30	Fri	0.00	16.49	28.4	16.54							0.20			36	4951	109	14990	5.85	805		3.7	12.6	0.04			< 3.7	509	2.4	330	0.01	1.4	20	12
Total		6.64	461.46		482.08	890.80	27.56	1143.90	7.48		26.53	35.65																						
Mean			15.38		16.07	127.26	3.94	142.99	0.93		3.32	1.19	82	10884	35	4647	130	17186	5.56	714	7.4	3.6	12.3	0.06	4.2	562	3.6	476	3.0	390	0.04	5.1	106.31	158.96
Maximum		1.82	20.17	40.0	19.81	297.00	10.31	357.00	1.62		10.63	4.81	120	17704	46	6787	445	59269	8.79	1079	8.2	4.0	16.2	0.24	4.6	723	4.0	622	5.3	773	0.14	16.5	320.00	390.00
Minimum			11.33		12.30	5.40	0.19	4.10	0.06		0.04	0.05	47	6370	22	3123	67	6622	3.30	468	5.4	3.2	8.8	0.01	3.5	379	3.1	322	1.4	182	0.01	1.4	20.00	12.00
# of Data		30	30	30	30	7	7	8	8	8	8	30	21	21	26	26	26	26	26	26	17	22	21	22	21	21	26	26	26	26	25	25	26	26
# of Data<MDL																					0	20			21		25				6		0	0
Wk1: 06/04-06/10/00			13.67		14.66								74	8698	33	3782	104	12413	5.67	644					4.3	546	3.7	458	3.7	449	0.03	3.6	48	163
Wk2: 06/11-06/17/00			15.65		16.27								81	10877	39	5168	143	19048	4.79	636					4.2	593	3.6	502	3.0	423	0.04	5.0	104	180
Wk3: 06/18-06/24/00			15.97		16.66								95	12734	40	5268	172	22883	6.23	805					4.3	582	3.7	503	2.7	356	0.06	7.6	130	110
Wk4: 06/25-07/01/00			17.50		17.62								75	9669	32	4155	112	14514	5.08	654					4.3	543	3.7	475	2.9	380	0.03	3.7	70	78

Total Est. Bypass Flow (MG): 70.69 Total Bypass Occurances (days/month): 10

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR JULY 2000

						CSO Pump Station Discharges [1]							Influent Data								Clarifier Effluent Data				Final Effluent Data									
						Michigan Outfall 002		Alder - Outfall 003		Magoun - Outfall 005																								
Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	Run Time Minutes	Est. Flow (MGD)	Run Time Minutes	Est. Flow (MGD)	Run Time Minutes	Flow (MGD)	Outfall 006 CSO Lagoon (MGD)	TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	TBOD5 (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	Ammonia-N (mg/L)	TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0									<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	5.0 AML 7.5 AWL <MDL	626 AML 939 AWL	6.0 AML 9 AWL	751 AML 1127 AWL	1.5 AML 2.3 AWL <MDL	188 AML 282 AWL	200 AML 400 AWL <MDL	125 AML <MDL
1	Sat	0.00	14.67	19.0	15.47							0.01		0		0		0		0						0		0		0		0.0	33	78
2	Sun	0.00	14.27	19.0	15.42							0.01	41	4879	26	3094	67	7974	4.42	526					3.5	417	< 3.2	381	2.0	238	0.02	2.4		
3	Mon	0.92	20.95	32.0	21.22	218.400	5.308	255.000	1.594	182.400	3.167	> 2.72	110	19220	49	8561	231	40361	5.71	998	4.8	< 3.5	9.6	0.05	4.0	699	< 3.5	612	2.6	454	0.03	5.2	60	75
4	Tue	0.00	16.13	27.8	16.57							1.77	35	4708	21	2825	40	5381	4.14	557	7.8	< 4.0	13.0	0.07	4.6	619	< 4.0	538	2.8	377	< 0.02	2.7	60	120
5	Wed	0.00	16.24	30.0	16.25							1.23	40	5418	16	2167	57	7720	4.37	592	7.7	< 3.7	14.2	0.07	4.3	582	< 3.7	501	4.2	569	0.02	2.7	28	150
6	Thu	0.00	15.83	28.3	16.09							0.97	134	17691	61	8053	164	21652	4.54	599	9.5	< 3.2	12.0	0.14	3.3	436	2.6	343	3.0	396	0.05	6.6	190	170
7	Fri	0.00	15.96	20.0	15.73							0.70		0	54	7188	123	16372	4.48	596		< 3.7	10.6	0.11		0	< 3.7	492	2.5	333	0.06	8.0	60	92
8	Sat	0.00	15.02	19.5	15.60							0.45		0		0		0		0						0		0		0		0.0	250	200
9	Sun	0.00	14.61	20.3	15.44							0.15	119	14500	62	7555	110	13403	4.97	606					4.0	487	< 3.5	426	4.2	512	0.05	6.1		
10	Mon	0.81	17.71	32.4	18.50	99.000	2.406	166.200	0.997	106.200	1.844	> 1.64	70	10339	47	6942	132	19497	5.15	761	7.9	< 4.0	11.4	0.09	4.6	679	< 4.0	591	5.4	798	0.05	7.4	27	16
11	Tue	0.00	16.01	28.8	15.60							0.96	85	11349	30	4006	126	16824	5.15	688	4.8	< 4.0	10.6	0.05	4.6	614	< 4.0	534	2.8	374	0.02	2.7	210	
12	Wed	0.00	15.35	23.0	15.06							0.30	59	7553	34	4353	126	16130	5.38	689	6.2	< 4.0	12.2	0.02	3.3	422	3.0	384	2.8	358	< 0.02	2.6	220	
13	Thu	0.00	15.04	20.0	15.11							0.06	81	10160	43	5394	143	17937	6.05	759	< 4.6	< 4.0	13.2	0.27	4.6	577	< 4.0	502	3.6	452	0.06	7.5	350	180
14	Fri	0.01	14.57	19.8	15.19							0.00		0	36	4374	106	12880	6.04	734		< 4.0	7.0	0.35		0	< 4.0	486	2.0	243	0.12	14.6	1500	300
15	Sat	0.00	13.25	19.3	14.44							0.00		0		0		0		0						0		0		0		0.0	73	180
16	Sun	0.00	13.03	18.0	14.45							0.00	69	7498	40	4347	88	9563	4.93	536					4.0	435	3.3	359	2.8	304	0.01	1.1		
17	Mon	0.00	13.32	19.0	14.25							0.00	60	6665	51	5666	108	11998	7.66	851	< 4.6	< 4.0	13.6	0.06	4.6	511	< 4.0	444	3.6	400	< 0.02	2.2	49	200
18	Tue	0.01	13.37	19.8	14.07							0.00	75	8363	51	5687	92	10259	6.72	749	8.1	3.7	17.7	0.16	3.8	424	3.3	368	2.8	312	0.04	4.5	34	37
19	Wed	0.00	14.10	20.9	14.03							0.00	64	7526	53	6232	112	13171	6.55	770	2.4	< 3.4	18.0	0.09	2.5	294	1.8	212	2.6	306	0.04	4.7	44	110
20	Thu	0.00	13.45	19.4	13.40							0.00	69	7740	54	6057	125	14022	6.38	716	4.0	< 4.0	20.2	0.16	4.6	516	< 4.0	449	3.2	359	0.04	4.5	43	160
21	Fri	0.00	13.15	19.2	12.85							0.00		0	47	5155	144	15793	4.45	488		< 3.7	15.8	0.15		0	< 3.7	406	3.1	340	0.11	12.1	250	60
22	Sat	0.00	12.80	17.3	12.46							0.00		0		0		0		0						0		0		0		0.0	30	70
23	Sun	0.00	12.10	18.9	11.60							0.00	52	5248	42	4238	88	8880	6.16	622					3.5	353	3.1	313	1.0	101	0.04	4.0		
24	Mon	0.00	13.02	18.0	11.96							0.00	61	6624	54	5864	91	9881	7.75	842	< 4.6	< 4.0	13.4	0.34	4.6	499	< 4.0	434	0.4	43	0.11	11.9	65	34
25	Tue	0.00	12.99	19.1	12.18							0.00	73	7909	54	5850	95	10292	7.09	768	3.1	< 4.0	13.2	0.22	3.1	336	< 4.3	466	6.8	737	0.06	6.5	29	100
26	Wed	0.00	13.18	19.1	12.73							0.00	85	9343	73	8024	56	6156	6.72	739	8.6	2.9	12.9	0.19	4.0	440	< 3.5	385	1.2	132	0.06	6.6	65	38
27	Thu	0.00	13.04	23.0	12.72							0.00	61	6634	42	4568	122	13268	5.49	597	< 4.3	< 3.7	15.2	0.15	4.3	468	< 3.7	402	1.6	174	0.02	2.2	310	150
28	Fri	0.42	15.56	40.0	14.97	28.200	0.648	36.000	0.120	66.000	0.499	0.00		0	60	7786	214	27771	5.54	719		< 3.7	14.0	0.11		0	< 3.7	480	2.7	350	0.07	9.1	750	650
29	Sat	0.04	12.88	20.8	13.15							0.00		0		0		0		0						0		0		0		0.0	570	530
30	Sun	0.21	12.79	21.3	12.64							0.00	38	4053	25	2667	61	6507	4.37	466					4.0	427	< 3.5	373	3.8	405	0.08	8.5		
31	Mon	0.13	14.45	31.2	13.11							0.00	57	6869	37	4459	103	12413	7.56	911	7.3	< 3.7	14.2	0.09	4.3	518	< 3.7	446	6.8	819	0.05	6.0	110	210
Total		2.55	448.84		452.26	345.60	8.36	457.20	2.71		5.51	10.97																						
Mean			14.48		14.59	115.20	2.79	152.40	0.90		1.84	0.35	70	6138	45	4552	112	11810	5.68	577	5.9	3.8	13.4	0.14	4.0	347	3.6	365	3.1	319	0.05	4.9	208.08	180.38
Maximum		0.92	20.95	40.0	21.22	218.40	5.31	255.00	1.59		3.17	2.72	134	19220	73	8561	231	40361	7.75	998	9.5	4.0	20.2	0.35	4.6	699	4.3	612	6.8	819	0.12	14.6	1500.00	650.00
Minimum			12.10		11.60	28.20	0.65	36.00	0.12		0.50	0.00	35	0	16	0	40	0	4.14	0	2.4	2.9	7.0	0.02	2.5	0	1.8	0	0.4	0	0.01	0.0	27.00	16.00
# of Data		31	31	31	31	3	3	3	3		3	31	22	22	26	26	26	26	26	26	17	21	21	21	22	22	26	26	26	26	26	26	26	26
# of Data<MDL																					4	19			15		20				3		0	0
Wk1: 07/02-07/08/00			16.34		16.70								72	10383	38	5315	114	16577	4.61	601					3.9	564	3.5	487	2.9	401	0.03	4.7	81	127
Wk2: 07/09-07/15/00			15.22		15.62								83	10780	42	5437	124	16112	5.46	568					4.2	563	3.8	496	3.5	466	0.05	7.0	191	167
Wk3: 07/16-07/22/00			13.32		13.64								67	7558	49	5524	111	12458	6.12	539					3.9	456	3.4	386	3.0	348	0.04	4.9	54	90
Wk4: 07/23-07/29/00			13.25		12.76								66	7151	54	6055	111	12708	6.46	575					3.9	399	3.7	394	2.3	244	0.06	6.4	159	137

Total Est. Bypass Flow (MG): 16.58 Total Bypass Occurances (days/month): 3

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR AUGUST 2000

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1]: Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)	Influent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Clarifier Effluent Data: TBOD5 (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	Ammonia-N (mg/L)	Final Effluent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0									<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	5.0 AML 7.5 AWL <MDL	626 AML 939 AWL	6.0 AML 9 AWL	751 AML 1127 AWL	1.5 AML 2.3 AWL <MDL	188 AML 282 AWL	200 AML 400 AWL <MDL	125 AML 235 DML <MDL
1	Tue	0.00	12.49	18.1	11.59							0.00	44	4583	24	2500	54	5625	6.79	707	7.3	< 3.5	12.8	0.12	4.0	417	< 3.5	365	2.0	208	0.07	7.3	180	170
2	Wed	0.02	12.81	19.5	12.02							0.00	56	5983	36	3846	96	10256	7.07	755	6.8	< 3.3	14.2	0.07	3.7	395	< 3.3	353	4.8	513	0.04	4.3	140	128
3	Thu	0.00	12.09	17.4	12.25							0.00	46	4638	31	3126	62	6251	7.17	723	8.0	< 3.7	11.5	0.17	3.6	363	< 3.7	373	2.6	262	0.03	3.0	190	200
4	Fri	0.00	12.06	17.4	10.51							0.00			43	4325	80	8046	6.94	698		< 3.7	12.0	0.09			< 3.7	372	2.7	272	0.06	6.0	62	81
5	Sat	0.30	13.45	34.8	13.38	25.800	1.174	37.800	0.164	35.400	1.356	0.00																					250	200
6	Sun	0.75	14.42	39.8	15.15	177.600	8.081	115.200	0.615	164.400	3.152	0.54	123	14792	53	6374	271	32591	5.21	627					3.7	445	< 3.3	397	3.6	433				
7	Mon	0.00	13.72	19.8	13.37							1.16	41	4691	39	4463	75	8582	5.94	680	6.1	< 4.0	12.6	0.20	4.6	526	< 4.0	458	2.1	240	0.10	11.4	190	
8	Tue	0.00	13.69	20.1	14.16							0.45	69	7878	41	4681	65	7421	8.34	952	9.1	< 3.7	12.2	0.11	4.3	491	< 3.7	422	2.4	274	0.04	4.6	390	
9	Wed	0.00	13.48	19.2	13.76							0.24	83	9331	53	5958	125	14053	7.62	857	7.5	3.1	14.0	0.22	4.0	450	< 3.5	393	7.0	787	0.07	7.9	540	
10	Thu	0.00	11.80	19.4	12.00							0.13	54	5314	35	3444	98	9644	5.60	551	5.9	< 3.3	12.6	0.14	3.7	364	< 3.3	325	2.8	276	0.02	2.0	220	
11	Fri	0.00	12.95	19.0	13.18							0.07			76	8208	141	15228	7.11	768		8.7	11.7	0.41			< 3.5	378	5.0	540	0.23	24.8	1200	
12	Sat	0.00	11.98	19.8	12.20							0.00																					2400	
13	Sun	0.00	11.92	17.0	11.81							0.00	48	4772	43	4275	81	8052	6.78	674					4.6	457	< 4.0	398	3.8	378	0.05	5.0		
14	Mon	0.00	12.67	18.5	12.84							0.00	33	3487	30	3170	110	11623	8.96	947	< 4.6	< 4.0	9.4	0.18	4.6	486	< 4.0	423	3.4	359	0.06	6.3	360	
15	Tue	0.00	12.94	19.2	12.36							0.01	72	7770	59	6367	109	11763	6.55	707	6.5	< 4.0	10.6	0.14	4.6	496	< 4.0	432	2.4	259	0.04	4.3	500	
16	Wed	0.00	12.36	19.4	11.58							0.03	102	10514	80	8247	94	9690	7.44	767	7.0	< 3.5	9.8	0.18	4.0	412	< 3.5	361	2.6	268	0.05	5.2	270	
17	Thu	1.21	15.89	40.0	16.08	176.400	8.026	156.600	0.898	180.000	3.148	> 1.78	99	13120	62	8216	276	36576	5.74	761	5.3	< 3.7	8.0	0.08	4.3	570	< 3.7	490	0.8	106	0.04	5.3	3400	4600
18	Fri	0.02	12.82	18.5	12.86	176.400	8.026					1.04			28	2994	100	10692	4.91	525		< 3.5	8.2	0.09			< 3.5	374	0.4	43	0.04	4.3	51	40
19	Sat	0.00	12.00	18.2	12.00							0.41																					58	
20	Sun	0.00	12.24	18.3	12.46							0.16	45	4594	33	3369	67	6839	6.32	645					4.0	408	< 3.5	357	2.6	265	0.06	6.1		
21	Mon	0.00	12.53	18.5	12.67							0.07	48	5016	30	3135	94	9823	8.96	936	6.0	< 4.0	16.0	0.16	4.6	481	< 4.0	418	2.0	209	0.06	6.3	290	
22	Tue	0.00	12.52	20.9	12.61							0.04	68	7100	38	3968	95	9920	7.78	812	5.8	< 3.5	9.8	0.15	4.0	418	< 3.5	365	3.2	334	0.06	6.3	460	
23	Wed	0.28	15.22	40.0	16.21	25.800	0.587	55.200	0.329	63.000	0.847	0.50	89	11297	63	7997	171	21706	5.99	760	6.5	< 3.2	8.6	0.17	3.5	444	< 3.2	406	1.5	190	0.04	5.1	640	700
24	Thu	0.00	12.55	22.2	13.73							0.27	36	3768	27	2826	60	6280	6.27	656	3.7	< 3.0	11.0	0.11	3.3	345	< 3.0	314	0.6	63	0.04	4.2	110	
25	Fri	0.00	12.30	18.5	13.34							0.15			34	3488	82	8412	7.81	801		< 3.7	11.8	0.33			< 3.7	380	2.0	205	0.08	8.2	230	
26	Sat	0.00	12.22	16.1	13.24							0.09																					150	
27	Sun	0.00	11.74	17.0	12.99							0.04	47	4602	32	3133	65	6364	5.32	521					3.7	362	< 3.3	323	5.2	509	0.11	10.8		
28	Mon	0.00	12.41	19.0	13.53							0.00	87	9004	56	5796	122	12627	9.18	950	7.6	< 3.3	11.0	0.12	3.7	383	< 3.3	342	3.0	310	0.04	4.1	150	210
29	Tue	0.00	12.15	17.1	13.36							0.02	103	10437	82	8309	109	11045	8.84	896	7.4	< 3.3	13.0	0.15	3.7	375	< 3.3	334	3.8	385	0.04	4.1	22	13
30	Wed	0.00	12.18	18.4	13.02							0.03	87	8838	63	6400	100	10158	8.46	859	9.2	4.7	13.2	0.14	3.3	335	2.9	295	4.2	427	0.04	4.1	25	27
31	Thu	0.00	12.20	21.0	12.87							0.03	113	11498	79	8038	116	11803	9.07	923	5.5	< 4.0	12.0	0.13	4.6	468	< 4.0	407	3.8	387	0.06	6.1	8	24
Total		2.58	395.80		403.13	582.00	25.89	364.80	2.01		8.50	7.24																						
Mean			12.77		13.00	116.40	5.18	91.20	0.50		2.13	0.23	69	7523	47	5061	108	11892	7.12	758	6.6	3.8	11.6	0.16	4.0	430	3.6	380	3.0	315	0.06	6.4	462.44	477.89
Maximum		1.21	15.89	40.0	16.21	177.60	8.08	156.60	0.90		3.15	1.78	123	14792	82	8309	276	36576	9.18	952	9.2	8.7	16.0	0.41	4.6	570	4.0	490	7.0	787	0.23	24.8	3400.00	4600.00
Minimum			11.74		10.51	25.80	0.59	37.80	0.16		0.85	0.00	33	3487	24	2500	54	5625	4.91	521	3.7	3.0	8.0	0.07	3.3	335	2.9	295	0.4	43	0.02	2.0	8.00	13.00
# of Data		31	31	31	31	5	5	4	4		4	31	23	23	27	27	27	27	27	27	19	23	23	23	23	23	27	27	27	27	26	26	27	27
# of Data<MDL																					1	20			21		26				1		0	0
Wk1: 07/30-08-05			12.88		12.21								48	5225	33	3487	76	8183	6.65	710					3.9	403	3.6	357	3.8	387	0.06	5.5	149	148
Wk2: 08/06-08-12			13.15		13.40								74	8401	50	5521	129	14587	6.64	739					4.1	464	3.6	403	3.8	434	0.09	10.2	542	556
Wk3: 08/13-08-19			12.94		12.79								71	7933	50	5545	128	14733	6.73	730					4.4	477	3.8	407	2.2	231	0.05	5.0	281	352
Wk4: 08/20-08-26			12.80		13.47								57	6355	38	4131	95	10497	7.19	769					3.9	435	3.5	390	2.0	219	0.06	6.3	262	313
Wk5: 08/27-09-02			12.04		12.73								87	6340	62	5393	104	10535	8.21	714					3.8	347	3.4	307	3.5	411	0.06	5.3	33	32

Total Est. Bypass Flow (MG): 955.30 Total Bypass Occurances (days/month): 5

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR SEPTEMBER 2000

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1] – Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0
1	Fri	0.00	12.14	18.8	12.38							0.00
2	Sat	0.00	11.48	17.0	10.95							0.03
3	Sun	0.00	11.59	16.5	10.45							0.03
4	Mon	0.00	8.37	16.0	9.49							0.01
5	Tue	0.00	11.28	25.0	9.91							0.00
6	Wed	0.02	11.26	22.0	9.91							0.00
7	Thu	0.00	11.42	17.0	10.39							0.00
8	Fri	0.00	8.20	18.0	11.13							0.02
9	Sat	0.00	11.25	16.5	10.03							0.01
10	Sun	0.55	12.94	40.0	11.93	34.800	0.792	55.200	0.424	71.400	0.385	0.00
11	Mon	2.96	15.81	40.0	17.06	454.200	20.666	418.200	15.857	491.400	18.821	> 1.68
12	Tue	0.33	24.92	31.0	26.33	218.400	9.937	283.200	10.293	238.200	9.123	> 3.60
13	Wed	0.00	22.13	32.0	20.99					11.400	0.218	1.26
14	Thu	0.31	21.76	33.8	20.82			20.400	0.464	43.200	0.827	0.72
15	Fri	0.00	17.88	30.0	18.29							0.34
16	Sat	0.00	15.79	29.0	16.96							0.11
17	Sun	0.00	15.55	20.8	16.27							0.04
18	Mon	0.00	14.99	20.1	15.69							0.00
19	Tue	0.00	14.58	22.0	15.20							0.01
20	Wed	0.58	17.41	38.3	17.71	33.600	0.764			72.000	1.379	0.04
21	Thu	0.00	12.31	20.0	15.67							0.01
22	Fri	0.41	16.40	38.5	16.32	35.400	0.805			40.800	0.781	0.08
23	Sat	0.00	14.86	30.0	15.22							0.26
24	Sun	0.24	16.65	31.5	15.99							0.13
25	Mon	0.01	13.48	19.8	14.00							0.00
26	Tue	0.00	13.62	19.0	14.28							0.00
27	Wed	0.00	12.53	18.0	13.53							0.00
28	Thu	0.00	11.63	17.7	12.46							0.00
29	Fri	0.00	11.97	17.0	12.80							0.00
30	Sat	0.00	11.21	16.5	11.86							0.00
Total		5.41	425.41		434.02	776.40	32.96	777.00	27.04		31.53	8.35
Mean			14.18		14.47	155.28	6.59	194.25	6.76		4.50	0.28
Maximum		2.96	24.92	40.0	26.33	454.20	20.67	418.20	15.86		18.82	3.60
Minimum			8.20		9.49	33.60	0.76	20.40	0.42		0.22	0.00
# of Data		30	30	30	30	5	5	4	4		7	30
# of Data<MDL												
Wk1: 9/03-9/09/2000			10.48		10.19							
Wk2: 9/10-9/16/2000			18.75		18.91							
Wk3: 9/17-9/23/2000			15.16		16.01							
Wk4: 9/24-9/30/2000			15.29		16.26							

Date	Influent Data TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Clarifier Effluent Data TBOD5 (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	Ammonia-N (mg/L)
Design Criteria									<MDL	<MDL	10	1.5
1			60	6075	142	14377	8.40	850		< 3.7	10.4	0.11
2												
3	73	7056	48	4640	77	7443	8.62	833				
4	59	4119	36	2513	88	6143	6.55	457	< 4.0	< 3.5	11.4	0.06
5	146	13735	70	6585	241	22672	10.80	1016	8.4	< 3.5	16.8	0.57
6	96	9015	61	5728	112	10518	10.10	948	8.5	< 3.5	14.0	0.16
7	107	10191	81	7715	109	10381	8.40	800	7.6	< 3.5	14.2	0.06
8			72	4924	142	9711	8.28	566		3.7	13.0	0.14
9												
10	102	11008	75	8094	249	26872	5.46	589				
11	100	13186	57	7516	144	18987	5.22	688	13.0	8.3	11.6	0.19
12	27	5611	15	3117	64	13301	3.14	653	6.1	< 3.7	9.3	0.09
13	35	6460	18	3322	49	9044	3.08	568	7.6	< 3.7	9.6	0.07
14	23	4174	27	4900	52	9437	4.48	813	5.6	< 3.5	11.2	0.09
15			41	6114	92	13719	5.66	844		< 3.7	8.8	0.10
16												
17	41	5317	21	2723	54	7003	4.31	559				
18	52	6501	26	3250	75	9376	6.75	844	< 4.3	< 3.7	11.4	0.12
19	51	6201	30	3648	74	8998	5.07	616	7.9	< 3.7	10.6	0.11
20	79	11471	39	5663	162	23522	6.44	935	6.0	< 3.7	13.9	0.09
21	22	2259	13	1335	49	5031	6.16	632	4.2	< 3.5	11.4	0.08
22			24	3283	123	16823	4.87	666		< 3.7	9.4	0.06
23												
24	38	5277	31	4305	67	9304	3.64	505				
25	59	6633	33	3710	78	8769	5.99	673	5.2	< 3.5	11.4	0.06
26	69	7838	29	3294	68	7724	4.24	482	7.7	< 3.3	11.2	0.08
27	100	10450	44	4598	121	12645	8.13	850	7.2	< 3.7	16.2	0.09
28	75	7275	38	3686	97	9408	8.57	831	6.1	< 3.5	13.3	0.12
29			44	4393	95	9484	4.76	475		< 3.7	15.2	0.08
30												
Total												
Mean	68	7689	41	4605	105	12028	6.28	708	6.8	3.8	12.1	0.12
Maximum	146	13735	81	8094	249	26872	10.80	1016	13.0	8.3	16.8	0.57
Minimum	22	2259	13	1335	49	5031	3.08	457	4.0	3.3	8.8	0.06
# of Data	20	20	25	25	25	25	25	25	16	21	21	21
# of Data<MDL									2	20		
Wk1: 9/03-9/09/2000	96	8823	61	5351	128	11145	8.79	601				
Wk2: 9/10-9/16/2000	57	8088	39	5511	108	15227	4.51	568				
Wk3: 9/17-9/23/2000	49	6350	26	3317	89	11782	5.60	539				
Wk4: 9/24-9/30/2000	49	6350	26	3317	89	11782	5.60	575				

Date	Final Effluent Data TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria	Report Only <MDL	Report Only	5.0 AML 7.5 AWL <MDL	626 AML 939 AWL	6.0 AML 9 AWL	751 AML 1127 AWL	1.5 AML 2.3 AWL <MDL	188 AML 282 AWL	200 AML 400 AWL <MDL	125 AML 235 DML <MDL
1			< 3.7	375	1.6	162	0.06	6.1	15	15
2									12	11
3	4.0	387	< 3.5	338	3.0	290	0.07	6.8		
4	4.0	279	< 3.5	244	2.8	195	0.04	2.8	13	17
5	4.0	376	< 3.5	329	3.8	357	0.20	18.8	200	250
6	4.0	376	< 3.5	329	5.2	488	0.11	10.3	61	48
7	4.0	381	< 3.5	333	3.8	362	0.09	8.6	25	30
8			< 3.7	253	3.0	205	0.16	10.9	50	80
9	4.0	375	< 3.5	328					49	31
10	4.6	496	< 3.7	399	4.0	432	0.13	14.0		
11	8.6	1134	7.2	949	2.8	369	0.11	14.5	36	31
12	4.3	894	< 3.7	769	2.8	582	0.06	12.5	71	54
13	4.2	775	< 3.7	683	2.6	480	0.12	22.1	220	
14	4.0	726	< 3.5	635	3.4	617	0.03	5.4	290	360
15			< 3.7	552	1.1	164	0.02	3.0	59	70
16									31	37
17	4.0	519	< 3.5	454	3.0	389	0.02	2.6		
18	4.3	538	< 3.7	463	2.6	325	0.03	3.8	43	39
19	4.3	523	< 3.7	450	2.8	340	0.04	4.9	51	39
20	4.2	610	< 3.7	537	3.8	552	0.03	4.4	32	28
21	4.0	411	< 3.5	359	7.0	719	0.08	8.2	36	31
22			< 3.7	506	4.2	574	0.08	10.9	15	15
23									23	18
24	4.0	555	< 3.5	486	4.0	555	0.16	22.2		
25	4.0	450	< 3.5	393	3.2	360	0.09	10.1	34	27
26	3.7	420	< 3.3	375	2.6	295	0.13	14.8	26	22
27	4.3	449	< 3.7	387	3.8	397	0.14	14.6	32	26
28	4.0	388	< 3.5	339	3.2	310	0.10	9.7	100	32
29			< 3.7	369	2.2	220	0.09	9.0	47	37
30									35	31
Total										
Mean	4.3	527	3.7	448	3.3	390	0.09	10.0	61.77	62.27
Maximum	8.6	1134	7.2	949	7.0	719	0.20	22.2	290.00	360.00
Minimum	3.7	279	3.3	244	1.1	162	0.02	2.6	12.00	11.00
# of Data	21	21	26	26	25	25	25	25	26	26
# of Data<MDL	19		25				0		0	0
Wk1: 9/03-9/09/2000	4.0	335	3.5	301	3.6	306	0.11	9.6	66	76
Wk2: 9/10-9/16/2000	5.1	811	4.3	671	2.8	437	0.08	11.8	118	132
Wk3: 9/17-9/23/2000	4.2	559	3.6	489	3.9	525	0.05	6.2	33	28
Wk4: 9/24-9/30/2000	4.2	559	3.6	489	3.9	525	0.05	6.2	35	32

Total Est. Bypass Flow (MG): 91.54 Total Bypass Occurances (days/month): 7

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR NOVEMBER 2000

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1]: Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0
1	Wed	0.00	10.83	15.0	10.99							0.01
2	Thu	0.00	10.30	14.0	10.58							0.00
3	Fri	0.00	10.28	14.0	10.00							0.00
4	Sat	0.00	9.95	15.0	9.62							0.00
5	Sun	0.00	9.92	14.0	9.33							0.00
6	Mon	0.35	11.98	36.0	11.79	34.200	0.800	27.600	0.480	50.400	11.030	0.00
7	Tue	0.00	10.33	36.0	10.76							0.00
8	Wed	0.04	10.04	14.0	10.13							0.00
9	Thu	1.40	16.42	40.0	19.17	195.600	4.800	232.800	4.040	196.800	43.050	0.92
10	Fri	0.00	11.42	16.0	12.07							1.54
11	Sat	0.00	11.27	16.0	12.38							1.35
12	Sun	0.10	11.43	19.0	13.50							1.13
13	Mon	0.32	15.28	29.5	16.91	9.600	0.200			16.200	3.540	1.15
14	Tue	0.01	11.47	16.0	12.52							1.00
15	Wed	0.00	11.32	16.0	12.47	9.600	0.200					0.85
16	Thu	0.00	11.20	16.0	12.14							0.60
17	Fri	0.00	10.89	15.0	11.48							0.35
18	Sat	0.00	10.65	15.0	11.19							0.24
19	Sun	0.02	10.48	15.0	10.90							0.16
20	Mon	0.00	10.37	15.0	10.71							0.08
21	Tue	0.00	10.45	14.0	10.82							0.01
22	Wed	0.00	10.48	15.0	10.92							0.00
23	Thu	0.00	9.93	15.0	9.98							0.00
24	Fri	0.00	9.77	14.0	9.78							0.00
25	Sat	0.32	12.06	27.0	12.19							0.00
26	Sun	0.07	10.14	16.0	10.91							0.00
27	Mon	0.00	9.71	14.0	9.93							0.00
28	Tue	0.00	9.70	14.0	9.55							0.00
29	Wed	0.18	11.20	15.0	11.68							0.00
30	Thu	0.00	9.87	14.0	9.90							0.00
Total		2.81	329.14		344.30	249.00	6.00	260.40	4.52		57.62	9.39
Mean			10.97		11.48	62.25	1.50	130.20	2.26		19.21	0.31
Maximum		1.40	16.42	40.0	19.17	195.60	4.80	232.80	4.04		43.05	1.54
Minimum			9.70		9.33	9.60	0.20	27.60	0.48		3.54	0.00
# of Data		30	30	30	30	4	4	2	2		3	30
# of Data<MDL												
Wk1: 10/29-11/04/00			10.43									
Wk2: 11/05-11/11/00			11.63									
Wk3: 11/12-11/18/00			11.75									
Wk4: 11/19-11/25/00			10.51									
Wk5: 11/26-12/01/00			10.46									

Total Est. Bypass Flow (MG): 68.14 Total Bypass Occurances (days/month): 2

Date	Influent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Clarifier Effluent Data: TBOD5 (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	Ammonia-N (mg/L)
Design Criteria									<MDL	<MDL	10	1.5
1	112	10116	67	6052		0	10.00	903	6.3	< 3.5	13.0	0.06
2	79	6786	59	5068	130	11167	9.63	827	6.6	5.2	14.2	0.06
3		0	47	4030	112	9602	9.52	816		< 3.7	15.6	0.06
4		0		0		0						
5	74	6122	71	5874	100	8273	7.92	655				
6	121	12089	97	9692	223	22281	6.97	696	6.0	< 3.2	16.8	0.07
7	93	8012	84	7237	193	16627	5.94	512	5.5	< 3.5	12.6	0.06
8	66	5526	62	5191	67	5610	8.34	698	9.2	8.3	12.2	0.05
9	94	12873	48	6573	147	20131	5.49	752	8.7	< 4.0	13.4	0.06
10		0	44	4191	83	7905	7.50	714		< 4.0	11.0	0.11
11		0		0		0						
12	93	8865	49	4671	90	8579	7.28	694				
13	101	12871	71	9048	148	18860	6.22	793	5.6	4.2	9.6	0.07
14	82	7844	63	6027	73	6983	5.89	563	9.8	8.4	9.4	0.03
15	102	9630	60	5665	108	10196	8.90	840	8.8	4.3	13.2	0.05
16	158	14758	75	7006	108	10088	7.62	712	9.2	6.3	11.0	0.08
17		0	48	4359	104	9446	7.50	681		3.8	10.0	0.05
18		0		0		0						
19	58	5069	40	3496	89	7779	6.95	607				
20	80	6919	56	4843	92	7957	7.84	678	8.3	< 4.0	28.6	0.05
21	79	6885	54	4706	125	10894	8.82	769	6.2	< 4.0	16.4	0.05
22	84	7342	45	3933	119	10401	8.63	754	19.0	< 4.0	0.0	0.08
23	107	8861	68	5632	108	8944	7.34	608	8.2	< 3.5	14.0	0.05
24		0	54	4400	86	7007	8.90	725		< 4.6	9.8	0.06
25		0		0		0						
26	69	5835	52	4398	78	6596	6.16	521				
27	65	5264	57	4616	92	7450	8.96	726	6.1	< 3.8	10.2	0.03
28	103	8332	71	5744	120	9708	7.78	629	5.8	3.4	10.2	0.07
29	130	12143	77	7192	171	15973	8.88	829	5.0	4.0	10.8	0.10
30	149	12265	83	6832	132	10866	7.66	631	7.7	3.2	9.6	0.06
Total												
Mean	95	6480	62	4882	116	8977	7.79	705	7.9	4.4	12.3	0.06
Maximum	158	14758	97	9692	223	22281	10.00	903	19.0	8.4	28.6	0.11
Minimum	58	0	40	0	67	0	5.49	512	5.0	3.2	0.0	0.03
# of Data	22	22	26	26	25	25	26	26	18	22	22	22
# of Data<MDL									0	12		

Date	Final Effluent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria	Report Only <MDL	Report Only	7.1 AML 10.7 AWL <MDL	888 AML 1339 AWL	8.5 AML 12.8 AWL	1063 AML 1601 AWL	1.5 AML 2.3 AWL <MDL	188 AML 751 DML		
1	2.3	208	< 3.5	316	4.6	415	0.03	2.7		
2	5.4	464	4.7	404	4.6	395	0.02	1.7		
3	< 3.7	317		0	3.2	274	0.05	4.3		
4		0		0		0		0.0		
5	< 4.6	381	< 4.0	331	7.8	645	0.04	3.3		
6	4.2	420	< 3.2	320	5.2	520	0.04	4.0		
7	< 4.0	345	< 3.5	302	5.6	482	0.04	3.4		
8	3.4	285	2.9	243	4.0	335	0.03	2.5		
9	< 4.6	630	< 4.0	548	2.8	383	0.02	2.7		
10		0	< 4.0	381	2.1	200	0.05	4.8		
11		0		0		0		0.0		
12	< 4.0	381	< 3.5	334	3.4	324	0.07	6.7		
13	4.0	510	< 3.5	446	3.0	382	0.05	6.4		
14	6.5	622	4.8	459	3.2	306	0.03	2.9		
15	< 4.3	406	< 3.7	349	3.4	321	0.03	2.8		
16	6.3	588	5.4	504	3.4	318	0.06	5.6		
17		0	< 3.5	318	4.0	363	0.02	1.8		
18		0		0		0		0.0		
19	4.9	428	< 4.0	350	3.5	306	0.06	5.2		
20	< 4.6	398	< 4.0	346	4.2	363	0.03	2.6		
21	< 4.6	401	< 4.0	349	7.6	662	0.05	4.4		
22	< 5.0	437	< 4.0	350	3.6	315	0.03	2.6		
23	< 4.0	331	< 3.5	290	4.2	348	0.01	0.8		
24		0	< 4.6	375	2.1	171	0.02	1.6		
25		0		0		0		0.0		
26	< 4.0	338	< 3.5	296	3.6	304	0.02	1.7		
27	< 4.3	348	< 3.7	300	2.8	227	0.01	0.8		
28	< 4.6	372	< 4.0	324	3.2	259	0.05	4.0		
29	3.9	364	3.2	299	3.0	280	0.04	3.7		
30	3.3	272	< 3.1	255	2.4	198	0.03	2.5		
Total										
Mean	4.4	308	3.8	293	3.9	303	0.04	2.9		
Maximum	6.5	630	5.4	548	7.8	662	0.07	6.7		
Minimum	2.3	0	2.9	0	2.1	0	0.01	0.0		
# of Data	23	23	25	25	26	26	26	26		
# of Data<MDL	13		20				0			

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR DECEMBER 2000

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1]: Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0
1	Fri	0.00	9.85	14.0	9.86	0.000	0.000	0.000	0.000	0.000	0.000	0.00
2	Sat	0.00	9.83	14.0	10.20	0.000	0.000	0.000	0.000	0.000	0.000	0.00
3	Sun	0.00	9.68	13.5	9.58	0.000	0.000	0.000	0.000	0.000	0.000	0.00
4	Mon	0.00	9.63	14.0	9.70	0.000	0.000	0.000	0.000	0.000	0.000	0.00
5	Tue	0.00	9.79	14.0	9.38	0.000	0.000	0.000	0.000	0.000	0.000	0.00
6	Wed	0.02	10.36	15.0	10.28	0.000	0.000	0.000	0.000	0.000	0.000	0.00
7	Thu	0.00	9.90	14.0	9.82	0.000	0.000	0.000	0.000	0.000	0.000	0.00
8	Fri	0.00	10.20	14.0	9.71	0.000	0.000	0.000	0.000	0.000	0.000	0.00
9	Sat	0.00	9.78	14.0	9.09	0.000	0.000	0.000	0.000	0.000	0.000	0.00
10	Sun	0.00	9.76	15.0	9.55	0.000	0.000	0.000	0.000	0.000	0.000	0.00
11	Mon	0.00	9.48	14.0	9.39	0.000	0.000	0.000	0.000	0.000	0.000	0.00
12	Tue	0.00	9.95	14.5	9.12	0.000	0.000	0.000	0.000	0.000	0.000	0.00
13	Wed	0.00	9.62	13.0	9.21	0.000	0.000	0.000	0.000	0.000	0.000	0.00
14	Thu	0.00	9.54	13.5	9.08	0.000	0.000	0.000	0.000	0.000	0.000	0.00
15	Fri	0.00	9.63	13.5	9.77	0.000	0.000	0.000	0.000	0.000	0.000	0.00
16	Sat	0.00	10.61	17.0	10.73	0.000	0.000	0.000	0.000	0.000	0.000	0.00
17	Sun	0.00	10.57	14.5	11.62	0.000	0.000	0.000	0.000	0.000	0.000	0.00
18	Mon	0.00	10.31	15.0	11.64	0.000	0.000	0.000	0.000	0.000	0.000	0.00
19	Tue	0.00	10.72	16.0	11.98	0.000	0.000	0.000	0.000	0.000	0.000	0.00
20	Wed	0.00	9.92	13.5	10.85	0.000	0.000	0.000	0.000	0.000	0.000	0.00
21	Thu	0.00	9.74	13.5	10.19	0.000	0.000	0.000	0.000	0.000	0.000	0.00
22	Fri	0.00	9.29	13.0	10.89	0.000	0.000	0.000	0.000	0.000	0.000	0.00
23	Sat	0.00	8.79	12.5	10.55	0.000	0.000	0.000	0.000	0.000	0.000	0.00
24	Sun	0.00	8.91	12.0		0.000	0.000	0.000	0.000	0.000	0.000	0.00
25	Mon	0.00	8.59	12.0		0.000	0.000	0.000	0.000	0.000	0.000	0.00
26	Tue	0.00	8.55	12.0		0.000	0.000	0.000	0.000	0.000	0.000	0.00
27	Wed	0.00	8.94	13.0		0.000	0.000	0.000	0.000	0.000	0.000	0.00
28	Thu	0.00	8.83	13.0		0.000	0.000	0.000	0.000	0.000	0.000	0.00
29	Fri	0.00	8.88	13.0	10.22	0.000	0.000	0.000	0.000	0.000	0.000	0.00
30	Sat	0.00	8.89	14.0	10.10	0.000	0.000	0.000	0.000	0.000	0.000	0.00
31	Sun	0.00	9.31	13.0	9.74	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Total		0.02	297.85		262.25	0.00	0.00	0.00	0.00		0.00	0.00
Mean			9.61		10.09	0.00	0.00	0.00	0.00		0.00	0.00
Maximum		0.02	10.72	17.0	11.98	0.00	0.00	0.00	0.00		0.00	0.00
Minimum			8.55		9.08	0.00	0.00	0.00	0.00		0.00	0.00
# of Data		31	31	31	26	31	31	31	31		31	31
# of Data<MDL												
Wk1: 12/03-12/09/00			9.91		9.65							
Wk2: 12/10-12/16/00			9.80		9.55							
Wk3: 12/17-12/23/00			9.91		11.10							
Wk4: 12/24-12/30/00			10.17		11.13							

Date	Influent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Clarifier Effluent Data: TBOD5 (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	Ammonia-N (mg/L)
Design Criteria									<MDL	<MDL	10	1.5
1			62	5093	121	9940	8.74	718		< 3.5	11.4	0.14
2												
3	174	14047	79	6378	200	16146	6.61	534				
4	122	9798	64	5140	129	10361	8.96	720	6.9	< 3.7	11.6	0.06
5	132	10778	81	6614	143	11676	8.18	668	10.5	3.7	12.0	0.07
6	212	18317	98	8467	208	17972	9.80	847	10.3	3.2	11.0	0.14
7	172	14201	91	7514	158	13045	10.10	834	9.5	5.3	12.0	0.06
8			52	4424	157	13356	8.57	729	11.6	4.6	11.6	0.07
9												
10	124	10093	60	4884	103	8384	7.95	647				
11	136	10753	76	6009	127	10041	11.60	917	9.1	4.6	13.0	0.06
12	160	13277	66	5477	166	13775	8.51	706	7.2	< 3.0	11.6	0.04
13	177	14201	65	5215	181	14522	8.40	674	6.8	< 3.2	13.6	0.06
14	151	12014	125	9945	113	8991	12.60	1003	7.3	3.4	11.2	0.03
15			59	4739	163	13091	10.20	819		< 4.6	9.8	0.04
16												
17	65	5730	53	4672	177	15603	9.74	859				
18	141	12124	77	6621	140	12038	9.46	813	11.0	5.0	14.0	0.24
19	182	16272	76	6795	267	23871	8.34	746	9.0	4.1	10.2	0.22
20	146	12079	71	5874	172	14230	7.78	644	10.6	4.6	11.0	0.06
21	175	14216	87	7067	193	15678	7.84	637	10.3	4.7	11.6	0.06
22			131	10150	172	13326	9.18	711		4.4	9.8	0.09
23												
24	120	8917	60	4459	137	10180	9.74	724				
25	89	6376	65	4657			12.40	888	8.3	6.2	8.0	0.05
26	118	8414	71	5063	134	9555	8.68	619	7.9	3.1	9.4	0.07
27	84	6263	64	4772	116	8649	7.28	543	8.2	3.7	9.0	0.06
28	194	14287	126	9279	177	13035	10.00	736	11.0	5.1	11.0	0.10
29			87	6443			8.12	601		5.3	10.0	0.08
30												
31	88	6833	76	5901	115	8929	8.53	662				
Total												
Mean	141	11380	78	6217	157	12766	9.13	731	9.1	4.2	11.1	0.09
Maximum	212	18317	131	10150	267	23871	12.60	1003	11.6	6.2	14.0	0.24
Minimum	65	5730	52	4424	103	8384	6.61	534	6.8	3.0	8.0	0.03
# of Data	21	21	26	26	24	24	26	26	17	21	21	21
# of Data<MDL									0	5		
Wk1: 12/03-12/09/00	162	13428	78	6423	166	13759	8.70	722				
Wk2: 12/10-12/16/00	150	12068	75	6045	142	11467	9.88	794				
Wk3: 12/17-12/23/00	142	12084	83	6863	187	15791	8.72	735				
Wk4: 12/24-12/30/00	142	12084	83	6863	187	15791	8.72	735				

Date	Final Effluent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria	Report Only <MDL	Report Only	7.1 AML 10.7 AWL <MDL	888 AML 1339 AWL	8.5 AML 12.8 AWL	1063 AML 1601 AWL	1.5 AML 2.3 AWL <MDL	188 AML 751 DML		
1			3.5	288	3.2	263	0.04	3.3		
2										
3	3.7	299	3.3	266	1.6	129	0.05	4.0		
4	4.3	345	3.7	297	3.2	257	0.09	7.2		
5	6.2	506	3.4	278	3.7	302	0.06	4.9		
6	5.2	449	3.6	311	3.2	276	0.05	4.3		
7	8.2	677	5.3	438	3.6	297	0.04	3.3		
8			5.2	442	4.4	374	0.03	2.6		
9										
10	5.2	423	3.3	269	4.0	326	0.03	2.4		
11	6.0	474	3.3	261	6.0	474	0.05	4.0		
12	3.9	324	3.0	249	5.8	481	0.02	1.7		
13	3.9	313	3.2	257	7.0	562	0.04	3.2		
14	4.8	382	3.3	263	5.2	414	0.02	1.6		
15			4.6	369	4.9	394	0.02	1.6		
16										
17	6.7	591	5.0	441	6.2	547	0.10	8.8		
18	6.8	585	3.3	284	5.4	464	0.14	12.0		
19	6.4	572	3.2	286	5.4	483	0.18	16.1		
20	6.6	546	4.0	331	4.2	347	0.06	5.0		
21	6.6	536	3.2	260	5.8	471	0.04	3.2		
22			3.9	302	6.2	480	0.06	4.6		
23										
24	3.7	275	3.3	245	5.8	431	0.04	3.0		
25	5.1	365	4.0	287	5.2	373	0.02	1.4		
26	4.4	314	3.3	235	4.6	328	0.04	2.9		
27	5.6	418	3.2	239	4.8	358	0.04	3.0		
28	5.8	427	3.1	228	5.4	398	0.06	4.4		
29			4.4	326	4.6	341	0.07	5.2		
30										
31	5.0	388	3.2		5.2	404	0.07	5.4		
Total										
Mean	5.4	439	3.7	298	4.8	384	0.06	4.6		
Maximum	8.2	677	5.3	442	7.0	562	0.18	16.1		
Minimum	3.7	275	3.0	228	1.6	129	0.02	1.4		
# of Data	21	21	26	26	26	26	26	26		
# of Data<MDL	3		17				0			
Wk1: 12/03-12/09/00	5.5	449	4.1	332	3.3	267	0.05	4.3		
Wk2: 12/10-12/16/00	4.8	369	3.5	270	5.5	427	0.03	2.3		
Wk3: 12/17-12/23/00	6.6	621	3.8	352	5.5	517	0.10	9.3		
Wk4: 12/24-12/30/00	6.6	621	3.8	352	5.5	517	0.10	9.3		

Total Est. Bypass Flow (MG): 0.00 Total Bypass Occurances (days/month): 0

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR JANUARY 2001

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1] — Michigan Outfall 002		Alder - Outfall 003		Magoun - Outfall 005		Outfall 006 CSO Lagoon (MGD)	Influent Data								Clarifier Effluent Data				Final Effluent Data								Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
						Run Time Minutes	Est. Flow (MGD)	Run Time Minutes	Est. Flow (MGD)	Run Time Minutes	Flow (MGD)		TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	TBOD5 (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	Ammonia-N (mg/L)	TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)		
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0									<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	7.1 AML 10.7 AWL <MDL	888 AML 1339 AWL	8.5 AML 12.8 AWL	1063 AML 1601 AWL	1.5 AML 2.3 AWL <MDL	188 AML 751 DML		
1	Mon	0.00	8.38	13.0	8.52							0.00	113	7897	56	3914	112	7828	6.72	470	6.7	3.8	10.4	0.05	3.6	252	< 3.1	217	3.8	266	0.05	3.5		
2	Tue	0.00	8.81	12.0	9.38							0.00	87	6392	53	3894	84	6172	8.06	592	10.3	3.5	9.0	0.03	5.7	419	2.7	198	4.0	294	0.02	1.5		
3	Wed	0.00	8.98	13.0	9.62							0.00	182	13631	97	7265	189	14155	10.60	794	12.0	5.5	11.4	0.34	8.1	607	4.1	307	4.0	300	0.20	15.0		
4	Thu	0.00	8.37	12.5	8.72							0.00	108	7539	69	4817	83	5794	6.44	450	10.1	4.4	11.6	0.07	6.1	426	3.0	209	3.8	265	0.04	2.8		
5	Fri	0.00	8.79	13.5	9.06							0.00			53	3885	170	12462	5.94	435		4.4	12.8	0.21			< 5.4	396	3.5	257	0.09	6.6		
6	Sat	0.00	8.50	12.0	8.86							0.00																						
7	Sun	0.00	8.79	12.5	9.01							0.00	87	6378	59	4325	82	6011	10.53	772					5.3	389	2.4	176	4.0	293	0.02	1.5		
8	Mon	0.00	8.72	14.5	9.25							0.00	188	13672	70	5091	191	13890	7.62	554	7.4	< 3.7	15.4	0.06	4.3	313	< 3.9	284	4.4	320	0.05	3.6		
9	Tue	0.00	8.78	12.0	9.50							0.00	147	10764	72	5272	134	9812	8.13	595	11.0	4.0	10.8	0.38	5.2	381	2.7	198	4.0	293	0.22	16.1		
10	Wed	0.00	10.42	17.0	10.00							0.00	187	16251	67	5822	144	12514	9.52	827	11.0	4.5	10.1	0.40	7.5	652	3.2	278	4.4	382	0.38	33.0		
11	Thu	0.00	10.94	17.0	9.88							0.00	106	9671	64	5839	96	8759	6.33	578	9.1	4.1	11.0	0.20	4.5	411	2.2	201	4.4	401	0.08	7.3		
12	Fri	0.00	10.77	16.0	9.48							0.00			73	6557	103	9252	12.40	1114		3.9	9.4	0.54			2.2	198	2.5	225	0.14	12.6		
13	Sat	0.00	10.71	19.0	9.19							0.00																						
14	Sun	0.20	13.65	20.0	12.85							0.00	89	10132	46	5237	94	10701	6.09	693					6.7	763	< 5.5	626	2.3	262	0.02	2.3		
15	Mon	0.30	12.91	18.0	13.31							0.00	70	7537	40	4307	77	8291	4.77	514	8.0	2.7	10.4	0.05	3.8	409	2.5	269	3.0	323	0.03	3.2		
16	Tue	0.00	12.22	17.0	11.71							0.00	106	10803	65	6624	79	8051	7.17	731	8.6	3.4	10.4	0.14	3.6	367	< 3.3	336	3.4	347	0.10	10.2		
17	Wed	0.00	12.25	17.0	12.01							0.00	107	10932	64	6539	90	9195	7.78	795	10.1	4.8	9.2	0.09	6.1	623	3.7	378	3.2	327	0.08	8.2		
18	Thu	0.00	12.07	17.0	11.52							0.00	103	10368	63	6342	76	7650	8.90	896	9.1	3.3	9.4	0.04	4.3	433	< 3.7	372	2.8	282	0.03	3.0		
19	Fri	0.01	12.02	17.0	11.31							0.00			58	5814	74	7418	7.95	797		2.9	10.0	0.05			< 3.0	301	2.0	200	0.03	3.0		
20	Sat	0.00	12.00	17.0	11.45							0.00																						
21	Sun	0.00	11.57	16.0	10.89							0.00	98	9456	57	5500	58	5597	7.76	749					3.8	367	< 3.3	318	0.4	39	0.03	2.9		
22	Mon	0.00	11.87	16.5	11.20							0.00	88	8712	56	5544	116	11484	9.07	898	4.9	< 3.5	9.3	0.06	4.3	426	< 3.5	346	0.6	59	0.04	4.0		
23	Tue	0.00	11.71	17.0	10.93							0.00	84	8204	68	6641	87	8497	7.06	689	6.5	< 3.5	6.8	0.04	3.0	293	< 3.5	342	1.4	137	0.03	2.9		
24	Wed	0.00	11.89	17.0	11.00							0.00	100	9916	61	6049	105	10412	6.89	683	6.9	< 3.5	9.0	0.06	3.1	307	< 3.5	347	3.2	317	0.03	3.0		
25	Thu	0.00	11.60	16.0	10.23							0.00	132	12770	79	7643	116	11222	7.00	677	7.2	3.3	9.6	0.05	3.6	348	< 4.0	387	3.0	290	0.03	2.9		
26	Fri	0.00	11.58	17.0	10.32							0.00			46	4443	102	9851	10.20	985		< 3.1	8.4	0.04			< 3.2	309	2.4	232	0.03	2.9		
27	Sat	0.00	11.59	17.5	9.79							0.00																						
28	Sun	0.00	10.87	16.5	9.53							0.00	83	7524	74	6709	72	6527	8.15	739					3.7	335	< 3.1	281	3.0	272	0.04	3.6		
29	Mon	0.57	19.33	40.0	16.90	88.800	2.160	21.600	0.375	162.600	3.560	0.00	132	21280	90	14509	232	37401	7.72	1245	22.0	8.2	55.8	0.26	16.0	2579	5.5	887	30.6	4933	0.23	37.1		
30	Tue	0.20	15.87	30.0	15.55							0.00	234	30971	106	14030	530	70149	6.38	844	14.0	6.3	15.7	0.83	6.9	913	4.4	582	4.2	556	0.41	54.3		
31	Wed	0.01	14.17	19.5	13.13							0.00	72	8509	54	6382	75	8863	6.33	748	6.9	3.5	9.4	0.02	4.1	485	< 3.5	414	0.6	71	< 0.02	2.4		
Total		1.29	350.13		334.10	88.80	2.16	21.60	0.38		3.56	0.00																						
Mean			11.29		10.78	88.80	2.16	21.60	0.38		3.56	0.00	118	11274	65	6259	125	12517	7.83	736	9.6	4.1	12.4	0.17	5.4	543	3.5	339	4.0	442	0.09	9.2		
Maximum		0.57	19.33	40.0	16.90	88.80	2.16	21.60	0.38		3.56	0.00	234	30971	106	14509	530	70149	12.40	1245	22.0	8.2	55.8	0.83	16.0	2579	5.5	887	30.6	4933	0.41	54.3		
Minimum			8.37		8.52	88.80	2.16	21.60	0.38		3.56	0.00	70	6378	40	3885	58	5597	4.77	435	4.9	2.7	6.8	0.02	3.0	252	2.2	176	0.4	39	0.02	1.5		
# of Data		31	31	31	31	1	1	1	1		1	31	23	23	27	27	27	27	27	27	19	23	23	23	23	23	27	27	27	27	27	27		
# of Data<MDL																					0	5			4		15				1			
			8.70		9.15								142	10397	70	5109	142	10354	8.21	600					5.8	447	3.6	275	4.0	303	0.10	8.1		
			11.66		10.92								112	10879	59	5731	99	9595	7.71	743					5.2	498	3.2	302	3.3	306	0.13	10.8		
			11.93		11.33								96	9534	61	6063	84	8307	8.09	804					4.3	409	3.5	326	1.7	166	0.04	3.8		
			12.00		11.44								100	10054	61	6061	82	8232	8.11	811					4.4	424	3.4	326	2.1	200	0.05	5.0		

Total Est. Bypass Flow (MG): 6.10 Total Bypass Occurances (days/month): 1

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR FEBRUARY 2001

						CSO Pump Station Discharges [1]							Influent Data								Clarifier Effluent Data				Final Effluent Data									
						Michigan Outfall 002		Alder - Outfall 003		Magoun - Outfall 005																								
Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	Run Time Minutes	Est. Flow (MGD)	Run Time Minutes	Est. Flow (MGD)	Run Time Minutes	Flow (MGD)	Outfall 006 CSO Lagoon (MGD)	TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	TBOD5 (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	Ammonia-N (mg/L)	TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0									<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	7.1 AML 10.7 AWL <MDL	888 AML 1339 AWL	8.5 AML 12.8 AWL	1063 AML 1601 AWL	1.5 AML 2.3 AWL <MDL	188 AML 751 DML		
1	Thu	0.00	13.43	19.0	12.66							0.00	82	9185	53	5936	61	6832	6.38	715	9.0	< 4.0	12.0	0.11	5.6	627	4.6	515	1.8	202	0.04	4.5		
2	Fri	0.00	13.32	19.0	12.90							0.00			49	5443	100	11109	6.16	684		< 4.6	10.8	0.05			< 4.6	511	2.7	300	0.02	2.2		
3	Sat	0.00	12.78	17.0	12.29							0.00																						
4	Sun	0.03	12.92	17.0	12.31	–						0.00	102	10991	66	7112	79	8512	4.03	434					5.4	582	4.1	442	1.2	129	< 0.02	2.2		
5	Mon	0.00	12.65	18.0	11.84							0.00	76	8018	48	5064	95	10023	4.64	490	8.4	< 4.6	9.8	<0.02	4.0	422	< 4.6	485	2.4	253	< 0.02	2.1		
6	Tue	0.14	14.06	22.0	12.96	0.190	0.200					0.00	69	8091	48	5628	72	8443	5.43	637	6.6	< 4.6	7.4	0.05	4.6	539	< 4.6	539	0.4	47	0.07	8.2		
7	Wed	0.02	12.57	17.0	11.73							0.00	107	11217	55	5766	101	10588	5.88	616	8.2	4.6	8.8	0.03	4.7	493	< 3.7	388	1.2	126	0.05	5.2		
8	Thu	0.43	15.06	40.0	13.74	1.910	1.900	12.000	1.470	109.200	23.890	0.00	84	10550	42	5275	84	10550	3.98	500	4.8	3.8	10.4	0.03	5.4	678	4.2	528	2.8	352	0.04	5.0		
9	Fri	0.66	18.48	39.5	18.37	1.200	1.200	337.800	5.860	78.600	17.190	0.00			62	9556	266	40997	3.58	552		< 4.3	12.1	0.11			< 4.3	663	1.6	247	0.04	6.2		
10	Sat	0.00	17.44	29.0	16.64			12.600	0.220			0.00																						
11	Sun	0.00	16.37	28.0	15.92							0.00	69	9420	36	4915	71	9693	4.26	582					5.0	683	< 4.6	628	2.2	300	0.04	5.5		
12	Mon	0.00	16.32	28.0	15.83							0.00	90	12250	47	6397	100	13611	4.03	549	7.8	< 4.6	8.2	0.03	5.0	681	< 4.6	626	1.0	136	0.02	2.7		
13	Tue	0.05	15.76	28.0	15.05							0.00	109	14327	54	7098	127	16693	3.92	515	7.1	< 4.6	8.8	0.03	5.4	710	< 4.6	605	1.5	197	0.07	9.2		
14	Wed	0.11	16.92	30.5	15.79							0.00	104	14676	70	9878	131	18486	4.59	648	7.2	< 4.6	6.8	0.04	4.6	649	< 4.6	649	1.2	169	< 0.01	1.4		
15	Thu	0.00	15.27	20.0	14.79							0.00	90	11462	48	6113	104	13245	4.00	509	6.5	< 4.0	6.0	0.03	4.6	586	< 4.0	509	1.4	178	0.01	1.3		
16	Fri	0.00	14.91	19.5	15.58							0.00			58	7212	193	23999	7.08	880		< 4.6	8.2	0.04			< 4.6	572	1.9	236	< 0.02	2.5		
17	Sat	0.00	14.07	18.5	14.69							0.00																						
18	Sun	0.00	13.72	18.0	14.09							0.00	162	18537	51	5836	124	14189	5.04	577					5.0	572	< 4.2	481	2.2	252	0.03	3.4		
19	Mon	0.00	13.58	18.0	13.57							0.00	131	14837	67	7588	165	18687	7.56	856	5.6	< 4.3	8.6	0.06	5.0	566	< 4.3	487	2.2	249	0.03	3.4		
20	Tue	0.00	13.37	20.0	13.19							0.00	132	14719	74	8251	207	23082	7.22	805	4.7	3.5	9.6	0.11	3.3	368	2.9	323	1.6	178	0.10	11.2		
21	Wed	0.00	13.31	18.5	13.02							0.00	135	14986	54	5994	151	16762	4.87	541	6.6	< 4.3	10.2	0.04	5.0	555	< 4.3	477	1.8	200	0.07	7.8		
22	Thu	0.00	12.92	17.0	12.27							0.00	90	9698	62	6681	172	18533	6.22	670	3.0	< 4.3	6.8	0.13	5.0	539	< 4.3	463	3.2	345	0.07	7.5		
23	Fri	0.00	12.75	17.0	11.81							0.00			57	6061	146	15525	5.91	628		3.4	5.6	0.06			3.4	362	2.0	213	0.03	3.2		
24	Sat	1.43	17.19	40.0	17.35	5.420	5.700	361.200	6.270	19.200		0.74																						
25	Sun	0.02	14.86	19.0	14.97			89.400	1.550			1.33	82	10162	45	5577	137	16979	3.08	382					5.0	620	< 4.3	533	2.8	347	0.04	5.0		
26	Mon	0.00	16.01	21.0	15.66							0.55	109	14554	64	8545	135	18026	3.75	501	6.6	< 4.6	9.4	0.11	5.2	694	< 4.2	561	2.2	294	0.03	4.0		
27	Tue	0.00	15.97	20.0	16.20							0.28	121	16116	46	6127	190	25306	4.26	567	5.0	< 4.2	9.2	0.06	5.0	666	< 4.2	559	1.8	240	0.06	8.0		
28	Wed	0.00	15.58	14.0	15.74							0.08	120	15592	55	7147	166	21570	4.65	604	6.5	< 4.2	7.6	0.04	5.0	650	< 4.2	546	1.4	182	0.04	5.2		
Total		2.89	411.59		400.96	8.72	9.00	813.00	15.37		41.08	2.98																						
Mean			14.70		14.32	2.18	2.25	162.60	3.07		20.54	0.11	103	12469	55	6633	132	16310	5.02	602	6.5	4.3	8.8	0.06	4.9	594	4.3	519	1.9	224	0.04	4.9		
Maximum		1.43	18.48	40.0	18.37	5.42	5.70	361.20	6.27		23.89	1.33	162	18537	74	9878	266	40997	7.56	880	9.0	4.6	12.1	0.13	5.6	710	4.6	663	3.2	352	0.10	11.2		
Minimum			12.57		11.73	0.19	0.20	12.00	0.22		17.19	0.00	69	8018	36	4915	61	6832	3.08	382	3.0	3.4	5.6	0.03	3.3	368	2.9	323	0.4	47	0.01	1.3		
# of Data		28	28	28	28	4	4	5	5		2	28	20	20	24	24	24	24	24	24	16	20	20	19	20	20	24	24	24	24	24	24		
# of Data<MDL																					0	16			13		19				4			
Wk1: 02/03-02/09/00			14.07		13.32								88	9773	54	6400	116	14843	4.59	538					4.8	505	4.3	479	1.6	181	0.04	4.5		
Wk2: 02/10-02/16/00			16.14		15.66								92	12427	52	6935	121	15954	4.65	614					4.9	635	4.5	582	1.5	198	0.03	3.6		
Wk3: 02/17-02/23/00			13.39		13.23								130	14555	61	6735	161	17796	6.14	680					4.7	514	3.9	424	2.2	234	0.06	5.9		
Wk4: 02/24-02/28/00			13.70		13.77								130	14555	61	6735	169	17796	6.33	680					4.7	514	4.1	424	2.2	242	0.05	5.9		

Total Est. Bypass Flow (MG): 65.45 Total Bypass Occurances (days/month): 5

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR MARCH 2001

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1] – Michigan Outfall 002: Run Time Minutes	Michigan Outfall 002: Est. Flow (MGD)	Alder - Outfall 003: Run Time Minutes	Alder - Outfall 003: Est. Flow (MGD)	Magoun - Outfall 005: Run Time Minutes	Magoun - Outfall 005: Flow (MGD)	Outfall 006 CSO Lagoon (MGD)	Influent Data: TBOD5 (mg/L)	Influent TBOD5 (lb/day)	Influent CBOD5 (mg/L)	Influent CBOD5 (lb/day)	Influent TSS (mg/L)	Influent TSS (lb/day)	Influent Ammonia-N (mg/L)	Influent Ammonia-N (lb/day)	Clarifier Effluent Data: TBOD5 (mg/L)	Clarifier CBOD5 (mg/L)	Clarifier TSS (mg/L)	Clarifier Ammonia-N (mg/L)	Final Effluent Data: TBOD5 (mg/L)	Final TBOD5 (lb/day)	Final CBOD5 (mg/L)	Final CBOD5 (lb/day)	Final TSS (mg/L)	Final TSS (lb/day)	Final Ammonia-N (mg/L)	Final Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0									<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	7.1 AML 10.7 AWL <MDL	888 AML 1339 AWL	8.5 AML 12.8 AWL	1063 AML 1601 AWL	1.5 AML 2.3 AWL <MDL	188 AML 751 DML		
1	Thu		15.08	19.0	14.88							0.08	96	12074	59	7420	102	12828	5.38	677	8.5	< 4.2	7.4	0.03	< 5.0	629	< 4.2	528	1.9	239	0.04	5.0		
2	Fri		14.73	25.0	13.90										99	12162	153	18796	7.00	860		< 4.2	8.0	0.05			< 4.2	516	0.9	111	0.02	2.5		
3	Sat		14.13		13.75							0.03																						
4	Sun		13.51		12.95							0.01	79	8901	44	4958	64	7211	5.10	575					2.7	304	< 3.5	394	1.2	135	0.03	3.4		
5	Mon		13.27	18.5	13.28								61	6751	48	5312	79	8743	6.50	719	< 4.6	< 4.0	11.8	0.03	< 4.6	509	< 4.0	443	3.0	332	0.02	2.2		
6	Tue		13.36	18.0	12.84								78	8691	60	6685	66	7354	6.38	711	7.1	< 4.0	10.0	0.04	4.0	446	< 4.0	446	1.2	134	0.02	2.2		
7	Wed		13.89	20.0	13.22								125	14480	51	5908	151	17492	5.49	636	8.0	< 4.0	13.2	0.04	3.6	417	< 4.0	463	1.0	116	0.03	3.5		
8	Thu		13.35	18.0	12.50								138	15365	48	5344	245	27278	6.44	717	6.6	< 4.2	13.0	0.21	< 5.0	557	< 4.2	468	2.6	289	0.08	8.9		
9	Fri		12.90	18.0	12.28										85	9145	242	26036	9.44	1016		< 4.2	10.2	0.04			< 4.2	452	1.0	108	0.03	3.2		
10	Sat		12.65	17.5	12.01																													
11	Sun	0.12	13.59	22.0	13.15								146	16548	55	6234	242	27428	5.99	679					3.2	363	< 3.0	340	2.2	249	0.03	3.4		
12	Mon	0.10	13.48	23.5	12.99								145	16301	58	6521	206	23159	5.04	567	6.9	2.2	13.4	0.04	2.7	304	1.6	180	3.0	337	0.03	3.4		
13	Tue		12.39	19.0	12.14								106	10953	74	7647	96	9920	6.78	701	10.4	3.4	13.2	0.03	4.3	444	< 4.2	434	2.4	248	0.02	2.1		
14	Wed	0.07	12.84	19.0	12.39								139	14885	61	6532	163	17455	6.83	731	7.7	4.0	13.6	0.05	< 4.6	493	< 4.0	428	2.6	278	0.04	4.3		
15	Thu	0.33	14.94	32.0	14.95								110	13706	59	7351	168	20933	6.38	795	13.2	3.9	15.6	0.06	4.9	611	< 4.2	523	2.7	336	0.04	5.0		
16	Fri	0.13	14.88	22.0	15.44										45	5584	67	8315	5.21	647		< 4.2	12.8	0.06			< 4.2	521	1.8	223	0.02	2.5		
17	Sat	0.09	14.73	28.0	14.23																													
18	Sun		13.45	21.0	14.52								78	8749	43	4823	87	9759	4.96	556					4.4	494	< 4.0	449	2.4	269	0.04	4.5		
19	Mon		12.92	19.0	13.39								117	12607	53	5711	138	14870	7.39	796	11.0	5.0	2.8	0.05	6.0	647	4.0	431	2.2	237	0.02	2.2		
20	Tue		13.23	19.0	13.47								151	16661	64	7062	221	24385	7.73	853	9.9	< 4.6	16.6	0.05	< 5.5	607	< 4.6	508	2.4	265	0.04	4.4		
21	Wed		13.43	19.0	13.38								114	12769	60	6720	114	12769	7.56	847	11.7	10.2	18.4	0.03	< 5.4	605	< 4.6	515	3.0	336	0.02	2.2		
22	Thu		13.12	19.0	12.66								136	14881	62	6784	188	20571	8.01	876	10.8	< 4.6	17.8	0.04	< 5.4	591	< 4.6	503	2.6	284	0.03	3.3		
23	Fri		13.20	17.0	12.59										54	5945	166	18275	7.84	863		< 4.2	18.6	0.10			< 4.2	462	2.8	308	0.07	7.7		
24	Sat		12.72	17.5	11.74																													
25	Sun		12.81	17.0	11.95								130	13889	58	6196	233	24893	5.63	601					< 3.3	353	< 3.0	321	3.0	321	0.03	3.2		
26	Mon		12.88	18.0	11.91								85	9131	49	5264	115	12353	5.03	540	9.4	3.3	19.4	0.06	< 4.3	462	< 3.7	397	1.6	172	0.02	2.1		
27	Tue		12.67	18.0	11.37								121	12786	46	4861	138	14582	7.84	828	5.0	< 4.2	19.3	0.04	< 5.0	528	< 4.2	444	2.6	275	0.02	2.1		
28	Wed		12.51	17.0	11.28								136	14189	62	6469	232	24205	7.45	777	10.0	3.8	20.6	0.04	4.4	459	2.8	292	2.2	230	0.03	3.1		
29	Thu	0.01	12.25	17.0	10.89								131	13384	61	6232	233	23804	8.62	881	8.0	< 3.7	20.2	0.08	< 4.3	439	< 3.7	378	3.0	306	0.07	7.2		
30	Fri		12.01	19.0	10.70										77	7713	225	22537	8.23	824		< 5.0	17.2	0.07			< 5.0	501	1.3	130	0.02	2.0		
31	Sat	0.05	11.74	17.0	10.36																													
Total		0.90	412.66		397.11	0.00	0.00	0.00	0.00		0.00	0.12																						
Mean			13.31		12.81							0.04	115	12748	59	6561	159	17537	6.70	741	8.8	4.3	14.2	0.06	4.4	489	3.9	436	2.2	241	0.03	3.7		
Maximum		0.33	15.08	32.0	15.44	0.00	0.00	0.00	0.00		0.00	0.08	151	16661	99	12162	245	27428	9.44	1016	13.2	10.2	20.6	0.21	6.0	647	5.0	528	3.0	337	0.08	8.9		
Minimum			11.74		10.36	0.00	0.00	0.00	0.00		0.00	0.01	61	6751	43	4823	64	7211	4.96	540	4.6	2.2	2.8	0.03	2.7	304	1.6	180	0.9	108	0.02	2.0		
# of Data		8	31	29	31	0	0	0	0		0	3	21	21	26	26	26	26	26	26	17	22	22	22	21	21	26	26	26	26	26	26		
# of Data<MDL																					1	14			11		23				0			
Wk1: 10/03-10/09/01			13.49		12.97								96	10838	56	6152	141	15686	6.56	729					4.0	430	4.0	426	1.7	179	0.04	3.7		
Wk2: 10/10-10/16/01			13.54		13.30								129	14479	59	6680	157	17868	6.04	687					3.9	433	3.5	401	2.5	274	0.03	3.4		
Wk3: 10/17-10/23/01			13.44		13.46								119	13134	56	6174	152	16771	7.25	799					5.3	599	4.3	481	2.6	285	0.04	4.1		
Wk4: 10/24-10/30/01			13.68		13.87								119	13134	55	6149	136	15111	6.81	763					5.3	599	4.3	498	2.4	274	0.03	3.3		

Total Est. Bypass Flow (MG): 0.00 Total Bypass Occurances (days/month): 0

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR MAY 2001

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1] Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0
1	Tue	0.00	11.10	11.0	10.34							0.00
2	Wed	0.00	10.40	17.0	11.26							0.01
3	Thu	0.00	11.02	17.0	9.90							0.01
4	Fri	0.00	11.07	15.5	9.66							0.00
5	Sat	0.19	11.76	32.5	11.41							0.00
6	Sun	0.14	11.49	29.0	11.18							0.00
7	Mon	0.00	11.00	18.0	10.52							0.00
8	Tue	0.00	10.81	16.0	10.06							0.00
9	Wed	0.00	10.71	16.0	9.74							0.00
10	Thu	0.11	11.75	22.0	11.34							0.00
11	Fri	0.17	11.50	22.5	11.47							0.01
12	Sat	0.00	9.90	15.0	8.81							0.00
13	Sun	0.00	10.48	15.0	8.47							0.00
14	Mon	0.38	12.51	40.0	11.01							0.00
15	Tue	0.00	11.04	17.0	9.22							0.00
16	Wed	0.47	13.37	40.0	12.45	46.200	1.100	79.200	1.400	84.000	1.810	0.09
17	Thu	0.00	11.45	19.0	10.75							0.00
18	Fri	0.03	11.12	17.0	10.74							0.00
19	Sat	0.00	11.55	16.0	9.46							0.00
20	Sun	0.00	10.62	18.0	9.58							0.00
21	Mon	0.73	15.65	40.0	16.03			27.000	0.500	67.200	1.500	0.13
22	Tue	0.00	10.45	45.0	9.79							0.11
23	Wed	0.14	11.14	19.0	10.81							0.04
24	Thu	0.13	11.19	27.0	10.77							0.00
25	Fri	0.29	11.54	21.0	11.16							0.00
26	Sat	0.89	13.75	24.5	14.49	121.200	2.900	202.800	3.500	130.800	2.900	0.29
27	Sun	0.37	14.10	26.0	16.16	61.200	1.500	153.000	2.700	57.000	1.200	1.01
28	Mon	0.00	11.48	22.5	12.33							0.51
29	Tue	0.00	11.81	18.5	12.59							0.31
30	Wed	0.00	11.93	18.5	12.55							0.13
31	Thu	0.42	13.56	40.0	14.46	50.400	1.200	55.800	1.000	52.800	1.200	0.18
Total		4.46	361.25		348.51	279.00	6.70	517.80	9.10		8.61	2.83
Mean			11.65		11.24	69.75	1.68	103.56	1.82		1.72	0.09
Maximum		0.89	15.65	45.0	16.16	121.20	2.90	202.80	3.50		2.90	1.01
Minimum			9.90		8.47	46.20	1.10	27.00	0.50		1.20	0.00
# of Data		31	31	31	31	4	4	5	5		5	31
# of Data<MDL												
Wk1:			11.12		10.35							
Wk2:			11.51		10.40							
Wk3:			11.71		11.02							
Wk4:			12.03		11.26							

Date	Day of Week	Influent Data TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Clarifier Effluent Data TBOD5 (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	Ammonia-N (mg/L)	Final Effluent Data TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria										<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	5.0 AML 7.5 AWL <MDL	626 AML 939 AWL	6.0 AML 9 AWL	751 AML 1127 AWL	1.5 AML 2.3 AWL <MDL	188 AML 282 AWL	200 AML 400 AWL <MDL	125 AML <MDL
1	Tue	164	15182	72	6665	212	19626	11.00	1018	7.7	2.7	12.0	0.19	< 3.3	305	< 3.0	278	4.4	407	0.10	9.3	17	10
2	Wed	124	10755	71	6158	205	17781	9.01	781	8.2	< 3.5	10.8	0.29	< 4.0	347	< 3.5	304	2.2	191	0.12	10.4		
3	Thu	136	12499	61	5606	186	17095	7.34	675	8.5	3.4	12.0	0.48	< 3.5	322	< 3.2	294	2.0	184	0.21	19.3	19	14
4	Fri			71	6555	220	20311	11.20	1034		< 4.0	13.8	0.25			< 4.0	369	1.6	148	0.17	15.7	4	3
5	Sat																					37	28
6	Sun	86	8241	78	7474	66	6325	10.60	1016					5.2	498	3.0	287	5.8	556	0.04	3.8		
7	Mon	62	5688	57	5229	96	8807	10.20	936	5.7	< 3.0	13.6	0.17	< 3.3	303	< 3.0	275	5.4	495	0.10	9.2	3	7
8	Tue	171	15417	68	6131	230	20736	10.20	920	8.0	2.9	12.6	0.34	2.8	252	< 3.2	288	3.0	270	0.21	18.9	22	15
9	Wed	159	14202	60	5359	194	17328	6.33	565	6.0	2.6	10.4	0.12	< 3.3	295	< 3.0	268	3.0	268	0.11	9.8	4	13
10	Thu	125	12249	48	4704	196	19207	8.23	806	7.7	< 3.5	9.4	0.11	< 4.0	392	< 3.5	343	2.3	225	0.11	10.8	5	4
11	Fri			49	4700	83	7961	7.84	752		< 5.0	11.0	0.27			< 5.0	480	2.0	192	0.13	12.5	1	< 1
12	Sat																					3	6
13	Sun	103	9003	56	4895	144	12586	6.69	585					< 3.5	306	< 3.1	271	2.0	175	0.07	6.1		
14	Mon	100	10433	67	6990	324	33804	9.55	996	4.2	< 3.5	13.9	0.40	< 4.0	417	< 3.5	365	3.2	334	0.23	24.0	3	1
15	Tue	68	6261	59	5432	108	9944	7.67	706	8.3	2.8	12.8	0.59	< 3.3	304	< 3.0	276	3.2	295	0.38	35.0	7	12
16	Wed	95	10593	50	5575	188	20963	8.85	987	9.6	3.6	16.8	0.36	< 3.7	413	< 3.3	368	4.4	491	0.35	39.0	16	12
17	Thu	153	14610	65	6207	203	19385	11.80	1127	7.2	< 3.0	9.2	0.34	< 3.3	315	< 3.0	286	1.0	95	0.18	17.2	4	9
18	Fri			68	6306	233	21609	8.96	831		< 4.0	10.0	0.29			< 4.0	371	2.5	232	0.14	13.0	4	20
19	Sat																					6	8
20	Sun	88	7794	70	6200	89	7883							< 4.6	407	< 4.0	354	1.8	159	0.07	6.2		
21	Mon	110	14357	64	8353	195	25452	7.82	1021	7.3	< 3.0	17.4	0.17	< 3.3	431	< 3.0	392	3.2	418	0.05	6.5	24	21
22	Tue	72	6275	50	4358	56	4881	10.30	898	8.8	2.8	10.9	0.11	< 4.0	349	< 3.5	305	1.8	157	0.11	9.6	7	10
23	Wed	76	7061	69	6411	122	11335	8.34	775	9.3	3.0	12.0	0.75	< 3.3	307	< 3.0	279	2.2	204	0.54	50.2	11	8
24	Thu	104	9706	75	6999	117	10919	9.52	888	5.2	2.6	10.6	0.33	2.7	252	2.2	205	2.2	205	0.23	21.5	4	3
25	Fri			60	5775	55	5293	9.30	895		< 5.0	9.4	0.46			< 5.0	481	1.0	96	0.30	28.9	3	8
26	Sat																					8	2
27	Sun	72	8467	51	5997	50	5880	9.07	1067					< 5.0	588	< 4.2	494	0.8	94	0.11	12.9		
28	Mon	57	5457	45	4308	64	6128	7.32	701	3.1	< 3.0	13.0	0.08	< 3.3	316	< 3.0	287	1.6	153	0.08	7.7	26	21
29	Tue	70	6895	46	4531	69	6796	9.14	900	7.9	< 4.0	11.0	0.26	< 5.0	492	< 4.0	394	4.6	453	0.09	8.9	2	7
30	Wed	98	9751	66	6567	135	13432	6.50	647	3.2	< 3.0	12.6	0.30	< 3.3	328	< 3.0	298	4.8	478	0.22	21.9	6	14
31	Thu	178	20130	79	8934	311	35171	7.84	887	9.1	7.7	17.2	0.37	2.8	317	2.7		3.0	339	0.26	29.4	9	10
Total																							
Mean		107	10479	62	6016	154	15061	8.87	862	7.1	3.5	12.3	0.31	3.7	359	3.4	331	2.8	271	0.17	16.9	9.81	10.27
Maximum		178	20130	79	8934	324	35171	11.80	1127	9.6	7.7	17.4	0.75	5.2	588	5.0	494	5.8	556	0.54	50.2	37.00	28.00
Minimum		57	5457	45	4308	50	4881	6.33	565	3.1	2.6	9.2	0.08	2.7	252	2.2	205	0.8	94	0.04	3.8	1.00	1.00
# of Data		23	23	27	27	27	27	26	26	19	23	23	23	23	23	27	27	27	27	27	27	26	26
# of Data<MDL										0	13			19		24				0		0	1
Wk1:		123	11209	66	6059	165	15100	9.31	858					3.6	313	3.2	274	3.5	301	0.14	11.7	15	13
Wk2:		98	8090	55	5383	174	17411	8.14	805					3.7	326	3.6	321	2.9	258	0.21	19.1	6	6
Wk3:		100	10020	64	6306	150	15083	9.44	664					3.7	346	3.4	317	2.1	205	0.18	16.4	9	13
Wk4:		104	10726	61	6167	161	16688	9.55	695					3.8	363	3.5	329	2.5	248	0.15	14.4	10	13

Total Est. Bypass Flow (MG): 24.41 Total Bypass Occurances (days/month): 5

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR JUNE 2001

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1]: Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)	Influent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0								
1	Fri	0.08	13.66	26.0	14.96							0.35			56	6380	122	13899	7.84	893
2	Sat	0.06	11.87	18.0	12.69							0.20								
3	Sun	0.00	11.41	16.0	11.82							0.12	50	4758	40	3806	35	3331	6.16	586
4	Mon	0.00	11.96	17.0	12.45							0.08	143	14264	64	6384	219	21844	6.72	670
5	Tue	0.95	16.49	37.0	16.92	170.400	4.100	252.000	4.400	169.800	3.750	0.95	83	11415	62	8527	138	18979	4.76	655
6	Wed	0.06	13.97	20.0	14.43							0.91	63	7340	50	5825	70	8156	4.40	513
7	Thu	0.00	15.08	19.0	13.22							0.39	104	13080	38	4779	125	15721	5.04	634
8	Fri	0.00	13.33	20.0	13.16							0.17			56	6226	228	25347	6.10	678
9	Sat	0.00	12.83	19.0	12.06							0.80								
10	Sun	0.00	12.63	18.0	11.58							0.40	125	13167	38	4003	127	13377	7.84	826
11	Mon	0.00	12.98	19.0	12.11							0.12	97	10501	35	3789	146	15805	6.78	734
12	Tue	1.40	20.50	40.0	20.15	193.200	4.720	181.200	3.200	237.600	6.460	3.00	107	18294	38	6497	158	27013	5.77	986
13	Wed	0.00	16.00	27.5	16.89							1.10	42	5604	24	3203	57	7606	5.68	758
14	Thu	0.15	15.98	33.5	16.54							0.44	96	12794	35	4665	141	18792	4.54	605
15	Fri	0.00	14.95	27.5	15.64							0.02			32	3990			4.70	586
16	Sat	0.00	13.78	19.5	14.32							0.01								
17	Sun	0.05	13.09	18.0	13.08							0.00	45	4913	35	3821	50	5459	5.49	599
18	Mon	0.00	13.69	19.0	13.73							0.00	56	6394	46	5252	86	9819	6.61	755
19	Tue	0.00	13.83	19.0	13.98							0.00	55	6344	33	3806	65	7497	5.15	594
20	Wed	0.00	13.26	18.5	13.73							0.00	62	6856	44	4866	74	8184	7.50	829
21	Thu	0.93	15.70	36.0	15.52	121.200	2.950	148.200	3.200	114.600	2.510	0.66	40	5238	34	4452	60	7856	5.32	697
22	Fri	0.00	13.55	23.0	13.69							0.56			42	4746	90	10171	7.96	900
23	Sat	0.00	12.94		13.28							0.27								
24	Sun	0.00	12.75	17.0	12.98							0.12	51	5423	38	4041	47	4998	8.06	857
25	Mon	0.00	13.18	19.0	14.14							0.00	80	8794	33	3627	112	12311	10.14	1115
26	Tue	0.00	13.15	18.0	13.96							0.00	98	10748	39	4277	106	11625	11.82	1296
27	Wed	0.00	13.56	18.0	13.77							0.00	167	18886	52	5881	129	14589	5.66	640
28	Thu	0.00	13.00	19.0	13.03							0.00	130	14095	55	5963	83	8999	6.44	698
29	Fri	0.00	13.09	18.0	13.14							0.00			42	4585	97	10590	6.98	762
30	Sat	0.00	12.64	17.0	12.64							0.00								
Total		3.68	414.85		419.61	484.80	11.77	581.40	10.80		12.72	10.67								
Mean			13.83		13.99	161.60	3.92	193.80	3.60		4.24	0.36	85	9945	42	4936	107	12582	6.54	755
Maximum		1.40	20.50	40.0	20.15	193.20	4.72	252.00	4.40		6.46	3.00	167	18886	64	8527	228	27013	11.82	1296
Minimum			11.41		11.58	121.20	2.95	148.20	3.20		2.51	0.00	40	4758	24	3203	35	3331	4.40	513
# of Data		30	30	29	30	3	3	3	3		3	30	20	20	25	25	24	24	25	25
# of Data<MDL																				
Wk1: 06/03-06/09/2001			13.58		13.44								89	10171	52	5925	136	15563	5.53	623
Wk2: 06/10-06/16/2001			15.26		15.32								93	12072	34	4358	126	16519	5.89	749
Wk3: 06/17-06/23/2001			13.72		13.86								52	5949	39	4491	71	8164	6.34	729
Wk4: 06/24-06/30/2001			13.84		14.01								52	5949	39	4491	71	8164	6.34	729

Date	Day of Week	Clarifier Effluent Data: TBOD5 (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	Ammonia-N (mg/L)	Final Effluent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria		<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	5.0 AML 7.5 AWL <MDL	626 AML 939 AWL	6.0 AML 9 AWL	751 AML 1127 AWL	1.5 AML 2.3 AWL <MDL	188 AML 282 AWL	200 AML 400 AWL <MDL	125 AML <MDL
1	Fri		3.8	12.6	0.21			< 4.3	490	1.8	205	0.13	14.8	9	10
2	Sat													4	2
3	Sun					< 5.5	523	< 4.6	438	0.6	57	0.04	3.8		
4	Mon	12.0	3.3	12.2	0.20	< 5.0	499	< 4.3	429	4.6	459	0.12	12.0	4	7
5	Tue	12.0	< 4.3	22.6	0.27	< 5.0	688	< 4.3	591	3.6	495	0.27	37.1	56	48
6	Wed	9.1	< 4.3	13.8	0.42	< 5.0	583	< 4.3	501	2.8	326	0.30	35.0	6	8
7	Thu	8.7	< 4.3	8.7	0.19	< 5.0	629	< 4.3	541	0.6	75	0.16	20.1	12	8
8	Fri		< 4.3	12.4	0.21			< 4.3	478	0.8	89	0.12	13.3	7	12
9	Sat													13	21
10	Sun					< 4.6	485	< 4.0	421	2.2	232	0.11	11.6		
11	Mon	7.0	< 4.3	11.2	0.89	< 5.0	541	< 4.3	465	2.4	260	0.65	70.4	24	15
12	Tue	13.0	< 4.3	20.0	0.53	< 5.0	855	< 4.3	735	3.2	547	0.42	71.8	340	280
13	Wed	7.8	4.3	6.6	0.65	< 5.0	667	< 4.3	574	1.4	187	0.26	34.7	260	
14	Thu	7.4	< 4.3	6.0	0.11	< 5.0	666	< 4.3	573	1.8	240	0.09	12.0	30	32
15	Fri		< 4.3	10.3	0.34			< 4.3	536	2.0	249	0.06	7.5	270	100
16	Sat													210	240
17	Sun					< 5.0	546	< 4.3	469	5.8	633	0.05	5.5		
18	Mon	7.4	< 4.3	6.0	0.26	< 5.0	571	4.5	514	0.8	91	0.14	16.0	75	39
19	Tue	7.6	< 4.3	9.6	0.10	< 5.0	577	< 4.3	496	1.0	115	0.05	5.8	98	85
20	Wed	8.4	< 4.3	9.4	0.22	< 5.0	553	< 4.3	476	2.0	221	0.08	8.8	74	70
21	Thu	9.6	< 4.3	11.4	0.20	< 5.0	655	< 4.3	563	0.4	52	0.08	10.5	76	69
22	Fri		< 4.3	10.0	0.19			< 4.3	486	1.6	181	0.07	7.9	56	36
23	Sat													17	23
24	Sun					< 5.4	574	< 4.6	489			0.07	7.4		
25	Mon	7.2	< 4.0	15.4	0.20	< 4.6	506	< 4.0	440	0.8	88	0.11	12.1	17	18
26	Tue	6.6	< 4.3	10.8	0.32	< 5.0	548	< 4.3	472	0.4	44	0.19	20.8	12	7
27	Wed	16.0	6.2	12.2	0.61	8.2	927	6.2	701	1.6	181	0.42	47.5	26	30
28	Thu	18.0	7.8	9.8	0.33	10.4	1128	7.8	846	1.2	130	0.19	20.6	52	25
29	Fri		< 4.3	14.4	0.26			< 4.3	469	1.6	175	0.09	9.8	30	18
30	Sat													48	33
Total															
Mean		9.9	4.5	11.7	0.32	5.4	636	4.5	528	1.9	222	0.17	20.7	70.23	58.31
Maximum		18.0	7.8	22.6	0.89	10.4	1128	7.8	846	5.8	633	0.65	71.8	340.00	280.00
Minimum		6.6	3.3	6.0	0.10	4.6	485	4.0	421	0.4	44	0.04	3.8	4.00	2.00
# of Data		16	21	21	21	20	20	25	25	24	24	25	25	26	26
# of Data<MDL		0	16			18		22				0		0	0
Wk1: 06/03-06/09/2001						5.1	584	4.4	500	2.2	256	0.17	20.2	16	17
Wk2: 06/10-06/16/2001						4.9	637	4.3	550	2.2	283	0.27	34.0	189	158
Wk3: 06/17-06/23/2001						5.0	584	4.3	504	1.9	217	0.08	7.8	66	54
Wk4: 06/24-06/30/2001						5.0	584	4.3	504	1.9	217	0.08	7.8	98	90

Total Est. Bypass Flow (MG): 35.29 Total Bypass Occurances (days/month): 3

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR JULY 2001

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1] — Michigan Outfall 002: Run Time Minutes	Michigan Outfall 002: Est. Flow (MGD)	Alder - Outfall 003: Run Time Minutes	Alder - Outfall 003: Est. Flow (MGD)	Magoun - Outfall 005: Run Time Minutes	Magoun - Outfall 005: Flow (MGD)	Outfall 006 CSO Lagoon (MGD)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0
1	Sun	0.00	12.12	16.0	11.17							0.02
2	Mon	0.00	12.24	17.0	10.97							
3	Tue	0.42	14.26	40.0	13.80	64.800	1.600	80.400	1.400	67.200	1.470	
4	Wed	0.00	12.05	16.5	11.77							
5	Thu	0.00	11.79	16.0	11.69							
6	Fri	0.00	12.28	17.0	9.81							
7	Sat	0.15	13.38	29.5	14.29							
8	Sun	0.00	11.73	16.0	11.31							
9	Mon	0.00	12.60	18.0	12.51							
10	Tue	0.00	12.28	17.5	11.59							
11	Wed	0.00	12.41	17.0	12.28							
12	Thu	0.00	12.32	17.0	11.21							
13	Fri	0.00	12.45	17.0	10.59							
14	Sat	0.00	12.01	16.0	10.88							
15	Sun	0.00	11.98	16.0	10.82							
16	Mon	0.00	12.41	17.0	11.74							
17	Tue	0.69	14.02	34.0	13.22					40.200	0.900	
18	Wed	0.02	12.72	17.0	13.03							
19	Thu	0.00	12.47	17.0	12.29							
20	Fri	0.00	12.54	17.0	12.26							
21	Sat	0.95	14.27	29.0	13.36	51.000	1.200	81.600	1.400	112.800	2.450	0.15
22	Sun	0.62	15.08	31.0	14.77	14.400	0.400	327.600	5.700	99.600	2.150	1.03
23	Mon	1.56	17.50	35.5	16.84	284.800	5.400	249.000	4.300	271.600	7.960	2.88
24	Tue	0.00	17.86	30.0	15.86			19.800	0.300			4.83
25	Wed	0.30	18.25	30.5	16.68	103.200	2.500			64.800	1.400	4.63
26	Thu	0.00	16.83	28.0	14.86							3.69
27	Fri	0.00	16.30	20.0	14.04							2.63
28	Sat	0.00	14.66	18.0	13.56							2.19
29	Sun	0.00	14.53	18.0	13.77							2.03
30	Mon	0.00	14.59	29.0	13.94							1.52
31	Tue	0.00	14.45	19.0	13.93							0.79
Total		4.71	424.38		398.84	518.20	11.10	758.40	13.10		16.33	26.39
Mean			13.69		12.87	103.64	2.22	151.68	2.62		2.72	2.20
Maximum		1.56	18.25	40.0	16.84	284.80	5.40	327.60	5.70		7.96	4.83
Minimum			11.73		9.81	14.40	0.40	19.80	0.30		0.90	0.00
# of Data		31	31	31	31	5	5	5	5		6	12
# of Data<MDL												
Wk1: 07/1-07/7/01			12.58		12.17							
Wk2: 07/8-07/14/01			12.27		11.30							
Wk3: 07/15-07/21/01			14.09		13.68							
Wk4: 07/22-07/28/01			13.36		12.95							

Total Est. Bypass Flow (MG): 40.33 Total Bypass Occurances (days/month): 7

Date	Influent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Clarifier Effluent Data: TBOD5 (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	Ammonia-N (mg/L)
Design Criteria									<MDL	<MDL	10	1.5
1 Sun	96	9704	38	3841	134	13545	7.39	747				
2 Mon	119	12148	46	4696	179	18273	6.72	686	6.3	< 4.0	14.2	0.11
3 Tue	63	7492	44	5233	104	12369	8.40	999	6.4	< 4.0	12.4	0.19
4 Wed	39	3919	36	3618	35	3517	6.22	625	8.2	< 4.0	13.4	0.10
5 Thu	35	3442	29	2852	47	4621	7.84	771	8.7	< 4.0	13.0	0.65
6 Fri		0	39	3994	128	13109	9.18	940		< 4.0	12.0	0.22
7 Sat												
8 Sun	64	6261	42	4109	101	9881	7.84	767				
9 Mon	108	11349	44	4624	189	19861	6.94	729	7.2	< 4.0	9.2	0.12
10 Tue	77	7886	37	3789	112	11471	6.72	688	7.7	< 4.0	13.6	0.08
11 Wed	117	12109	40	4140	164	16974	6.44	667	6.4	< 4.0	8.0	0.24
12 Thu	78	8014	25	2569	71	7295	7.84	806	5.5	< 3.5	7.4	0.71
13 Fri		0	36	3738	272	28243	10.10	1049		< 4.0	8.4	0.24
14 Sat												
15 Sun	64	6394	29	2897	81	8093	8.77	876				
16 Mon	101	10453	34	3519	131	13558	8.46	876	6.7	< 4.0	10.2	0.28
17 Tue	102	11927	61	7133	160	18708	7.28	851	7.7	3.4	10.2	0.15
18 Wed	92	9760	61	6471	70	7426	8.51	903	6.9	< 3.5	9.4	0.14
19 Thu	141	14664	57	5928	130	13520	7.06	734	8.4	< 4.0	8.8	0.09
20 Fri		0	50	5229	185	19348	10.00	1046		< 4.0	8.6	0.23
21 Sat					135	16067						
22 Sun	54	6791	38	4779			5.15	648				
23 Mon	31	4524	21	3065	76	11092	4.17	609	< 4.6	< 4.0	8.8	0.48
24 Tue	47	7001	32	4766	64	9533	2.63	392	3.9	< 3.5	7.2	0.08
25 Wed	38	5784	31	4718	63	9589	1.87	285	< 4.6	< 4.0	9.8	0.05
26 Thu	47	6597	39	5474	65	9124	7.62	1070	4.9	< 3.7	6.8	0.17
27 Fri			41	5574	102	13866	5.60	761		< 4.3	11.2	0.09
28 Sat												
29 Sun	56	6786	50	6059	55	6665	6.44	780				
30 Mon	63	7666	48	5841	82	9978	5.60	681	6.2	< 3.0	9.8	5.88
31 Tue	66	7954	30	3615	101	12172	4.58	552	5.7	< 3.0	8.8	0.14
Total												
Mean	74	7255	40	4529	112	12515	6.87	761	6.4	3.8	10.1	0.47
Maximum	141	14664	61	7133	272	28243	10.10	1070	8.7	4.3	14.2	5.88
Minimum	31	0	21	2569	35	3517	1.87	285	3.9	3.0	6.8	0.05
# of Data	23	23	27	27	27	27	27	27	18	22	22	22
# of Data<MDL									2	21		
Wk1: 07/1-07/7/01	62	5411	39	4071	101	10560	7.74	677				
Wk2: 07/8-07/14/01	87	7476	34	3442	139	12923	8.06	827				
Wk3: 07/15-07/21/01	84	7944	48	5434	126	11682	7.03	798				
Wk4: 07/22-07/28/01	98	8933	50	5510	135	12093	7.74	843				

Date	Final Effluent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Effluent Fecal coliform (col/100 mLs)	Effluent E. coli (col/100 mLs)
Design Criteria	Report Only <MDL	Report Only	5.0 AML 7.5 AWL <MDL	626 AML 939 AWL	6.0 AML 9 AWL	751 AML 1127 AWL	1.5 AML 2.3 AWL <MDL	188 AML 282 AWL	200 AML 400 AWL <MDL	125 AML <MDL
1 Sun	< 5.0	505	< 4.3	435	3.6	364	0.07	7.1		
2 Mon	< 4.6	470	< 4.0	408	1.0	102	0.03	3.1	32	24
3 Tue	< 4.6	547	< 4.0	476	5.2	618	0.11	13.1	400	300
4 Wed	< 4.6	462	< 4.0	402	2.4	241	0.02	2.0	250	110
5 Thu	< 4.6	452	< 4.0	393	1.8	177	0.29	28.5	23	20
6 Fri			< 4.0	410	1.6	164	0.04	4.1	360	75
7 Sat									33	32
8 Sun	< 3.3	323	< 3.0	293	2.0	196	0.07	6.8		
9 Mon	< 4.6	483	< 4.0	420	2.2	231	0.06	6.3	44	36
10 Tue	< 4.6	471	< 4.0	410	5.8	594	0.04	4.1	300	130
11 Wed	< 4.6	476	< 4.0	414	0.7	72	0.13	13.5	250	130
12 Thu	< 4.0	411	< 3.5	360	1.5	154	0.32	32.9	26	18
13 Fri			< 4.0	415	2.0	208	0.29	30.1	40	33
14 Sat						0			11	5
15 Sun	< 4.3	430	< 3.7	370	1.5	150	0.03	3.0		
16 Mon	3.7	383	3.3	342	3.4	352	0.12	12.4	19	40
17 Tue	< 4.3	503	< 3.7	433	2.2	257	0.07	8.2	59	55
18 Wed	< 4.0	424	< 3.5	371	2.4	255	0.08	8.5	230	100
19 Thu	< 4.6	478	< 4.0	416	2.6	270	0.03	3.1	130	140
20 Fri			< 4.0	418	2.0	209	0.11	11.5	47	48
21 Sat									6	12
22 Sun	< 5.0	629	< 3.7	465	3.2	402	0.08	10.1		
23 Mon	< 4.6	671	< 4.0	584	3.6	525	0.24	35.0	26	27
24 Tue	< 4.0	596	< 3.5	521	3.3	492	0.03	4.5	48	8
25 Wed	< 4.6	700	< 4.0	609	2.2	335	0.02	3.0	290	210
26 Thu	< 4.3	604	< 3.7	519	4.4	618	0.03	4.2	220	150
27 Fri			< 4.3	585	5.6	761	0.03	4.1	170	100
28 Sat									510	
29 Sun	< 3.7	448	< 3.3	400	3.4	412	0.03	3.6		
30 Mon	< 3.3	402	< 3.0	365	7.2	876	0.50	60.8	220	170
31 Tue	< 3.3	398	< 3.0	362	3.6	434	0.08	9.6	270	210
Total										
Mean	4.3	490	3.8	429	3.0	338	0.11	12.3	154.38	105.50
Maximum	5.0	700	4.3	609	7.2	876	0.50	60.8	510.00	560.00
Minimum	3.3	323	3.0	293	0.7	0	0.02	2.0	6.00	5.00
# of Data	23	23	27	27	27	27	27	27	26	26
# of Data<MDL	22		26				0		0	0
Wk1: 07/1-07/7/01	4.3	370	3.8	378	2.5	260	0.10	9.8	185	96
Wk2: 07/8-07/14/01	4.2	340	3.8	356	2.5	236	0.16	14.5	108	59
Wk3: 07/15-07/21/01	4.5	440	3.8	437	2.7	312	0.10	12.4	83	64
Wk4: 07/22-07/28/01	4.3	393	3.7	398	2.6	284	0.08	8.7	82	66

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR AUGUST 2001

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1]: Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0
1	Wed	0.00	14.12	18.0	13.77							0.00
2	Thu	0.44	15.41	32.0	13.87	18.600	0.500	70.800	1.200	80.400	1.800	0.04
3	Fri	0.02	14.13	19.0	14.20							0.00
4	Sat	0.00	13.33	18.0	12.30							0.00
5	Sun	0.00	13.46	17.0	12.01							0.00
6	Mon	0.00	13.68	19.0	12.01							0.00
7	Tue	0.00	13.58	18.0	12.39							0.00
8	Wed	0.00	13.59	18.0	12.73							0.00
9	Thu	0.28	14.96	39.5	14.78	38.400	0.900	27.000	0.500	43.800	1.010	0.00
10	Fri	0.00	13.33	28.0	12.53							0.00
11	Sat	0.00	12.32	16.0	12.37							0.00
12	Sun	0.00	12.42	16.0	11.19							0.00
13	Mon	0.00	12.43	16.5	10.71							0.00
14	Tue	0.00	12.42	17.5	11.97							0.00
15	Wed	0.00	12.14	16.5	9.22							0.00
16	Thu	0.39	15.63	37.0	14.81			20.400	0.400	20.400	0.450	0.00
17	Fri	0.00	12.30	17.5	11.09							0.00
18	Sat	0.51	15.25	38.0	13.96	51.600	2.500	85.800	4.170	58.800	1.290	0.00
19	Sun	0.32	13.82	33.0	13.08	23.400	1.100	33.600	1.630	40.200	0.880	0.03
20	Mon	0.00	12.09	17.0	11.12							0.00
21	Tue	0.12	13.52	34.5	12.30	24.000	1.200	24.000	1.170	25.200	0.550	0.00
22	Wed	0.00	12.94	21.0	12.38							0.00
23	Thu	0.00	12.44	17.0	11.51							0.00
24	Fri	0.14	12.42	29.0	13.82							0.00
25	Sat	0.27	14.57	33.0	13.12	12.000	0.300	13.800	0.200	33.000	0.720	0.00
26	Sun	0.02	12.47	16.0	10.57							0.00
27	Mon	0.00	12.77	18.0	11.56							0.00
28	Tue	0.00	12.33	17.5	10.47							0.00
29	Wed	0.00	13.07	17.5	10.86							0.00
30	Thu	0.30	14.38	37.0	12.41					28.200	0.620	0.00
31	Fri	0.18	14.08	27.0	14.26			29.400	0.500	12.000	0.260	0.00
Total		2.99	415.40		383.37	168.00	6.50	304.80	9.77		7.58	0.07
Mean			13.40		12.37	28.00	1.08	38.10	1.22		0.84	0.00
Maximum		0.51	15.63	39.5	14.81	51.60	2.50	85.80	4.17		1.80	0.04
Minimum			12.09		9.22	12.00	0.30	13.80	0.20		0.26	0.00
# of Data		31	31	31	31	6	6	8	8		9	31
# of Data<MDL												
Wk1: 07/29-08/04/2001			13.82		12.92							
Wk2: 08/05-08/11/2001			12.96		11.83							
Wk3: 08/12-08/18/2001			13.19		12.21							
Wk4: 08/19-08/25/2001			13.65		12.68							

Total Est. Bypass Flow (MG): 23.85 Total Bypass Occurances (days/month): 9

Date	Influent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Clarifier Effluent Data: TBOD5 (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	Ammonia-N (mg/L)
Design Criteria									<MDL	<MDL	10	1.5
1	71	8361	52	6124	75	8832	8.66	1020	6.2	< 3.5	8.0	0.28
2	51	6554	44	5655	48	6169	5.60	720	4.8	< 3.5	9.0	0.13
3			43	5067	117	13788	7.59	894		< 4.3	6.8	0.31
4												
5	64	7184	36	4041	74	8307	5.10	573				
6	116	13235	77	8785	154	17570	19.00	2168	4.7	< 3.3	7.6	0.80
7	81	9174	54	6116	107	12119	15.00	1699	5.2	< 3.2	9.2	0.22
8	69	7821	57	6460	85	9634	8.29	940	4.5	< 3.0	8.4	0.11
9	81	10106	54	6737	139	17343	8.31	1037	< 4.0	< 3.5	8.0	0.18
10			43	4780	137	15231	5.60	623		< 3.5	6.0	0.08
11												
12	38	3936	25	2590	122	12637	6.78	702				
13	38	3939	26	2695	82	8501	12.00	1244	4.9	< 3.0	18.6	0.14
14	66	6836	42	4350	112	11601	11.10	1150	6.5	< 3.2	13.4	0.28
15	54	5467	39	3949	70	7087	10.20	1033	6.9	< 3.5	10.2	0.14
16	64	8343	40	5214	282	36760	7.87	1026	4.4	< 4.0	10.4	0.05
17			50	5129	53	5437	8.34	856		< 4.0	11.2	0.43
18												
19	47	5417	39	4495	57	6570	5.38	620				
20	55	5546	45	4537	59	5949	7.67	773	5.7	< 3.0	8.8	0.34
21	53	5976	47	5300	51	5751	7.39	833	6.0	< 3.3	9.8	0.06
22	99	10684	71	7662	163	17591	5.88	635	< 3.5	< 3.2	9.4	0.13
23	53	5499	39	4046	115	11931	7.06	732	3.5	< 3.0	13.4	0.06
24			78	8079	125	12948	9.77	1012		< 4.3	9.4	0.06
25												
26	41	4264	28	2912	65	6760	7.61	791				
27	78	8307	52	5538	91	9692	11.20	1193	4.3	2.9	6.8	0.84
28	59	6067	46	4730	94	9666	7.16	736	< 4.0	< 3.5	4.4	0.20
29	72	7848	45	4905	142	15479	12.70	1384	< 4.6	< 4.0	6.0	0.04
30	92	11033	66	7915	174	20868	14.70	1763	4.9	2.6	7.0	0.59
31			59	6928	127	14913	13.38	1571		< 4.2	7.4	0.73
Total												
Mean	66	7345	48	5361	108	12190	9.23	1027	4.9	3.5	9.1	0.27
Maximum	116	13235	78	8785	282	36760	19.00	2168	6.9	4.3	18.6	0.84
Minimum	38	3936	25	2590	48	5437	5.10	573	3.5	2.6	4.4	0.04
# of Data	22	22	27	27	27	27	27	27	18	23	23	23
# of Data<MDL									4	21		
Wk1: 07/29-08/04/2001	82	9504	54	6201	113	13127	10.55	1218				
Wk2: 08/05-08/11/2001	52	5704	36	3930	134	15303	8.93	963				
Wk3: 08/12-08/18/2001	61	6624	49	5195	83	8871	6.95	742				
Wk4: 08/19-08/25/2001	64	7193	49	5390	111	13009	7.09	790				

Date	Final Effluent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria	Report Only <MDL	Report Only	5.0 AML 7.5 AWL <MDL	626 AML 939 AWL	6.0 AML 9 AWL	751 AML 1127 AWL	1.5 AML 2.3 AWL <MDL	188 AML 282 AWL	200 AML 400 AWL <MDL	125 AML <MDL
1	< 4.0	471	< 3.5	412	8.6	1013	0.11	13.0	26	34
2	< 4.0	514	< 3.5	450	4.2	540	0.05	6.4	160	210
3			< 4.3	507	3.7	436	0.06	7.1	80	230
4									47	41
5	3.2	359	3.0	337	1.8	202	0.04	4.5		
6	< 3.7	422	< 3.3	377	2.6	297	0.38	43.4	340	260
7	< 3.5	396	< 3.2	362	3.4	385	0.20	22.7	47	38
8	< 3.3	374	< 3.0	340	5.2	589	0.06	6.8	180	120
9	< 4.0	499	< 3.5	437	3.0	374	0.05	6.2	26	17
10			< 3.5	389	1.2	133	0.02	2.2	44	45
11									9	8
12	< 3.5	363	< 3.1	321	3.0	311	0.02	2.1		
13	< 3.3	342	< 3.0	311	2.6	270	0.10	10.4	190	240
14	< 3.5	363	< 3.2	331	2.2	228	0.12	12.4	22	17
15	< 4.0	405	< 3.5	354	2.2	223	0.07	7.1	68	51
16	< 4.6	600	< 4.0	521	2.6	339	0.02	2.6	62	54
17			< 4.0	410	2.4	246	0.13	13.3	8	14
18									19	60
19	< 5.0	576	< 4.2	484	4.0	461	0.05	5.8		
20	< 3.0	302	< 3.0	302	2.4	242	0.07	7.1	18	12
21	4.4	496	< 3.3	372	3.0	338	0.01	1.1	77	64
22	< 3.5	378	< 3.2	345	2.7	291	0.02	2.2	57	41
23	< 3.3	342	< 3.0	311	3.6	373	0.05	5.2	68	41
24			< 4.3	445	3.0	311	0.03	3.1	14	12
25									690	510
26	< 3.3	343	< 3.0	312	3.0	312	0.06	6.2		
27	3.5	373	3.2	341	1.2	128	0.39	41.5	30	21
28	< 4.0	411	< 3.5	360	2.8	288	0.11	11.3	90	110
29	< 4.6	501	< 4.0	436	3.0	327	0.02	2.2	23	8
30	< 3.3	396	< 3.0	360	3.5	420	0.31	37.2	32	210
31			< 4.2	493	1.7	200	0.58	68.1	37	5
Total										
Mean	3.8	419	3.5	386	3.1	344	0.12	13.0	91.26	91.59
Maximum	5.0	600	4.3	521	8.6	1013	0.58	68.1	690.00	510.00
Minimum	3.0	302	3.0	302	1.2	128	0.01	1.1	8.00	5.00
# of Data	22	22	27	27	27	27	27	27	27	27
# of Data<MDL	19		25				0		0	1
Wk1: 07/29-08/04/2001	3.5	379	3.4	370	3.3	359	0.13	13.7	120	118
Wk2: 08/05-08/11/2001	3.8	369	3.4	334	2.3	225	0.06	5.5	66	69
Wk3: 08/12-08/18/2001	3.8	282	3.5	344	3.0	302	0.06	3.3	41	39
Wk4: 08/19-08/25/2001	4.1	332	3.6	378	2.9	298	0.05	2.9	40	41

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR SEPTEMBER 2001

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1]: Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)	Influent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0								
1	Sat	0.00	11.69	16.0	10.00							0.00								
2	Sun	0.00	11.31	17.0	9.36							0.00	48	4528	40	3773	62	5848	7.71	727
3	Mon	0.00	11.86	18.0	9.67							0.00	49	4847	41	4055	64	6330	8.74	864
4	Tue	0.00	12.09	17.0	9.91							0.00	75	7562	52	5243	80	8066	19.50	1966
5	Wed	0.00	12.41	19.0	9.95							0.00	72	7452	48	4968	99	10246	11.00	1138
6	Thu	0.81	13.45	38.5	11.74	91.200	2.200	105.000	1.800	95.400	2.430	0.00	81	9086	55	6170	116	13012	5.60	628
7	Fri	0.08	14.01	23.5	13.65	15.000	0.400	37.800	0.700	15.000	0.330	0.08			89	10399	167	19513	12.50	1461
8	Sat	0.00	12.39	16.0	10.20							0.64								
9	Sun	0.59	15.06	32.0	14.14	25.200	0.600	53.400	0.900	63.600	1.390	0.21	49	6154	40	5024	74	9294	4.90	615
10	Mon	0.00	12.36	17.5	9.84							0.79	68	7010	49	5051	80	8247	10.70	1103
11	Tue	0.00	12.02	17.0	9.45							1.02	74	7418	49	4912	101	10125	17.50	1754
12	Wed	0.00	12.32	17.0	9.82							0.41	85	8734	52	5343	95	9761	14.80	1521
13	Thu	0.01	12.39	18.0	9.88							0.11	74	7647	48	4960	62	6407	11.10	1147
14	Fri	0.00	11.91	17.0	9.18							0.04			44	4370	72	7152	8.00	795
15	Sat	0.00	11.53	15.5	8.63							0.00								
16	Sun	0.00	11.63	15.0	8.96							0.00	94	9117	57	5529	89	8632	8.29	804
17	Mon	0.45	13.73	33.0	11.42	29.400	0.700	63.600	1.100	46.800	1.020	0.00	101	11565	65	7443	127	14543	12.00	1374
18	Tue	0.28	11.09	21.0	10.68	94.200	2.300	82.800	1.400	91.800	2.010	0.00	84	7769	61	5642	115	10636	6.46	597
19	Wed	0.35	12.68	32.0	14.01							1.01	93	9835	46	4865	102	10787	6.78	717
20	Thu	0.02	9.74	13.0	9.77							0.50	93	7555	66	5361	62	5036	7.45	605
21	Fri	0.04	9.94	14.5	10.33							0.28			47	3896	87	7212	7.28	604
22	Sat	0.00	9.33	14.0	9.16							0.12								
23	Sun	0.72	13.57	34.0	14.35	85.200	2.100	53.400	0.900	82.800	1.810	83.00	62	7017	48	5432	68	7696	7.22	817
24	Mon	0.63	15.12	29.5	16.29							1.41	70	8827	43	5422	78	9836	9.24	1165
25	Tue	0.21	13.51	28.5	15.48	14.400	0.300	20.400	0.400	16.200	0.350	1.40	52	5859	27	3042	67	7549	5.57	628
26	Wed	0.00	10.82	16.5	12.30							0.99	54	4873	39	3519	56	5053	6.42	579
27	Thu	0.00	11.02	14.0	11.46							0.07	68	6250	50	4595	88	8088	10.10	928
28	Fri	0.00	10.83	15.0	9.94							0.50			58	5239	74	6684	9.69	875
29	Sat	0.00	10.34	14.5	10.21							0.34								
30	Sun	0.00	10.29	15.0	10.24							0.23	39	3347	30	2575	45	3862	6.94	596
Total		4.19	360.44		330.02	354.60	8.60	416.40	7.20		9.34	93.15								
Mean			12.01		11.00	50.66	1.23	59.49	1.03		1.33	3.11	71	7260	50	5073	85	8785	9.42	960
Maximum		0.81	15.12	38.5	16.29	94.20	2.30	105.00	1.80		2.43	83.00	101	11565	89	10399	167	19513	19.50	1966
Minimum			9.33		8.63	14.40	0.30	20.40	0.40		0.33	0.00	39	3347	27	2575	45	3862	4.90	579
# of Data		30	30	30	30	6	7	7	7		7	30	21	21	25	25	25	25	25	25
# of Data<MDL																				
Wk1: 09/02-09/08/2001			13.04		11.32								65	7020	54	5977	100	11077	10.37	1112
Wk2: 09/09-09/15/2001			12.02		9.39								79	7985	50	5028	83	8387	11.73	1187
Wk3: 09/16-09/22/2001			11.44		11.39								87	8748	56	5440	94	9318	7.87	786
Wk4: 09/23-09/29/2001			11.16		10.62								93	9168	57	5456	97	9474	8.04	784

Date	Clarifier Effluent Data: TBOD5 (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	Ammonia-N (mg/L)	Final Effluent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria	<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	5.0 AML 7.5 AWL <MDL	626 AML 939 AWL	6.0 AML 9 AWL	751 AML 1127 AWL	1.5 AML 2.3 AWL <MDL	188 AML 282 AWL	200 AML 400 AWL <MDL	125 AML <MDL
1													37	61
2					3.3	311	< 3.0	283	1.6	151	0.22	20.8		
3	6.2	< 4.0	8.6	0.06	4.6	455	< 4.0	396	1.1	109	0.04	4.0	10	6
4	6.6	< 4.0	11.0	0.70	4.6	464	< 4.0	403	1.2	121	0.33	33.3	32	28
5	7.3	< 4.0	10.6	0.13	4.6	476	< 4.0	414	2.4	248	0.02	2.1	28	23
6	7.8	< 4.0	12.2	0.12	4.6	516	< 4.0	449	2.2	247	0.09	10.1	140	90
7		2.9	10.0	0.27			< 3.7	432	1.2	140	0.04	4.7	32	28
8													360	
9					4.3	540	< 3.7	465	1.2	151	0.01	1.3		
10	6.0	< 4.0	10.6	0.04	4.6	474	< 4.0	412	2.0	206	< 0.02	2.1	41	40
11	9.2	3.9	10.7	0.76	4.3	431	3.9	391	1.8	180	0.30	30.1	56	48
12	8.3	< 4.0	9.8	0.52	4.6	473	< 4.0	411	2.2	226	0.36	37.0	83	75
13	6.2	< 4.0	12.4	0.14	4.6	475	< 4.0	413	2.8	289	0.13	13.4	53	68
14		< 3.5	10.8	0.11			< 3.5	348	2.2	219	0.08	7.9	76	61
15													34	39
16					4.0	388	< 3.5	339	2.4	233	0.04	3.9		
17	5.6	< 4.6	9.4	0.24	5.4	618	< 4.6	527	2.0	229	0.07	8.0	92	85
18	5.5	< 4.0	9.8	0.15	4.6	425	< 4.0	370	2.0	185	0.08	7.4	72	81
19	8.1	< 4.0	10.0	0.08	4.6	486	< 4.0	423	2.0	212	0.06	6.3	33	26
20	< 4.2	< 3.7	8.2	0.05	4.2	341	< 3.7	301	1.8	146	< 0.02	1.6	33	23
21		< 3.1	8.2	0.07			< 3.1	257	1.4	116	0.01	0.8	26	53
22													51	43
23					4.0	453	3.7	419	2.9	328	0.03	3.4		
24	8.8	< 4.0	9.6	0.95	4.6	580	< 4.0	504	3.0	378	0.65	82.0	68	41
25	7.4	< 3.7	9.8	<0.02	4.3	484	< 3.7	417	1.4	158	< 0.02	2.3	41	33
26	6.4	< 3.7	9.2	<0.02	4.3	388	< 3.7	334	1.0	90	0.03	2.7	42	59
27	5.5	< 3.5	10.4	0.04	4.0	368	< 3.5	322	1.4	129	0.06	5.5	24	31
28		< 5.0	6.2	0.06			< 5.0	452	0.5	45	0.02	1.8	34	29
29														
30					5.4	463	< 4.6	395	1.0	86	0.09	7.7	1800	1900
Total														
Mean	6.8	3.9	9.9	0.25	4.5	458	3.9	395	1.8	185	0.11	12.0	131.92	128.84
Maximum	9.2	5.0	12.4	0.95	5.4	618	5.0	527	3.0	378	0.65	82.0	1800.00	1900.00
Minimum	4.2	2.9	6.2	0.04	3.3	311	3.0	257	0.5	45	0.01	0.8	10.00	6.00
# of Data	16	20	20	18	21	21	25	25	25	25	25	25	25	25
# of Data<MDL	1	18			20		23				3		0	0
Wk1: 09/02-09/08/2001					4.5	418	3.9	372	1.6	147	0.09	7.8	100	71
Wk2: 09/09-09/15/2001					4.4	354	3.8	304	2.2	177	0.16	12.4	57	55
Wk3: 09/16-09/22/2001					4.6	456	3.9	379	2.0	203	0.05	4.5	51	52
Wk4: 09/23-09/29/2001					4.6	421	3.8	349	1.9	175	0.05	4.4	51	52

Total Est. Bypass Flow (MG): 24.84 Total Bypass Occurances (days/month): 7

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR OCTOBER 2001

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1] Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)	Influent Data TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0								
1	Mon	0.00	10.52	17.0	10.42							0.15	48	4211	41	3597	67	5878	8.74	767
2	Tue	0.00	10.56	17.0	11.04							0.13	36	3171	27	2378	74	6517	6.10	537
3	Wed	0.00	10.45	15.0	13.03							0.10	94	8192	46	4009	103	8977	8.54	744
4	Thu	1.18	12.83	32.0	13.91	133.200	3.200	294.600	5.100	133.200	2.910	0.38	94	10058	53	5671	133	14231	7.37	789
5	Fri	0.92	14.13	20.0	18.25	111.600	2.700	328.800	5.700	108.600	2.380	2.80			24	2828	99	11667	4.20	495
6	Sat	0.00	12.63	17.0	14.75							1.04								
7	Sun	0.00	12.22	15.0	14.39							0.40	83	8459	37	3771	77	7847	5.88	599
8	Mon	0.00	12.03	17.0	14.20							0.19	104	10434	39	3913	125	12541	7.78	781
9	Tue	0.00	11.89	16.0	13.82							0.14	104	10313	44	4363	90	8925	10.64	1055
10	Wed	0.05	11.69	16.0	13.34							0.03	78	7605	34	3315	98	9554	7.34	716
11	Thu	0.15	11.12	16.5	11.92							0.08	81	7512	36	3339	83	7697	7.70	714
12	Fri	1.04	16.03	32.5	19.81	237.600	5.800	269.400	4.700	186.000	4.070	1.97			72	9626	118	15775	5.49	734
13	Sat	1.49	16.71	31.0	20.20	284.400	6.900	268.200	4.700	264.000	5.770	2.24								
14	Sun	0.23	19.94	27.0	22.66	25.800	0.600	26.400	0.500	12.600	0.280	3.52	34	5654	19	3160	74	12306	3.19	530
15	Mon	0.04	17.24	25.0	19.90							1.23	32	4601	20	2876	81	11646	4.03	579
16	Tue	0.20	18.45	26.0	20.93							0.70	76	11694	31	4770	121	18619	3.14	483
17	Wed	0.00	15.66	24.0	18.50							0.38	63	8228	31	4049	81	10579	6.94	906
18	Thu	0.00	15.95	24.5	18.03							0.26	64	8513	35	4656	57	7582	8.23	1095
19	Fri	0.00	14.07	24.5	16.61							0.14			37	4342	87	10209	6.56	770
20	Sat	0.00	13.15	17.0	15.99							0.13								
21	Sun	0.00	10.21	16.0	15.87							0.01	86	7323	41	3491	80	6812	8.74	744
22	Mon	0.03	12.37	17.0	15.39							0.11	135	13927	48	4952	174	17951	12.99	1340
23	Tue	0.85	16.29	39.0	19.04	120.000	2.900	123.000	2.100	127.800	3.340	2.13	79	10733	32	4347	114	15488	5.38	731
24	Wed	0.63	14.28	29.0	16.99	111.600	2.700	163.200	2.800	146.400	4.060	2.50	77	9170	43	5121	84	10004	5.15	613
25	Thu	0.00	15.52	25.0	17.50							2.19	59	7637	37	4789	66	8543	6.55	848
26	Fri	0.00	14.46	18.0	16.86							0.68			29	3497	123	14833	5.24	632
27	Sat	0.00	13.90	17.0	16.12							0.26								
28	Sun	0.00	14.04	17.0	16.33							0.17	85	9953	32	3747	90	10538	5.65	662
29	Mon	0.00	13.06	17.0	14.81							0.00	82	8931	39	4248	124	13506	8.85	964
30	Tue	0.03	12.86	18.0	14.83							0.00	121	12978	39	4183	125	13407	10.64	1141
31	Wed	0.00	12.57	17.0	14.28							0.06	101	10588	33	3460	87	9121	10.14	1063
Total		6.84	426.83		499.72	1024.20	24.80	1473.60	25.60		22.81	24.12								
Mean			13.77		16.12	146.31	3.54	210.51	3.66		3.26	0.78	79	8691	37	4167	98	11139	7.08	779
Maximum		1.49	19.94	39.0	22.66	284.40	6.90	328.80	5.70		5.77	3.52	135	13927	72	9626	174	18619	12.99	1340
Minimum			10.21		10.42	25.80	0.60	26.40	0.50		0.28	0.00	32	3171	19	2378	57	5878	3.14	483
# of Data		31	31	31	31	7	7	7	7		7	31	23	23	27	27	27	27	27	27
# of Data<MDL																				
Wk1: 9/30-10/06/01			12.31		14.48								96	7909	41	4093	105	10698	7.40	744
Wk2: 10/07-10/13/01			15.88		18.39								60	6178	35	4514	96	12600	5.15	626
Wk3: 10/14-10/20/01			13.96		17.06								85	8121	37	4306	99	11437	8.14	931
Wk4: 10/21-10/27/01			14.27		17.33								85	8281	37	4377	100	11959	7.77	890

Date	Day of Week	Clarifier Effluent Data TBOD5 (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	Ammonia-N (mg/L)	Final Effluent Data TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria		<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	5.0 AML 7.5 AWL <MDL	626 AML 939 AWL	6.0 AML 9 AWL	751 AML 1127 AWL	1.5 AML 2.3 AWL <MDL	188 AML 282 AWL	200 AML 400 AWL <MDL	125 AML <MDL
1	Mon	7.4	< 4.6	9.4	0.56	< 5.5	483	< 4.6	404	0.9	79	0.28	24.6	160	140
2	Tue	7.7	< 4.6	8.6	0.20	< 5.5	484	< 4.6	405	2.2	194	0.19	16.7	200	160
3	Wed	9.2	< 4.6	12.2	0.17	< 5.5	479	< 4.6	401	1.6	139	0.08	7.0	80	26
4	Thu	10.5	< 4.6	13.8	0.26	< 5.4	578	< 4.6	492	0.8	86	0.11	11.8	30	21
5	Fri		< 4.3	13.0	0.13			< 4.3	507	1.2	141	0.03	3.5	37	25
6	Sat													150	70
7	Sun					< 5.5	561	< 4.6	469	1.7	173	0.07	7.1		
8	Mon	9.7	< 4.6	13.4	0.03	< 5.5	552	< 4.6	462	1.4	140	0.02	2.0	29	20
9	Tue	11.0	< 4.6	14.0	0.72	< 5.5	545	< 4.6	456	2.0	198	0.43	42.6	40	34
10	Wed	10.0	< 4.6	17.8	0.21	< 5.5	536	< 4.6	448	1.8	175	0.19	18.5	35	25
11	Thu	8.9	< 4.3	16.8	0.11	< 5.0	464	< 4.3	399	1.2	111	0.05	4.6	36	26
12	Fri		< 4.6	16.0	0.11			< 4.6	615	2.2	294	0.07	9.4	47	36
13	Sat													17	25
14	Sun					< 5.5	915	< 4.6	765	2.2	366	0.04	6.7		
15	Mon	12.0	6.0	18.4	0.05	< 5.5	791	< 4.6	661	1.8	259	0.03	4.3	210	38
16	Tue	9.3	< 4.6	11.4	0.79	< 5.5	846	< 4.6	708	2.2	339	0.71	109.2	250	160
17	Wed	11.0	< 4.6	15.0	0.02	< 5.5	718	< 4.6	601	1.8	235	0.02	2.6	150	58
18	Thu	12.0	< 4.6	12.8	0.22	< 5.5	732	< 4.6	612	1.0	133	0.10	13.3	28	22
19	Fri		< 3.2	12.0	0.09			< 3.2	376	1.2	141	0.03	3.5	59	42
20	Sat													18	16
21	Sun					< 5.5	468	< 4.6	392	3.2	272	0.03	2.6		
22	Mon	12.0	< 4.6	16.0	0.32	< 5.5	567	< 4.6	475	1.4	144	0.20	20.6	54	43
23	Tue	10.0	< 4.0	15.8	0.09	< 5.5	747	< 4.6	625	1.2	163	0.14	19.0	67	50
24	Wed	12.0	< 4.6	12.6	0.31	< 5.5	655	< 4.6	548	3.6	429	0.25	29.8	27	20
25	Thu	10.0	< 4.6	16.8	0.03	< 5.5	712	< 4.6	595	1.4	181	0.03	3.9	51	44
26	Fri		< 4.6	11.6	0.18			< 4.6	555	1.0	121	0.12	14.5	100	140
27	Sat													32	18
28	Sun					< 5.4	632	< 4.6	539	6.0	703	< 0.02	2.3		
29	Mon	8.0	< 4.6	16.0	0.26	< 5.5	599	< 4.6	501	1.2	131	< 0.17	18.5	17	14
30	Tue	11.1	< 4.6	16.4	0.09	< 5.5	590	< 4.6	493	3.2	343	0.16	17.2	14	7
31	Wed	11.2	< 4.6	15.4	0.10	< 5.5	577	< 4.6	482	1.6	168	0.10	10.5	12	6
Total															
Mean		10.2	4.5	14.1	0.22	5.5	619	4.5	518	1.9	217	0.14	15.8	72.22	47.63
Maximum		12.0	6.0	18.4	0.79	5.5	915	4.6	765	6.0	703	0.71	109.2	250.00	160.00
Minimum		7.4	3.2	8.6	0.02	5.0	464	3.2	376	0.8	79	0.02	2.0	12.00	6.00
# of Data		19	23	23	23	23	23	27	27	27	27	27	27	27	27
# of Data<MDL		0	22			23		27				2		0	0
Wk1: 9/30-10/06/01						5.5	625	4.6	546	1.5	173	0.12	14.3	61	33
Wk2: 10/07-10/13/01						5.4	804	4.6	589	1.9	297	0.18	29.0	99	52
Wk3: 10/14-10/20/01						5.5	797	4.4	629	1.6	225	0.09	12.4	63	39
Wk4: 10/21-10/27/01						5.5	814	4.4	641	1.8	264	0.18	29.3	93	57

Total Est. Bypass Flow (MG): 73.21 Total Bypass Occurances (days/month): 7

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR NOVEMBER 2001

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1]: Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0
1	Thu	0.06	12.12	16.5	13.31							0.09
2	Fri	0.36	14.42	37.0	16.04			37.800	0.700	21.600	0.470	0.02
3	Sat	0.00	11.42	15.0	12.42							0.00
4	Sun	0.00	11.12	15.5	12.01							0.00
5	Mon	0.00	11.52	16.0	12.64							0.00
6	Tue	0.00	11.37	16.0	12.68							0.00
7	Wed	0.00	11.28	16.0	12.88							0.00
8	Thu	0.10	11.11	15.0	12.50							0.00
9	Fri	0.00	10.74	15.0	12.35							0.00
10	Sat	0.00	10.26	14.0	11.78							0.00
11	Sun	0.00	10.18	13.0	12.11							0.00
12	Mon	0.00	10.11	14.0	11.41							0.00
13	Tue	0.00	10.16	15.0	10.96							0.00
14	Wed	0.15	11.04	26.5	11.94							0.00
15	Thu	0.00	9.69	12.5	10.13							0.00
16	Fri	0.00	9.73	17.0	10.05							0.00
17	Sat	0.00	9.32	12.0	9.35							0.00
18	Sun	0.08	9.66	14.0	9.46							0.00
19	Mon	0.23	11.71	31.0	12.38							0.00
20	Tue	0.00	9.45	13.5	9.81							0.00
21	Wed	0.00	9.75	15.0	10.36							0.00
22	Thu	0.00	9.40	14.0	10.41							0.00
23	Fri	0.00	9.45	13.0	10.13							0.00
24	Sat	0.58	10.78	31.0	12.30	54.000	1.300	85.200	1.500	76.800	2.100	0.24
25	Sun	0.11	10.24	18.0	11.90							0.23
26	Mon	0.07	10.01	17.0	11.47							0.14
27	Tue	0.00	9.85	13.5	10.89							0.12
28	Wed	0.08	9.86	14.5	10.76							0.09
29	Thu	0.45	12.28	28.0	13.82							0.10
30	Fri	0.34	12.17	27.0	15.91	103.200	5.000	45.600	2.220	87.000	1.900	0.88
Total		2.61	320.20		354.16	157.20	6.30	168.60	4.42	185.40	4.47	1.91
Mean			10.67		11.81	78.60	3.15	56.20	1.47	61.80	1.49	0.06
Maximum		0.58	14.42	37.0	16.04	103.20	5.00	85.20	2.22	87.00	2.10	0.88
Minimum			9.32		9.35	54.00	1.30	37.80	0.70	21.60	0.47	0.00
# of Data		30	30	30	30	2	2	3	3		3	30
# of Data<MDL												
Wk1: 10/28-11/03/2001			11.22		12.50							
Wk2: 11/04-11/10/2001			10.17		11.20							
Wk3: 11/11-11/17/2001			9.82		10.27							
Wk4: 11/18-11/24/2001			9.86		10.26							

Date	Influent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Clarifier Effluent Data: TBOD5 (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	Ammonia-N (mg/L)
Design Criteria									<MDL	<MDL	10	1.5
1	101	10209	39	3942	138	13949	8.12	821	11.8	< 4.6	16.4	0.08
2			45	5412	77	9260	7.22	868		< 4.6	13.8	0.06
3												
4	86	7976	74	6863	90	8347	9.24	857				
5	90	8647	67	6437	105	10088	9.77	939	6.8	< 3.0	12.0	0.09
6	76	7207	54	5121	83	7871	10.40	986	8.5	< 3.5	15.0	0.10
7	60	5645	37	3481	76	7150	9.40	884	8.4	< 4.0	13.8	0.07
8	96	8895	51	4726			10.70	991	7.4	< 3.0	14.2	0.10
9			42	3762	143	12809	11.87	1063		< 4.0	12.0	0.33
10												
11	90	7641	38	3226	88	7471	8.40	713				
12	49	4132	26	2192	53	4469	6.19	522	10.4	< 4.6	13.4	0.07
13	106	8982	52	4406	106	8982	8.69	736	7.6	< 5.0	12.2	0.03
14	89	8195	42	3867	98	9023	6.83	629	11.1	< 4.6	13.4	0.04
15	64	5172	39	3152	68	5495	6.72	543	10.4	< 4.6	14.0	0.01
16			50	4057	81	6573	4.98	404		< 4.3	15.8	0.05
17												
18	100	8056	85	6848	88	7090	8.74	704				
19	68	6641	48	4688	84	8204	5.88	574	6.3	< 4.0	14.4	0.03
20	86	6778	65	5123	74	5832	6.69	527	7.2	< 3.0	14.8	0.02
21	131	10652	89	7237	108	8782	15.40	1252	9.9	< 3.3	17.4	0.39
22	125	9800	68	5331	78	6115	7.67	601	12.1	< 4.6	16.8	0.18
23			61	4808	120	9458	8.51	671		< 4.3	21.8	0.10
24												
25	80	6832	37	3160	94	8028	7.73	660				
26	65	5426	43	3590	64	5343	11.09	926	8.2	< 4.0	15.8	0.03
27	100	8215	43	3532	159	13062	10.81	888	7.7	3.2	14.6	0.07
28	101	8305	61	5016	98	8059	11.47	943	11.0	< 4.6	14.0	0.14
29	128	13109	74	7579	127	13007	11.61	1189	7.3	< 3.0	14.6	0.13
30			61	6191	240	24359	9.74	989		< 4.0	13.6	0.18
Total												
Mean	90	7929	54	4759	102	9153	9.00	803	8.9	4.0	14.7	0.10
Maximum	131	13109	89	7579	240	24359	15.40	1252	12.1	5.0	21.8	0.39
Minimum	49	4132	26	2192	53	4469	4.98	404	6.3	3.0	12.0	0.01
# of Data	21	21	26	26	25	25	26	26	17	22	22	22
# of Data<MDL									0	21		
Wk1: 10/28-11/03/2001	82	5481	54	4341	99	7711	10.23	953				
Wk2: 11/04-11/10/2001	80	4874	41	2986	82	7002	6.97	591				
Wk3: 11/11-11/17/2001	102	5990	69	4891	92	7580	8.82	722				
Wk4: 11/18-11/24/2001	102	5990	68	4766	86	7099	8.23	677				

Date	Final Effluent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria	Report Only <MDL	Report Only	7.1 AML 10.7 AWL <MDL	888 AML 1339 AWL	8.5 AML 12.8 AWL	1063 AML 1601 AWL	1.5 AML 2.3 AWL <MDL	188 AML 751 DML		
1	< 5.5	556	< 4.6	465	0.6	61	0.12	12.1		
2			< 4.6	553	2.4	289	0.03	3.6		
3										
4	< 3.3	306	< 3.0	278	2.6	241	0.03	2.8		
5	3.5	336	< 3.0	288	2.0	192	0.02	1.9		
6	4.2	398	< 3.5	332	1.8	171	0.07	6.6		
7	< 4.6	433	< 4.0	376	1.8	169	0.04	3.8		
8	4.8	445	< 3.0	278	3.4	315	0.03	2.8		
9			< 4.0	358	2.4	215	0.19	17.0		
10										
11	< 4.6	391	< 4.0	340	1.4	119	0.04	3.4		
12	< 5.5	464	< 4.6	388	2.8	236	0.02	1.7		
13	< 5.0	424	< 4.3	364	2.0	169	0.01	0.8		
14	< 5.5	506	< 4.6	424	4.2	387	0.04	3.7		
15	< 5.5	444	< 4.6	372	3.0	242	0.05	4.0		
16			< 4.3	349	3.6	292	0.07	5.7		
17										
18	< 3.3	266	< 3.0	242	3.6	290	0.04	3.2		
19	4.4	430	< 4.0	391	2.6	254	0.08	7.8		
20	6.5	512	< 3.0	236	1.2	95	0.04	3.2		
21	4.0	325	< 3.3	268	3.2	260	0.19	15.4		
22	< 5.5	431	< 4.6	361	3.0	235	0.16	12.5		
23			< 4.3	339	1.8	142	0.06	4.7		
24										
25	< 3.5	299	< 3.1	265	2.6	222	0.06	5.1		
26	< 4.6	384	< 4.0	334	2.3	192	0.08	6.7		
27	3.7	304	< 3.0	246	2.2	181	0.07	5.8		
28	< 5.5	452	< 4.6	378	1.2	99	0.08	6.6		
29	< 3.3	338	< 3.0	307	1.0	102	0.15	15.4		
30			< 4.0	406	2.0	203	0.13	13.2		
Total										
Mean	4.6	402	3.8	344	2.3	207	0.07	6.5		
Maximum	6.5	556	4.6	553	4.2	387	0.19	17.0		
Minimum	3.3	266	3.0	236	0.6	61	0.01	0.8		
# of Data	21	21	26	26	26	26	26	26		
# of Data<MDL	14		26				0			
Wk1: 10/28-11/03/2001	4.1	428	3.4	357	2.3	243	0.06	6.6		
Wk2: 11/04-11/10/2001	5.2	491	4.4	407	2.8	261	0.04	3.5		
Wk3: 11/11-11/17/2001	4.7	414	3.7	324	2.6	223	0.10	8.3		
Wk4: 11/18-11/24/2001	4.7	414	3.7	323	2.9	248	0.10	8.5		

Total Est. Bypass Flow (MG): 15.19 Total Bypass Occurances (days/month): 3

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR DECEMBER 2001

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1] Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)	Influent Data TBOD5 (mg/L)	Influent TBOD5 (lb/day)	Influent CBOD5 (mg/L)	Influent CBOD5 (lb/day)	Influent TSS (mg/L)	Influent TSS (lb/day)	Influent Ammonia-N (mg/L)	Influent Ammonia-N (lb/day)	Clarifier Effluent Data TBOD5 (mg/L)	Clarifier CBOD5 (mg/L)	Clarifier TSS (mg/L)	Clarifier Ammonia-N (mg/L)	Final Effluent Data TBOD5 (mg/L)	Final TBOD5 (lb/day)	Final CBOD5 (mg/L)	Final CBOD5 (lb/day)	Final TSS (mg/L)	Final TSS (lb/day)	Final Ammonia-N (mg/L)	Final Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0									<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	7.1 AML 10.7 AWL <MDL	888 AML 1339 AWL	8.5 AML 12.8 AWL	1063 AML 1601 AWL	1.5 AML 2.3 AWL <MDL	188 AML 751 DML		
1	Sat	0.01	10.33	12.0	12.19	0.000	0.000	0.000	0.000	0.000	0.000	0.47																						
2	Sun	0.00	10.32	13.0	12.04	0.000	0.000	0.000	0.000	0.000	0.000	0.25	104	8951	56	4820	112	9640	10.30	887					< 4.6	396	< 4.0	344	2.0	172	0.05	4.3		
3	Mon	0.00	10.24	13.0	12.15	0.000	0.000	0.000	0.000	0.000	0.000	0.15	83	7088		0	83	7088	10.52	898	6.4	< 4.6	11.2	0.06	< 5.5	470	< 4.6	393	1.0	85	0.02	1.7		
4	Tue	0.00	10.39	13.0	12.13	0.000	0.000	0.000	0.000	0.000	0.000	0.14	125	10832		0	164	14211	9.63	834	< 6.0	< 5.0	13.4	0.32	< 15.0	1300	< 7.5	650	1.4	121	0.30	26.0		
5	Wed	0.14	11.30	28.0	12.97	0.000	0.000	0.000	0.000	0.000	0.000	0.14	150	14136	92	8670	134	12628	10.20	961	< 4.3	< 3.7	15.8	0.16	< 12.0	1131	< 8.5	801	2.0	188	0.05	4.7		
6	Thu	0.00	10.04	15.0	11.39	0.000	0.000	0.000	0.000	0.000	0.000	0.00	97	8122	68	5694	160	13397	7.76	650	8.7	< 5.5	11.4	0.06	< 8.5	712	< 6.6	553	0.4	33	0.05	4.2		
7	Fri	0.00	10.04	14.0	11.23	0.000	0.000	0.000	0.000	0.000	0.000	0.00			88	7369	119	9964	13.02	1090		< 6.0	10.4	0.23			< 6.0	502	3.8	318	0.38	31.8		
8	Sat	0.00	9.60	13.0	10.21	0.000	0.000	0.000	0.000	0.000	0.000	0.00																						
9	Sun	0.00	9.33	15.0	9.47	0.000	0.000	0.000	0.000	0.000	0.000	0.00	127	9882	90	7003	72	5602	11.40	887					< 10.0	778	< 7.5	584	2.0	156	0.08	6.2		
10	Mon	0.00	9.94	16.0	10.06	0.000	0.000	0.000	0.000	0.000	0.000	0.00	150	12435	88	7295	154	12767	12.30	1020	< 8.5	< 6.6	12.2	0.11	< 8.5	705	< 6.6	547	1.4	116	0.06	5.0		
11	Tue	0.00	9.80	16.0	9.80	0.000	0.000	0.000	0.000	0.000	0.000	0.00	148	12096	77	6293	139	11361	10.70	875	< 10.0	< 6.0	12.2	0.08	< 20.0	1635	< 12.0	981	3.2	262	0.05	4.1		
12	Wed	0.12	10.00	14.5	9.85	0.000	0.000	0.000	0.000	0.000	0.000	0.00	181	15095	98	8173	198	16513	12.00	1001	< 4.3	< 3.3	13.8	0.34	< 4.3	359	< 3.3	275	1.5	125	0.07	5.8		
13	Thu	0.00	10.43	18.0	10.70	0.000	0.000	0.000	0.000	0.000	0.000	0.00	181	15745	78	6785	150	13048	11.90	1035	< 4.3	< 3.3	12.6	0.05	< 4.3	374	< 3.3	287	1.8	157	0.05	4.3		
14	Fri	0.28	11.75	28.0	12.00	0.000	0.000	0.000	0.000	0.000	0.000	0.00			77	7546	203	19893	8.94	876		< 7.5	12.2	0.27			< 7.5	735	1.4	137	0.03	2.9		
15	Sat	0.00	9.33	13.0	9.07	0.000	0.000	0.000	0.000	0.000	0.000	0.00																						
16	Sun	0.22	10.65	18.5	11.34	0.000	0.000	0.000	0.000	0.000	0.000	0.00	148	13146	89	7905	140	12435	10.90	968					< 4.6	409	< 4.0	355	2.2	195	0.20	17.8		
17	Mon	0.14	11.38	18.0	13.21	0.000	0.000	0.000	0.000	0.000	0.000	0.00	132	12528	102	9681	133	12623	10.25	973	6.9	< 3.5	24.8	0.05	< 4.0	380	< 3.5	332	0.8	76	0.05	4.7		
18	Tue	0.00	9.79	14.0	10.70	0.000	0.000	0.000	0.000	0.000	0.000	0.00	163	13309	107	8736	113	9226	10.64	869	7.2	< 3.5	11.4	0.05	< 4.0	327	< 3.5	286	2.2	180	0.05	4.1		
19	Wed	0.05	10.08	16.0	10.91	0.000	0.000	0.000	0.000	0.000	0.000	0.00	127	10677	77	6473	94	7902	9.80	824	10.0	< 4.0	12.6	0.45	< 4.6	387	< 4.0	336	1.0	84	0.13	10.9		
20	Thu	0.00	9.53	13.0	10.16	0.000	0.000	0.000	0.000	0.000	0.000	0.00	63	5007	54	4292	48	3815	5.04	401	< 5.0	< 3.7	14.6	0.17	< 5.0	397	< 3.7	294	2.2	175	0.16	12.7		
21	Fri	0.00	9.49	14.5	10.48	0.000	0.000	0.000	0.000	0.000	0.000	0.00			62	4907	100	7915	5.10	404		< 5.0	12.0	0.09			< 5.0	396	1.5	119	0.08	6.3		
22	Sat	0.10	9.93	15.0	11.47	0.000	0.000	0.000	0.000	0.000	0.000	0.00																						
23	Sun	0.00	9.74	13.0	10.24	0.000	0.000	0.000	0.000	0.000	0.000	0.00	108	8773	48	3899	107	8692	10.60	861					4.7	382	< 4.0	325	1.2	97	0.06	4.9		
24	Mon	0.00	9.42	11.0	9.62	0.000	0.000	0.000	0.000	0.000	0.000	0.00	113	8878	50	3928	104	8171	8.34	655	13.5	5.2	19.5	0.09	10.0	786	6.1	479	22.7	1783	0.09	7.1		
25	Tue	0.00	9.25	11.0	9.14	0.000	0.000	0.000	0.000	0.000	0.000	0.00	138	10646	62	4783	126	9720	10.50	810	12.9	< 5.4	12.8	0.10	< 6.6	509	< 5.4	417	15.8	1219	0.10	7.7		
26	Wed	0.00	9.61	11.0	9.54	0.000	0.000	0.000	0.000	0.000	0.000	0.00	148	11862	54	4328	172	13785	11.40	914	11.0	< 4.3	11.2	0.15	< 6.0	481	< 4.3	345	8.4	673	0.08	6.4		
27	Thu	0.00	9.25	13.0	9.09	0.000	0.000	0.000	0.000	0.000	0.000	0.00	92	7097	53	4089	67	5169	12.50	964	12.1	4.1	9.0	0.05	6.1	471	< 4.2	324	2.6	201	0.04	3.1		
28	Fri	0.00	9.13	12.0	9.41	0.000	0.000	0.000	0.000	0.000	0.000	0.00			46	3503	67	5102	12.30	937		< 4.2	6.8	0.13		0	< 4.2	320	3.7	282	0.10	7.6		
29	Sat	0.00	8.78	12.0	8.98	0.000	0.000	0.000	0.000	0.000	0.000	0.00																						
30	Sun	0.00	8.94	13.0	8.83	0.000	0.000	0.000	0.000	0.000	0.000	0.00	50	3728	35	2610	63	4697	8.96	668					2.6	194	< 4.0	298	2.8	209	0.08	6.0		
31	Mon	0.00	8.32	12.5	8.35	0.000	0.000	0.000	0.000	0.000	0.000	0.00	57	3955	48	3331	73	5065	19.90	1381	< 15.0	< 8.5	86.0	0.19	< 6.0	416	< 4.3	298	4.1	284	0.06	4.2		
Total		1.06	306.13		326.73	0.00	0.00	0.00	0.00		0.00	1.15																						
Mean			9.88		10.54	0.00	0.00	0.00	0.00		0.00	0.04	122	10181	71	5466	119	10017	10.57	871	8.6	4.9	16.5	0.15	7.1	565	5.3	441	3.6	286	0.10	7.9		
Maximum		0.28	11.75	28.0	13.21	0.00	0.00	0.00	0.00		0.00	0.47	181	15745	107	9681	203	19893	19.90	1381	15.0	8.5	86.0	0.45	20.0	1635	12.0	981	22.7	1783	0.38	31.8		
Minimum			8.32		8.35	0.00	0.00	0.00	0.00		0.00	0.00	50	3728	35	0	48	3815	5.04	401	4.3	3.3	6.8	0.05	2.6	0	3.3	275	0.4	33	0.02	1.7		
# of Data		31	31	31	31	31	31	31	31		31	31	22	22	24	24	26	26	26	26	17	21	21	21	22	22	26	26	26	26	26	26		
# of Data<MDL																					8	19			18		25				0			
Wk1: 12/2-12/08/2001			10.13		11.36								116	10012	85	4789	122	10482	10.42	887					10.2	994	6.8	654	1.8	169	0.15	14.1		
Wk2: 12/09-12/15/2001			10.27		10.40								162	13703	85	7333	164	14336	11.12	962					8.3	704	6.1	538	1.9	169	0.08	6.9		
Wk3: 12/16-12/22/2001			9.99		11.02								119	10059	75	6331	99	8362	8.57	722					4.5	408	4.0	359	1.5	133	0.09	7.9		
Wk4: 12/23-12/29/2001			10.12		11.18								127	10933	82	6999	105	8986	8.62	740					4.4	415	4.0	365	1.7	150	0.11	10.2		

Total Est. Bypass Flow (MG): 0.00 Total Bypass Occurances (days/month): 0

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR JANUARY 2002

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1]: Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0
1	Tue	0.00	8.55	11.5	8.50	0.000	0.000	0.000	0.000	0.000	0.000	0.00
2	Wed	0.00	8.92	13.0	8.70	0.000	0.000	0.000	0.000	0.000	0.000	0.00
3	Thu	0.00	8.69	13.0	8.62	0.000	0.000	0.000	0.000	0.000	0.000	0.00
4	Fri	0.00	8.59	13.0	8.43	0.000	0.000	0.000	0.000	0.000	0.000	0.00
5	Sat	0.00	8.51	12.0	8.06	0.000	0.000	0.000	0.000	0.000	0.000	0.00
6	Sun	0.00	9.03	14.5	8.54	0.000	0.000	0.000	0.000	0.000	0.000	0.00
7	Mon	0.00	8.55	12.0	8.20	0.000	0.000	0.000	0.000	0.000	0.000	0.00
8	Tue	0.00	8.55	12.0	8.39	0.000	0.000	0.000	0.000	0.000	0.000	0.00
9	Wed	0.00	8.70	12.0	8.36	0.000	0.000	0.000	0.000	0.000	0.000	0.00
10	Thu	0.00	8.33	12.0	8.02	0.000	0.000	0.000	0.000	0.000	0.000	0.00
11	Fri	0.00	8.29	12.0	8.16	0.000	0.000	0.000	0.000	0.000	0.000	0.00
12	Sat	0.00	8.16	12.0	7.83	0.000	0.000	0.000	0.000	0.000	0.000	0.00
13	Sun	0.00	7.98	12.0	7.72	0.000	0.000	0.000	0.000	0.000	0.000	0.00
14	Mon	0.05	7.99	14.0	7.50	0.000	0.000	0.000	0.000	0.000	0.000	0.00
15	Tue	0.00	7.98	12.0	7.31	0.000	0.000	0.000	0.000	0.000	0.000	0.00
16	Wed	0.00	8.56	14.0	8.20	0.000	0.000	0.000	0.000	0.000	0.000	0.00
17	Thu	0.00	8.36	13.0	7.68	0.000	0.000	0.000	0.000	0.000	0.000	0.00
18	Fri	0.00	8.13	12.5	8.43	0.000	0.000	0.000	0.000	0.000	0.000	0.00
19	Sat	0.00	7.79	12.0	7.44	0.000	0.000	0.000	0.000	0.000	0.000	0.00
20	Sun	0.00	7.64	11.5	6.90	0.000	0.000	0.000	0.000	0.000	0.000	0.00
21	Mon	0.09	7.98	13.0	7.92	0.000	0.000	0.000	0.000	0.000	0.000	0.00
22	Tue	0.02	7.75	12.0	7.38	0.000	0.000	0.000	0.000	0.000	0.000	0.00
23	Wed	0.03	7.55	12.0	7.28	0.000	0.000	0.000	0.000	0.000	0.000	0.00
24	Thu	0.00	7.79	12.0	7.26	0.000	0.000	0.000	0.000	0.000	0.000	0.00
25	Fri	0.00	7.81	12.0	7.43	0.000	0.000	0.000	0.000	0.000	0.000	0.00
26	Sat	0.00	7.52	12.0	7.31	0.000	0.000	0.000	0.000	0.000	0.000	0.00
27	Sun	0.00	7.57	12.0	7.43	0.000	0.000	0.000	0.000	0.000	0.000	0.00
28	Mon	0.00	7.43	13.0	6.92	0.000	0.000	0.000	0.000	0.000	0.000	0.00
29	Tue	0.08	7.92	20.0	7.99	0.000	0.000	0.000	0.000	0.000	0.000	0.00
30	Wed	0.33	10.77	26.5	11.15	0.000	0.000	0.000	0.000	0.000	0.000	0.00
31	Thu	0.61	10.85	18.0	12.65	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Total		1.21	258.24		251.71	0.00	0.00	0.00	0.00		0.00	0.00
Mean			8.33		8.12	0.00	0.00	0.00	0.00		0.00	0.00
Maximum		0.61	10.85	26.5	12.65	0.00	0.00	0.00	0.00		0.00	0.00
Minimum			7.43		6.90	0.00	0.00	0.00	0.00		0.00	0.00
# of Data		25	31	31	31	31	31	31	31		31	31
# of Data<MDL												
Wk1: 01/01-01/05/00			8.66		8.37							
Wk2: 01/06-01/12/00			8.18		7.82							
Wk3: 01/13-01/19/00			7.89		7.58							
Wk4: 01/20-01/26/00			8.03		7.71							

Date	Influent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Clarifier Effluent Data: TBOD5 (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	Ammonia-N (mg/L)	Final Effluent Data: TBOD5 (mg/L)	TBOD5 (lb/day)	CBOD5 (mg/L)	CBOD5 (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia-N (mg/L)	Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria									<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	7.1 AML 10.7 AWL <MDL	888 AML 1339 AWL	8.5 AML 12.8 AWL	1063 AML 1601 AWL	1.5 AML 2.3 AWL <MDL	188 AML 751 DML		
1	63	4492	46	3280	95	6774	9.91	707	7.8	< 4.3	11.9	0.07	< 5.0	357	< 4.3	307	4.2	299	0.03	2.1		
2	105	7811	53	3943	149	11085	10.40	774	7.8	< 4.0	10.6	0.03	< 4.6	342	< 4.0	298	3.6	268	0.01	0.7		
3	129	9349	89	6450	106	7682	13.30	964	7.4	< 4.2	9.2	0.09	< 4.1	297	< 4.2	304	11.8	855	0.03	2.2		
4			58	4155	153	10961	11.20	802		< 4.6	8.8	0.24			< 4.6	330	1.8	129	0.04	2.9		
5																						
6	151	11372	50	3766	193	14535	11.03	831					< 6.0	452	< 4.3	324	2.2	166	0.23	17.3		
7	144	10268	49	3494	176	12550	10.17	725	12.0	< 4.6	13.0	0.20	< 5.4	385	< 4.6	328	2.6	185	0.06	4.3		
8	129	9199	88	6275	100	7131	9.83	701	11.1	3.8	9.4	0.24	6.3	449	< 4.0	285	2.6	185	0.09	6.4		
9	39	2830	25	1814	41	2975	5.04	366	9.7	< 4.0	9.8	0.10	5.8	421	< 4.0	290	2.6	189	0.13	9.4		
10	73	5071	26	1806	80	5558	4.65	323	11.0	< 4.2	9.4	0.03	5.5	382	< 4.2	292	3.0	208	0.03	2.1		
11			53	3664	64	4425	8.23	569		4.6	6.2	0.11			< 4.6	318	2.0	138	0.31	21.4		
12																						
13	86	5724	65	4326	44	2928	7.73	514					4.6	306	< 4.0	266	3.0	200	0.03	2.0		
14	102	6797	60	3998	79	5264	9.41	627	11.0	< 4.6	12.4	0.05	6.0	400	< 4.6	307	3.0	200	0.02	1.3		
15	88	5857	55	3660	82	5457	7.39	492	11.0	< 4.0	10.0	0.03	5.5	366	< 4.0	266	2.2	146	0.01	0.7		
16	152	10851	96	6853	128	9138	6.04	431	10.6	< 4.0	10.4	0.03	5.5	393	< 4.0	286	3.6	257	0.02	1.4		
17	183	12759	107	7460	109	7600	5.60	390	9.7	< 4.2	12.7	0.04	< 5.0	349	< 4.2	293	3.8	265	0.04	2.8		
18			90	6102	90	6102	7.34	498		< 5.0	11.4	0.06			< 5.0	339	3.5	237	0.02	1.4		
19																						
20	49	3122	36	2294	43	2740	4.20	268					< 5.4	344	< 4.6	293	1.6	102	0.04	2.5		
21	91	6056	61	4060	85	5657	8.68	578	8.9	< 4.6	9.4	0.12	< 5.4	359	< 4.6	306	2.9	193	0.03	2.0		
22	159	10277	89	5753	94	6076	11.98	774	9.4	< 4.3	9.2	0.13	< 5.0	323	< 4.3	278	2.2	142	0.04	2.6		
23	174	10956	106	6675	126	7934	10.20	642	8.5	< 4.6	8.2	0.04	< 5.4	340	< 4.6	290	1.8	113	0.02	1.3		
24	156	10135	104	6757	118	7666	10.00	650	10.4	< 4.0	10.6	0.15	< 4.6	299	< 4.0	260	2.0	130	0.26	16.9		
25			73	4755	100	6514	8.93	582		< 4.6	14.6	0.07			< 4.6	300	2.2	143	0.06	3.9		
26																						
27	99	6250	63	3977	106	6692	8.54	539					4.7	297	< 4.0	253	2.4	152	0.04	2.5		
28	88	5453	75	4647	104	6444	8.34	517	11.0	< 4.0	13.2	0.03	< 4.7	291	< 4.0	248	2.6	161	0.04	2.5		
29	88	5813	41	2708	122	8058	8.40	555	9.4	< 4.0	12.6	0.06	4.4	291	< 4.0	264	2.4	159	0.20	13.2		
30	89	7994	68	6108	184	16527	5.38	483	8.7	< 4.6	11.6	0.26	< 5.5	494	< 4.6	413	3.2	287	1.01	90.7		
31	76	6877	42	3801	94	8506	5.94	538	12.0	4.6	12.6	0.16	6.3	570	< 4.6	416	2.8	253	0.06	5.4		
Total																						
Mean	109	7622	65	4540	106	7518	8.44	587	9.9	4.3	10.7	0.10	5.2	370	4.3	302	3.0	213	0.11	8.2		
Maximum	183	12759	107	7460	193	16527	13.30	964	12.0	5.0	14.6	0.26	6.3	570	5.0	416	11.8	855	1.01	90.7		
Minimum	39	2830	25	1806	41	2740	4.20	268	7.4	3.8	6.2	0.03	4.1	291	4.0	248	1.6	102	0.01	0.7		
# of Data	23	23	27	27	27	27	27	27	19	23	23	23	23	23	27	27	27	27	27	27		
# of Data<MDL									0	21			13		27				0			
Wk1: 01/01-01/05/00	118	8604	60	4326	128	9306	10.10	731					5.5	387	4.3	301	3.9	279	0.10	6.8		
Wk2: 01/06-01/12/00	100	6860	59	4051	80	5462	7.24	493					5.4	350	4.2	276	2.8	183	0.07	4.7		
Wk3: 01/13-01/19/00	131	8634	82	5391	91	6018	8.00	525					5.2	325	4.6	289	2.6	170	0.03	2.0		
Wk4: 01/20-01/26/00	127	8613	80	5420	92	6219	7.31	490					5.3	334	4.5	288	2.9	192	0.03	2.0		

Total Est. Bypass Flow (MG): 0.00 Total Bypass Occurances (days/month): 0

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

EAST CHICAGO SANITARY DISTRICT WASTEWATER TREATMENT PLANT
MONTHLY REPORT OF OPERATIONS SUMMARY FOR FEBRUARY 2002

Date	Day of Week	Precip. @ WWTP (inches)	Influent Flow (MGD)	Peak Influent Flow (MGD)	Outfall 001 Effluent Flow (MGD)	CSO Pump Station Discharges [1]: Michigan Outfall 002 Run Time Minutes	Michigan Outfall 002 Est. Flow (MGD)	Alder - Outfall 003 Run Time Minutes	Alder - Outfall 003 Est. Flow (MGD)	Magoun - Outfall 005 Run Time Minutes	Magoun - Outfall 005 Flow (MGD)	Outfall 006 CSO Lagoon (MGD)
Design Criteria			15 Avg 27 Max	36 Peak							Metered Lagoon Influent	>Max Q=3.0
1	Fri	0.15	9.76	15.0	12.50	0.000		0.000		0.000		0.00
2	Sat	0.00	8.49	13.0	9.72	0.000		0.000		0.000		0.00
3	Sun	0.00	8.73	13.0	10.23	0.000		0.000		0.000		0.00
4	Mon	0.00	8.36	12.0	9.40	0.000		0.000		0.000		0.00
5	Tue	0.00	8.35	12.0	9.25	0.000		0.000		0.000		0.00
6	Wed	0.00	8.76	13.0	9.64	0.000		0.000		0.000		0.00
7	Thu	0.00	8.74	13.0	10.00	0.000		0.000		0.000		0.00
8	Fri	0.00	8.61	13.5	9.90	0.000		0.000		0.000		0.00
9	Sat	0.00	9.10	15.5	10.33	0.000		0.000		0.000		0.00
10	Sun	0.02	8.89	13.5	10.12	0.000		0.000		0.000		0.00
11	Mon	0.00	8.76	13.0	10.61	0.000		0.000		0.000		0.00
12	Tue	0.00	8.84	13.0	10.98	0.000		0.000		0.000		0.00
13	Wed	0.00	8.86	12.5	11.13	0.000		0.000		0.000		0.00
14	Thu	0.00	8.91	13.0	10.17	0.000		0.000		0.000		0.00
15	Fri	0.00	8.80	12.5	10.04	0.000		0.000		0.000		0.00
16	Sat	0.00	8.72	12.5	9.80	0.000		0.000		0.000		0.00
17	Sun	0.00	8.35	12.0	8.89	0.000		0.000		0.000		0.00
18	Mon	0.00	8.61	12.0	9.16	0.000		0.000		0.000		0.00
19	Tue	0.50	12.46	23.0	15.00	0.000		0.000		0.000		0.00
20	Wed	0.20	10.64	22.0	13.35	0.000		0.000		0.000		0.00
21	Thu	0.02	9.10	13.0	9.82	0.000		0.000		0.000		0.00
22	Fri	0.00	8.94	13.0	10.12	0.000		0.000		0.000		0.00
23	Sat	0.00	8.72	13.0	9.98	0.000		0.000		0.000		0.00
24	Sun	0.00	8.77	13.0	9.90	0.000		0.000		0.000		0.00
25	Mon	0.04	9.40	15.0	11.54	0.000		0.000		0.000		0.00
26	Tue	0.14	10.07	17.0	10.93	0.000		0.000		0.000		0.00
27	Wed	0.00	8.94	14.0	9.85	0.000		0.000		0.000		0.00
28	Thu	0.00	8.63	14.0	9.09	0.000		0.000		0.000		0.00
Total		1.07	253.31		291.45	0.00	0.00	0.00	0.00		0.00	0.00
Mean			9.05		10.41			0.00				0.00
Maximum		0.50	12.46	23.0	15.00	0.00	0.00	0.00	0.00		0.00	0.00
Minimum			8.35		8.89	0.00	0.00	0.00	0.00		0.00	0.00
# of Data		28	28	28	28	28	0	28	0		0	28
# of Data<MDL												
Wk1: 02/03-02/09/00			8.66		9.82							
Wk2: 02/10-02/16/00			8.83		10.41							
Wk3: 02/17-02/23/00			9.55		10.90							
Wk4: 02/24-02/28/00			9.55		10.88							

Date	Influent TBOD5 (mg/L)	Influent TBOD5 (lb/day)	Influent CBOD5 (mg/L)	Influent CBOD5 (lb/day)	Influent TSS (mg/L)	Influent TSS (lb/day)	Influent Ammonia-N (mg/L)	Influent Ammonia-N (lb/day)	Clarifier Effluent TBOD5 (mg/L)	Clarifier Effluent CBOD5 (mg/L)	Clarifier Effluent TSS (mg/L)	Clarifier Effluent Ammonia-N (mg/L)	Final Effluent TBOD5 (mg/L)	Final Effluent TBOD5 (lb/day)	Final Effluent CBOD5 (mg/L)	Final Effluent CBOD5 (lb/day)	Final Effluent TSS (mg/L)	Final Effluent TSS (lb/day)	Final Effluent Ammonia-N (mg/L)	Final Effluent Ammonia-N (lb/day)	Effluent Fecal coliform (col/100	Effluent E. coli (col/100 mLs)
Design Criteria									<MDL	<MDL	10	1.5	Report Only <MDL	Report Only	7.1 AML 10.7 AWL <MDL	888 AML 1339 AWL	8.5 AML 12.8 AWL	1063 AML 1601 AWL	1.5 AML 2.3 AWL <MDL	188 AML 751 DML		
1			50	4070	83	6756	5.32	433		< 4.0	11.4	0.10			< 4.0	326	2.0	163	0.03	2.4		
2																						
3	49	3568	43	3131	34	2475	3.73	272					5.0	364	< 4.3	313	1.0	73	0.10	7.3		
4	74	5159	54	3765	81	5648	9.40	655	7.1	< 4.0	12.6	0.15	4.6	321	< 4.0	279	3.0	209	0.02	1.4		
5	86	5989	51	3552		0	7.56	526	11.0	< 4.3	11.0	0.04	5.4	376	< 4.3	299	4.0	279	0.03	2.1		
6	135	9863	95	6941	137	10009	13.40	979	7.9	< 4.0	11.4	0.15	4.6	336	< 4.0	292	2.2	161	0.13	9.5		
7	94	6852	52	3790	101	7362	11.20	816	8.6	< 4.0	10.8	0.13	4.6	335	< 4.0	292	2.4	175	0.05	3.6		
8			56	4021	103	7396	9.41	676		< 3.7	9.4	0.09			< 3.7	266	2.2	158	0.04	2.9		
9																						
10	155	11492	63	4671	234	17349	7.16	531					4.7	348	< 3.7	274	3.4	252	0.05	3.7		
11	144	10520	81	5918	150	10959	9.52	696	8.8	< 3.5	12.4	0.24	4.0	292	< 3.5	256	2.0	146	0.09	6.6		
12	130	9584	56	4129	156	11501	8.32	613	8.3	4.4	17.0	0.11	4.0	295	< 3.5	258	4.0	295	0.03	2.2		
13	222	16404	92	6798	252	18621	11.00	813	8.5	< 3.7	11.0	0.17	4.0	296	< 3.5	259	1.0	74	0.08	5.9		
14	136	10106	48	3567	235	17463	8.12	603	8.9	< 3.7	11.6	0.14	4.3	320	< 3.7	275	1.8	134	0.07	5.2		
15			49	3596	105	7706	10.30	756		< 3.5	10.0	0.15			< 3.5	257	1.7	125	0.04	2.9		
16																						
17	114	7939	67	4666	147	10237	7.22	503					3.7	258	< 3.3	230	2.3	160	0.04	2.8		
18	87	6247	36	2585	132	9479	6.06	435	6.6	6.2	9.2	0.07	4.0	287	< 3.5	251	2.5	180	0.06	4.3		
19	95	9872	66	6858	177	18393	5.66	588	9.4	< 3.5	10.8	0.26	4.0	416	< 3.5	364	2.4	249	0.18	18.7		
20	84	7454	45	3993	130	11536	5.15	457	8.4	< 3.5	10.5	0.04	4.0	355	< 3.5	311	1.9	169	0.03	2.7		
21	123	9335	48	3643	177	13433	8.40	638	8.8	< 3.5	9.8	0.05	4.0	304	< 3.5	266	2.1	159	0.04	3.0		
22			75	5592	194	14465	8.12	605		< 4.6	10.0	0.15			< 4.6	343	2.6	194	0.07	5.2		
23																						
24	57	4169	38	2779	67	4901	3.41	249					5.0	366	< 3.5	256	2.1	154	0.06	4.4		
25	89	6977	39	3057	97	7604	7.34	575	20.0	4.4	12.0	0.10	4.3	337	< 3.7	290	5.0	392	0.04	3.1		
26	83	6971	36	3023	155	13017	6.47	543	8.2	< 3.7	30.8	1.06	4.6	386	< 4.0	336	1.0	84	0.07	5.9		
27	94	7009	36	2684	127	9469	5.42	404	13.0	3.6	23.0	0.53	4.3	321	< 3.7	276	2.0	149	0.43	32.1		
28	70	5038	25	1799	117	8421	4.08	294	7.6	< 3.7	16.0	0.08	4.3	309	< 3.7	266	5.0	360	0.05	3.6		
Total																						
Mean	106	8027	54	4110	139	10175	7.57	569	9.4	4.0	13.0	0.19	4.4	331	3.8	285	2.5	187	0.08	5.9		
Maximum	222	16404	95	6941	252	18621	13.40	979	20.0	6.2	30.8	1.06	5.4	416	4.6	364	5.0	392	0.43	32.1		
Minimum	49	3568	25	1799	34	0	3.41	249	6.6	3.5	9.2	0.04	3.7	258	3.3	230	1.0	73	0.02	1.4		
# of Data	20	20	24	24	23	23	24	24	16	20	20	20	20	20	24	24	24	24	24	24		
# of Data<MDL									0	16			16		24				0			
Wk1: 02/03-02/09/00	88	6286	59	4200	91	7604	9.12	654					4.8	391	4.1	329	2.5	159	0.06	5.1		
Wk2: 02/10-02/16/00	157	11621	65	4780	189	13933	9.07	669					4.2	371	3.6	312	2.3	203	0.06	5.3		
Wk3: 02/17-02/23/00	101	8169	56	4556	160	12924	6.77	538					3.9	371	3.7	336	2.3	211	0.07	7.1		
Wk4: 02/24-02/28/00	101	8169	56	4556	160	12924	6.77	538					3.9	371	3.7	336	2.3	211	0.07	7.1		

Total Est. Bypass Flow (MG): 0.00 Total Bypass Occurances (days/month): 0

Note [1]: Run time meters are not read at midnight for Michigan and Magoun.

APPENDIX II

WATER QUALITY INFORMATION

Gary Sanitary District

Grand Calumet River and Indiana Harbor Ship Canal CSO
Discharge Impact Initial Assessment Study

NRDC

Testing the Waters 2003

GARY SANITARY DISTRICT
Gary, Indiana

Grand Calumet River and Indiana Harbor Ship Canal CSO Discharge Impact Initial Assessment Study

Table 2-5
DRY WEATHER ANALYSES
CLINE AVENUE BRIDGE LOCATION
B3

Greeley and Hansen
June 23, 1998 Through May 3, 1999

PARAMETER	SAMPLE DATE						Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit	GLI Water Quality Acute Limit	GLI Water Quality Chronic Limit
	23-Jun-98	20-Aug-98	21-Oct-98	28-Dec-98	23-Feb-99	3-May-99						
E-coli (CFU / 100mL)	20.00	60.00	10.00	60.00	10.00	20.00	23.00	60.00	10.00	10.00	235	235
Oil and Grease	<2.00	<2.00	<2.00	<2.00	<2.00	3.20	0.49	3.20	0.33	2.00	-	-
Ammonia (NH_3), as N	0.45	0.25	0.33	0.43	0.38	0.41	0.37	0.45	0.25	0.01	3.5	0.80
Carbonaceous Biochemical Oxygen Demand (CBOD)	7.10	<2.00	<2.00	27.00	3.60	5.90	4.40	27.00	1.33	2.00	-	-
Chemical Oxygen Demand (COD)	<20.00	<20.00	<20.00	<20.00	<20.00	<20.00	0.00	0.00	0.00	20.00	-	-
Chloride	37.00	33.00	34.00	29.00	37.00	41.00	34.96	41.00	29.00	1.00	860.00	230.00
Cyanide, Amenable to Chlorination (ATC)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.000	0.000	0.000	0.005	0.022	0.0052
Fluoride, (F)	0.36	0.32	0.48	0.47	0.36	0.48	0.41	0.48	0.32	0.10	12	3.4
Hardness, Total as $CaCO_3$	180.00	150.00	160.00	180.00	260.00	130.00	172.43	260.00	130.00	2.00	-	-
Nitrogen, Total Kjeldahl as N (TKN)	0.77	0.75	0.79	0.82	1.10	1.10	0.88	1.10	0.75	0.50	-	-
Phosphorus, Total	0.05	0.07	0.06	<0.04	<0.04	<0.04	0.02	0.07	0.01	0.02	-	-
Solids, Total Dissolved (TDS)	160.00	210.00	220.00	200.00	240.00	160.00	196.04	240.00	160.00	10.00	-	-
Solids, Total Suspended (TSS)	7.00	4.80	2.60	3.60	6.40	14.00	5.52	14.00	2.60	1.00	-	-
Solids, Total Volatile Suspended (TVSS)	2.00	1.60	1.60	<1.0	1.20	1.50	1.58	2.00	1.20	2.00	-	-
Sulfate (SO_4)	43.00	36.00	31.00	42.00	34.00	47.00	38.43	47.00	31.00	8.00	-	-
pH (pH units)	8.12		8.24	7.99	7.89	7.89	8.02	8.24	7.89	0.01	6<=pH<=9	6<=pH<=9
METALS												
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.002	0.01	0.00	0.01	0.34	0.15
Arsenic (As), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.00	0.00	0.00	0.01	0.34	0.15
Cadmium (Cd), Total Recoverable	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.000	0.000	0.000	0.005	0.0082	0.0037
Cadmium (Cd), Dissolved	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.000	0.000	0.000	0.005	0.0078	0.0034
Chromium (Cr), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.00	0.00	0.00	0.01	2.8	0.13
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.00	0.00	0.00	0.01	0.88	0.11
Copper (Cu), Total Recoverable	<0.01	<0.01	<0.01	0.02	<0.01	0.02	0.01	0.02	0.00	0.01	0.023	0.015
Copper (Cu), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.00	0.00	0.00	0.01	0.022	0.014
Iron (Fe), Total Recoverable	0.44	0.53	0.43	0.45	0.39	0.66	0.48	0.66	0.39	0.05	-	-
Iron (Fe), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.00	0.00	0.00	0.05	-	-
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.00	0.00	0.00	0.05	0.24	0.013
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.00	0.00	0.00	0.05	0.24	0.013
Mercury (Hg), Total Recoverable	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0000	0.0000	0.0000	0.0002	0.0017	0.00091
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0000	0.0000	0.0000	0.0002	0.0014	0.00077
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.00	0.00	0.00	0.01	0.74	0.082
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.00	0.00	0.00	0.01	0.73	0.081
Zinc (Zn), Total Recoverable	0.02	0.03	0.02	0.03	0.03	0.03	0.03	0.03	0.02	0.01	0.19	0.19
Zinc (Zn), Dissolved	<0.01	<0.01	0.01	0.01	0.01	<0.01	0.01	0.01	0.01	0.01	0.18	0.19

NOTES:
All parameters are listed in milligrams per liter unless otherwise noted.
[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4 (a)(8)(C) in which samples with concentrations below the detection limit are assigned the value "V".
[2]If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero.
[3]The minimum value may be equal to the calculated "V" value.

dry_sampl_analysis2.xls.xls

GARY SANITARY DISTRICT
Gary, Indiana

Grand Calumet River and Indiana Harbor Ship Canal CSO Discharge Impact Initial Assessment Study

Table 2-8
DRY WEATHER ANALYSES
DICKEY ROAD BRIDGE LOCATION
B6

Greeley and Hansen
June 23, 1998 Through May 3, 1999

PARAMETER	SAMPLE DATE						Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit	GLI Water Quality Acute Limit	GLI Water Quality Chronic Limit
	23-Jun-98	20-Aug-98	21-Oct-98	28-Dec-98	23-Feb-99	3-May-99						
E-coli (CFU / 100mL)	40.00	<10.00	40.00	150.00	20.00	30.00	32.00	150.00	8.00	10.00	235	235
Oil and Grease	2.50	<2.00	<2.00	<2.00	<2.00	4.50	1.14	4.50	0.67	2.00	-	-
Ammonia (NH_3), as N	0.20	0.18	0.21	0.51	0.41	0.42	0.30	0.51	0.18	0.01	7.9	1.8
Carbonaceous Biochemical Oxygen Demand (CBOD)	5.40	<2.00	<2.00	23.00	<2.00	6.30	3.04	23.00	1.00	2.00	-	-
Chemical Oxygen Demand (COD)	<20.00	<20.00	<20.00	<20.00	<20.00	<20.00	0.00	0.00	0.00	20.00	-	-
Chloride	40.00	33.00	40.00	45.00	54.00	66.00	45.15	66.00	33.00	1.00	860.00	230.00
Cyanide, Amenable to Chlorination (ATC)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.000	0.000	0.000	0.005	0.022	0.0052
Fluoride, (F)	0.41	0.35	0.53	0.48	0.45	0.49	0.45	0.53	0.35	0.10	12	3.4
Hardness, Total as $CaCO_3$	190.00	150.00	160.00	170.00	220.00	190.00	178.55	220.00	150.00	2.00	-	-
Nitrogen, Total Kjeldahl as N (TKN)	0.72	0.63	0.69	1.10	1.20	1.20	0.89	1.20	0.63	0.50	-	-
Phosphorus, Total	<0.02	0.07	0.08	0.41	0.09	<0.04	0.06	0.41	0.01	0.02	-	-
Solids, Total Dissolved (TDS)	290.00	220.00	250.00	220.00	310.00	220.00	249.17	310.00	220.00	10.00	-	-
Solids, Total Suspended (TSS)	5.60	4.80	4.00	4.40	6.20	6.20	5.13	6.20	4.00	1.00	-	-
Solids, Total Volatile Suspended (TVSS)	6.00	1.40	<1.0	2.80	2.00	<1.0	2.09	6.00	1.33	2.00	-	-
Sulfate (SO_4)	48.00	44.00	38.00	54.00	59.00	95.00	53.82	95.00	38.00	8.00	-	-
pH (pH units)	8.19	8.39	8.16	7.77	7.86	7.77	8.02	8.39	7.77	0.01	6<=pH<=9	6<=pH<=9
METALS												
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.00	0.00	0.00	0.01	0.34	0.15
Arsenic (As), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.00	0.00	0.00	0.01	0.34	0.15
Cadmium (Cd), Total Recoverable	<0.005	<0.005	<0.005	<0.005	0.006	<0.005	0.001	0.006	0.001	0.005	0.0093	0.0041
Cadmium (Cd), Dissolved	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.000	0.000	0.000	0.005	0.0088	0.0037
Chromium (Cr), Total Recoverable	<0.01	<0.01	0.09	<0.01	<0.01	<0.01	0.003	0.09	0.00	0.01	3.1	0.15
Chromium (Cr), Dissolved	<0.01	<0.01	0.10	<0.01	<0.01	<0.01	0.003	0.10	0.00	0.01	0.96	0.13
Copper (Cu), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.00	0.00	0.00	0.01	0.026	0.016
Copper (Cu), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.00	0.00	0.00	0.01	0.025	0.015
Iron (Fe), Total Recoverable	0.34	0.34	0.40	0.43	0.50	0.52	0.42	0.52	0.34	0.05	-	-
Iron (Fe), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.00	0.00	0.00	0.05	-	-
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.00	0.00	0.00	0.05	0.28	0.015
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.00	0.00	0.00	0.05	0.28	0.015
Mercury (Hg), Total Recoverable	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	0.00004	0.0002	0.0000	0.0002	0.0017	0.00091
Mercury (Hg), Dissolved	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	0.00005	0.0003	0.0000	0.0002	0.0014	0.00077
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.00	0.00	0.00	0.01	0.81	0.090
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.00	0.00	0.00	0.01	0.81	0.090
Zinc (Zn), Total Recoverable	0.02	0.02	0.02	0.02	0.04	0.03	0.02	0.04	0.02	0.01	0.21	0.21
Zinc (Zn), Dissolved	<0.01	<0.01	<0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.20	0.20

NOTES:
All parameters are listed in milligrams per liter unless otherwise noted.
[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4 (a)(8)(C) in which samples with concentrations below the detection limit are assigned the value "V".
[2]If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero.
[3]The minimum value may be equal to the calculated "V" value.

GARY SANITARY DISTRICT
Gary, Indiana

Grand Calumet River and Indiana Harbor Ship Canal CSO Discharge Impact Initial Assessment Study

Table 3-8
WET WEATHER ANALYSIS
CLINE AVENUE BRIDGE LOCATION
B3

Greeley and Hansen
April 8-10, 1999

FROM START OF STORM, HOURS	-4	0	4	8	12	16	20	24	28	32	36	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit	GLI Water Quality Acute Limit
SAMPLE NO.	1	2	3	4	5	6	7	8	9	10	11					
PARAMETER																
E-coli (CFU / 100mL)	<10.00	10.00	80.00	100.00	630.00	4000.00	490.00	200.00	100.00	200.00	500.00	198.00	4000.00	10.00	100.00	235
Oil and Grease	<2.00	<2.00	<2.00	<2.00	3.30	3.90	<2.00	2.00				1.25	3.90	0.75	2.00	-
Ammonia (NH_3), as N	0.47	0.52	0.55	0.52	0.81	0.78	0.86	0.51	0.38	0.42	0.43	0.52	0.78	0.38	0.01	3.7
Carbonaceous Biochemical Oxygen Demand (CBOD)	<2.00	6.30	4.00	5.50	9.70	5.70	11.00	<2.00	9.20	5.10	6.90	5.19	11.00	1.64	2.00	-
Chemical Oxygen Demand (COD)	<20.00	<20.00	<20.00	240.00	140.00	130.00	120.00	180.00				60.70	240.00	12.50	20.00	-
Chloride	45.00	42.00	40.00	55.00	46.00	43.00	44.00	37.00				43.74	55.00	37.00	4.00	860
Cyanide. Amenable to Chlorination (ATC)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.006	<0.005				0.002	0.006	0.001	0.010	0.022
Fluoride. (F)	0.41	0.46	0.42	0.38	0.46	0.50	0.34	0.33				0.41	0.50	0.33	0.10	12
Hardness, Total as $CaCO_3$	130.00	170.00	180.00	200.00	180.00	200.00	200.00	190.00				179.72	200.00	130.00	2.00	-
Nitrogen, Total Kjeldahl as N (TKN)	1.30	1.60	1.90	1.40	1.80	1.60	1.70	1.10	1.30	1.90	1.40	1.54	1.90	1.10	0.50	-
Phosphorus, Total	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10				0.00	0.00	0.00	0.10	-
Solids, Total Dissolved (TDS)	200.00	230.00	240.00	120.00	220.00	250.00	250.00	230.00				212.70	250.00	120.00	10.00	-
Solids, Total Suspended (TSS)	7.60	9.60	14.00	96.00	14.00	15.00	5.40	6.40				12.78	96.00	5.40	1.00	-
Solids, Total Volatile Suspended (TVSS)	5.80	7.20	10.00	61.00	<1.0	<1.0	4.00	3.80				4.85	61.00	0.75	1.00	-
Sulfate (SO_4)	35.00	34.00	34.00	34.00	38.00	34.00	42.00	34.00				35.53	42.00	34.00	5.00	-
pH (pH units)												0.00	0.00	0.00	0.01	6<=pH<=9
METALS																
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.34
Arsenic (As), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.34
Cadmium (Cd), Total Recoverable	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0093
Cadmium (Cd), Dissolved	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0088
Chromium (Cr), Total Recoverable	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01				0.002	0.01	0.00	0.01	3.1
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.96
Copper (Cu), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.01	0.01				0.004	0.03	0.00	0.01	0.026
Copper (Cu), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.025
Iron (Fe), Total Recoverable	0.91	1.41	2.12	1.81	1.79	1.73	1.34	1.02				1.46	2.12	0.91	0.05	-
Iron (Fe), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	-
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.28
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.28
Mercury (Hg), Recoverable	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0017
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0014
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.81
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.81
Zinc (Zn), Total Recoverable	0.03	0.05	0.03	0.08	0.08	0.06	0.05	0.04				0.05	0.08	0.03	0.01	0.21
Zinc (Zn), Dissolved	0.03	0.01	<0.01	0.01	0.03	0.02	<0.01	0.01				0.01	0.03	0.01	0.01	0.20

NOTES:
All parameters are listed in milligrams per liter unless otherwise noted.
[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4 (a)(8)(C) in which samples with concentrations below the detection limit are assigned the value "V".
[2]If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero.
[3]The minimum value may be equal to a calculated "V" value.

GARY SANITARY DISTRICT
Gary, Indiana

Grand Calumet River and Indiana Harbor Ship Canal CSO Discharge Impact Initial Assessment Study

Table 3-9
WET WEATHER ANALYSIS
DICKEY ROAD BRIDGE LOCATION
B6

Greeley and Hansen
April 8-10, 1999

FROM START OF STORM, HOURS	-4	0	4	8	12	18	20	24	28	32	36	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit	GLI Water Quality Acute Limit
SAMPLE NO.	1	2	3	4	5	6	7	8	9	10	11					
PARAMETER																
E-coli (CFU / 100mL)	20.00	50.00	120.00	50.00	150.00	3500.00	100.00	900.00	1700.00	2900.00	3500.00	329.00	3500.00	20.00	100.00	235
Oil and Grease	2.30	2.60	2.30	<2.0	3.00	5.30	2.80	2.40				2.67	5.30	1.75	2.00	-
Ammonia (NH_3), as N	0.58	0.56	0.52	0.53	0.52	0.50	0.49	0.53	0.56	0.65	0.59	0.55	0.65	0.49	0.01	9.6
Carbonaceous Biochemical Oxygen Demand (CBOD)	5.60	2.80	2.80	2.60	<2.00	3.00	2.60	<2.00	9.10	9.00	4.80	3.49	9.10	1.64	2.00	-
Chemical Oxygen Demand (COD)	<20.00	<20.00	<20.00	<20.00	<20.00	90.00	<20.00	<20.00				3.91	90.00	2.50	20.00	-
Chloride	54.00	52.00	48.00	53.00	51.00	54.00	54.00	61.00				53.27	61.00	48.00	4.00	860
Cyanide, Amenable to Chlorination (ATC)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.008	<0.005				0.002	0.008	0.001	0.010	0.022
Fluoride, (F)	0.60	0.63	0.57	0.56	0.59	0.50	0.48	0.53				0.56	0.63	0.48	0.10	12
Hardness, Total as $CaCO_3$	210.00	200.00	200.00	180.00	200.00	200.00	220.00	210.00				202.20	220.00	180.00	2.00	-
Nitrogen, Total Kjeldahl as N (TKN)	1.50	1.90	1.40	1.60	2.00	1.90	2.50	1.70	2.00	2.10	1.70	1.82	2.50	1.40	0.50	-
Phosphorus, Total	0.13	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10				0.02	0.13	0.01	0.10	-
Solids, Total Dissolved (TDS)	250.00	210.00	310.00	320.00	270.00	170.00	30.00	290.00				194.87	320.00	30.00	10.00	-
Solids, Total Suspended (TSS)	28.00	8.00	4.40	16.00	8.80	6.80	11.00	10.00				10.05	28.00	4.40	1.00	-
Solids, Total Volatile Suspended (TVSS)	21.00	5.00	<1.0	2.50	4.40	5.10	6.80	8.00				4.80	21.00	0.88	1.00	-
Sulfate (SO_4)	50.00	120.00	51.00	47.00	50.00	40.00	51.00	56.00				54.87	120.00	40.00	5.00	-
pH (pH units)												0.00	0.00	0.00	0.01	6<=pH<=9
METALS																
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.34
Arsenic (As), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.34
Cadmium (Cd), Total Recoverable	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.010
Cadmium (Cd), Dissolved	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0098
Chromium (Cr), Total Recoverable	0.02	0.02	<0.01	0.02	<0.01	<0.01	<0.01	<0.01				0.01	0.02	0.00	0.01	3.3
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.0
Copper (Cu), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.028
Copper (Cu), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.027
Iron (Fe), Total Recoverable	3.42	0.93	0.66	0.98	0.89	1.22	1.60	1.45				1.23	3.42	0.66	0.05	-
Iron (Fe), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	-
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.31
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.31
Mercury (Hg), Recoverable	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002				0.00003	0.0002	0.0000	0.0002	0.0017
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0014
Nickel (Ni), Total Recoverable	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.002	0.01	0.00	0.01	0.88
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.88
Zinc (Zn), Total Recoverable	0.11	0.05	0.04	0.05	0.05	0.05	0.09	0.06				0.06	0.11	0.04	0.01	0.22
Zinc (Zn), Dissolved	0.02	0.03	0.02	0.02	0.02	0.02	0.02	0.02				0.02	0.03	0.02	0.01	0.22

NOTES:
All parameters are listed in milligrams per liter unless otherwise noted.
[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4 (a)(8)(C) in which samples with concentrations below the detection limit are assigned the value "V".
[2]If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are aqual to zero.
[3]The minimum value may be equal to a calculated "V" value.

GARY SANITARY DISTRICT
Gary, Indiana

Grand Calumet River and Indiana Harbor Ship Canal CSO Discharge Impact Initial Assessment Study

Table 3-14
WET WEATHER ANALYSIS
CLINE AVENUE BRIDGE LOCATION
B3

Greeley and Hansen
April 19-20, 2000

FROM START OF STORM, HOURS	-4	0	4	8	12	16	20	24	28	32	36					
SAMPLE NO.	1	2	3	4	5	6	7	8	9	10	11	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit	GLI Water Quality Acute Limit
PARAMETER																
E-coli (CFU / 100mL)	100.00	100.00	100.00	100.00	100.00	<100.00	<100.00	<100.00	300.00	4100.00	20000.00	230.00	20000.00	73.00	100.00	235.00
Oil and Grease	<2.00	3.00	<2.00	<2.00	2.70	<2.00	2.70	<2.00				1.23	3.00	0.75	2.00	-
Ammonia (NH_3), as N	0.32	0.32	0.31	0.36	0.44	0.42	0.35	0.33	0.31	0.51	0.42	0.37	0.51	0.31	0.01	3.7
Carbonaceous Biochemical Oxygen Demand (CBOD)	2.80	3.60	2.40	2.20	2.40	3.00	2.80	3.20	10.00	6.40	6.00	3.60	10.00	2.20	2.00	-
Chemical Oxygen Demand (COD)	70.00	30.00	50.00	70.00	40.00	<20.00	<20.00	<20.00				29.50	70.00	12.50	20.00	-
Chloride	38.00	39.00	43.00	45.00	50.00	45.00	39.00	41.00				42.33	50.00	38.00	4.00	860.00
Cyanide, Amenable to Chlorination (ATC)	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010				0.000	0.000	0.000	0.010	0.022
Fluoride, (F)	0.66	0.73	0.71	0.74	0.72	0.64	0.56	0.57				0.66	0.74	0.56	0.10	12
Hardness, Total as $CaCO_3$	190.00	170.00	180.00	190.00	190.00	180.00	190.00	160.00				180.93	190.00	160.00	2.00	-
Nitrogen, Total Kjeldahl as N (TKN)	1.50	1.30	1.30	1.50	1.30	1.30	1.40	1.50	2.70	1.80	1.60	1.53	2.70	1.30	0.50	-
Phosphorus, Total	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10				0.00	0.00	0.00	0.10	-
Solids, Total Dissolved (TDS)	280.00	160.00	250.00	290.00	270.00	280.00	260.00	280.00				255.00	290.00	160.00	10.00	-
Solids, Total Suspended (TSS)	9.80	16.00	14.00	19.00	16.00	21.00	21.00	13.00				15.77	21.00	9.80	1.00	-
Solids, Total Volatile Suspended (TVSS)	2.00	4.00	5.20	4.80	4.40	3.00	3.20	3.20				3.58	5.20	2.00	1.00	-
Sulfate (SO_4)	32.00	29.00	36.00	39.00	39.00	39.00	33.00	32.00				34.88	39.00	29.00	5.00	-
pH (pH units)												0.00	0.00	0.00	0.01	6<=pH<=9
METALS																
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.34
Arsenic (As), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.34
Cadmium (Cd), Total Recoverable	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0093
Cadmium (Cd), Dissolved	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0088
Chromium (Cr), Total Recoverable	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01				0.002	0.01	0.00	0.01	3.1
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.96
Copper (Cu), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.026
Copper (Cu), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.025
Iron (Fe), Total Recoverable	1.06	0.53	1.25	2.10	3.29	2.27	1.82	1.46				1.53	3.29	0.53	0.05	-
Iron (Fe), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	-
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.28
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.28
Mercury (Hg), Total Recoverable	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0017
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0014
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.81
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.81
Zinc (Zn), Total Recoverable	0.02	0.01	0.02	0.05	0.07	0.05	0.03	0.03				0.03	0.07	0.01	0.01	0.21
Zinc (Zn), Dissolved	<0.01	<0.01	0.01	0.02	0.01	0.01	<0.01	0.01				0.01	0.02	0.01	0.01	0.20

NOTES:
All parameters are listed in milligrams per liter unless otherwise noted.
[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4 (a)(6)(C) in which samples with concentrations below the detection limit are assigned the value "V".
[2]If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero.
[3]The minimum value may be equal to a calculated "V" value.

wet_bridge_2.xls
Cline

GARY SANITARY DISTRICT
Gary, Indiana

Grand Calumet River and Indiana Harbor Ship Canal CSO Discharge Impact Initial Assessment Study

Table 3-17
WET WEATHER ANALYSIS
DICKEY ROAD BRIDGE LOCATION
B6

Greeley and Hansen
April 19-20, 2000

FROM START OF STORM, HOURS	-4	0	4	8	12	16	20	24	28	32	36	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit	GLI Water Quality Acute Limit
SAMPLE NO.	1	2	3	4	5	6	7	8	9	10	11					
PARAMETER																
E-coli (CFU / 100mL)	500.00	700.00	500.00	4100.00	2500.00	1600.00	3700.00	3600.00	5600.00	5000.00	4000.00	2139.00	5600.00	500.00	100.00	235.00
Oil and Grease	3.50	3.30	2.10	<2.00	<2.00	<2.00	<2.00	<2.00				1.24	3.50	0.75	2.00	-
Ammonia (NH_3), as N	0.29	0.31	0.36	0.41	0.40	0.47	0.45	0.45	0.42	0.36	0.38	0.39	0.47	0.29	0.01	9.6
Carbonaceous Biochemical Oxygen Demand (CBOD)	<2.00	<2.00	<2.00	2.20	<2.00	<2.00	2.20	2.00	5.10	2.80	5.40	1.90	5.40	1.09	2.00	-
Chemical Oxygen Demand (COD)	<20.00	40.00	100.00	90.00	100.00	100.00	100.00	<20.00				54.77	100.00	15.00	20.00	-
Chloride	52.00	52.00	53.00	56.00	53.00	58.00	58.00	65.00				55.73	65.00	52.00	4.00	860.00
Cyanide, Amenable to Chlorination (ATC)	<0 010	<0.010	<0.010	<0.005	<0.010	<0.010	<0.010	<0.010				0.000	0.000	0.000	0.010	0.022
Fluoride, (F)	0 59	0 64	0.64	0.69	0.66	0.65	0.66	0.65				0.65	0.69	0.59	0.10	12
Hardness, Total as $CaCO_3$	210 00	200 00	190.00	220.00	200.00	220.00	200.00	220.00				207.21	220.00	190.00	2.00	-
Nitrogen, Total Kjeldahl as N (TKN)	1 10	0 86	1 30	1.30	1.40	1.40	1.60	1.30	1.50	1.30	1.40	1.30	1.60	0.86	0.50	-
Phosphorus, Total	<0 10	<0.10	<0.10	<0.10	<0.10	0.11	0.11	<0.10				0.04	0.11	0.03	0.10	-
Solids, Total Dissolved (TDS)	180 00	220 00	300.00	340.00	200.00	310.00	300.00	340.00				266.63	340.00	180.00	10.00	-
Solids, Total Suspended (TSS)	9 80	9 20	14 00	16.00	330.00	17.00	17.00	12.00				19.75	330.00	9.20	1.00	-
Solids, Total Volatile Suspended (TVSS)	3 80	5.00	7.60	2.40	14.00	5.20	5.20	1.40				4.55	14.00	1.40	1.00	-
Sulfate (SO_4)	48.00	54.00	52.00	60.00	66.00	63.00	65.00	62.00				58.41	66.00	48.00	5.00	-
pH (pH units)												0.00	0.00	0.00	0.01	6<=pH<=9
METALS																
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.34
Arsenic (As), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.34
Cadmium (Cd), Total Recoverable	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.010
Cadmium (Cd), Dissolved	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0098
Chromium (Cr), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	3.3
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	0.01	0.01	<0.01	<0.01				0.004	0.01	0.00	0.01	1.0
Copper (Cu), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.028
Copper (Cu), Dissolved	<0.01	<0.01	<0.01	<0.01	0.02	0.02	<0.01	<0.01				0.004	0.02	0.00	0.01	0.027
Iron (Fe), Total Recoverable	0.96	1.18	1.65	1.01	0.99	2.31	2.62	1.47				1.42	2.62	0.96	0.05	-
Iron (Fe), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	-
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.31
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.31
Mercury (Hg), Total Recoverable	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0017
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0014
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.88
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.88
Zinc (Zn), Total Recoverable	0.03	0.03	0.05	0.05	0.04	0.07	0.08	0.05				0.05	0.08	0.03	0.01	0.22
Zinc (Zn), Dissolved	0.06	0.01	0.02	0.01	0.02	0.02	0.01	0.04				0.02	0.06	0.01	0.01	0.22

NOTES:

All parameters are listed in milligrams per liter unless otherwise noted.

[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4 (a)(8)(C) in which samples with concentrations below the detection limit are assigned the value "V".

[2]If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero.

[3]The minimum value may be equal to a calculated "V" value.

wet_bridge_2.xls
Dickey

GARY SANITARY DISTRICT
Gary, Indiana

Grand Calumet River and Indiana Harbor Ship Canal CSO Discharge Impact Initial Assessment Study

Table 3-22
WET WEATHER ANALYSIS
CLINE AVENUE BRIDGE LOCATION
B3

Greeley and Hansen
June 20-21, 2000

FROM START OF STORM, HOURS	-4	0	4	8	12	16	20	24	28	32	36	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit	GLI Water Quality Acute Limit
SAMPLE NO.	1	2	3	4	5	6	7	8	9	10	11					
PARAMETER																
E-coli (CFU / 100mL)	130.00	60.00	600.00	100.00	37000.00	34000.00	120000.00	11000.00	2000.00	2000.00	5000.00	2405.00	120000.00	60.00	10.00	235.00
Oil and Grease	<2.00	4.60	2.60	6.30	<2.00	<2.00	6.60	<2.00				2.17	6.60	1.00	2.00	-
Ammonia (NH_3), as N	0.27	0.28	0.25	0.32	0.30	0.44	0.54	0.29	0.32	0.36	0.35	0.33	0.54	0.25	0.01	3.7
Carbonaceous Biochemical Oxygen Demand (CBOD)	<2.00	3.00	2.00	4.00	4.20	7.80	12.00	<2.00	3.30	<2.00	3.50	3.18	12.00	1.45	2.00	-
Chemical Oxygen Demand (COD)	20.00	20.00	<20.00	<20.00	<20.00	<20.00	<20.00	<20.00				7.07	20.00	5.00	20.00	-
Chloride	36.00	37.00	50.00	53.00	45.00	53.00	56.00	51.00				47.38	56.00	37.00	1.00	860.00
Cyanide, Amenable to Chlorination (ATC)	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010				0.000	0.000	0.000	0.005	0.022
Fluoride, (F)	0.60	0.59	0.63	0.63	0.58	0.52	0.57	0.59				0.59	0.63	0.52	0.10	12
Hardness, Total as $CaCO_3$	200.00	220.00	220.00	230.00	250.00	230.00	220.00	180.00				217.83	250.00	180.00	2.00	-
Nitrogen, Total Kjeldahl as N (TKN)	1.40	1.10	1.30	1.60	1.20	1.50	1.60	1.20	1.50	1.00	1.10	1.30	1.60	1.00	0.50	-
Phosphorus, Total	<0.10	<0.10	<0.10	<0.10	<0.10	0.12	0.14	0.11				0.02	0.14	0.01	0.02	-
Solids, Total Dissolved (TDS)	240.00	260.00	290.00	280.00	210.00	210.00	240.00	290.00				250.60	290.00	210.00	10.00	-
Solids, Total Suspended (TSS)	7.00	6.80	6.80	4.00	7.20	11.00	8.60	5.80				6.90	11.00	4.00	1.00	-
Solids, Total Volatile Suspended (TVSS)	2.00	2.80	3.00	2.40	2.80	5.20	5.00	3.20				3.14	5.20	2.00	2.00	-
Sulfate (SO_4)	32.00	34.00	37.00	38.00	31.00	30.00	34.00	32.00				33.40	38.00	30.00	8.00	-
pH (pH units)												0.00	0.00	0.00	0.01	6<=pH<=9
METALS																
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.34
Arsenic (As), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.34
Cadmium (Cd), Total Recoverable	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0093
Cadmium (Cd), Dissolved	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0088
Chromium (Cr), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	3.1
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.96
Copper (Cu), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.026
Copper (Cu), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.025
Iron (Fe), Total Recoverable	2.16	1.36	1.14	1.09	1.69	1.71	1.32	1.02				1.39	2.16	1.02	0.05	-
Iron (Fe), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	-
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.28
Lead (Pb), Dissolved	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.01	0.06	0.01	0.05	0.28
Mercury (Hg), Total Recoverable	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0017
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0014
Nickel (Ni), Total Recoverable	0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01				0.004	0.01	0.00	0.01	0.81
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01				0.002	0.01	0.00	0.01	0.81
Zinc (Zn), Total Recoverable	0.05	0.03	0.03	0.04	0.03	0.04	0.03	0.03				0.03	0.05	0.03	0.01	0.21
Zinc (Zn), Dissolved	0.05	<0.01	<0.01	0.03	<0.01	0.07	0.01	<0.01				0.01	0.07	0.01	0.01	0.20

NOTES:
All parameters are listed in milligrams per liter unless otherwise noted.
[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4 (a)(6)(C) in which samples with concentrations below the detection limit are assigned the value "V".
[2]If all sample concentrations for a parameter are below the detection limit, the geometric mean, maximum value and minimum value are equal to zero.
[3]The minimum value may be equal to a calculated "V" value.

GARY SANITARY DISTRICT
Gary, Indiana

Grand Calumet River and Indiana Harbor Ship Canal CSO Discharge Impact Initial Assessment Study

Table 3-25
WET WEATHER ANALYSIS
DICKEY ROAD BRIDGE LOCATION
B6

Greeley and Hansen
June 20-21, 2000

FROM START OF STORM, HOURS	-4	0	4	8	12	16	20	24	28	32	36	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit	GLI Water Quality Acute Limit
SAMPLE NO.	1	2	3	4	5	6	7	8	9	10	11					
PARAMETER																
E-coli (CFU / 100mL)	220.00	1100.00	200.00	<100.00	<1000.00	11000.00	5000.00	4000.00	10000.00	11000.00	18000.00	1028.00	18000.00	8.00	10.00	235.00
Oil and Grease	2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00				0.32	2.00	0.25	2.00	-
Ammonia (NH_3), as N	0.27	0.25	0.26	0.31	0.24	0.34	0.33	0.39	0.22	0.29	0.41	0.30	0.41	0.22	0.01	9.6
Carbonaceous Biochemical Oxygen Demand (CBOD)	2.20	3.20	2.20	7.80	3.30	<2.00	14.00	<2.00	<2.00	<2.00	<2.00	2.28	14.00	1.09	2.00	-
Chemical Oxygen Demand (COD)	50.00	20.00	<20.00	<20.00	<20.00	60.00	<20.00	30.00				19.14	60.00	10.00	20.00	-
Chloride	49.00	49.00	49.00	60.00	44.00	61.00	60.00	62.00				53.83	62.00	44.00	1.00	860.00
Cyanide, Amenable to Chlorination (ATC)	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010				0.000	0.000	0.000	0.005	0.022
Fluoride, (F)	0.50	0.49	0.51	0.61	0.45	0.59	0.54	0.56				0.53	0.61	0.45	0.10	12
Hardness, Total as $CaCO_3$	210.00	200.00	140.00	230.00	190.00	200.00	220.00	220.00				199.28	230.00	140.00	2.00	-
Nitrogen, Total Kjeldahl as N (TKN)	1.10	1.00	<1.00	1.10	<1.00	1.70	1.20	1.30	1.40	1.40	1.30	1.03	1.70	0.41	0.50	-
Phosphorus, Total	<0.10	<0.10	0.10	<0.10	<0.10	0.13	<0.10	0.12				0.02	0.13	0.01	0.02	-
Solids, Total Dissolved (TDS)	300.00	300.00	390.00	340.00	260.00	360.00	290.00	340.00				320.07	390.00	260.00	10.00	-
Solids, Total Suspended (TSS)	3.40	6.60	6.00	4.60	11.00	8.00	6.00	11.00				6.60	11.00	3.40	1.00	-
Solids, Total Volatile Suspended (TVSS)	2.00	2.60	2.80	2.20	3.80	2.80	2.00	4.40				2.72	4.40	2.00	2.00	-
Sulfate (SO_4)	55.00	54.00	54.00	67.00	47.00	74.00	65.00	64.00				59.42	74.00	47.00	8.00	-
pH (pH units)												0.00	0.00	0.00	0.01	6<=pH<=9
METALS																
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.34
Arsenic (As), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.34
Cadmium (Cd), Total Recoverable	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.010
Cadmium (Cd), Dissolved	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0098
Chromium (Cr), Total Recoverable	<0.01	0.01	0.01	<0.01	<0.01	<0.01	0.01	0.02				0.01	0.02	0.01	0.01	3.3
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.0
Copper (Cu), Total Recoverable	<0.01	0.01	<0.01	<0.01	0.01	<0.01	<0.01	0.01				0.01	0.01	0.00	0.01	0.026
Copper (Cu), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.027
Iron (Fe), Total Recoverable	0.90	0.98	0.97	0.73	0.93	1.04	0.79	1.43				0.95	1.43	0.73	0.05	-
Iron (Fe), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	-
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.31
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.31
Mercury (Hg), Total Recoverable	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0017
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0014
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.88
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.88
Zinc (Zn), Total Recoverable	0.04	0.05	0.04	0.03	0.07	0.05	0.04	0.05				0.04	0.07	0.03	0.01	0.22
Zinc (Zn), Dissolved	0.03	0.08	<0.01	<0.01	0.01	<0.01	<0.01	<0.01				0.01	0.08	0.00	0.01	0.22

NOTES:

All parameters are listed in milligrams per liter unless otherwise noted.

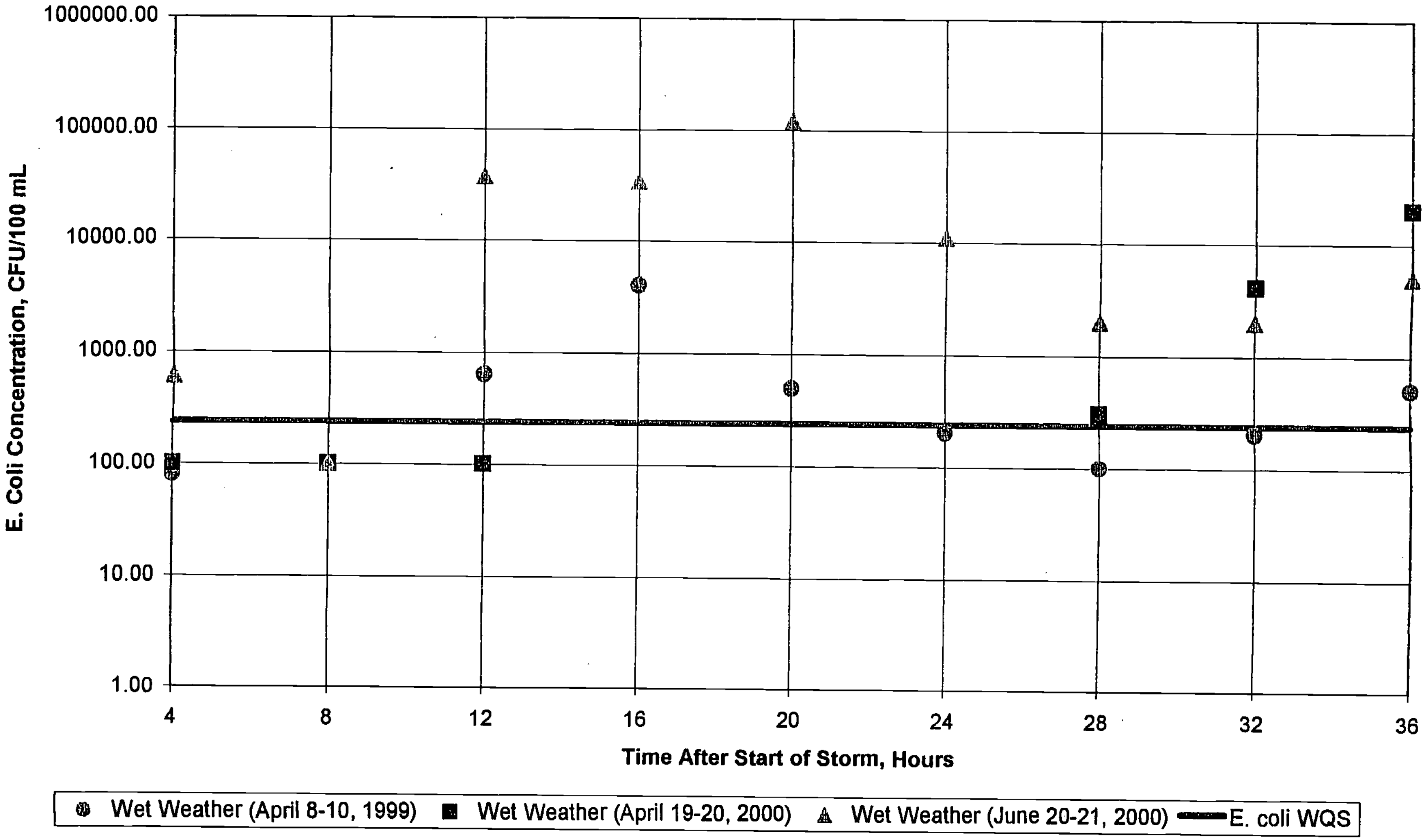
[1] Geometric mean calculated using method identified in 327 IAC 5-2-11.4 (a)(8)(C) in which samples with concentrations below the detection limit are assigned the value "V".

[2] If all sample concentrations for a parameter are below the detection limit, the geometric mean, maximum value and minimum value are equal to zero.

[3] The minimum value may be equal to a calculated "V" value.

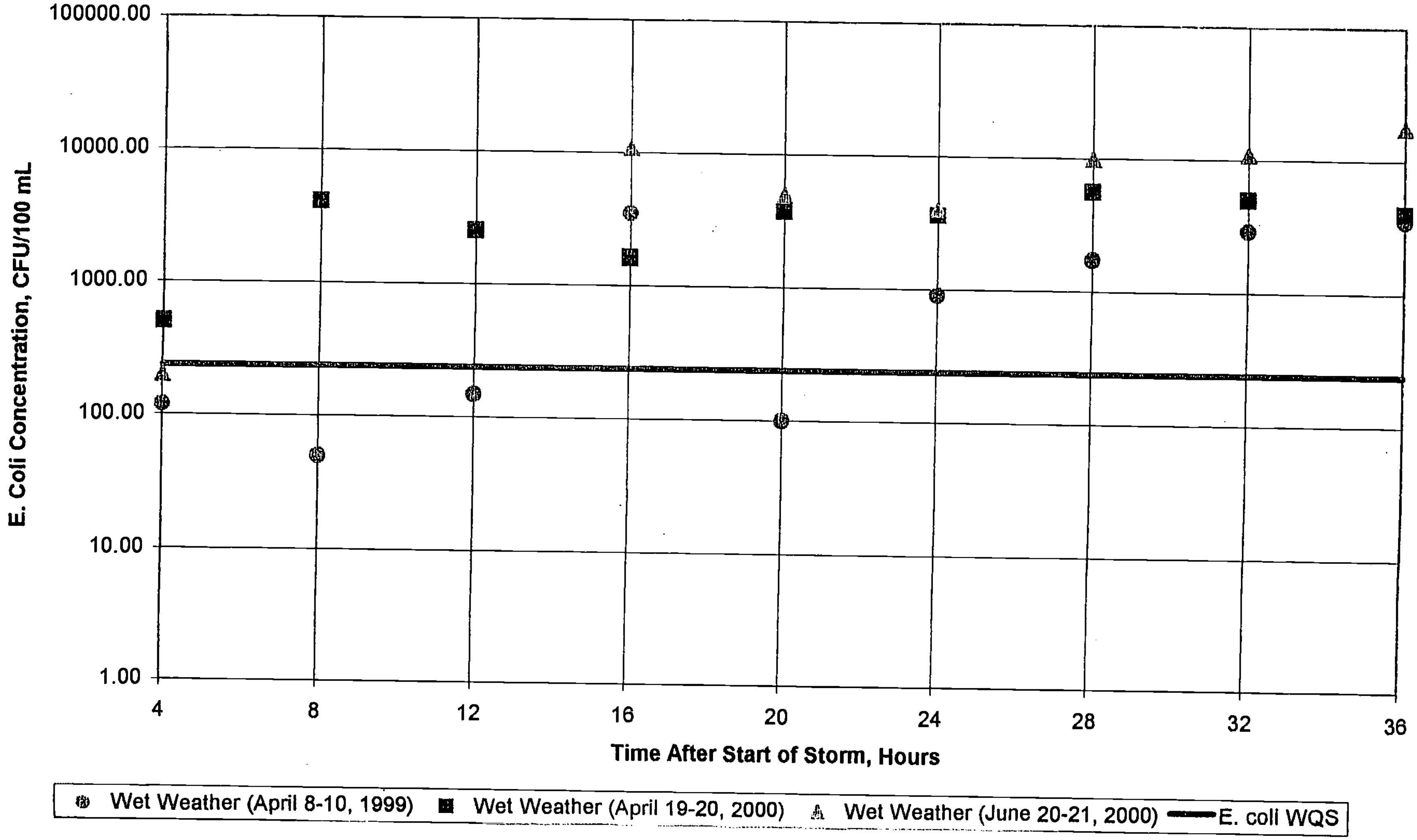
wet_bridge_3.xls
Dickey

FIGURE 3-3.
Comparison of E. Coli Wet Weather Concentrations at the Cline Avenue Bridge to the Water Quality Standard



AcuteBridgeFigures.xls
CL_EC

FIGURE 3-6.
Comparison of E. Coli Wet Weather Concentrations at the Dickey Road Bridge to the Water Quality Standard



AcuteBridgeFigures.xls
DY_EC

GARY SANITARY DISTRICT
Gary, Indiana

Grand Calumet River and Indiana Harbor Ship Canal CSO Discharge Impact Initial Assessment Study

Table 4-2
CSO DISCHARGE ANALYSIS
EAST CHICAGO SANITARY DISTRICT
MICHIGAN AVENUE LOCATION
002-MAECSD

Greeley and Hansen
April 8-10, 1999

FROM START OF OVERFLOW, MINUTES	15	30	45	60	75	90	105	120	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit
SAMPLE NO.	1	2	3	4	5	6	7	8				
PARAMETER												
E-coli (CFU / 100mL)	28000.00		20000.00		17000.00		24000.00		21863.00	28000.00	17000.00	10.00
Oil and Grease	140.00		5.30		3.10		5.10		10.41	140.00	3.10	2.00
Ammonia (NH_3), as N	2.50		2.10		3.10		3.20		2.69	3.20	2.10	0.01
Carbonaceous Biochemical Oxygen Demand (CBOD)	120.00	32.00	52.00	35.00	56.00	39.00	36.00	34.00	45.60	120.00	32.00	2.00
Chemical Oxygen Demand (COD)	230.00		110.00		100.00		80.00		119.28	230.00	80.00	20.00
Chloride	74.00		82.00		68.00		85.00		27.51	74.00	0.80	1.00
Cyanide, Amenable to Chlorination (ATC)	<0.005		0.010		0.009		0.008		0.007	0.010	0.004	0.005
Fluoride, (F)	0.56		0.51		0.54		0.54		0.54	0.56	0.51	0.10
Hardness, Total as $CaCO_3$	180.00		140.00		140.00		120.00		143.44	180.00	120.00	2.00
Nitrogen, Total Kjeldahl as N (TKN)	3.90		3.80		4.60		5.00		4.30	5.00	3.80	0.50
Phosphorus, Total	0.82		0.54		0.79		0.54		0.66	0.82	0.54	0.10
Solids, Total Dissolved (TDS)	330.00	320.00	290.00	280.00	10000.00	240.00	430.00	350.00	485.70	10000.00	240.00	10.00
Solids, Total Suspended (TSS)	180.00	88.00	65.00	43.00	34.00	26.00	<1.00	33.00	30.52	180.00	0.88	1.00
Solids, Total Volatile Suspended (TVSS)	40.00	30.00	28.00	18.00	16.00	<1.00	<1.00	1.20	7.11	40.00	0.75	1.00
Sulfate (SO_4)	52.00		53.00		53.00		56.00		53.48	56.00	52.00	8.00
pH (pH units)	7.01		7.07		7.10		7.23		7.10	7.23	7.01	0.01
METALS												
Arsenic (As), Total Recoverable	0.03		0.02		<0.01		<0.01		0.01	0.03	0.01	0.01
Arsenic (As), Dissolved	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Cadmium (Cd), Total Recoverable	<0.005		<0.005		<0.005		<0.005		0.000	0.000	0.000	0.005
Cadmium (Cd), Dissolved	<0.005		<0.005		<0.005		<0.005		0.000	0.000	0.000	0.005
Chromium (Cr), Total Recoverable	0.02		<0.01		<0.01		0.01		0.01	0.02	0.01	0.01
Chromium (Cr), Dissolved	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Copper (Cu), Total Recoverable	0.04		0.03		0.02		0.02		0.03	0.04	0.02	0.01
Copper (Cu), Dissolved	0.01		0.01		<0.01		<0.01		0.01	0.01	0.01	0.01
Iron (Fe), Total Recoverable	4.64		3.07		1.92		1.32		2.45	4.64	1.32	0.05
Iron (Fe), Dissolved	0.22		0.12		0.12		0.13		0.14	0.22	0.12	0.05
Lead (Pb), Total Recoverable	<0.05		<0.05		<0.05		<0.05		0.00	0.00	0.00	0.05
Lead (Pb), Dissolved	<0.05		<0.05		<0.05		<0.05		0.00	0.00	0.00	0.05
Mercury (Hg)	<0.0002		0.0002		0.0002		0.0002		0.0002	0.0002	0.0002	0.0002
Mercury (Hg), Dissolved	<0.0002		<0.0002		<0.0002		<0.0002		0.0000	0.0000	0.0000	0.0002
Nickel (Ni), Total Recoverable	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Nickel (Ni), Dissolved	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Zinc (Zn), Total Recoverable	0.24		0.21		0.15		0.12		0.17	0.24	0.12	0.01
Zinc (Zn), Dissolved	0.03		0.04		0.04		0.04		0.04	0.04	0.03	0.01

NOTES:
All parameters are listed in milligrams per liter unless otherwise noted.
[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4 (a)(6)(C) in which samples with concentrations below the detection limit are assigned the value"V".
[2]If all sample concentrations for a parameter are below the detection limit, the geometric mean, maximum value and minimum value are equal to zero.
[3]The minimum value may be equal to a calculated "V" value.

GARY SANITARY DISTRICT
Gary, Indiana

Grand Calumet River and Indiana Harbor Ship Canal CSO Discharge Impact Initial Assessment Study

Table 4-3
CSO DISCHARGE ANALYSIS
EAST CHICAGO SANITARY DISTRICT
ALDER ST. LOCATION
003-ASECSD

Greeley and Hansen
April 8-10, 1999

FROM START OF OVERFLOW, MINUTES	15	30	45	60	75	90	105	120	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit
SAMPLE NO.	1	2	3	4	5	6	7	8				
PARAMETER												
E-coli (CFU / 100mL)	22000.00		20000.00		13000.00		14000.00		16822.00	22000.00	13000.00	10.00
Oil and Grease	720.00		45.00		7.50		6.70		35.72	720.00	6.70	2.00
Ammonia (NH_3), as N	5.00		2.70		1.80		1.70		2.54	5.00	1.70	0.01
Carbonaceous Biochemical Oxygen Demand (CBOD)	140.00	150.00	120.00	89.00	51.00	80.00	62.00	42.00	83.85	150.00	42.00	2.00
Chemical Oxygen Demand (COD)	370.00		330.00		110.00		230.00		235.75	370.00	110.00	20.00
Chloride	100.00		48.00		38.00		47.00		54.11	100.00	38.00	1.00
Cyanide, Amenable to Chlorination (ATC)	<0.005		<0.005		<0.005		0.290		0.005	0.290	0.001	0.005
Fluoride, (F)	0.73		0.45		0.33		0.31		0.43	0.73	0.31	0.10
Hardness, Total as $CaCO_3$	280.00		220.00		150.00		130.00		186.17	280.00	130.00	2.00
Nitrogen, Total Kjeldahl as N (TKN)	17.00		5.20		3.80		6.90		7.39	17.00	3.80	0.50
Phosphorus, Total	2.50		2.40		1.60		1.40		1.91	2.50	1.40	0.10
Solids, Total Dissolved (TDS)	6400.00	210.00	220.00	120.00	220.00	140.00	210.00	170.00	281.13	6400.00	120.00	10.00
Solids, Total Suspended (TSS)	310.00	700.00	270.00	260.00	230.00	250.00	120.00	120.00	244.12	700.00	120.00	1.00
Solids, Total Volatile Suspended (TVSS)	170.00	350.00	140.00	56.00	140.00	130.00	66.00	56.00	116.31	350.00	56.00	1.00
Sulfate (SO_4)	76.00		35.00		23.00		22.00		34.06	76.00	22.00	6.00
pH (pH units)	7.19		7.28		7.35		7.37		7.30	7.37	7.19	0.01
METALS												
Arsenic (As), Total Recoverable	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Arsenic (As), Dissolved	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Cadmium (Cd), Total Recoverable	<0.005		<0.005		<0.005		<0.005		0.000	0.000	0.000	0.005
Cadmium (Cd), Dissolved	<0.005		<0.005		<0.005		<0.005		0.000	0.000	0.000	0.005
Chromium (Cr), Total Recoverable	0.03		0.03		0.02		0.02		0.02	0.03	0.02	0.01
Chromium (Cr), Dissolved	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Copper (Cu), Total Recoverable	0.10		0.07		0.09		0.07		0.08	0.10	0.07	0.01
Copper (Cu), Dissolved	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Iron (Fe), Total Recoverable	10.60		12.10		7.61		6.97		9.06	12.10	6.97	0.05
Iron (Fe), Dissolved	0.18		0.22		0.12		0.11		0.15	0.22	0.11	0.05
Lead (Pb), Total Recoverable	0.10		0.12		0.08		0.08		0.09	0.12	0.08	0.05
Lead (Pb), Dissolved	<0.05		<0.05		<0.05		<0.05		0.00	0.00	0.00	0.05
Mercury (Hg)	0.0003		0.0004		0.0005		0.0002		0.0003	0.0005	0.0002	0.0002
Mercury (Hg), Dissolved	<0.0002		<0.0002		<0.0002		<0.0002		0.0000	0.0000	0.0000	0.0002
Nickel (Ni), Total Recoverable	<0.01		0.02		0.01		<0.01		0.01	0.02	0.01	0.01
Nickel (Ni), Dissolved	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Zinc (Zn), Total Recoverable	0.77		0.80		0.46		0.43		0.59	0.80	0.43	0.01
Zinc (Zn), Dissolved	0.01		0.02		0.04		0.03		0.02	0.04	0.01	0.01

NOTES:
All parameters are listed in milligrams per liter unless otherwise noted.
[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4 (a)(6)(C) in which samples with concentrations below the detection limit are assigned the value "V".
[2]If all sample concentrations for a parameter are below the detection limit, the geometric mean, maximum value and minimum value are equal to zero.
[3]The minimum value may be equal to a calculated "V" value.

GARY SANITARY DISTRICT
Gary, Indiana

Grand Calumet River and Indiana Harbor Ship Canal CSO Discharge Impact Initial Assessment Study

Table 4-4
CSO DISCHARGE ANALYSIS
EAST CHICAGO SANITARY DISTRICT
EQUALIZATION BASIN OVERFLOW
004-EQECSD

Greeley and Hansen
April 8-10, 1999

FROM START OF OVERFLOW, MINUTES	15	30	45	60	75	90	105	120	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit
SAMPLE NO.	1	2	3	4	5	6	7	8				
PARAMETER												
E-coli (CFU / 100mL)	3000.00		3500.00		3000.00		2700.00		3037.00	3500.00	2700.00	10.00
Oil and Grease	<2.00		<2.00		<2.00		<2.00		0.00	0.00	0.00	2.00
Ammonia (NH_3), as N	3.40		3.70		3.70		3.40		3.55	3.70	3.40	0.01
Carbonaceous Biochemical Oxygen Demand (CBOD)	6.50	5.80	<2.00	3.00	2.80	3.60	3.00	3.60	3.48	6.50	1.75	2.00
Chemical Oxygen Demand (COD)	30.00		<20		20.00		60.00		27.11	60.00	15.00	20.00
Chloride	56.00		68.00		55.00		54.00		57.99	68.00	54.00	1.00
Cyanide, Amenable to Chlorination (ATC)	<0.005		<0.005		<0.005		<0.005		0.000	0.000	0.000	0.005
Fluoride, (F)	0.34		0.32		0.32		0.41		0.35	0.41	0.32	0.10
Hardness, Total as $CaCO_3$	95.00		90.00		90.00		95.00		92.47	95.00	90.00	2.00
Nitrogen, Total Kjeldahl as N (TKN)	4.40		4.70		4.70		6.20		4.95	6.20	4.40	0.50
Phosphorus, Total	0.21		0.20		0.20		0.20		0.20	0.21	0.20	0.10
Solids, Total Dissolved (TDS)	230.00	240.00	280.00	210.00	240.00	250.00	260.00	270.00	246.59	280.00	210.00	10.00
Solids, Total Suspended (TSS)	120.00	2.00	3.00	3.00	3.80	2.00	<1.00	1.40	3.45	120.00	0.88	1.00
Solids, Total Volatile Suspended (TVSS)	<1.00	2.40	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	0.18	2.40	0.13	1.00
Sulfate (SO_4)	19.00		22.00		21.00		23.00		21.20	23.00	19.00	8.00
pH (pH units)	7.85		7.93		8.00		8.00		7.94	8.00	7.85	0.01
METALS												
Arsenic (As), Total Recoverable	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Arsenic (As), Dissolved	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Cadmium (Cd), Total Recoverable	<0.005		<0.005		<0.005		<0.005		0.000	0.000	0.000	0.005
Cadmium (Cd), Dissolved	<0.005		<0.005		<0.005		<0.005		0.000	0.000	0.000	0.005
Chromium (Cr), Total Recoverable	0.01		<0.01		0.18		<0.01		0.01	0.18	0.01	0.01
Chromium (Cr), Dissolved	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Copper (Cu), Total Recoverable	<0.01		0.01		<0.01		<0.01		0.004	0.01	0.00	0.01
Copper (Cu), Dissolved	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Iron (Fe), Total Recoverable	0.36		0.26		0.24		0.24		0.27	0.36	0.24	0.05
Iron (Fe), Dissolved	<0.05		0.60		<0.05		<0.05		0.03	0.60	0.01	0.05
Lead (Pb), Total Recoverable	<0.05		<0.05		<0.05		<0.05		0.00	0.00	0.00	0.05
Lead (Pb), Dissolved	<0.05		<0.05		<0.05		<0.05		0.00	0.00	0.00	0.05
Mercury (Hg)	<0.0002		<0.0002		<0.0002		<0.0002		0.0000	0.0000	0.0000	0.0002
Mercury (Hg), Dissolved	<0.0002		<0.0002		<0.0002		<0.0002		0.0000	0.0000	0.0000	0.0002
Nickel (Ni), Total Recoverable	<0.01		<0.01		0.08		<0.01		0.01	0.08	0.00	0.01
Nickel (Ni), Dissolved	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Zinc (Zn), Total Recoverable	0.01		0.01		0.01		0.01		0.01	0.01	0.01	0.01
Zinc (Zn), Dissolved	<0.01		<0.01		0.01		<0.01		0.004	0.01	0.00	0.01

NOTES:
All parameters are listed in milligrams per liter unless otherwise noted.
[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4 (a)(8)(C) in which samples with concentrations below the detection limit are assigned the value "V".
[2]If all sample concentrations for a parameter are below the detection limit, the geometric mean, maximum value and minimum value are equal to zero.
[3]The minimum value may be equal to a calculated "V" value.

GARY SANITARY DISTRICT
Gary, Indiana

Grand Calumet River and Indiana Harbor Ship Canal CSO Discharge Impact Initial Assessment Study

Table 4-17
CSO DISCHARGE ANALYSIS
EAST CHICAGO SANITARY DISTRICT
ALDER ST. LOCATION
003-ASECSD

Greeley and Hansen
April 19-20, 2000

FROM START OF OVERFLOW, MINUTES	15	30	45	60	75	90	105	120	Geometric Mean[1, 2]	Maximum Value[2]	Minimum Value[2, 3]	Detection Limit
SAMPLE NO.	1	2	3	4	5	6	7	8				
PARAMETER												
E-coli (CFU / 100mL)	1200000.00		1000000.00		2000000.00		1600000.00		1399854.00	2000000.00	1000000.00	10.00
Oil and Grease	220.00		2.00		4.80		19.00		14.15	220.00	2.00	2.00
Ammonia (NH_3), as N	4.70		9.50		2.70		8.80		5.35	9.50	2.70	0.01
Carbonaceous Biochemical Oxygen Demand (CBOD)	100.00	110.00	56.00	68.00	36.00	25.00	60.00	140.00	64.95	140.00	25.00	2.00
Chemical Oxygen Demand (COD)	340.00		110.00		220.00		80.00		160.18	340.00	80.00	20.00
Chloride	91.00		72.00		71.00		79.00		77.86	91.00	71.00	1.00
Cyanide, Amenable to Chlorination (ATC)	<0.010		<0.010		<0.010		<0.010		0.000	0.000	0.000	0.005
Fluoride, (F)	0.79		0.64		0.57		0.67		0.66	0.79	0.57	0.10
Hardness, Total as $CaCO_3$	360.00		210.00		240.00		270.00		284.56	360.00	210.00	2.00
Nitrogen, Total Kjeldahl as N (TKN)	16.00		20.00		8.60		14.00		14.01	20.00	8.60	0.50
Phosphorus, Total	2.20		2.10		1.20		2.00		1.82	2.20	1.20	0.02
Solids, Total Dissolved (TDS)	400.00	320.00	310.00	350.00	220.00	360.00	350.00	410.00	334.79	410.00	220.00	10.00
Solids, Total Suspended (TSS)	320.00	310.00	210.00	560.00	210.00	320.00	300.00	280.00	300.14	560.00	210.00	1.00
Solids, Total Volatile Suspended (TVSS)	100.00	150.00	110.00	240.00	88.00	140.00	100.00	440.00	146.71	440.00	88.00	2.00
Sulfate (SO_4)	100.00		60.00		47.00		72.00		67.13	100.00	47.00	8.00
pH (pH units)	7.13		7.33		7.37		7.29		7.28	7.37	7.13	0.01
METALS												
Arsenic (As), Total Recoverable	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Arsenic (As), Dissolved	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Cadmium (Cd), Total Recoverable	<0.005		<0.005		<0.005		<0.005		0.000	0.000	0.000	0.005
Cadmium (Cd), Dissolved	<0.005		<0.005		<0.005		<0.005		0.000	0.000	0.000	0.005
Chromium (Cr), Total Recoverable	0.02		<0.01		0.02		0.01		0.01	0.02	0.01	0.01
Chromium (Cr), Dissolved	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Copper (Cu), Total Recoverable	0.08		0.06		0.08		0.08		0.07	0.08	0.06	0.01
Copper (Cu), Dissolved	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Iron (Fe), Total Recoverable	14.90		6.73		11.40		11.80		10.78	14.90	6.73	0.05
Iron (Fe), Dissolved	0.49		0.40		0.10		0.45		0.31	0.49	0.10	0.05
Lead (Pb), Total Recoverable	0.1		0.05		0.09		0.07		0.07	0.10	0.05	0.05
Lead (Pb), Dissolved	<0.05		<0.05		<0.05		<0.05		0.00	0.00	0.00	0.05
Mercury (Hg), Total Recoverable	<0.0002		<0.0002		0.0004		<0.0002		0.0001	0.0004	0.0001	0.0002
Mercury (Hg), Dissolved	<0.0002		<0.0002		<0.0002		<0.0002		0.0000	0.0000	0.0000	0.0002
Nickel (Ni), Total Recoverable	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Nickel (Ni), Dissolved	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Zinc (Zn), Total Recoverable	0.61		0.36		0.50		0.45		0.47	0.61	0.36	0.01
Zinc (Zn), Dissolved	<0.01		0.01		0.03		0.01		0.01	0.03	0.01	0.01

NOTES:
All parameters are listed in milligrams per liter unless otherwise noted.
[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4 (a)(8)(C) in which samples with concentrations below the detection limit are assigned the value "V".
[2]If all sample concentrations for a parameter are below the detection limit, the geometric mean, maximum value and minimum value are equal to zero.
[3]The minimum value may be equal to a calculated "V" value.

cso_2.xls
ASECSD

GARY SANITARY DISTRICT
Gary, Indiana

Grand Calumet River and Indiana Harbor Ship Canal CSO Discharge Impact Initial Assessment Study

Table 4-18
CSO DISCHARGE ANALYSIS
EAST CHICAGO SANITARY DISTRICT
EQUALIZATION BASIN OVERFLOW
004-EQECSD

Greeley and Hansen
April 19-20, 2000

FROM START OF OVERFLOW, MINUTES	15	30	45	60	75	90	105	120	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit
SAMPLE NO.	1	2	3	4	5	8	7	8				
PARAMETER												
E-coli (CFU / 100mL)	1000 00		4000.00		2000.00		4000.00		2378.00	4000.00	1000.00	10.00
Oil and Grease	<2.00		2.00		<2.00		<2.00		0.71	2.00	0.50	2.00
Ammonia (NH_3), as N	1.90		2.00		2.10		2.10		2.02	2.10	1.90	0.01
Carbonaceous Biochemical Oxygen Demand (CBOD)	20 00	20.00	24.00	22.00	27.00	29.00	21.00	14.00	21.67	29.00	14.00	2.00
Chemical Oxygen Demand (COD)	50.00		70.00		60.00		40.00		53.84	70.00	40.00	20.00
Chloride	46.00		47.00		48.00		48.00		47.24	48.00	46.00	1.00
Cyanide, Amenable to Chlorination (ATC)	<0.010		<0.005		<0.010		<0.010		0.000	0.000	0.000	0.005
Fluoride, (F)	0.36		0.36		0.36		0.36		0.36	0.36	0.36	0.10
Hardness, Total as $CaCO_3$	130.00		130.00		120 00		130.00		127.42	130.00	120.00	2.00
Nitrogen, Total Kjeldahl as N (TKN)	6.50		5.20		6.80		4.70		5.73	6.80	4.70	0.50
Phosphorus, Total	0.35		0.36		0.35		0.30		0.34	0.36	0.30	0.02
Solids, Total Dissolved (TDS)	230.00	240.00	240.00	230.00	220.00	210.00	230.00	230.00	228.56	240.00	210.00	10.00
Solids, Total Suspended (TSS)	20.00	20.00	24.00	20.00	12.00	18.00	13.00	11.00	16.66	24.00	11.00	1.00
Solids, Total Volatile Suspended (TVSS)	16.00	19.00	20.00	19.00	14.00	17.00	14.00	10.00	15.78	20.00	10.00	2.00
Sulfate (SO_4)	33.00		31.00		28.00		27.00		29.66	33.00	27.00	8.00
pH (pH units)	7.50		8.10		8.18		8.31		8.02	8.31	7.50	0.01
METALS												
Arsenic (As), Total Recoverable	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Arsenic (As), Dissolved	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Cadmium (Cd), Total Recoverable	<0.005		<0.005		<0.005		<0.005		0.000	0.000	0.000	0.005
Cadmium (Cd), Dissolved	<0.005		<0.005		<0.005		<0.005		0.000	0.000	0.000	0.005
Chromium (Cr), Total Recoverable	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Chromium (Cr), Dissolved	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Copper (Cu), Total Recoverable	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Copper (Cu), Dissolved	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Iron (Fe), Total Recoverable	0.66		0.38		0.25		0.22		0.34	0.66	0.22	0.05
Iron (Fe), Dissolved	<0.05		<0.05		<0.05		<0.05		0.00	0.00	0.00	0.05
Lead (Pb), Total Recoverable	<0.05		<0.05		<0.05		<0.05		0.00	0.00	0.00	0.05
Lead (Pb), Dissolved	<0.05		<0.05		<0.05		<0.05		0.00	0.00	0.00	0.05
Mercury (Hg), Total Recoverable	<0.0002		<0.0002		<0.0002		<0.0002		0.0000	0.0000	0.0000	0.0002
Mercury (Hg), Dissolved	<0.0002		<0.0002		<0.0002		<0.0002		0.0000	0.0000	0.0000	0.0002
Nickel (Ni), Total Recoverable	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Nickel (Ni), Dissolved	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Zinc (Zn), Total Recoverable	0.05		0.03		0.02		0.02		0.03	0.05	0.02	0.01
Zinc (Zn), Dissolved	<0.01		<0.01		0.01		<0.01		0.004	0.01	0.00	0.01

NOTES:
All parameters are listed in milligrams per liter unless otherwise noted.
[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4 (a)(8)(C) in which samples with concentrations below the detection limit are assigned the value"V".
[2]If all sample concentrations for a parameter are below the detection limit, the geometric mean, maximum value and minimum value are equal to zero.
[3]The minimum value may be equal to a calculated "V" value.

GARY SANITARY DISTRICT
Gary, Indiana

Grand Calumet River and Indiana Harbor Ship Canal CSO Discharge Impact Initial Assessment Study

Table 4-31
CSO DISCHARGE ANALYSIS
EAST CHICAGO SANITARY DISTRICT
ALDER ST. LOCATION
003-ASECSD

Greeley and Hansen
June 20-21, 2000

FROM START OF OVERFLOW, MINUTES	15	30	45	60	75	90	105	Remaining	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit
SAMPLE NO.	1	2	3	4	5	6	7	8				
PARAMETER												
E-coli (CFU / 100mL)	1200000.00		7500000.00		8000000.00		1500000.00		3223710.00	8000000.00	1200000.00	10.00
Oil and Grease			39.00				5.60		14.76	39.00	5.60	2.00
Ammonia (NH_3), as N	4.40		3.40		1.50				2.62	4.40	1.50	0.01
Carbonaceous Biochemical Oxygen Demand (CBOD)	30.00	33.00	24.00	18.00	19.00				23.54	33.00	18.00	2.00
Chemical Oxygen Demand (COD)	270.00		230.00		120.00				195.32	270.00	120.00	20.00
Chloride	70.00		72.00		58.00				66.37	72.00	58.00	1.00
Cyanide, Amenable to Chlorination (ATC)	<0.010		<0.010		<0.010				0.000	0.000	0.000	0.005
Fluoride, (F)	0.64		0.61		0.54				0.60	0.64	0.54	0.10
Hardness, Total as $CaCO_3$	300.00		240.00		160.00				225.65	300.00	160.00	2.00
Nitrogen, Total Kjeldahl as N (TKN)	11.00		9.20		5.90				8.42	11.00	5.90	0.50
Phosphorus, Total	2.10		1.60		0.93				1.52	2.10	0.93	0.02
Solids, Total Dissolved (TDS)	390.00	350.00	530.00	260.00	240.00				339.56	530.00	240.00	10.00
Solids, Total Suspended (TSS)	160.00	170.00	150.00	91.00	92.00				127.65	170.00	91.00	1.00
Solids, Total Volatile Suspended (TVSS)	96.00	100.00	87.00	54.00	51.00				74.53	100.00	51.00	2.00
Sulfate (SO_4)	86.00		74.00		61.00				72.95	86.00	61.00	8.00
pH (pH units)									0.00	0.00	0.00	0.01
METALS												
Arsenic (As), Total Recoverable	0.01		<0.01		<0.01				0.005	0.01	0.00	0.01
Arsenic (As), Dissolved	<0.01		<0.01		<0.01				0.00	0.00	0.00	0.01
Cadmium (Cd), Total Recoverable	<0.005		<0.005		<0.005				0.000	0.000	0.000	0.005
Cadmium (Cd), Dissolved	<0.005		<0.005		<0.005				0.000	0.000	0.000	0.005
Chromium (Cr), Total Recoverable	0.01		0.02		0.01				0.01	0.02	0.01	0.01
Chromium (Cr), Dissolved	<0.01		<0.01		<0.01				0.00	0.00	0.00	0.01
Copper (Cu), Total Recoverable	0.07		0.05		0.03				0.05	0.07	0.03	0.01
Copper (Cu), Dissolved	<0.01		<0.01		<0.01				0.00	0.00	0.00	0.01
Iron (Fe), Total Recoverable	6.56		5.96		3.26				5.04	6.56	3.26	0.05
Iron (Fe), Dissolved	0.42		0.21		0.15				0.24	0.42	0.15	0.05
Lead (Pb), Total Recoverable	<0.05		<0.05		<0.05				0.00	0.00	0.00	0.05
Lead (Pb), Dissolved	<0.05		<0.05		<0.05				0.00	0.00	0.00	0.05
Mercury (Hg), Total Recoverable	<0.0002		<0.0002		<0.0002				0.0000	0.0000	0.0000	0.0002
Mercury (Hg), Dissolved	<0.0002		<0.0002		<0.0002				0.0000	0.0000	0.0000	0.0002
Nickel (Ni), Total Recoverable	<0.01		<0.01		<0.01				0.00	0.00	0.00	0.01
Nickel (Ni), Dissolved	<0.01		<0.01		<0.01				0.00	0.00	0.00	0.01
Zinc (Zn), Total Recoverable	0.26		0.31		0.17				0.24	0.31	0.17	0.01
Zinc (Zn), Dissolved	0.03		0.04		0.04				0.04	0.04	0.03	0.01

NOTES:
All parameters are listed in milligrams per liter unless otherwise noted.
[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4 (a)(6)(C) in which samples with concentrations below the detection limit are assigned the value "V".
[2]If all sample concentrations for a parameter are below the detection limit, the geometric mean, maximum value and minimum value are equal to zero.
[3]The minimum value may be equal to a calculated "V" value.

GARY SANITARY DISTRICT
Gary, Indiana

Grand Calumet River and Indiana Harbor Ship Canal CSO Discharge Impact Initial Assessment Study

Table 4-32
CSO DISCHARGE ANALYSIS
EAST CHICAGO SANITARY DISTRICT
EQUALIZATION BASIN OVERFLOW
004-EQECSD

Greeley and Hansen
June 20-21, 2000

FROM START OF OVERFLOW, MINUTES	15	30	45	60	75	90	105	Remaining				
SAMPLE NO.	1	2	3	4	5	6	7	8	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit
PARAMETER												
E-coli (CFU / 100mL)	87000.00		61000.00		40000.00		70000.00		62087.00	87000.00	40000.00	10.00
Oil and Grease	2.00		<2.00		<2.00		<2.00		0.71	2.00	0.50	2.00
Ammonia (NH_3), as N	0.53		0.36		0.44		0.36		0.42	0.53	0.36	0.01
Carbonaceous Biochemical Oxygen Demand (CBOD)	14.00	36.00	7.70	40.00	10.00	40.00	16.00	8.30	17.36	40.00	7.70	2.00
Chemical Oxygen Demand (COD)	<20.00		20.00		<20.00		90.00		20.60	90.00	10.00	20.00
Chloride	42.00		43.00		40.00		39.00		40.97	43.00	39.00	1.00
Cyanide, Amenable to Chlorination (ATC)	<0.010		<0.010		<0.010		<0.010		0.000	0.000	0.000	0.005
Fluoride, (F)	0.41		0.39		0.39		0.39		0.39	0.41	0.39	0.10
Hardness, Total as $CaCO_3$	100.00		100.00		90.00		90.00		94.87	100.00	90.00	2.00
Nitrogen, Total Kjeldahl as N (TKN)	2.00		2.30		2.00		2.10		2.10	2.30	2.00	0.50
Phosphorus, Total	0.10		<0.10		<0.10		0.13		0.03	0.13	0.01	0.02
Solids, Total Dissolved (TDS)	200.00	3200.00	200.00	260.00	220.00	190.00	270.00	220.00	308.78	3200.00	190.00	10.00
Solids, Total Suspended (TSS)	2.40	3.80	<2.00	2.40	2.80	1.80	2.00	2.80	2.20	3.80	0.88	1.00
Solids, Total Volatile Suspended (TVSS)	3.20	4.20	3.20	3.20	4.00	3.20	3.20	3.40	3.43	4.20	3.20	2.00
Sulfate (SO_4)	25.00		24.00		24.00		23.00		23.99	25.00	23.00	8.00
pH (pH units)									0.00	0.00	0.00	0.01
METALS												
Arsenic (As), Total Recoverable	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Arsenic (As), Dissolved	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Cadmium (Cd), Total Recoverable	<0.005		<0.005		<0.005		<0.005		0.000	0.000	0.000	0.005
Cadmium (Cd), Dissolved	<0.005		<0.005		<0.005		<0.005		0.000	0.000	0.000	0.005
Chromium (Cr), Total Recoverable	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Chromium (Cr), Dissolved	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Copper (Cu), Total Recoverable	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Copper (Cu), Dissolved	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Iron (Fe), Total Recoverable	0.45		0.37		0.35		0.30		0.36	0.45	0.30	0.05
Iron (Fe), Dissolved	0.13		0.13		0.11		0.13		0.12	0.13	0.11	0.05
Lead (Pb), Total Recoverable	<0.05		<0.05		<0.05		<0.05		0.00	0.00	0.00	0.05
Lead (Pb), Dissolved	<0.05		<0.05		<0.05		<0.05		0.00	0.00	0.00	0.05
Mercury (Hg), Total Recoverable	<0.002		<0.002		<0.002		<0.002		0.0000	0.0000	0.0000	0.0002
Mercury (Hg), Dissolved	<0.002		<0.002		<0.002		<0.002		0.0000	0.0000	0.0000	0.0002
Nickel (Ni), Total Recoverable	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Nickel (Ni), Dissolved	<0.01		<0.01		<0.01		<0.01		0.00	0.00	0.00	0.01
Zinc (Zn), Total Recoverable	0.01		<0.01		<0.01		<0.01		0.00	0.01	0.00	0.01
Zinc (Zn), Dissolved	0.06		0.01		<0.01		0.06		0.02	0.06	0.01	0.01

NOTES:
All parameters are listed in milligrams per liter unless otherwise noted.
[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4 (a)(8)(C) in which samples with concentrations below the detection limit are assigned the value "V".
[2]If all sample concentrations for a parameter are below the detection limit, the geometric mean, maximum value and minimum value are equal to zero.
[3]The minimum value may be equal to a calculated "V" value.

cso_3.xls
EQECSO

GARY SANITARY DISTRICT
Gary, Indiana

Grand Calumet River and Indiana Harbor Ship Canal
CSO Discharge Impact Initial Assessment Study

TABLE 4-44
Estimated Combined Sewer Overflow Volumes During Wet Weather Events

Date[1]	GSD							HSD[2]				ECSD		
	Rhode Island	Alley Nine	Polk Street	Pierce Street	Bridge Street	Chase Street	Colfax Island	Johnson Avenue	Sohl Avenue	Kennedy Avenue	Columbia Avenue	Michigan Avenue	Alder Street	Eq. Basin
April 7, 1999	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	0.00	0.00	0.00
April 8, 1999	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	1.07	0.00
April 9, 1999	0.00	0.00	0.37	0.36	1.63	0.05	0.92	-	-	-	-	8.47	25.64	0.51
April 10, 1999	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	0.00	0.00	0.57
April 11, 1999	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	0.00	0.00	0.69
April 18, 2000	0.00	0.00	0.00	19.28	0.00	0.00	0.00	-	-	-	-	0.00	0.00	0.00
April 19, 2000	0.00	0.00	4.57	13.28	0.00	0.00	0.00	0.00	0.00	1.68	7.64	0.71	0.22	0.00
April 20, 2000	1.92	0.00	17.68	8.72	0.00	0.00	1.16	0.58	1.34	5.71	45.85	3.38	5.00	0.52
April 21, 2000	1.37	0.00	15.20	0.00	0.00	0.00	0.29	-	-	-	-	0.00	0.33	1.56
April 22, 2000	0.00	0.00	0.29	8.13	0.00	0.00	0.00	-	-	-	-	0.00	0.00	0.59
June 19, 2000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	0.00	0.00	0.05
June 20, 2000	0.00	0.19	1.55	1.16	3.23	0.00	0.00	0.00	0.00	16.71	15.54	4.01	1.23	0.74
June 21, 2000	3.74	0.00	1.71	1.84	12.10	0.00	0.00	5.76	14.11	3.53	9.59	0.13	0.53	3.79
June 22, 2000	0.25	0.00	0.81	0.00	9.86	0.00	0.00	-	-	-	-	0.00	0.00	1.25
June 23, 2000	0.00	0.00	0.00	0.00	0.00	0.00	0.02	-	-	-	-	0.00	0.00	0.45

NOTES:
[1]Dates in bold are days in which wet weather bridge sampling occurred.
[2]CSO discharge information was provided by Hammond Sanitary District for April 8, 1999, April 19-20, 2000 and June 20-21, 2000.
All values are in million gallons.

FIGURE 5-1.
Comparison of E. Coli Concentrations During Dry and Wet Weather Events

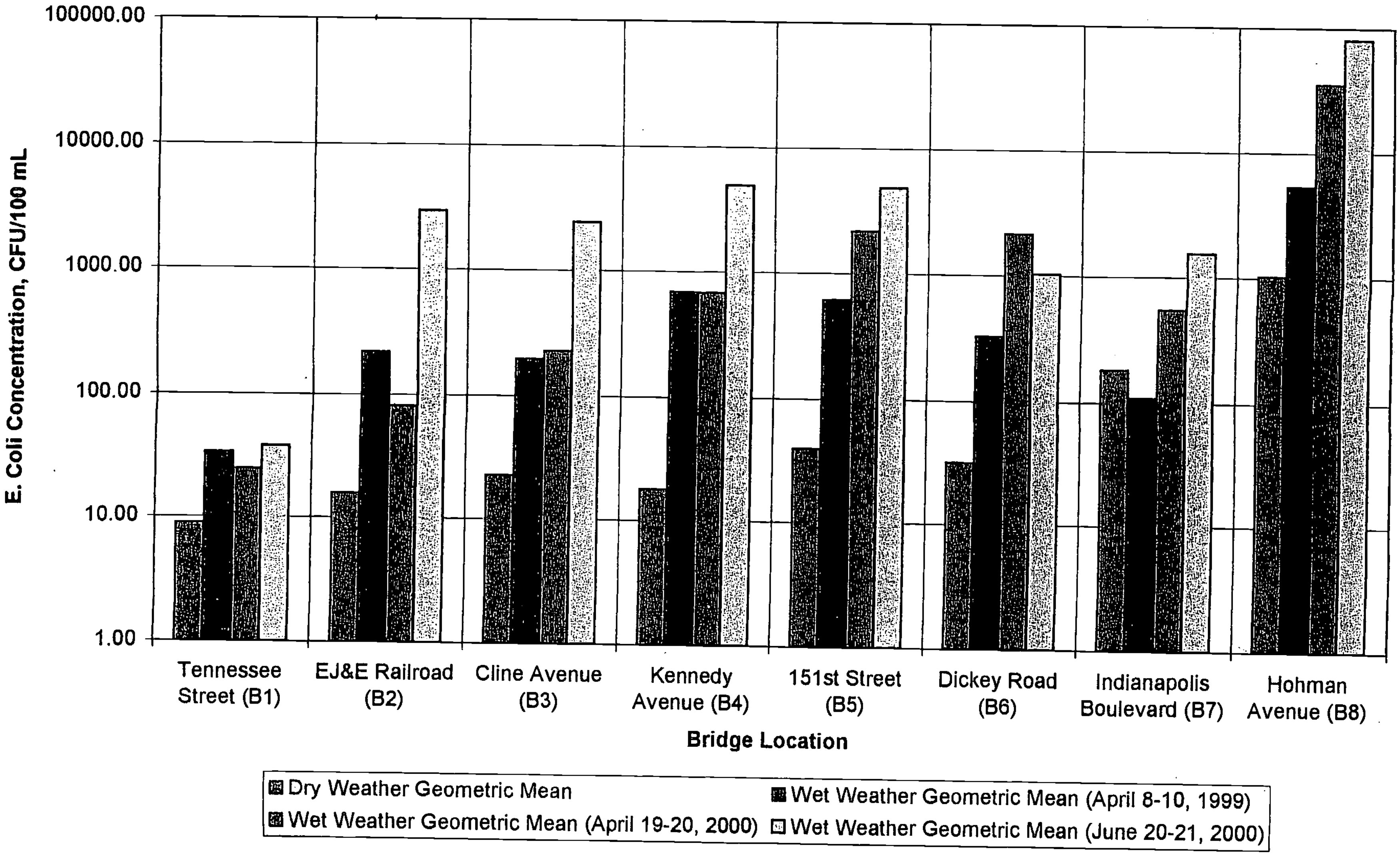
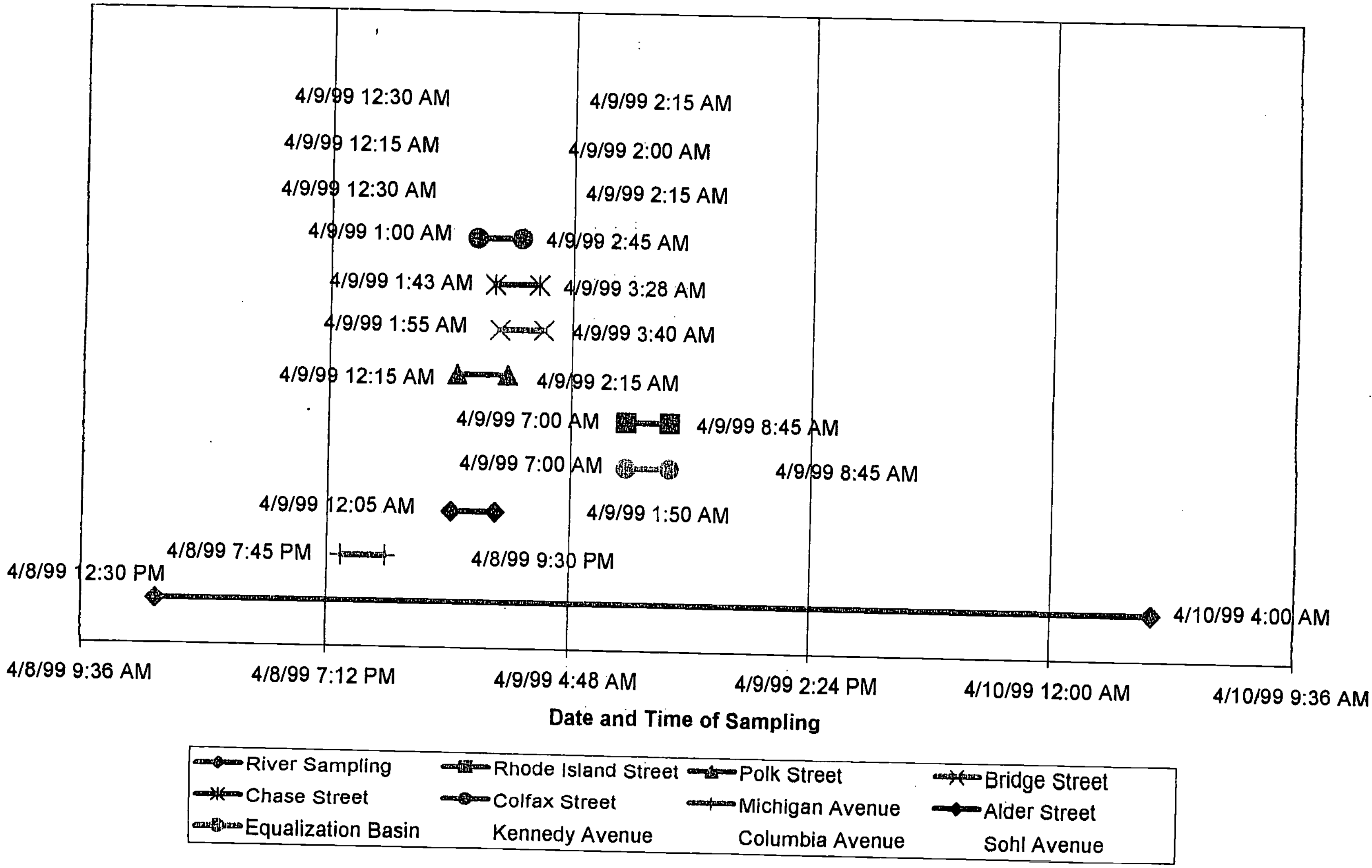
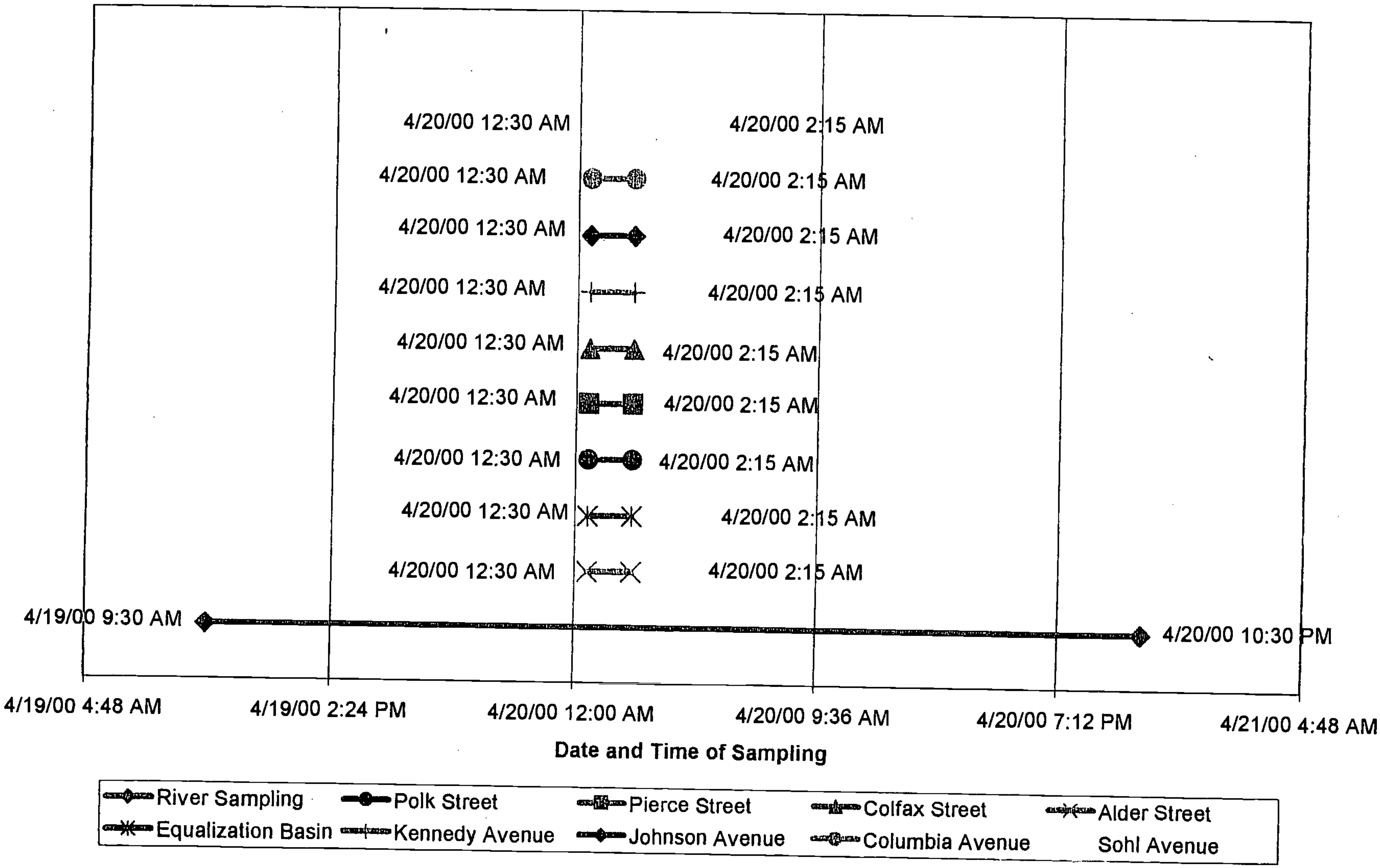


FIGURE 1-3
GCR / IHSC and CSO Sampling Range During the First Wet Weather Event



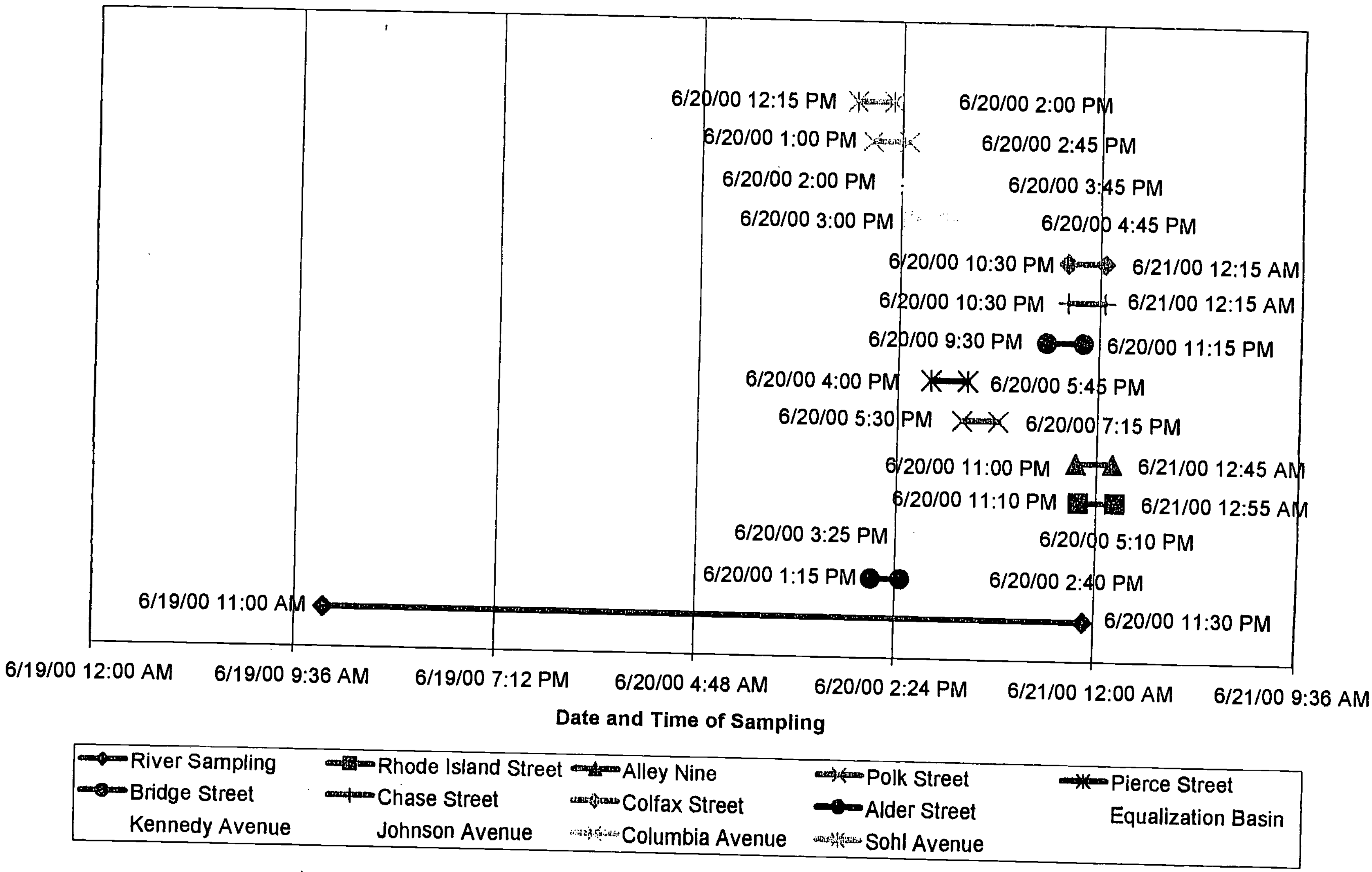
SamplingTime.xls
WW1

FIGURE 1-4
GCR / IHSC and CSO Sampling Range During the Second Wet Weather Event



SamplingTime.xls
WW2

FIGURE 1-5
GCR / IHSC and CSO Sampling Range During the Third Wet Weather Event



SamplingTime.xls
WW3

NRDC
THE EARTH'S BEST DEFENSE

TESTING THE WATERS
A Guide to Water Quality at Vacation Beaches
August 2003

Click here for beach rating map

INDIANA

Indiana passed a state rule in 1990 designating a water quality standard for monitoring Great Lakes waters, but it does not mandate that each county monitor beachwater quality. Local health departments, however, do have a statutory obligation to notify the public of a condition that may cause, transmit, or generate disease.

Health agencies in all three counties bordering Lake Michigan monitor beaches at least once a week. The EPA-recommended *E. coli* standards are used by Lake and La Porte Counties but are only partially implemented by Porter County and the Indiana Dunes National Lakeshore. The Hammond City Health Department in Lake County uses a fecal coliform standard. Closures or advisories are issued for 98 percent of all beaches when standards are exceeded. All agencies notify the public generally within 24 hours.

The Indiana Department of Natural Resources organized an interagency *E. coli* task force in the mid-1990s to coordinate and evaluate beach testing methods using *E. coli* as the indicator bacteria, examine the source of bacterial contamination to Lake Michigan beaches, and discuss remediation strategies. In 1997, the Technical Task Force created a list of potential contamination sources and possible actions that might be taken to further define or eliminate a source in three main categories: 1) point source discharges and sewerage overflows and bypasses, 2) nonpoint source and septic systems, and 3) marine (i.e., commercial and recreational vessels) and other sources. Details are listed on the Indiana Lake Michigan Coastal Program website, but no information is provided on actions taken to implement the recommendations.[70] Monitoring results from beachwater testing in 2002 suggest further examination is still warranted: 78 beach closing/advisory days were due to monitoring that revealed elevated bacteria, 45 percent of which were from unknown sources of contamination.

According to Indiana's 2002 305(b) report, 65 percent of stream miles assessed fully support both aquatic life and primary recreation. The primary causes of nonsupport are PCBs, pathogens, and mercury. The sources of the contamination are primarily urban runoff, agriculture, and other nonpoint sources, as well as industrial point sources. Fifty-eight miles of Great Lakes shoreline (out of 59 assessed) fully support aquatic life but do not support primary recreation. PCBs, pathogens, and mercury are also the primary causes of impairment along the Great Lakes shoreline; pollution sources are urban runoff and land disposal. All of the assessed lake acreage outside of the Great Lakes fully supports swimming, and 42 percent fully supports aquatic life. As with the Great Lakes and streams, PCBs and mercury are among the leading causes of impairment. Pollution sources are largely unknown but include industrial point sources.

Standards and Testing

Indicator Organisms: *E. coli*, fecal coliform.

Standards: The health departments in Lake and La Porte Counties use the EPA's recommended *E. coli* standard for both multiple- and single-sample testing methods. The Indiana Dunes National Lakeshore, National Park Service, and Porter County Health Department use the EPA's single sample standard only. The Hammond Park Department in Lake County does not use the EPA-recommended standard (see table below).

Standards Used by Indiana Agencies in 2001

Agency	Indicator Used	Density/100 ml	Statistical Measure
La Porte County Health Dept	*E. coli*	235	Single sample
		125	Geometric mean of five samples within 30 days
Lake County Health Dept	*E. coli*	235	Single sample
		125	Geometric mean of five samples within 30 days

Agency	Indicator Used	Density/ 100 ml	Statistical Measure
Indiana Dunes National Lakeshore, National Park Service	*E. coli*	235	Single sample
Porter County Health Dept	*E. coli*	235	Single sample
Hammond Park Dept; Hammond Marina (Lake County)	Fecal coliform	200	Single sample
		200	Arithmetic mean of five samples within 30 days

La Porte County issues a preemptive rain advisory if excessive debris such as oil globules or algae are found in lakes or on the beach. Reports of swimmer's itch in inland lakes will result in an advisory. Park departments will close the beach for weather and current (rip current) conditions.

Monitoring

All three Lake Michigan counties in Indiana provided information on a total of 45 beaches. All 45 beaches are monitored at least once a week: La Porte County monitors 15 beaches twice a week, Lake County monitors 12 beaches once a week, Porter County monitors 8 beaches once a week, and the Indiana Dunes National Lakeshore and National Park Service monitor 10 beaches in all three counties once a week (see table below).

Miles of Ocean and Bay or Great Lakes Beach/Miles Monitored: La Porte County: 6.85 miles and all were sampled. Lake County: 2 miles and all were sampled. Indiana Dunes National Lakeshore: 13.2 miles and 12.6 miles were sampled; 7.7 miles (private) and 1.7 miles were sampled.

Monitoring Frequency and Reported Pollution Sources in Indiana

County	Nearest Town	Beach	Monitoring Frequency	Known Stormwater or Sewage Pollution Source
La Porte	Fish Lake	Southtown (Lower Fish Lake) Beach	Twice a week	Yes
La Porte	Fish Lake	Upper Fish Lake	Twice a week	Yes
La Porte	Hudson Lake	Bluebird Beach	Twice a week	Yes
La Porte	La Porte	Pine Lake Assembly	Twice a week	Yes
La Porte	La Porte	Old Stone Lake Beach	Twice a week	Yes
La Porte	La Porte	Pine Lake-Kiwanis Teledyne Park	Twice a week	Yes
La Porte	La Porte	Pine Lake-Waverly Road	Twice a week	Yes
La Porte	La Porte	Stone Lake Beach	Twice a week	Yes
La Porte	La Porte	Stone Lake Launch	Twice a week	Yes
La Porte	Long Beach	Stop 24	Twice a week	Yes
La Porte	Long Beach/ Shoreland Hills	Stop 31	Twice a week	Yes
La Porte	Michiana Shores	Stop 37	Twice a week	Yes
La Porte	Michigan City	California Avenue-Stop 2	Twice a week	Yes
La Porte	Michigan City	Mount Baldy	Once a week	Yes
La Porte	Michigan City	Washington Park	Twice a week	Yes
La Porte	Westville	Clear Lake	Twice a week	Yes
Lake	Cedar Lake	Conference South	Once a week	No
Lake	Cedar Lake	Fish and Game Club	Once a week	No
Lake	Cedar Lake	John's Pharmacy	Once a week	No
Lake	Cedar Lake	La Tulip Harbor	Once a week	No
Lake	Cedar Lake	Pine Crest Marina	Once a week	No
Lake	Hammond	Lake Michigan-Beachfront	Once a week	No
Lake	Hammond	Lake Michigan-Marina	Once a week	No
Lake	Hammond	Wolf Lake	Once a week	No
Lake	Lowell	P.O.A. Beach	Once a week	No
Lake	Merrillville	Hidden Lake-North	Once a week	No

County	Nearest Town	Beach	Monitoring Frequency	Known Stormwater or Sewage Pollution Source
Lake	Merrillville	Hidden Lake-South	Once a week	No
Lake	Miller	Indiana Dunes National Lakeshore-West Beach	Once a week	Yes
Lake	Whiting	Whihala Beach-East Beach	Once a week	No
Lake	Whiting	Whihala Beach-West Beach	Once a week	No
Lake	Winfield	Club House	Once a week	No
Lake	Winfield	Sandy Beach	Once a week	No
Porter	Beverly Shores	Dunbar	Once a week	Yes
Porter	Beverly Shores	Indiana Dunes National Lakeshore-Central Avenue Beach	Once a week	Yes
Porter	Beverly Shores	Indiana Dunes National Lakeshore-State Park Road/Kemil Avenue Beach	Once a week	Yes
Porter	Beverly Shores	Lakeview	Once a week	Yes
Porter	Burns Harbor	Lakeland Park	Once a week	Yes
Porter	Ogden Dunes	Ogden Dunes Beach	Once a week	Yes
Porter	Porter	Dune Acres Beach	Once a week	Yes
Porter	Porter	Indiana Dunes National Lakeshore-Porter Beach	Once a week	Yes
Porter	Porter	Indiana Dunes State Park	Once a week	Yes
Porter	Valparaiso	Bradley Beach	Once a week	Yes
Porter	Valparaiso	Burlington Beach (Flint Beach)	Once a week	Yes
Porter	Valparaiso	Edgewater Beach	Once a week	Yes
Porter	Valparaiso	Hillcrest Beach	Once a week	Yes
Porter	Valparaiso	Long Lake Beach	Once a week	Yes
Porter	Valparaiso	Spectacle Beach	Once a week	Yes
Porter	Valparaiso	Wauhob Lake	Once a week	Yes

Cost of Indiana's Annual Monitoring and Public Notification Programs in 2002*

Agency	Combined Program	Monitoring	Advisory/Closing
La Porte County Health Dept	$2,500–$9,999		
Lake County Health Dept-Indiana	Not known		
Hammond City Health Dept		Not known	Not known
Porter County Health Dept	$10,000–$49,999		
Indiana Dunes National Lakeshore, National Park Service		$10,000–$49,999	Less than $2,500

*Ranges specified by the EPA.

Closings and Advisories

The number of closings/advisories in 2002 in Indiana decreased 49 percent to 176 from 347 in 2001.

Closings/Advisory Issuance: Closures or advisories are issued at 44 of 45 beaches when standards are exceeded. They are sometimes issued at Stone Lake Launch in La Porte County, depending on circumstances. Porter and La Porte Counties report notifying the public within one hour, while Indiana Dunes, Hammond City, and Lake County notify the public generally within 24 hours.

Causes of Closings/Advisories: Forty-four percent (78) of closings/advisories in 2002 were due to monitoring that revealed elevated bacteria levels. Of these, 45 percent (35) were from stormwater runoff, 45 percent (35) were from unknown sources of contamination, 36 percent (28) were from other sources including wildlife, and 10 percent (8) were from sewage leaks or spills. Sixty-four percent of closings/advisories (113) were preemptive rain advisories, and 16 percent (29) were in response to known sewage or chemical spills. The sum of closings/advisories listed here may exceed the state total and may exceed 100 percent because more than one cause or pollution source may apply to each closing/advisory.

Beach Closings and Advisories by County: Year-to-Year Comparison

County	2002 Closings/Advisories	2001 Closings/Advisories	2000 Closings/Advisories
La Porte	138	117	181
Lake	0	186	134
Porter	38	44	26
Total	176	347	341

2002 Indiana Closings and Advisories by Beach

County	Nearest Town	Beach	Start Date	End Date	Cause	Source	Water Body
La Porte	Fish Lake	Southtown (Lower Fish Lake) Beach	5/23	5/24	Bacteria	(?)	Lower Fish Lake
La Porte	Fish Lake	Southtown (Lower Fish Lake) Beach	6/11	6/12	Bacteria	(?)	Lower Fish Lake
La Porte	Fish Lake	Southtown (Lower Fish Lake) Beach	8/22	8/28	PRain	SW,(?)	Lower Fish Lake
La Porte	Fish Lake	Upper Fish Lake	7/23	7/26	Bacteria, PRain	SW,(?)	Upper Fish Lake
La Porte	Fish Lake	Upper Fish Lake	8/15	8/16	Bacteria	(?)	Upper Fish Lake
La Porte	Fish Lake	Upper Fish Lake	8/22	8/28	PRain	SW,(?)	Upper Fish Lake
La Porte	La Porte	Pine Lake Assembly	7/23	7/26	Bacteria, PRain	SW,(?)	Pine Lake
La Porte	La Porte	Pine Lake Assembly	8/22	8/28	PRain	SW,(?)	Pine Lake
La Porte	LaPorte	Old Stone Lake Beach	7/23	7/25	Bacteria, PRain	SW,(?)	Stone Lake
La Porte	LaPorte	Old Stone Lake Beach	8/22	8/28	PRain	(?)	Stone Lake
La Porte	LaPorte	Pine Lake-Kiwanis Teledyne Park	6/11	6/12	Bacteria	(?)	Pine Lake
La Porte	LaPorte	Pine Lake-Kiwanis Teledyne Park	7/11	7/12	Bacteria	(?)	Pine Lake
La Porte	LaPorte	Pine Lake-Kiwanis Teledyne Park	7/23	7/24	Bacteria	(?)	Pine Lake
La Porte	LaPorte	Pine Lake-Kiwanis Teledyne Park	7/23	7/27	Bacteria, PRain	SW,(?)	Pine Lake
La Porte	LaPorte	Pine Lake-Kiwanis Teledyne Park	7/25	7/26	Bacteria	(?)	Pine Lake
La Porte	LaPorte	Pine Lake-Kiwanis Teledyne Park	8/22	8/28	PRain	SW,(?)	Pine Lake
La Porte	LaPorte	Pine Lake Waverly Road	7/25	7/30	Bacteria	(?)	Pine Lake
La Porte	LaPorte	Pine Lake Waverly Road	8/22	8/28	PRain	SW,(?)	Pine Lake
La Porte	LaPorte	Stone Lake Beach	5/23	5/24	Bacteria	(?)	Stone Lake
La Porte	LaPorte	Stone Lake Beach	6/11	6/12	Bacteria	(?)	Stone Lake
La Porte	LaPorte	Stone Lake Beach	7/23	7/25	Bacteria, PRain	SW,(?)	Stone Lake
La Porte	LaPorte	Stone Lake Beach	8/22	8/28	PRain	SW,(?)	Stone Lake
La Porte	LaPorte	Stone Lake Beach	9/3	9/5	Bacteria	(?)	Stone Lake
La Porte	LaPorte	Stone Lake Launch	6/18	6/19	Bacteria	(?)	Stone Lake
La Porte	LaPorte	Stone Lake Launch	8/22	8/28	PRain	SW,(?)	Stone Lake
La Porte	Long Beach	Stop 24	6/27	6/28	Bacteria	(?)	Lake Michigan
La Porte	Long Beach	Stop 24	7/23	7/26	PRain	SW,(?)	Lake Michigan
La Porte	Long Beach	Stop 24	8/22	8/28	PRain,P Sewage	SewBrk,SW,(?)	Lake Michigan
La Porte	Long Beach/ Shoreland Hills	Stop 31	6/27	6/28	Bacteria	(?)	Lake Michigan
La Porte	Long Beach/ Shoreland Hills	Stop 31	7/23	7/26	PRain	SW,(?)	Lake Michigan
La Porte	Long Beach/ Shoreland Hills	Stop 31	8/22	8/28	PRain, PSewage	SewBrk,SW,(?)	Lake Michigan
La Porte	Michiana Shores	Stop 37	6/11	6/12	Bacteria	(?)	Lake Michigan

County	Nearest Town	Beach	Start Date	End Date	Cause	Source	Water Body
La Porte	Michiana Shores	Stop 37	7/23	7/26	PRain	SW,(?)	Lake Michigan
La Porte	Michiana Shores	Stop 37	8/22	8/28	PRain, PSewage	SewBrk,SW,(?)	Lake Michigan
La Porte	Michigan City	California Avenue-Stop 2	6/11	6/12	Bacteria	(?)	Lake Michigan
La Porte	Michigan City	California Avenue-Stop 2	6/27	6/28	Bacteria	(?)	Lake Michigan
La Porte	Michigan City	California Avenue-Stop 2	7/23	7/26	PRain	SW,(?)	Lake Michigan
La Porte	Michigan City	California Avenue-Stop 2	8/22	8/28	PRain, PSewage	SewBrk,SW	Lake Michigan
La Porte	Michigan City	Mount Baldy	6/28	6/29	Bacteria	(?)	Lake Michigan
La Porte	Michigan City	Washington Park	7/23	7/26	PRain	SW,(?)	Lake Michigan
La Porte	Michigan City	Washington Park	8/13	8/14	Bacteria	(?)	Lake Michigan
La Porte	Michigan City	Washington Park	8/22	8/27	PRain, PSewage	SewBrk,SW,(?)	Lake Michigan
La Porte	Michigan City	Washington Park	8/27	8/28	Bacteria	(?)	Lake Michigan
La Porte	Westville	Clear Lake	7/23	7/24	Bacteria, PRain	SW,(?)	Clear Lake
La Porte	Westville	Clear Lake	8/22	8/28	PRain	SW,(?)	Clear Lake
Porter	Beverly Shores	Dunbar	6/14	6/15	Bacteria	(?)	Lake Michigan
Porter	Beverly Shores	Dunbar	6/28	6/29	Bacteria	(?)	Lake Michigan
Porter	Beverly Shores	Indiana Dunes National Lakeshore-State Park Road/ Kemil Avenue Beach	6/28	6/29	Bacteria	(?)	Lake Michigan
Porter	Beverly Shores	Lakeview	6/28	6/29	Bacteria	(?)	Lake Michigan
Porter	Beverly Shores	Lakeview	7/19	7/20	Bacteria	(?)	Lake Michigan
Porter	Porter	Dune Acres Beach	6/14	6/15	Bacteria	(?)	Lake Michigan
Porter	Porter	Dune Acres Beach	6/28	6/29	Bacteria	(?)	Lake Michigan
Porter	Porter	Indiana Dunes National Lakeshore-Porter Beach	6/14	6/15	Bacteria	(?)	Lake Michigan
Porter	Porter	Indiana Dunes National Lakeshore-Porter Beach	6/28	6/29	Bacteria	(?)	Lake Michigan
Porter	Porter	Indiana Dunes National Lakeshore-Porter Beach	7/19	7/20	Bacteria	(?)	Lake Michigan
Porter	Porter	Indiana Dunes State Park	6/14	6/15	Bacteria	Other	Lake Michigan
Porter	Porter	Indiana Dunes State Park	6/28	7/3	Bacteria	Other	Lake Michigan
Porter	Porter	Indiana Dunes State Park	7/3	7/4	Bacteria	Other	Lake Michigan
Porter	Porter	Indiana Dunes State Park	8/23	8/24	Bacteria	Other	Lake Michigan
Porter	Valparaiso	Hillcrest Beach	7/11	7/15	Bacteria	SW,Wild	Flint Lake
Porter	Valparaiso	Hillcrest Beach	7/25	8/2	Bacteria	SW,Wild	Flint Lake
Porter	Valparaiso	Long Lake Beach	7/18	7/25	Bacteria	Septic,SW,Wild	Long Lake
Porter	Valparaiso	Wauhob Lake	8/1	8/2	Bacteria	Septic,SW,Wild	Wauhob Lake

Abbreviations used: Bacteria, Elevated bacteria levels; PChem, Preemptive—Chem. or oil discharge/spill; PRain, Preemptive—Rainfall; PSewage, Preemptive—Sewage discharge or spill; Boat, Boat discharge; CSO, Combined sewer overflow; POTW, Publicly owned treatment works; Septic, Septic systems; SewBrk, Sewer line blockage/break; SSO, Sanitary sewer overflow; SW, Stormwater runoff; Wild, Wildlife; (?), Unknown.

Total 2002 Indiana Great Lakes and Other Lakes Beach Closings/Advisories (C/A): 176

Year	Beach Days Affected by C/A (lasting less than 7 weeks)	Number of Permanent C/A (lasting more than 13 weeks)
2002	176	0
2001	347	0
2000	341	1
1999	269	0
1998	154	1
1997	30	0
1996	34	0
1995	14	0
1994	36	0
1993	30	0

Note

[70] Indiana Lake Michigan Coastal Program, www.in.gov/dnr/lakemich/issues/sources.html.

Table III-1
Estimate of Probable Costs for CSO Retention/Primary Treatment and Disinfection at the Michigan Avenue CSO Pump Station (132 MGD Design Flow; 2.8 MG Tank Volume)

Item	*Quantity*	*Unit*	*Unit Price*	*Total*
Project Costs				
Earth Excavation and Disposal	22,000	CY	$ 12	$ 264,000
Cast-In -Place Reinforced Concrete Base Slab	5,200	CY	$ 400	$ 2,080,000
Cast-In -Place Reinforced Concrete Formed Walls and Floors	1,500	CY	$ 600	$ 900,000
Granular Fill	1,000	CY	$ 30	$ 30,000
Sediment Flushing w/Tipping Buckets	2.8	MG	$ 250,000	$ 700,000
Control Gates and Valves	1	Lump Sum	$ 250,000	$ 250,000
Overflow Weir Troughs and Baffles	2,200	LF	$ 70	$ 154,000
Influent and Effluent Piping	1	Lump Sum	$ 1,000,000	$ 1,000,000
Disinfection Equipment	1	Lump Sum	$ 200,000	$ 200,000
Building	2,000	SF	$ 300	$ 600,000
Electrical, Instrumentation and Control	1	Lump Sum	$ 500,000	$ 500,000
Sitework	1	Lump Sum	$ 200,000	$ 200,000
Miscellaneous	1	Lump Sum	$ 500,000	$ 500,000
Subtotal				$ 7,378,000
Contingency @ 15%				$ 1,106,700
Probable Construction Cost				$ 8,484,700
Engineering, Legal and Administrative Costs @ 25%				$ 2,121,175
Land Acquisition	4	Acre	$ 50,000	$ 200,000
Probable Project Cost				**$ 10,810,000**
Annual Operation and Maintenance Costs				
Chemicals	1	Lump Sum	$ 8,000	$ 8,000
Labor	1,000	Hour	$ 60	$ 60,000
Miscellaneous	1	Lump Sum	$ 25,000	$ 25,000
Equipment Maintenance	1	Lump Sum	$ 20,000	$ 20,000
Probable Annual O&M Cost				**$113,000**

Table III-2
Estimate of Probable Costs for 6.4 MG Lagoon Storage at the Michigan Avenue CSO Pump Station

Item	*Quantity*	*Unit*	*Unit Price*	*Total*
Project Costs				
Earth Excavation and Disposal	20,000	CY	$ 12	$ 240,000
Berm Construction	6,200	CY	$ 10	$ 62,000
Lagoon Lining Excavation and Clay Backfill	8,000	CY	$ 16	$ 128,000
Synthetic Liner	23,300	SY	$ 10	$ 233,000
Diversion and Overflow Structure	1	Lump Sum	$ 1,000,000	$ 1,000,000
Influent and Effluent Piping	1	Lump Sum	$ 1,000,000	$ 1,000,000
Water Piping and Appurtenances for Lagoon Washdown	1	Lump Sum	$ 150,000	$ 150,000
Fine Screens	1	Lump Sum	$ 4,000,000	$ 4,000,000
Site Work	1	Lump Sum	$ 500,000	$ 500,000
Miscellaneous	1	Lump Sum	$ 500,000	$ 500,000
Subtotal				$ 7,813,000
Contingency @ 15%				$ 1,171,950
Probable Construction Cost				$ 8,984,950
Engineering, Legal and Administrative Costs @ 25%				$ 2,246,238
Land Acquisition	10	Acre	$ 50,000	$ 500,000
Probable Project Cost				**$ 11,730,000**
Annual Operation and Maintenance Costs				
Labor	1,800	Hour	$ 60	$ 108,000
Miscellaneous	1	Lump Sum	$ 10,000	$ 10,000
Equipment Maintenance	1	Lump Sum	$ 17,000	$ 17,000
Probable Annual O&M Cost				**$135,000**

Table III-3
Estimate of Probable Costs for 6.4 MG Tank Storage at the Michigan Avenue CSO Pump Station

Item	*Quantity*	*Unit*	*Unit Price*	*Total*
Project Costs				
Earth Excavation and Disposal	41,000	CY	$ 12	$ 492,000
Cast-In -Place Reinforced Concrete Base Slab	11,200	CY	$ 400	$ 4,480,000
Cast-In -Place Reinforced Concrete Formed Walls and Floors	2,100	CY	$ 600	$ 1,260,000
Granular Fill	2,000	CY	$ 30	$ 60,000
Influent and Effluent Piping	1	Lump Sum	$ 1,000,000	$ 1,000,000
Control Gates and Valves	1	Lump Sum	$ 350,000	$ 350,000
Sediment Flushing w/ Tipping Buckets	6.4	MG	$ 200,000	$ 1,280,000
Sitework	1	Lump Sum	$ 300,000	$ 300,000
Miscellaneous	1	Lump Sum	$ 500,000	$ 500,000
Subtotal				$ 9,722,000
Contingency @ 15%				$ 1,458,300
Probable Construction Cost				$ 11,180,300
Engineering, Legal and Administrative Costs @ 25%				$ 2,795,075
Land Acquisition	6	Acre	$ 50,000	$ 300,000
Probable Project Cost				**$ 14,280,000**
Annual Operation and Maintenance Costs				
Labor	800	Hour	$ 60	$ 48,000
Miscellaneous	1	Lump Sum	$ 10,000	$ 10,000
Equipment Maintenance	1	Lump Sum	$ 7,000	$ 7,000
Probable Annual O&M Cost				**$65,000**

Table III-4
Estimate of Probable Costs for the Rehabilitation of CSO Weir Structures

Item	*Quantity*	*Unit*	*Unit Price*	*Total*
Structure Number/Rehabilitation Type/Address				
100/Install Weir Trough/138th St. & Drummond Ave.	1	Each	$ 3,000	$ 3,000
101/Clean Out/138th St. & Euclid Ave.	1	Each	$ 200	$ 200
102/Install Weir Trough/138th St. & Euclid Ave.	1	Each	$ 3,000	$ 3,000
103/Clean Out and Replace Weir Trough/138th St. & Ivy Ave.	1	Each	$ 3,200	$ 3,200
104/No Rehab/138th St. & Parrish Ave.	-	-	-	-
105/Clean Out and Install Weir Trough/138th St. & Parrish Ave.	1	Each	$ 3,200	$ 3,200
106/Replace Weir Trough/138th St. & Hemlock Ave.	1	Each	$ 3,000	$ 3,000
107/Install Weir Trough/138th St. & Grand Ave.	1	Each	$ 3,000	$ 3,000
108/No Rehab/138th St. & Fir Ave.	-	-	-	-
109/Clean Out and Replace Weir Trough/138th St. & Elm Ave.	1	Each	$ 3,200	$ 3,200
110/Install Weir Trough/138th St. & Doedar Ave.	1	Each	$ 3,000	$ 3,000
111/Replace Weir Trough/138th St. & Main Ave.	1	Each	$ 3,000	$ 3,000
112/Replace Weir Trough/138th St. & Main Ave.	1	Each	$ 3,000	$ 3,000
113/Clean Out and Install Weir Trough/138th St. & Alder Ave.	1	Each	$ 3,200	$ 3,200
114/Gunite Manhole/139th St. & Alder Ave.	1	Each	$ 2,000	$ 2,000
115/No Rehab/Broadway Ave. & Alder Ave.	-	-	-	-
116/Replace Manhole/Broadway Ave. & Alder Ave.	1	Each	$ 5,000	$ 5,000
117/No Rehab/Broadway Ave. & Pulaski Ave.	-	-	-	-
118/No Rehab/Broadway Ave. & Main Ave.	-	-	-	-
119/Replace Manhole/Pennsylvania Ave. & Washington Ave.	1	Each	$ 5,000	$ 5,000
120/Replace Weir Trough/135th St. & Fir Ave.	1	Each	$ 3,000	$ 3,000
121//135th St. & Fir Ave.	-	-	-	-
122/Replace Weir Trough/135th St. & Doeder Ave.	1	Each	$ 3,000	$ 3,000
123/No rehab/135th St. & Doeder Ave.	-	-	-	-
124/No Rehab/151st St. & Magoun Ave.	-	-	-	-
125/Gunite Manhole/150th St. & Magoun Ave.	1	Each	$ 2,000	$ 2,000
126/Replace Manhole/148th St. & Magoun Ave.	1	Each	$ 5,000	$ 5,000
127/Gunite Manhole/145th St. & Magoun Ave.	1	Each	$ 2,000	$ 2,000
128/No Rehab/Columbus Dr. & Baring Ave.	-	-	-	-
129/No Rehab/142nd St. & Baring Ave.	-	-	-	-
130/Replace Weir Trough/142nd St. & Baring Ave.	1	Each	$ 3,000	$ 3,000
131/Replace Weir Trough/143rd St. & Baring Ave.	1	Each	$ 3,000	$ 3,000
132/Replace Weir Trough/142nd St. & Northcote Ave.	1	Each	$ 3,000	$ 3,000
133/Replace Weir Trough/142nd St. & Homerlee Ave.	1	Each	$ 3,000	$ 3,000
134/Clean Out/142nd St. & Wegg Ave.	1	Each	$ 200	$ 200
135/Replace Weir Trough/144th St. & Baring Ave.	1	Each	$ 3,000	$ 3,000
136/Replace Weir Trough/Chicago Ave. & Baring Ave.	1	Each	$ 3,000	$ 3,000
137/Clean Out/149th St. & Baring Ave.	1	Each	$ 200	$ 200
138/No Rehab/150th St. & Walsh Ave.	-	-	-	-
139/Replace Weir Trough/150th St. & Reading Ave.	1	Each	$ 3,000	$ 3,000
140/Replace Weir Trough/150th St. & Wegg Ave.	1	Each	$ 3,000	$ 3,000
141/No Rehab/150th St. & Homerlee Ave.	-	-	-	-
142/Replace Weir Trough/150th St. & Indianapolis Blvd.	1	Each	$ 3,000	$ 3,000
143/Replace Manhole/150th St. & Olcott Ave.	1	Each	$ 5,000	$ 5,000
144/Clean Out and Replace Weir Trough/150th St. Tod Ave.	1	Each	$ 3,200	$ 3,200
145/No Rehab/143rd St. & Indianapolis Blvd.	-	-	-	-
145/Replace Weir Trough/142nd St. & Indianapolis Blvd.	1	Each	$ 3,000	$ 3,000
Miscellaneous	1	Lump Sum	$ 20,000	$ 20,000
Subtotal				$ 119,600
Contingency @ 15%				$ 17,940
Probable Construction Cost				$ 137,540
Engineering, Legal and Administrative Costs @ 25%				$ 34,385
Probable Project Cost				**$ 170,000**

Note: No additional annual operation and maintenance costs would result from rehabilitating the existing overflow weirs.

Table III-5

Estimate of Probable Costs for Sewer Separation in the Area Tributary to the Michigan Avenue CSO Pump Station

Item	Quantity	Unit	Unit Price	Total
Project Costs				
Streets Requiring New Sewers and Modifications to Stormwater and/or Sanitary Sewage Connections	42,400	LF	$ 140	$ 5,936,000
Streets Requiring Modifications to Stormwater and/or Sanitary Sewage Connections to Existing Sewers	23,300	LF	$ 30	$ 699,000
Sewer Inspection/Verification	15,000	LF	$ 5	$ 75,000
Miscellaneous	1	Lump Sum	$ 500,000	$ 500,000
Subtotal				$ 7,210,000
Contingency @ 15%				$ 1,081,500
Probable Construction Cost				$ 8,291,500
Engineering, Legal and Administrative Costs @ 25%				$ 2,072,875
Probable Project Cost				**$ 10,360,000**

Note: No additional annual operation and maintence costs would result from separating the existing sewers.

Table III-6

Estimate of Probable Costs for CSO Retention/Primary Treatment and Disinfection at the Alder Street CSO Pump Station (122 MGD Design Flow; 2.5 MG Tank Volume)

Item	Quantity	Unit	Unit Price	Total
Project Costs				
Earth Excavation and Disposal	29,000	CY	$ 12	$ 348,000
Cast-In -Place Reinforced Concrete Base Slab	4,700	CY	$ 400	$ 1,880,000
Cast-In -Place Reinforced Concrete Formed Walls and Floors	1,500	CY	$ 600	$ 900,000
Granular Fill	800	CY	$ 30	$ 24,000
Sediment Flushing w/Tipping Buckets	2.5	MG	$ 250,000	$ 625,000
Control Gates and Valves	1	Lump Sum	$ 250,000	$ 250,000
Overflow Weir Troughs and Baffles	2,000	LF	$ 70	$ 140,000
Influent and Effluent Piping	1	Lump Sum	$ 600,000	$ 600,000
Disinfection Equipment	1	Lump Sum	$ 200,000	$ 200,000
Building	2,000	SF	$ 300	$ 600,000
Electrical, Instrumentation and Control	1	Lump Sum	$ 500,000	$ 500,000
Sitework	1	Lump Sum	$ 200,000	$ 200,000
Miscellaneous	1	Lump Sum	$ 500,000	$ 500,000
Subtotal				$ 6,767,000
Contingency @ 15%				$ 1,015,050
Probable Construction Cost				$ 7,782,050
Engineering, Legal and Administrative Costs @ 25%				$ 1,945,513
Land Acquisition	4	Acre	$ 20,000	$ 80,000
Probable Project Cost				**$ 9,810,000**
Annual Operation and Maintenance Costs				
Chemicals	1	Lump Sum	$ 10,000	$ 10,000
Labor	1,000	Hour	$ 60	$ 60,000
Miscellaneous	1	Lump Sum	$ 25,000	$ 25,000
Equipment Maintenance	1	Lump Sum	$ 17,000	$ 17,000
Probable Annual O&M Cost				**$112,000**

Table III-7
Estimate of Probable Costs for 7.5 MG Lagoon Storage at the Alder Street CSO Pump Station

Item	*Quantity*	*Unit*	*Unit Price*	*Total*
Project Costs				
Earth Excavation and Disposal	57,000	CY	$ 12	$ 684,000
Lagoon Lining Excavation and Clay Backfill	9,500	CY	$ 16	$ 152,000
Synthetic Liner	23,300	SY	$ 10	$ 233,000
Diversion and Overflow Structure	1	Lump Sum	$ 1,000,000	$ 1,000,000
Influent and Effluent Piping	1	Lump Sum	$ 500,000	$ 500,000
Water Piping and Appurtenances for Lagoon Washdown	1	Lump Sum	$ 150,000	$ 150,000
Fine Screens	1	Lump Sum	$ 4,000,000	$ 4,000,000
Site Work	1	Lump Sum	$ 500,000	$ 500,000
Miscellaneous	1	Lump Sum	$ 500,000	$ 500,000
Subtotal				$ 7,719,000
Contingency @ 15%				$ 1,157,850
Probable Construction Cost				$ 8,876,850
Engineering, Legal and Administrative Costs @ 25%				$ 2,219,213
Land Acquisition	11	Acre	$ 20,000	$ 220,000
Probable Project Cost				**$ 11,320,000**
Annual Operation and Maintenance Costs				
Labor	1,800	Hour	$ 60	$ 108,000
Miscellaneous	1	Lump Sum	$ 10,000	$ 10,000
Equipment Maintenance	1	Lump Sum	$ 17,000	$ 17,000
Probable Annual O&M Cost				**$135,000**

Table III-8
Estimate of Probable Costs for 7.5 MG Tank Storage at the Alder Street Pump Station

Item	*Quantity*	*Unit*	*Unit Price*	*Total*
Project Costs				
Earth Excavation and Disposal	72,000	CY	$ 12	$ 864,000
Cast-In -Place Reinforced Concrete Base Slab	13,000	CY	$ 400	$ 5,200,000
Cast-In -Place Reinforced Concrete Formed Walls and Floors	2,500	CY	$ 600	$ 1,500,000
Granular Fill	2,200	CY	$ 30	$ 66,000
Influent and Effluent Piping	1	Lump Sum	$ 500,000	$ 500,000
Control Gates and Valves	1	Lump Sum	$ 350,000	$ 350,000
Sediment Flushing w/Tipping Buckets	8	MG	$ 200,000	$ 1,500,000
Sitework	1	Lump Sum	$ 300,000	$ 300,000
Miscellaneous	1	Lump Sum	$ 500,000	$ 500,000
Subtotal				$ 10,780,000
Contingency @ 15%				$ 1,617,000
Probable Construction Cost				$ 12,397,000
Engineering, Legal and Administrative Costs @ 25%				$ 3,099,250
Land Acquisition	7	Acre	$ 20,000	$ 140,000
Probable Project Cost				**$ 15,640,000**
Annual Operation and Maintenance Costs				
Labor	800	Hour	$ 60	$ 48,000
Miscellaneous	1	Lump Sum	$ 10,000	$ 10,000
Equipment Maintenance	1	Lump Sum	$ 8,000	$ 8,000
Probable Annual O&M Cost				**$66,000**

Table III-9

Estimate of Probable Costs for Replacement of the Sanitary Pumps (25 MGD Capacity) at the Alder Street Pump Station

Item	*Quantity*	*Unit*	*Unit Price*	*Total*
Project Costs				
Replace Sanitary Pumps (12.5 MGD Capacity for each pump)	3	Each	$ 75,000	$ 225,000
Electrical Instrumentation and Control	1	Lump Sum	$ 90,000	$ 90,000
Miscellaneous	1	Lump Sum	$ 60,000	$ 60,000
Subtotal				$ 375,000
Contingency @ 15%				$ 56,250
Probable Construction Cost				$ 431,250
Engineering, Legal and Administrative Costs @ 25%				$ 107,813
Probable Project Cost				**$ 540,000**
Annual Operation and Maintenance Costs				
Miscellaneous Additional Cost	1	Lump Sum	$ 5,000	$ 5,000
Probable Annual O&M Cost				**$5,000**

Table III-10

Estimate of Probable Costs for Replacement of the Sanitary Pumps (30 MGD Capacity) at the Alder Street Pump Station

Item	*Quantity*	*Unit*	*Unit Price*	*Total*
Project Costs				
Replace Sanitary Pumps (15 MGD Capacity for each pump)	3	Each	$ 85,000	$ 255,000
Electrical Instrumentation and Control	1	Lump Sum	$ 120,000	$ 120,000
Miscellaneous	1	Lump Sum	$ 65,000	$ 65,000
Subtotal				$ 440,000
Contingency @ 15%				$ 66,000
Probable Construction Cost				$ 506,000
Engineering, Legal and Administrative Costs @ 25%				$ 126,500
Probable Project Cost				**$ 630,000**
Annual Operation and Maintenance Costs				
Miscellaneous Addition Cost	1	Lump Sum	$ 8,000	$ 8,000
Probable Annual O&M Cost				**$8,000**

Table III-11

Estimate of Probable Costs for 145th Street Pump Station Rehabilitation with Plugging Storm Sewer to Combined Sewer Connection

Item	*Quantity*	*Unit*	*Unit Price*	*Total*
Project Costs				
Pump Station Improvements and Plugging Connection to Combined Sewer	1	Lump Sum	$ 1,000,000	$ 1,000,000
Subtotal				$ 1,000,000
Contingency @ 15%				$ 150,000
Probable Construction Cost				$ 1,150,000
Engineering, Legal and Administrative Costs @ 25%				$ 287,500
Probable Project Cost				**$ 1,440,000**

Note: Additional annual operation and maintenance costs associated with retuning this pump station to normal operation would be offset by reduced O&M costs at the WWTP and Alder Street Pump Station.

Table III-12

Estimate of Probable Costs for Mechanical Bar Screen Replacement at the WWTP

Item	*Quantity*	*Unit*	*Unit Price*	*Total*
Project Costs				
Mechanical Bar Screen Replacement	2	Each	$ 350,000	$ 700,000
Miscellaneous	1	Lump Sum	$ 75,000	$ 75,000
Subtotal				$ 775,000
Contingency @ 15%				$ 116,250
Probable Construction Cost				$ 891,250
Engineering, Legal and Administrative Costs @ 25%				$ 222,813
Probable Project Cost				**$ 1,110,000**

Note: No additional annual operation and maintenance costs would result from replacing the existing mechanical bar screens

Table III-13
Estimate of Probable Costs for Additional Final Clarifier at the WWTP

Item	*Quantity*	*Unit*	*Unit Price*	*Total*
Project Costs				
Final Clarifier (100 Feet Diameter 12 Feet Side Water Depth)	1	Lump Sum	$ 1,300,000	$ 1,300,000
Return Activated Sludge Pump and Piping	1	Lump Sum	$ 100,000	$ 100,000
Miscellaneous	1	Lump Sum	$ 100,000	$ 100,000
Subtotal				$ 1,500,000
Contingency @ 15%				$ 225,000
Probable Construction Cost				$ 1,725,000
Engineering, Legal and Administrative Costs @ 25%				$ 431,250
Probable Project Cost				**$ 2,160,000**
Annual Operation and Maintenance Costs				
Labor	200	Hour	$ 60	$ 12,000
Miscellaneous	1	Lump Sum	$ 5,000	$ 5,000
Equipment Maintenance	1	Lump Sum	$ 3,000	$ 3,000
Probable Annual O&M Cost				**$20,000**

Table III-14
Estimate of Probable Costs to Disinfect CSO Lagoon Effluent at the WWTP (UV equipment Replacement @36 MGD capacity w/necessary diversion chamber and yard piping)

Item	*Quantity*	*Unit*	*Unit Price*	*Total*
Project Costs				
UV Equipment Replacement	1	Lump Sum	$ 920,000	$ 920,000
Diversion Chamber and Yard Piping	1	Lump Sum	$ 130,000	$ 130,000
Miscellaneous	1	Lump Sum	$ 100,000	$ 100,000
Subtotal				$ 1,150,000
Contingency @ 15%				$ 172,500
Probable Construction Cost				$ 1,322,500
Engineering, Legal and Administrative Costs @ 25%				$ 330,625
Probable Project Cost				**$ 1,650,000**
Annual Operation and Maintenance Costs				
Miscellaneous Additional Cost	1	Lump Sum	$ 10,000	$ 10,000
Probable Annual O&M Cost				**$10,000**

Table III-15
Estimate of Probable Costs to Disinfect CSO Lagoon Effluent at the WWTP (UV equipment Replacement @ 40 MGD capacity w/necessary diversion chamber and yard piping)

Item	*Quantity*	*Unit*	*Unit Price*	*Total*
Project Costs				
UV Equipment Replacement	1	Lump Sum	$ 950,000	$ 950,000
Diversion Chamber and Yard Piping	1	Lump Sum	$ 130,000	$ 130,000
Miscellaneous	1	Lump Sum	$ 100,000	$ 100,000
Subtotal				$ 1,180,000
Contingency @ 15%				$ 177,000
Probable Construction Cost				$ 1,357,000
Engineering, Legal and Administrative Costs @ 25%				$ 339,250
Probable Project Cost				**$ 1,700,000**
Annual Operation and Maintenance Costs				
Miscellaneous Additional Cost	1	Lump Sum	$ 15,000	$ 15,000
Probable Annual O&M Cost				**$15,000**

Table III-16
Estimate of Probable Costs for CSO Lagoon Forcemain (24-Inch Diameter) at the WWTP

Item	*Quantity*	*Unit*	*Unit Price*	*Total*
Project Costs				
24-Inch Forcemain	1,000	LF	$ 160	$ 160,000
Motorized Valves and Controls	1	Lump Sum	$ 50,000	$ 50,000
Miscellaneous	1	Lump Sum	$ 50,000	$ 50,000
Subtotal				$ 260,000
Contingency @ 15%				$ 39,000
Probable Construction Cost				$ 299,000
Engineering, Legal and Administrative Costs @ 25%				$ 74,750
Probable Project Cost				**$ 370,000**
Annual Operation and Maintenance Costs				
Miscellaneous	1	Lump Sum	$ 2,000	$ 2,000
Probable Annual O&M Cost				**$2,000**

Table III-17
Estimate of Probable Costs for CSO Lagoon Pump Station (10 MGD Capacity) at the WWTP

Item	*Quantity*	*Unit*	*Unit Price*	*Total*
Project Costs				
10 MGD Pump Station	1	Lump Sum	$ 650,000	$ 650,000
Miscellaneous	1	Lump Sum	$ 50,000	$ 50,000
Subtotal				$ 700,000
Contingency @ 15%				$ 105,000
Probable Construction Cost				$ 805,000
Engineering, Legal and Administrative Costs @ 25%				$ 201,250
Probable Project Cost				**$ 1,010,000**
Annual Operation and Maintenance Costs				
Labor	200	Hour	$ 60	$ 12,000
Miscellaneous	1	Lump Sum	$ 4,000	$ 4,000
Equipment Maintenance	1	Lump Sum	$ 2,000	$ 2,000
Probable Annual O&M Cost				**$18,000**

EAST CHICAGO SANITARY DISTRICT

FINANCIAL CAPABILITY DATA FOR THE COMBINED SEWER OVERFLOW LONG-TERM CONTROL PLAN

January 9, 2004

Clifton Gunderson LLP
Certified Public Accountants & Consultants

January 9, 2003

East Chicago Sanitary District
4525 Indianapolis Blvd.
East Chicago, IN 46312

Dear Mssrs. Maldonado and Suty:

At your request and as a consulting service for the East Chicago Sanitary District, we are pleased to provide the financial capability data for the Combined Sewer Overflow Long-Term Control Plan (CSO LTCP). The engagement included assisting you in gathering certain City of East Chicago, East Chicago Sanitary District, and East Chicago Water Department related information, as listed in Attachment A of our engagement letter. This information was requested, with your knowledge, by and for the use of HNTB Corporation in connection with their engagement to prepare a Combined Sewer Overflow Long Term Control Plan (CSO LTCP) for the East Chicago Sanitary District.

All information requested is provided in Attachment A and its related Exhibits. The information was obtained from prior financial reports and various operational reports maintained by the East Chicago Water Department and East Chicago Sanitary District personnel. If there is additional information required, we would be pleased to perform additional procedures to assist you in completing the financial capability portion of the CSO LTCP.

Very truly yours,

Walter F. Kelly

Walter F. Kelly, CPA CFE
Managing Partner
Indianapolis
Client Service Center

ATTACHMENT A

CITY OF EAST CHICAGO
EAST CHICAGO SANITARY DISTRICT
FINANCIAL DATA FOR FINANCIAL CAPABILITY ANALYSIS
COMBINED SEWER OVERFLOW LONG TERM CONTROL PLAN

East Chicago Sanitary District Wastewater Information

1 Current rate schedule
Refer to Exhibit A

2 Comparative Balance Sheet
Refer to Exhibit B

3 Annual Revenue
Refer to Exhibit C

4 Annual Operation and Maintenance Expenses
Refer to Exhibit C

5 Comparative Statement for Cash Flows
Refer to Exhibit D

6 Current Annual Debt Service (Principal and Interest)
Refer to Exhibit E

7 Total Debt
Refer to Exhibit E

8 Number of Residential Households in Service Area
7,516 (some light commercial is included but not identifiable)

9 Residential Flow/Commercial & Industrial Flow (ADF)
Refer to Exhibit F

East Chicago Water Department Information

1 Current Rate Schedule
Refer to Exhibit G

2 Comparative Balance Sheet
Refer to Exhibit H

3 Annual Revenue
Refer to Exhibit I

4 Annual Operation and Maintenance Expenses
Refer to Exhibit I

5 Comparative Statement of Cash Flows
Refer to Exhibit J

ATTACHMENT A

CITY OF EAST CHICAGO
EAST CHICAGO SANITARY DISTRICT
FINANCIAL DATA FOR FINANCIAL CAPABILITY ANALYSIS
COMBINED SEWER OVERFLOW LONG TERM CONTROL PLAN

6 Current Annual Debt Service (Principal and Interest)
Refer to Exhibit K

7 Total Debt
Refer to Exhibit K

8 Number of Residential Households in Service Area
7,516 (some light commercial is included but not identifiable)

9 Residential Flow/Commercial & Industrial Usage
Refer to Exhibit L

<u>Miscellaneous Other Information</u>

1 All Local Public Debt Affecting Sewer Rate Payers (School Debt, Library Debt, Bridges and Road Debt, EDIT bonded debt

Refer to Exhibits M, N, O and P

2 Bond Rating (Municipal Utility and Municipality)
BB

3 Existing Stormwater Taxes or User Fees
NONE.
The Sanitary District Special Revenue Fund receives various types of taxes. Out of this fund, are paid general expenses, which are not identified by cost center and sludge disposal. In addition, salaries are paid from this fund for Trash and Bulk Collections, Street Sweeping, Collections, Sewer Repair and Maintenance Service, Pump Stations and Recycling, Administration, Building and Maintenance of the Garage and the Sanitary District Board Fees. Property taxes support all activities. There are also miscellaneous revenues received for commercial dumping and County Waste District allocated fees.

General property taxes	$ 11,432,716
Financial institutions tax	18,783
Automobile and aircraft excise tax	185,650
Commercial vehicle exicse tax	41,626
Recycling fees received from County Waste District	193,750
	$ 11,872,525

Fiscal year 2002 salaries:	
Trash and bulk collection	$ 582,486
Street sweeping	230,056
Garbage collection	860,380
Sewer repair and service	604,771
Pump stations	288,880
Recycling	433,503
Total	$ 3,000,076

ATTACHMENT A

CITY OF EAST CHICAGO
EAST CHICAGO SANITARY DISTRICT
FINANCIAL DATA FOR FINANCIAL CAPABILITY ANALYSIS
COMBINED SEWER OVERFLOW LONG TERM CONTROL PLAN

4 Street Sweeping, Leaf Removal, Annual Cost

The only cost segregated in the finacial reports is salaries; refer to question 3.

5 Recycling/Hazardous Waste Expenses

The only cost segregated in the finacial reports is salaries; refer to question 3.

6 Any Other Non-Point Source/CSO Nine Minimum Control Costs Not Paid Through User Fees
None

7 Property Tax Revenue Collected vs. Assessed (1999 Taxes, Pay 2000; 2000 Taxes, Pay 2001; 2001 Taxes, Pay 2002)

Refer to Exhibits Q, R and S

EXHIBIT A

City of East Chicago
East Chicago Sanitary District
Schedule of Rates and Charges
For the period August 1, 1997 through December 31, 2003

Usage per 1,000 gallons water used or gallons discharged	$	2.72
Chemical Oxygen Demand (COD) charge per pound	$	0.40
Suspended Solids (SS) charge per pound	$	0.10

City of East Chicago
East Chicago Sanitary District
Wastewater Enterprise Fund
Comparative Balance Sheet
December 31, 2002, 2001, 2000, 1999, 1998 and 1997

	2002	2001	2000	1999	1998	1997
ASSETS						
Cash	$ 1,486,836	$ 2,701,819	$ 1,293,142	$ 500	$ 500	$ 1,011,497
User Charge receivables, net of allowance for estimated uncollectibles of $348,499 for 2002 and $400,065 for 2002	1,081,960	1,229,077	941,637	743,017	648,108	542,858
Restricted cash - maintenance	1,934,239	-	-	-	-	-
Due from other funds	-	64,564	1,004,940	2,672,949	1,477,529	17,013
Due from the primary government	1,467	42,300	65,049	65,049	65,050	191,954
					15,517	15,517
Long-term loans due from the primary government	36,600	36,600	36,600	36,599	36,599	36,600
Land, building and other fixed assets	29,412,100	29,583,706	31,002,556	17,969,497	17,042,462	17,360,494
Total Assets	$ 33,953,202	$33,658,066	$34,343,924	$21,487,611	$19,285,765	$19,175,933
LIABILITIES AND EQUITY						
LIABILITIES						
Accounts payable and other accrued liabilities	$ 351,148	$ 303,113	$ 30,143	$ 1,225,873	$ 287,471	$ 184,097
Accrued payroll and payroll taxes	193,347	239,066	178,225	150,558	147,067	208,882
Due to other funds	1,707	81,113	81,113	81,113	93,099	-
Due to primary government	31,221	5,268	-	-	-	229,122
Total liabilities	577,423	628,560	289,481	1,457,544	527,637	622,101
EQUITY						
Contributed capital	40,031,927	40,031,927	40,031,927	25,891,668	25,072,811	25,072,811
Retained earnings:						
Reserved for repair and replacement	3,219,144	3,015,290	2,811,725	2,586,957	2,348,583	2,149,383
Unreserved deficit	(9,875,292)	(10,017,711)	(8,789,209)	(8,448,558)	(8,663,266)	(8,668,362)
Total equity	33,375,779	33,029,506	34,054,443	20,030,067	18,758,128	18,553,832
Total liabilities and equity	$ 33,953,202	$33,658,066	$34,343,924	$21,487,611	$19,285,765	$19,175,933

The financial statements presented above are excerpted from the City of East Chicago East Chicago Sanitary District, Component Unit General Purpose Financial Statements for the year indicated.

EXHIBIT C

City of East Chicago
East Chicago Sanitary District
Wastewater Enterprise Fund
Comparative Statements of Revenues, Expenses and Changes in Retained Earnings
For the years ended December 31, 2002, 2001, 2000, 1999, 1998 and 1997

	2002	2001	2000	1999	1998	1997
OPERATING REVENUES						
Charges for services						
Industrial	$ 2,180,143	$ 2,182,287	$ 2,727,975	$ 2,652,422	$ 2,192,276	$ 1,893,263
Residential, commercial and governmental	2,916,204	2,906,846	2,853,954	3,138,396	2,577,293	1,827,371
Disposal fees	23,468	43,714	-	-	-	-
Other	567,584	3,812	37,241	49,208	98,114	66,616
Total operating revenues	5,687,399	5,136,659	5,619,170	5,840,026	4,867,683	3,787,250
OPERATING EXPENSES BEFORE DEPRECIATION						
Personnel services	2,150,460	2,183,998	1,473,605	2,286,949	1,877,584	1,905,171
Contractual services	1,425,398	2,237,827	2,447,758	2,066,440	1,793,280	2,365,049
Supplies	309,874	361,849	399,240	222,297	364,695	337,249
Total operating revenues before depreciation	3,885,732	4,783,674	4,320,603	4,575,686	4,035,559	4,607,469
Operating income before depreciation	1,801,667	352,985	1,298,567	1,264,340	832,124	(820,219)
Depreciation	1,460,294	1,420,222	1,414,450	811,258	760,631	757,879
Net operating income (loss) before operating transfers	341,373	(1,067,237)	(115,883)	453,082	71,493	(1,578,098)
Other income (expense) and financing						
Operating transfers	-	-	-	-	(10,363)	-
Interest income	-	-	-	-	-	45
Nonoperating gain (loss) on sale of assets	4,900	42,300	-	-	-	-
NET INCOME (LOSS)	346,273	(1,024,937)	(115,883)	453,082	61,130	(1,578,053)
RETAINED EARNINGS DEFICIT, BEGINNING OF YEAR	(7,002,421)	(5,977,484)	(5,861,601)	(6,314,683)	(6,375,813)	(4,797,760)
RETAINED EARNINGS DEFICIT, END OF YEAR	$ (6,656,148)	$ (7,002,421)	$ (5,977,484)	$ (5,861,601)	$ (6,314,683)	$ (6,375,813)

The financial statements presented above are excerpted from the City of East Chicago East Chicago Sanitary District, Component Unit General Purpose Financial Statements for the year indicated.

EXHIBIT D

City of East Chicago
East Chicago Sanitary District
Wastewater Enterprise Fund
Comparative Statements of Cash Flows
For the years ended December 31, 2002, 2001, 2000, 1999, 1998 and 1997

	2002	2001	2000	1999	1998	1997
CASH FLOWS FROM OPERATING ACTIVITIES						
Net operating income before nonoperating revenues	$ 341,373	$(1,067,237)	$ (115,883)	$ 453,082	$ 46,132	$(1,721,264)
Adjustments to reconcile net operating income (loss) before nonoperating revenues to net cash provided (used) by operating activities:						
Depreciation	1,460,294	1,420,222	1,414,450	811,258	760,631	757,879
Effects of changes in operating assets and Liabilities:						
Decrease (increase)						
User charge receivables (net)	147,117	(287,440)	(198,620)	(94,909)	63,277	(170,065)
Due from other funds	64,564	940,376	1,668,009	(1,195,420)	(1,460,516)	24,914
Due from primary government	40,833	65,049	-	-	126,904	(40,499)
Prepaid amounts	-	-	-	15,517	-	(15,517)
Increase (decrease)						
Accounts payable	48,035	272,970	(1,195,732)	938,400	103,374	(182,504)
Accrued payroll and related taxes	(45,719)	60,841	27,667	3,491	(61,815)	159,836
Due to other funds	(79,406)	-	-			-
Due to other governments	-	-	-	(11,986)	93,099	(1,445,313)
Due to primary government	25,953	5,268	-	-	(229,122)	-
Net cash provided (used) by operating activities	2,003,044	1,410,049	1,599,891	919,433	(558,036)	(2,632,533)
CASH FLOWS FROM INVESTING ACTIVITIES						
Proceeds from the sale of fixed assets	4,900	-	-	-		-
Interest and investment proceeds received						45
Net cash provided by investing activities	4,900	-	-	-	-	45
CASH FLOWS FROM NONCAPITAL FINANCING ACTIVITIES						
Transfers	-	-	-	-	(10,363)	-
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES						
Capital acquisitions	(1,288,688)	(1,372)	(307,249)	(919,433)	(442,598)	(13,864)
NET INCREASE (DECREASE) IN CASH	719,256	1,408,677	1,292,642	-	(1,010,997)	(2,646,352)
CASH, BEGINNING OF YEAR	2,701,819	1,293,142	500	500	1,011,497	3,657,849
CASH, END OF YEAR	$ 3,421,075	$ 2,701,819	$1,293,142	$ 500	$ 500	$ 1,011,497

The financial statements presented above are excerpted from the City of East Chicago East Chicago Sanitary District, Component Unit General Purpose Financial Statements for the year indicated.

EXHIBIT E

EAST CHICAGO SANITARY DISTRICT
WASTEWATER ENTERPRISE FUND
SRF PAYMENT SCHEDULE FOR SRF RELATED DEBT (REVISED)
For the years 2003 through 2019

January 1, 2003 Balance Outstanding: $ 11,324,595.00

Date	Rate	Principal	Interest	Total Payment for Date	Annual Principal	Annual Interest	Total Annual Payments	Debt Outstanding
1/15/2003	2.9%	$ 525,000.00	$ 164,206.63	$ 689,206.63	$ 525,000.00	$ 320,800.76	$ 845,800.76	$ 10,799,595.00
7/15/2003	2.9%		156,594.13	156,594.13	-			10,799,595.00
1/15/2004	2.9%	540,000.00	156,594.13	696,594.13	540,000.00	305,358.26	845,358.26	10,259,595.00
7/15/2004	2.9%		148,764.13	148,764.13	-			10,259,595.00
1/15/2005	2.9%	555,000.00	148,764.13	703,764.13	555,000.00	289,480.76	844,480.76	9,704,595.00
7/15/2005	2.9%		140,716.63	140,716.63	-			9,704,595.00
1/15/2006	2.9%	570,000.00	140,716.63	710,716.63	570,000.00	273,168.26	843,168.26	9,134,595.00
7/15/2006	2.9%		132,451.63	132,451.63	-			9,134,595.00
1/15/2007	2.9%	590,000.00	132,451.63	722,451.63	590,000.00	256,348.26	846,348.26	8,544,595.00
7/15/2007	2.9%		123,896.63	123,896.63	-			8,544,595.00
1/15/2008	2.9%	605,000.00	123,896.63	728,896.63	605,000.00	239,020.76	844,020.76	7,939,595.00
7/15/2008	2.9%		115,124.13	115,124.13	-			7,939,595.00
1/15/2009	2.9%	625,000.00	115,124.13	740,124.13	625,000.00	221,185.76	846,185.76	7,314,595.00
7/15/2009	2.9%		106,061.63	106,061.63	-			7,314,595.00
1/15/2010	2.9%	640,000.00	106,061.63	746,061.63	640,000.00	202,843.26	842,843.26	6,674,595.00
7/15/2010	2.9%		96,781.63	96,781.63	-			6,674,595.00
1/15/2011	2.9%	660,000.00	96,781.63	756,781.63	660,000.00	183,993.26	843,993.26	6,014,595.00
7/15/2011	2.9%		87,211.63	87,211.63	-			6,014,595.00
1/15/2012	2.9%	680,000.00	87,211.63	767,211.63	680,000.00	164,563.26	844,563.26	5,334,595.00
7/15/2012	2.9%		77,351.63	77,351.63	-			5,334,595.00
1/15/2013	2.9%	700,000.00	77,351.63	777,351.63	700,000.00	144,553.26	844,553.26	4,634,595.00
7/15/2013	2.9%		67,201.63	67,201.63	-			4,634,595.00
1/15/2014	2.9%	720,000.00	67,201.63	787,201.63	720,000.00	123,963.26	843,963.26	3,914,595.00
7/15/2014	2.9%		56,761.63	56,761.63	-			3,914,595.00
1/15/2015	2.9%	740,000.00	56,761.63	796,761.63	740,000.00	102,793.26	842,793.26	3,174,595.00
7/15/2015	2.9%		46,031.63	46,031.63	-			3,174,595.00
1/15/2016	2.9%	760,000.00	46,031.63	806,031.63	760,000.00	81,043.26	841,043.26	2,414,595.00
7/15/2016	2.9%		35,011.63	35,011.63	-			2,414,595.00
1/15/2017	2.9%	785,000.00	35,011.63	820,011.63	785,000.00	58,640.76	843,640.76	1,629,595.00
7/15/2017	2.9%		23,629.13	23,629.13	-			1,629,595.00
1/15/2018	2.9%	805,000.00	23,629.13	828,629.13	805,000.00	35,585.76	840,585.76	824,595.00
7/15/2018	2.9%		11,956.63	11,956.63	-			824,595.00
1/15/2019	2.9%	824,595.00 (1)	11,956.63	836,551.63	824,595.00	11,956.63	836,551.63	-
		11,324,595.00	3,015,298.71	14,339,893.71	11,324,595.00	3,015,298.71	14,339,893.71	

(1) Original debt schedule payment was $830,000, however, $5,405 was never drawn down on the loan
The last payment has, therefore, been adjusted.

The above information was extracted from the City of East Chicago original debt retirement schedule submitted at the State Revolving Loan Fund closing and the billing statement from the State Budget Agency, State Revolving Loan Fund for July 15, 2003.

EXHIBIT F

City of East Chicago
East Chicago Sanitary District
Billed Gallons by Month and Customer Type
For the period December 2002 through November 2003

	Residential					
	Section 1	Section 2	Section 3	Subtotal	Government	Total All
December	28,757,000	20,404,000	23,526,000	72,687,000	5,474,450	78,161,450
January	28,531,500	22,200,250	21,811,500	72,543,250	5,560,650	78,103,900
February	30,779,000	21,792,750	23,200,500	75,772,250	5,157,300	80,929,550
March	27,103,500	20,921,500	23,127,000	71,152,000	5,031,350	76,183,350
April	24,767,250	23,691,750	18,953,250	67,412,250	5,605,850	73,018,100
May	26,722,500	20,207,000	23,993,250	70,922,750	5,691,250	76,614,000
June	28,055,000	26,648,500	25,010,250	79,713,750	6,176,100	85,889,850
July	34,327,750	30,440,750	29,494,500	94,263,000	8,901,150	103,164,150
August	34,348,500	24,890,750	36,311,250	95,550,500	8,826,900	104,377,400
September	35,799,500	25,450,750	32,025,750	93,276,000	10,095,050	103,371,050
October	30,044,000	23,384,500	31,323,750	84,752,250	6,772,200	91,524,450
November	31,308,500	20,463,750	26,433,000	78,205,250	5,601,650	83,806,900
Total	360,544,000	280,496,250	315,210,000	956,250,250	78,893,900	1,035,144,150
Monthly average	30,045,333	23,374,688	26,267,500	79,687,521	6,574,492	86,262,013

	Industrial billed separately			Commercial & Light Industrial billed with water
	Discharge Volume	Lbs of Solids	Lbs of COD	
November	61,234,300	24,162	29,306	95,658,450
December	63,470,966	16,965	66,449	83,733,950
January	55,216,225	53,808	69,040	87,814,700
February	50,070,717	14,255	47,590	81,109,100
March	58,710,984	29,553	96,669	91,271,500
April	54,476,002	11,737	88,849	78,327,900
May	53,788,770	7,063	75,618	83,754,850
June	64,528,671	7,015	13,968	90,379,400
July	66,297,729	52,469	26,551	84,801,900
August	62,014,852	32,632	56,451	88,049,950
September	67,784,661	1,156	56,778	93,615,850
October	56,514,736	8,780	27,519	94,279,750
Total	714,108,613	259,595	654,788	1,052,797,300
Monthly average	59,509,051	21,633	54,566	87,733,108

The above information was extracted from the East Chicago Water Department Monthly Billing Summary and the East Chicago Sanitary District Industrial Billing Data Report

EXHIBIT G

CITY OF EAST CHICAGO, INDIANA, WATER DEPARTMENT
SCHEDULE OF RATES AND CHARGES

With respect to 1-3, customers shall pay for each service connection a monthly rate which shall be the sum of a service charge based on the size of the meter throught which the customer receives such service and a volume charge based on the amoun of water which the customer consumed.

1) General Metered Rates for a One Month Consumption Period

Applicable to residential, commercial, governmental and Industrial direct consumers.

Monthly consumption		Rate per 1,000 gallons
First	10,000	$ 0.88
Next	115,000	$ 0.85
Next	875,000	$ 0.84
Over	1,000,000	$ 0.81

2) General Minimum Rate for a One Month Consumption Period

Applicable to residential, commercial, governmental and Industrial direct consumers.

Meter Size	Rate per Month
5/8"	$ 4.49
3/4"	$ 4.93
1"	$ 12.24
1 1/2"	$ 19.00
2"	$ 29.14
3"	$ 71.34
4"	$ 108.15
6"	$ 205.20
8"	$ 279.83
10"	$ 403.43

3) Fire Protection Service Rates for Hydrants and Sprinklers

Available only to users who are located on the utility's distribution mains which are suitable and adequate for supplying the service requested. Service under these rates shall generally consist of stand-by-service for fire emergencies. All water taken through such connections shall be restricted to fire emergencies unless other temporary use shall have been specifically authorized by the Water Superintendent. The Water Department reserves the right to install flow detectors from time to time to see that the service is restricted to fire fighting purposes.

Meter Size	Rate per Use
5/8"	$ 384.78
3/4"	$ 384.78
1"	$ 577.09
1 1/2"	$ 866.03
2"	$ 1,538.00
3"	$ 3,463.00
4"	$ 6,156.48
6"	$ 13,852.03
8"	$ 24,654.17
10"	$ 38,477.87

4) Rate for temporary users for construction

A temporary construction meter must be installed on all buildings larger than one (1) family dwelling unit at an existing rate structure. The minimum charge for each and any non-metered service under construction shall be sixteen dollares ($16.00).

Contractors must pay for water used on streets, sewers, buildings, a and sidewalks, while under construction. Contractors are to furnish the Water Department with the amount of material to be used before starting construction and, thereupon, an estimation of water to be used shall be made by the Water Department and charged according to the monthly consumption rates. Payment is to be made in advance. The Water Department may require contractors to install a construction meter at the property line or other designated place so that all water can be metered.

EXHIBIT G

CITY OF EAST CHICAGO, INDIANA, WATER DEPARTMENT
SCHEDULE OF RATES AND CHARGES (*continued*)

5) Charge for Tapping the Utility's Mains

A tapping fee of $550 will be required (payable in advance) for the water utility to tap a 3/4" or 1" line. All taps over 1" shall be estimated by the Water Utility and this charge shall be paid before the tap is actually made by the Water Utility personnel.

Any contractor other than the water utility will be assessed a fee for making a tap into water utility distribution system based on the following schedule. This fee must be paid in advance and proper approval must be given by the water utility before the tap can actually be made.

Size	Fee
1 1/2"	135
2"	162
3"	189
4"	216
6"	243
8"	270
10"	297
12"	324
Larger than 12"	378

6) Various Non-recurring Charges

Miscellaneous non-recurring chargs exclusive of those mentioned previously shall be charged as follows:

Bad check fee	$ 20.00
Late payment of bills	10% for first $3.00 and 3% of excess

Deposits - residential

Meter size		Fee
5/8" meter	$	40.00
3/4" meter	$	60.00

6) Various Non-recurring Charges (*continued*)

Deposits - Commercial and Industrial

Meter size	Fee
5/8"	75
1"	100
1 1/2"	150
2"	200
3"	300
4"	400
6" and over	600

Frozen Meter
No charge for first incident during consecutive 12 month period. Each time, thereafter, labor and parts will be charged with the minimum charge of $10.00

Shutoff for repairs, minimum fee $20

Meter test fees, mimimum fee $20
(the test fee is refundable if the test indicates that the meter is not working properly)

4) Reconnection charges for non-payment or violation of rules

Buffalo box has not been installed or is not accessible	$ 250.00
Fee for illegal water turned on by customer	$ 300.00

Reconnection charge for non-payment of bill within any 12 consecutive month period

First incident	$ 15.00
Second incident	$ 30.00
Third or other violation	$ 35.00

City o. . Chicago
East Chicago Water Utility
Comparative Balance Sheet
December 31, 2002, 2001, 2000, 1999, 1998 and 1997

ASSETS	2002	2001	2000	1999	1998	1997
Current Assets:						
Cash and cash equivalents	$ 504	$ 2,500	$ 2,500	$ 2,500	$ 2,699	$ 2,500
Receivables (net of allowances)						
Accounts	656,291	901,781	498,883	436,217	415,625	279,523
Interfund	21,003	-	-	-	-	-
Inventory	75,296	76,481	59,803	84,596	93,220	110,826
Prepaid expenses	31,858	9,227	38,975	38,881	-	8,205
Total Current Assets	784,952	989,989	600,161	562,194	511,544	657,590
Restricted Assets:						
Cash and cash equivalents	798,162	669,574	579,499	544,084	515,628	596,038
Net pension asset	47,521	17,143	28,918	-	-	-
Total restricted assets	845,683	686,717	608,417	544,084	515,628	596,038
Fixed assets, net of accumulated depreciation	14,574,520	13,656,518	13,784,108	13,859,925	14,034,028	13,397,596
Deferred debt issuance costs	87,459	-	-	-	-	-
Total Assets	$ 16,292,614	$ 15,333,224	$ 14,992,686	$ 14,966,203	$ 15,061,200	$ 14,651,224
LIABILITIES AND EQUITY						
Liabilities						
Current Liabilities:						
Accounts payables and other accrued liabilities	$ 45,166	$ 155,383	91,936	$ 752,681	$ 144,992	$ 42,753
Wages and deductions payable	93,176	93,176	49,887	42,691	42,527	43,707
Taxes payable	8,188	19,092	-	5,792	5,770	-
Interfund Payable	1,849,886	2,585,734	3,000,434	2,611,749	2,890,126	2,606,755
Due to component unit	-	2,698	-	-	-	126,905
Current Liabilities (Payable from Restricted Assets):						
Accounts payables		-	-	-	-	41,062
Customer deposits	422,726	407,069	386,301	366,887	349,680	335,783
Interest payable on customer deposits	191,192	184,351	170,511	154,509	143,028	130,838
Compensated absences payable	89,862	29,126	11,848	60,037	47,116	57,667
Notes payable	1,105,001					
Pension Liability	-	-	-	-	3,587	7,961
Total Liabilities	3,805,197	3,476,629	3,710,917	3,994,346	3,626,826	3,906,402
Equity:						
Contributed capital	4,128,145	4,128,145	4,128,145	4,109,332	4,109,332	3,443,732
Retained earnings						
Unreserved	8,359,272	7,728,450	7,153,624	6,862,525	7,325,042	7,301,090
Total Equity	12,487,417	11,856,595	11,281,769	10,971,857	11,434,374	10,744,822
Total Liabilities and Equity	$ 16,292,614	$ 15,333,224	$ 14,992,686	$ 14,966,203	$ 15,061,200	$ 14,651,224

The financial statements presented above are excerpted from the City of East Chicago Comprehensive Annual Financial Statements for the related year

EXHIBIT I

City of East Chicago
East Chicago Water Utility
Comparative Statements of Revenues, Expenses
Changes in Retained Earnings
For the years ended December 31, 2002, 2001, 2000, 1999, 1998 and 1997

	2002	2001	2000	1999	1998
Operating Revenues:					
Charges for services	$ 4,288,079	$ 4,122,534	$ 3,155,700	$ 3,075,331	$ 3,113,143
Total Operating Revenues	4,288,079	4,122,534	3,155,700	3,075,331	3,113,143
Operating Expenses:					
Pumping	319,490	331,357	244,921	479,488	328,703
Water Treatment	1,285,856	1,318,709	1,564,288	1,862,430	1,383,709
Transmission and distribution	884,795	387,490	363,439	508,177	500,401
Commercial	421,200	385,816	231,542	140,343	174,002
General and administration	516,263	911,513	255,688	318,056	478,700
Depreciation	211,901	211,066	209,727	209,375	201,000
Taxes	45,631	48,629	38,196	37,259	34,928
Total Operating Expenses	3,685,136	3,594,580	2,907,801	3,555,128	3,101,443
Operating Income (loss)	602,943	527,954	247,899	(479,797)	11,700
Nonoperating Revenues (Expense):					
Interest	(5,292)	-	-	-	-
Sale of assets	3,500	-	-	-	-
Rental income	29,671	46,872	43,200	17,280	12,252
	27,879	46,872	43,200	17,280	12,252
Net income (loss) to retained earnings	630,822	574,826	291,099	(462,517)	23,952
Retained earnings at beginning of year	7,728,450	7,153,624	6,862,525	7,325,042	7,301,090
Retained earnings at end of year	$ 8,359,272	$ 7,728,450	$ 7,153,624	$ 6,862,525	$ 7,325,042

The financial statements presented above are excerpted from the City of East Chicago Comprehensive Annual Financial Statements for the related year

EXHIBIT J

City of East Chicago
East Chicago Water Utility
Comparative Statements of Cash Flows
For the years ended December 31, 2002, 2001, 2000, 1999, 1998 and 1997

	2002	2001	2000	1999	1998	1997
Cash Flows From Operating Activities:						
Net Operating Income (Loss)	$ 602,943	$ 527,954	$ 247,899	$ (479,797)	$ 11,700	$ 35,247
Adjustements to Reconcile Operating Income (Loss) to						
Net Cash Provided by Operating Activities:						
Depreciation	211,901	211,066	209,727	209,375	201,000	196,011
Bad debt expense	7,800	600	600	599	600	600
Non operating revenues	29,671	46,872	43,200	17,280	-	
Changes in Assets and Liabilities:						
(Increase) decrease in assets						
Accounts receivable	237,690	(403,498)	(63,266)	(21,191)	(136,702)	(46,169)
City Hydrant Rental receivable	-	-	-	-	-	384,153
Due from other funds and interfund receivables	(21,003)	-	-	-	-	
Inventory	1,185	(16,678)	24,793	8,624	17,606	(60,226)
Materials receivable	-	-	-	-	20,867	-
Due from Component Unit	-	-	-	-	229,122	1,445,313
Prepaid Expenses	(22,631)	29,748	(94)	(38,881)	8,205	(8,205)
Net pension asset	(30,378)	11,775	(28,918)	-	-	-
Increase (decrease) in Liabilities						
Accounts payable and other accrued liabilities	(110,217)	63,447	(665,568)	607,689	61,177	44,811
Wages and deductions payable	-	43,289	7,196	164	(1,180)	(2,867)
Taxes payable	(10,904)	19,092	(5,792)	22	5,770	-
Compensated absences payable	60,736	17,278	(48,189)	12,921	(10,551)	11,467
Interfund payable	(735,848)	(414,700)	388,685	(278,377)	(229,600)	(1,516,226)
Pension liability	-	-	-	(3,587)	(4,374)	7,961
Customer deposits payable	15,657	20,768	19,414	17,207	13,897	18,487
Interest payable on customer deposits	6,841	13,840	16,002	11,481	12,190	8,241
Due to Component Unit	(2,698)	2,698	-	-	(126,905)	-
Net Cash Provided by Operating Activities	240,745	173,551	145,689	63,529	72,822	518,598
Cash Flows From Capital and Related Financing Activities:						
Contribution of Assets	(94,100)	-	18,813	-	665,600	-
Acquisition and Construction of Capital Assets	(18,261)	(83,476)	(129,087)	(35,272)	(837,432)	(498,916)
Proceeds from sale of capital assets	3,500	-	-	-	-	
Interest paid	(5,292)	-	-	-	-	
Net Cash Used for Capital and Related Financing Activities	(114,153)	(83,476)	(110,274)	(35,272)	(171,832)	(498,916)
Cash Flows From Investing Activities						
Sale of Investment	-	-	-	-	6,547	-
Interest on Investments	-	-	-	-	12,252	16,409
Net Cash Provided by Investing Activities	-	-	-	-	18,799	16,409
Net Increase (Decrease) in Cash and Cash Equivalents	126,592	90,075	35,415	28,257	(80,211)	36,091
Cash and Cash Equivalents at Beginning of Year	672,074	581,999	546,584	518,327	598,538	562,447
Cash and Cash Equivalents at End of Year	$ 798,666	$ 672,074	$ 581,999	$ 546,584	$ 518,327	$ 598,538
<u>Supplemental Information:</u>						
Noncash Financing Activities:						
Acquisition of capital assets through debt issuance, including deferred debt issuance costs	$ 1,105,001	$ -	$ -	$ -	$ -	$ -

The financial statements presented above are excerpted from the City of East Chicago Comprehensive Annual Financial Statements for the related year

EXHIBIT K

CITY OF EAST CHICAGO
WATER DEPARTMENT
SRF PAYMENT SCHEDULE FOR SRF RELATED DEBT (REVISED)
For the years 2003 through 2019

Date	Rate	Drawdowns on Loan	Principal	Interest	Total Payment for Date	Annual Principal	Annual Interest	Total Annual Payments	Debt Outstanding	Interest Days on Draws
Balance outstanding on December 22, 2002									347,799	
12/23/2002	2.9%	$ 343,650.00	-	$ 221.46	$ -	-	$ -	$ -	691,449	4
1/21/2003	2.9%	156,767.00		1,114.00					848,216	20
1/27/2003	2.9%	252,200.00		409.97					1,100,416	6
2/28/2003	2.9%	4,585.00		2,747.98					1,105,001	31
3/17/2003	2.9%	380,902.00		1,691.27					1,485,903	19
4/8/2003	2.9%	238,632.00		2,513.65					1,724,535	21
5/12/2003	2.9%	152,316.00		4,723.31					1,876,851	34
7/1/2003	2.9%			7,408.35	20,829.99				1,876,851	49
7/16/2003	2.9%	58,920.00		2,339.06					1,935,771	15
8/13/2003	2.9%	13,043.00		4,238.67					1,948,814	27
8/25/2003	2.9%	7,336.00		1,890.95					1,956,150	12
11/3/2003	2.9%	30,876.00		10,884.49					1,987,026	68
12/1/2003 (1)	2.9%	12,974.00		4,511.11					2,000,000	28
1/1/2003	2.9%			4,833.33	28,697.60	-	49,527.59	49,527.59	2,000,000	30
7/1/2003	2.9%			29,000.00	29,000.00	-			2,000,000	
1/1/2004	2.9%		75,000	29,000.00	104,000.00	75,000	58,000.00	133,000.00	1,925,000	
7/1/2004	2.9%			27,912.50	27,912.50	-			1,925,000	
1/1/2005	2.9%		75,000	27,912.50	102,912.50	75,000	55,825.00	130,825.00	1,850,000	
7/1/2005	2.9%			26,825.00	26,825.00	-			1,850,000	
1/1/2006	2.9%		80,000	26,825.00	106,825.00	80,000	53,650.00	133,650.00	1,770,000	
7/1/2006	2.9%			25,665.00	25,665.00	-			1,770,000	
1/1/2007	2.9%		80,000	25,665.00	105,665.00	80,000	51,330.00	131,330.00	1,690,000	
7/1/2007	2.9%			24,505.00	24,505.00	-			1,690,000	
1/1/2008	2.9%		85,000	24,505.00	109,505.00	85,000	49,010.00	134,010.00	1,605,000	
7/1/2008	2.9%			23,272.50	23,272.50	-			1,605,000	
1/1/2009	2.9%		85,000	23,272.50	108,272.50	85,000	46,545.00	131,545.00	1,520,000	
7/1/2009	2.9%			22,040.00	22,040.00	-			1,520,000	
1/1/2010	2.9%		90,000	22,040.00	112,040.00	90,000	44,080.00	134,080.00	1,430,000	
7/1/2010	2.9%			20,735.00	20,735.00	-			1,430,000	
1/1/2011	2.9%		90,000	20,735.00	110,735.00	90,000	41,470.00	131,470.00	1,340,000	
7/1/2011	2.9%			19,430.00	19,430.00	-			1,340,000	
1/1/2012	2.9%		95,000	19,430.00	114,430.00	95,000	38,860.00	133,860.00	1,245,000	
7/1/2012	2.9%			18,052.50	18,052.50	-			1,245,000	
1/1/2013	2.9%		95,000	18,052.50	113,052.50	95,000	36,105.00	131,105.00	1,150,000	
7/1/2013	2.9%			16,675.00	16,675.00	-			1,150,000	
1/1/2014	2.9%		100,000	16,675.00	116,675.00	100,000	33,350.00	133,350.00	1,050,000	
7/1/2014	2.9%			15,225.00	15,225.00	-			1,050,000	
1/1/2015	2.9%		105,000	15,225.00	120,225.00	105,000	30,450.00	135,450.00	945,000	
7/1/2015	2.9%			13,702.50	13,702.50	-			945,000	
1/1/2016	2.9%		105,000	13,702.50	118,702.50	105,000	27,405.00	132,405.00	840,000	
7/1/2016	2.9%			12,180.00	12,180.00	-			840,000	
1/1/2017	2.9%		110,000	12,180.00	122,180.00	110,000	24,360.00	134,360.00	730,000	
7/1/2017	2.9%			10,585.00	10,585.00	-			730,000	
1/1/2018	2.9%		110,000	10,585.00	120,585.00	110,000	21,170.00	131,170.00	620,000	
7/1/2018	2.9%			8,990.00	8,990.00	-			620,000	
1/1/2019	2.9%		115,000	8,990.00	123,990.00	115,000	17,980.00	132,980.00	505,000	
7/1/2019	2.9%			7,322.50	7,322.50	-			505,000	
1/1/2020	2.9%		120,000	7,322.50	127,322.50	120,000	14,645.00	134,645.00	385,000	
7/1/2020	2.9%			5,582.50	5,582.50	-			385,000	
1/1/2021	2.9%		125,000	5,582.50	130,582.50	125,000	11,165.00	136,165.00	260,000	
7/1/2021	2.9%			3,770.00	3,770.00	-			260,000	
1/1/2022	2.9%		130,000	3,770.00	133,770.00	130,000	7,540.00	137,540.00	130,000	
7/1/2022	2.9%			1,885.00	1,885.00	-			130,000	
1/1/2023	2.9%		130,000	1,885.00	131,885.00	130,000	3,770.00	133,770.00	-	
			2,000,000	716,237.59	2,716,237.59	2,000,000	716,237.59	2,716,237.59		

(1) Draws were unavailable for December 2003 activity. The assumption was made that the remaining loan was draw as of December 1, 2003 for scheduling purposes above. This was done to provide a conservative estimate of interest expense.

The above information was extracted from the original debt schedule submitted with the State Revolving Loan Fund Closing documents provided provided by the City of East Chicago, the Interest Billing Statement for July 1, 2003 from the State Budget Agency, State Revolving Loan Fund and the drawdowns listed in the Trust Statements held at Bank One Trust Company, N.A. for the State Revolving Fund Drinking Water Program Series 2001A, City of East Chicago Account.

EXHIBIT L

City of East Chicago
East Chicago Water Department
Billed Gallons by Month and Customer Type
For the period December 2002 through November 2003

	Residential						
	Section 1	Section 2	Section 3	Subtotal	Industrial	Government	Total All
December	28,757,000	20,404,000	23,526,000	72,687,000	211,497,200	5,474,450	289,658,650
January	28,531,500	22,200,250	21,811,500	72,543,250	233,277,000	5,560,650	311,380,900
February	30,779,000	21,792,750	23,200,500	75,772,250	237,601,000	5,157,300	318,530,550
March	27,103,500	20,921,500	23,127,000	71,152,000	206,047,850	5,031,350	282,231,200
April	24,767,250	23,691,750	18,953,250	67,412,250	204,427,650	5,605,850	277,445,750
May	26,722,500	20,207,000	23,993,250	70,922,750	218,132,350	5,691,250	294,746,350
June	28,055,000	26,648,500	25,010,250	79,713,750	229,917,650	6,176,100	315,807,500
July	34,327,750	30,440,750	29,494,500	94,263,000	221,296,650	8,901,150	324,460,800
August	34,348,500	24,890,750	36,311,250	95,550,500	242,399,200	8,826,900	346,776,600
September	35,799,500	25,450,750	32,025,750	93,276,000	234,429,100	10,095,050	337,800,150
October	30,044,000	23,384,500	31,323,750	84,752,250	228,802,850	6,772,200	320,327,300
November	31,308,500	20,463,750	26,433,000	78,205,250	237,310,750	5,601,650	321,117,650
Total	360,544,000	280,496,250	315,210,000	956,250,250	2,705,139,250	78,893,900	3,740,283,400
Monthly average	30,045,333	23,374,688	26,267,500	79,687,521	225,428,271	6,574,492	311,690,283

The above information was extracted from the East Chicago Water Department Monthly Section Summaries

EXHIBIT M

City of East Chicago
Computation of Direct and Overlapping Debt
December 31, 2002

Jurisdiction	Assessed Valuation (A)	Bonds Outstanding	Estimated Percent Applicate to East Chicago	Estimated Amount Applicable to East Chicago
Direct:				
City of East Chicago	$ 1,460,890,824	$ 3,720,000	100.00%	$ 3,720,000
Total direct debt		$ 3,720,000		$ 3,720,000
Overlapping:				
Sanitary District	1,460,890,824	11,324,600	100.00%	11,324,600
Facilities Building Corporation	1,460,890,824	28,260,000	100.00%	28,260,000
Lake County	10,132,030,446	56,150,000	14.42%	8,096,010
School City	1,460,890,824	80,927,500	100.00%	80,927,500
Library District	1,460,890,824	335,000	100.00%	335,000
Total overlapping debt		$ 176,997,100		$ 128,943,110
Total direct and overlapping debt		$ 180,717,100		$ 132,663,110

(A) Source: Indiana State Tax Commissioner

The above information was extracted from the City of East Chicago Comprehensive Annual Financial Report for the year ended December 31, 2002, Statistical Section

EXHIBIT N

City of East Chicago
Ratio of Annual Debt Service Expenditures for General Obligation
Bonded Debt to Total General Expenditures (A)
Last Ten Fiscal Years

Fiscal Year	Principal	Interest	Total Debt Service	Total General Governmental Expenditures	Ratio of Debt Service toTotal General Governmental
2002	$ 6,532,969	$ 1,186,342	$ 7,719,311	$ 74,584,382	10.3%
2001	13,800,000	1,466,844	15,266,844	68,408,808	22.3%
2000	5,610,000	1,828,359	7,438,359	60,913,185	12.2%
1999	2,216,820	724,775	2,941,595	106,192,420	2.8%
1998	4,596,818	973,192	5,570,010	81,022,848	6.9%
1997	2,341,818	932,968	3,274,786	52,534,790	6.2%
1996	1,081,818	995,531	2,077,349	40,443,161	5.1%
1995	271,818	960,736	1,232,554	44,672,168	2.8%
1994	3,385,000	1,639,499	5,024,499	41,717,151	12.0%
1993	4,075,000	1,466,243	5,541,243	40,345,166	13.7%

(A) Includes all primary government funds, expendable trust and component unit funds

The above information was extracted from the City of East Chicago
Comprehensive Annual Financial Report for the year ended December 31, 2002, Statistical Section

EXHIBIT O

City of East Chicago
Ratio of Net General Obligation Bonded Debt to Assessed Value
and Net General Obligation Bonded Debt per Capita
Last Ten Fiscal Years

Fiscal Year	Population (A)	Assessed Value	Gross Bonded Debt (B)		Debt Service Monies Available (B)	Net Bonded Debt	Net Bonded Debt to Assessed Value	Net Bonded Debt per Capita
2002 (E)	31,731	$ 1,460,890,824	$ 3,720,000		$ 548,765	$ 3,171,235	0.2%	99.94
2001(E)	32,414	901,465,230	4,155,000		529,064	3,625,936	0.4%	111.86
2000	32,414	485,799,544	6,295,000		573,327	5,721,673	1.2%	176.52
1999	33,892	542,815,350	7,890,000		56,460	7,833,540	1.4%	231.13
1998	33,892	612,873,543	4,790,000		(67,811)	4,857,811	0.8%	143.33
1997	33,892	553,119,319	8,625,000		1,554,281	7,070,719	1.3%	208.63
1996	33,892	491,229,365	10,925,000		1,367,019	9,557,981	1.9%	282.01
1995	33,892	508,229,365	9,530,000		1,915,521	7,614,479	1.5%	224.67
1994	33,892	470,126,480	12,270,000	(C)	1,420,112	10,849,888	2.3%	320.13
1993	33,892	526,086,166	15,705,000	(D)	2,624,882	13,080,118	2.5%	385.94

(A) Source: US Bureau of Census
(B) Includes only General Obligation Bonds
(C) Includes matured bonds of $135,000 not yet presented for payment
(D) Includes matured bonds of $10,000 not yet presented for payment
(E) The assessed value is the true tax (actual) value.

The above information was extracted from the City of East Chicago
Comprehensive Annual Financial Report for the year ended December 31, 2002, Statistical Section

EXHIBIT P

City of East Chicago
Revenue Bond Coverage
Water Department
Last Ten Fiscal Years

Fiscal Year	Net Revenue Available for Debt Service (B)	Debt Service Requirements			Coverage
		Principal	Interest	Total	
2002	N/A	N/A	N/A	N/A	N/A
2001	N/A	N/A	N/A	N/A	N/A
2000	N/A	N/A	N/A	N/A	N/A
1999	N/A	N/A	N/A	N/A	N/A
1998	N/A	N/A	N/A	N/A	N/A
1997	N/A	N/A	N/A	N/A	N/A
1996	N/A	N/A	N/A	N/A	N/A
1995	N/A	N/A	N/A	N/A	N/A
1994(A)	N/A	N/A	N/A	N/A	N/A
1993	1,207,339	370,000	152,038	522,038	231%

(A) Waterworks revenue bonds were called at a 1% premium on November 1, 1994

(B) Annually, 42% of the Water Department operating receipts were initially set aside and paid into a special account of the City for the purpose of paying the principal and interest on bonds issued. The City, as a policy, maintained a debt service position of 210% of bond principal and interest charges expected to be paid in the ensuing year since 1984.

The above information was extracted from the City of East Chicago Comprehensive Annual Financial Report for the year ended December 31, 2002, Statistical Section

EXHIBIT Q

City of East Chicago
Property Tax Levies and Collections (A)
Last Ten Fiscal Years

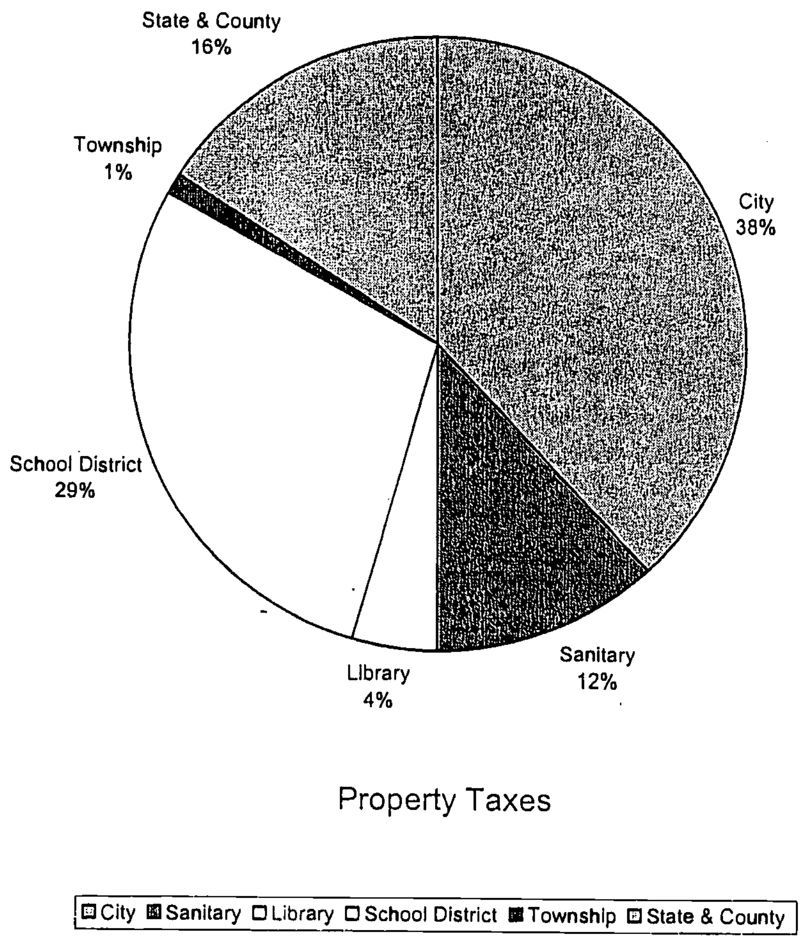
Fiscal Year (B)	Tax Levy	Total Tax Collections	Ratio of Total Tax Collections to Total Levy
2002	$40,646,165	$39,583,890	97.39%
2001	44,895,166	37,388,049	83.28%
2000	45,828,273	41,839,002	91.30%
1999	38,478,654	38,247,367	99.40%
1998	39,590,621	37,102,103	93.71%
1997	36,495,395	39,084,139	107.09%
1996	37,453,963	35,068,065	93.63%
1995	35,622,894	36,388,938	102.15%
1994	33,755,173	35,144,157	104.11%
1993	34,458,148	33,737,004	97.91%

(A) Data regarding delinquent t
(B) Represents year levy to be collected

The above information was extracted from the City of East Chicago Comprehensive Annual Financial Report for the year ended December 31, 2002, Statistical Section

EXHIBIT R

City of East Chicago
Property Tax Rates of Direct and Overlapping Government as a Percentage of Total



The above information was extracted from the City of East Chicago Comprehensive Annual Financial Report for the year ended December 31, 2002, Statistical Section

EXHIBIT S

City of East Chicago
Property Tax Rates - Direct and Overlapping Governments (A)
Last Ten Fiscal Years

Fiscal Year	City	Sanitary District	Library	School District	Township	State & County	Total
2002	$ 4.5089	$ 1.4406	$ 0.5012	$ 3.4004	$ 0.1370	$ 1.8864	$ 11.8745
2001	6.9023	2.3392	0.8316	8.3125	0.3362	5.0651	23.7869
2000	6.0471	2.3954	0.7116	7.6653	0.3022	4.9637	22.0853
1999	4.8067	1.4717	0.5730	7.2959	0.2801	5.0139	19.4413
1998	5.5936	1.5641	0.5753	7.2181	0.2758	4.2420	19.4689
1997	5.6691	1.7603	0.6486	7.5075	0.3330	5.2415	21.1600
1996	5.7799	1.5896	0.5865	7.2514	0.2748	4.9328	20.4150
1995	5.8987	1.6786	0.5528	7.2238	0.2940	5.2597	20.9076
1994	5.2016	1.6104	0.5260	6.6295	0.3074	5.2213	19.4962
1993	4.9124	1.6375	0.5756	5.8994	0.2504	4.1142	17.3895

(A) Rate per $100 of assessed valuation

The above information was extracted from the City of East Chicago
Comprehensive Annual Financial Report for the year ended December 31, 2002, Statistical Section

APPENDIX VI

PUBLIC PARTICIPATION

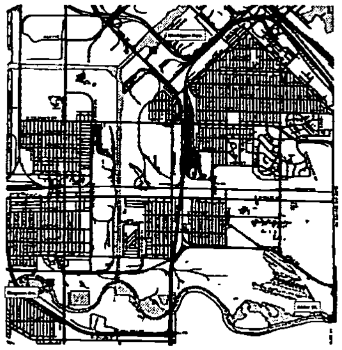
1/24/02	ECSD Board Meeting Presentation
7/25/02	Public Meeting
7/24/03	ECSD Board Meeting Presentation
10/23/03	ECSD Board Meeting Presentation
2/27/04	CAC Meeting
3/5/04	CAC Meeting
3/11/04	Public Meeting
3/19/04	CAC Meeting
9/11/06	CAC Meeting
10/18/06	CAC Meeting
3/19/07	CAC Meeting

CSO PROGRAM OVERVIEW

Presenter: Nicholas Menninga, P.E.

HNTB

East Chicago CSS



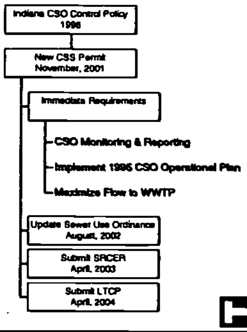
HNTB

CSO REGULATIONS

- EPA CSO Control Strategy (1989)
- EPA CSO Control Policy (1994)
- Indiana CSO Strategy (1996)

HNTB

Regulatory Timeline



HNTB

CSO OPERATIONAL PLAN

- Operation and maintenance manual for a combined sewer system
- Plan for implementation of 9 minimum controls

HNTB

NINE MINIMUM CONTROLS

1. Proper O & M
2. Storage in collection system
3. Review of pretreatment requirements
4. Maximization of flow to POTW
5. Prohibition of dry weather CSOs
6. Control of solids and floatable materials
7. Pollution prevention
8. Public notification
9. Monitor CSO impacts and effectiveness of controls (Stream Reach Characterization and Evaluation Report)

HNTB

9th MINIMUM CONTROL STREAM REACH CHARACTERIZATION AND EVALUATION REPORT (SRCER)

- Summary of frequency and duration of overflow from monitored points
- Establish baseline stream quality
- Stream sampling, visual observation and data search to determine effectiveness of CSO controls

SCHEDULE: Due by April 1, 2003

HNTB

LONG-TERM CONTROL PLAN

- Identifies CSO reduction alternatives and cost
- Evaluates CSO control alternatives with respect to cost and pollution reduction
- Identifies control alternative(s) that provide best performance/lowest cost ("most bang for the buck")
- Develop implementation schedule based on affordability, protection of environmentally sensitive areas, and local priorities.

SCHEDULE: Due by April 1, 2004.

HNTB

UNKNOWNS

1. <75,000 population exempt from some LTCP requirements at IDEM's discretion.
2. Target for CSO reduction - will it change as a result of wet weather water quality standards?

HNTB

UNKNOWNS

1. <75,000 population exempt from some LTCP requirements at IDEM's discretion.

- Though CSO policy indicates exemptions from certain requirements are possible, permits contain all LTCP requirements.
- Establish scope of LTCP early and jointly with IDEM reviewers.

HNTB

UNKNOWNS

Target for CSO reduction - will it change as a result of wet weather water quality standards?

- Legislation for temporary suspension of stream use designation during wet weather.
- Suspension of stream use designation is contingent upon an approved LTCP and compliance with all other system operation requirements.

HNTB

WHY LTCP?

- Policy decisions can be made based on sound engineering analysis
- Required by the NPDES permit
- Avoid enforcement action
- Be proactive/control your own destiny
- Puts you in line to take advantage of funding that may develop

HNTB

APPROACHES AND ELEMENTS OF LONG-TERM CSO CONTROL PLAN

HNTB

KEY CSO POLICY PRINCIPLES

- Clear levels of control
- Flexibility: site-specific needs and cost-effectiveness
- Phased implementation: financial capability
- Review and possible revision of WQS to reflect site-specific CSO impacts

HNTB

APPROACHES FOR LONG-TERM CSO CONTROL PLANNING

- PRESUMPTIVE APPROACH
- DEMONSTRATIVE APPROACH

HNTB

PRESUMPTIVE APPROACH

- Less than 4-6 overflow events per year, or
- Eliminate or treat at least 85% of wet weather flow, or
- Remove pollutant loadings equivalent to at least 85% of wet weather flow eliminated or treated
- Minimum treatment required:
  - *Primary clarification*
  - *Solids and floatables disposal*
  - *Disinfection*

HNTB

DEMONSTRATIVE APPROACH

- Adequate to meet WQS and designated uses;
- Where WQS and designated uses can not be met due to natural background conditions or other pollution sources, use total maximum daily load (TMDL) to apportion pollutant loads;
- Maximize pollution reduction;
- Allow cost-effective expansion or retrofitting

HNTB

LONG-TERM CONTROL PLANNING STEPS

- PROGRAM SETUP
- SYSTEM CHARACTERIZATION
- ALTERNATIVE DEVELOPMENT AND EVALUATION
- PLAN SELECTION AND IMPLEMENTATION

DONE!

Public participation and agency interaction in all steps

HNTB

PROGRAM SETUP

- Review CSO Operational Plan & complete SRCER
- Review water quality standards and designated uses
- Determine Approach
- Set Up Program

HNTB

SYSTEM CHARACTERIZATION

DONE!

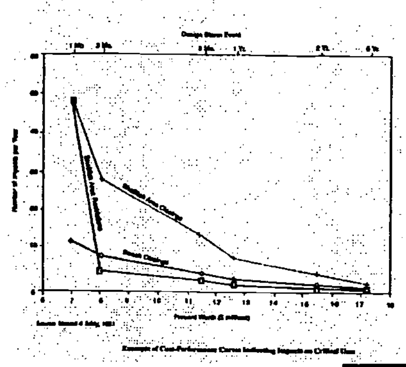
- Existing Data Analysis
  - Sewer data
  - Receiving water data
- Monitoring
  - Combined sewer monitoring
  - Receiving water monitoring
- Modeling
  - Model selection, calibration and verification
  - Model analysis and results interpretation

HNTB

ALTERNATIVE DEVELOPMENT AND EVALUATION

- Maximizing Treatment at Existing POTW
- Evaluation of Alternatives
- Cost/Performance Consideration

HNTB



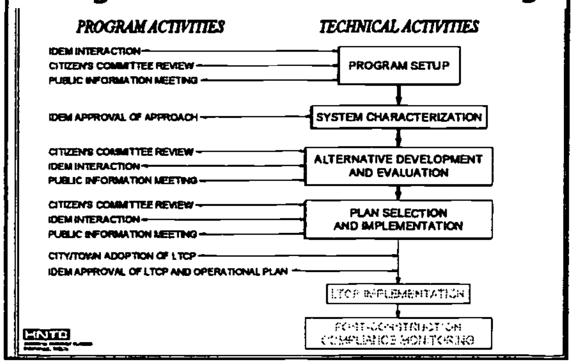
HNTB

PLAN SELECTION AND IMPLEMENTATION

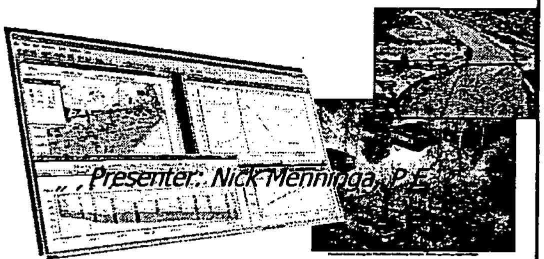
- Sensitive Area Consideration
  - Waters with threatened or endangered species or their habitats
  - Waters with primary contact recreation
  - Public drinking water intakes or their protection areas
  - Outstanding national resource waters; national marine sanctuaries, shellfish beds
- Financial Capability
- Implementation Schedule
- Post-Construction Compliance Monitoring Program
- CSO Operational Plan Revision

HNTB

Long-Term CSO Control Planning



Modeling Applications



HNTB

Types of Models

- Hydrologic - Rainfall / Surface Runoff
- Hydraulic - Sewer / Subsurface
- River / Natural Channel Hydraulic
- Water Quality

HNTB

Capabilities & Data Requirements

- Hydrologic - Rainfall / Surface Runoff
  - Rational Method
  - HEC-1
  - EPA Stormwater Management Model (SWMM)

HNTB

Hydrologic - Rainfall / Surface Runoff

Model	Data Requirements	Applications
Rational Method	➢ Ground Slope ➢ "C" Value	Quick, simple estimate of peak runoff rates.
HEC-1	➢ Topography ➢ Land use (imperviousness) ➢ Soil data	Simulates dynamic response to input rainfall pattern.
ILLUDAS	➢ Ground Slope ➢ Imperviousness	Good for "detached" paved areas.
Storm Water Management Model (SWMM)	➢ Topography ➢ Land use (imperviousness) ➢ Soil data	Simulates dynamic response to input rainfall pattern. Many additional capabilities including continuous simulation of historical rainfall.

HNTB

Types of Models

- Hydrologic - Rainfall / Surface Runoff
  - Rational Method
  - HEC-1
  - EPA Stormwater Management Model (SWMM)
- Hydraulic - Sewer / Subsurface
  - Manning's Equation
  - ILLUDAS
  - SWMM

HNTB

Hydraulic - Sewer / Subsurface

Model	Data Requirements	Applications
Manning's Equation	➢ Pipe Diameter ➢ Pipe Slope ➢ Pipe Roughness (material)	Quick design of simple drainage networks.
ILLUDAS	➢ Pipe Diameter ➢ Sewer Profile ➢ Pipe Roughness (material)	• Automatic pipe sizing. • Good for simple gravity sewer design. • Does not simulate pressurized (surcharged) conditions.
Storm Water Management Model (SWMM)	➢ Sewer Profile (size, slope, etc.) ➢ Diversion Structure Details ➢ Pump Station	• Automatic pipe sizing. • Good for simulation of existing systems. • Can simulate virtually any hydraulic phenomena. • Ideal for CSO Long Term Control Plans!

HNTB

Types of Models

- Hydrologic - Rainfall / Surface Runoff
  - Rational Method
  - HEC-1
  - EPA Stormwater Management Model (SWMM)
- Hydraulic - Sewer / Subsurface
  - Manning's Equation
  - ILLUDAS
  - SWMM
- River / Natural Channel Hydraulics
  - HEC-RAS (Steady-state)
  - UNET (Dynamic)

HNTB

Hydrodynamic - River / Natural Channel

- HEC-RAS
  - Capabilities
    - Steady-State
    - Peak Water Levels
    - Flood Damage Assessment
  - Data Requirements
    - Channel Cross Sections
    - Channel Flows
- UNET
  - Capabilities
    - Dynamic response to rainfall event
    - Pre-processor for water quality modeling
  - Data Requirements - Same as HEC-RAS

HNTB

Types of Models

- Hydrologic - Rainfall / Surface Runoff
  - Rational Method
  - HEC-1
  - EPA Stormwater Management Model (SWMM)
- Hydraulic - Sewer / Subsurface
  - Manning's Equation
  - ILLUDAS
  - SWMM
- River / Natural Channel
  - HEC-RAS (Steady-state)
  - UNET (Dynamic)
- Water Quality
  - SWMM
  - WASP (Dynamic)

HNTB

Water Quality Modeling

- Qual2E - Steady State Water Quality
  - Capabilities
    - Pollutant Transport
    - Pollutant Loadings in Dry Weather
  - Data Requirements
    - Boundary Condition Loadings
    - Point Source Loadings
    - Low-flow Hydraulics
- WASP - Dynamic Surface Water Quality
  - Capabilities
    - Pollutant Fate & Transport, During Storms
    - E. Coli., DO, BOD, TSS, etc.
  - Data Requirements
    - Dynamic Hydraulic Model (i.e., UNET)
    - Point Source Loadings

HNTB

Sewer Modeling Software

HNTB

Need for Sewer Model

- Reduce combined sewer overflows (CSOs)
- Identify hydraulic deficiencies
- Reduce basement backups

HNTB

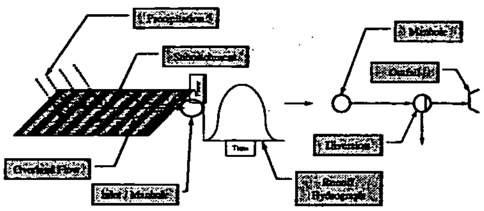
Modeling Software

- SWMM - Storm Water Management Model
  - Developed by USEPA
  - Extremely powerful
  - 2 Primary Components (Computational Blocks)
    - RUNOFF
    - EXTRAN

HNTB

RUNOFF - EXTRAN

RUNOFF ⟹ Linkage ⟹ EXTRAN



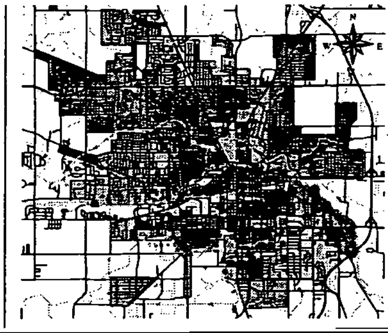
HNTB

CASE STUDY

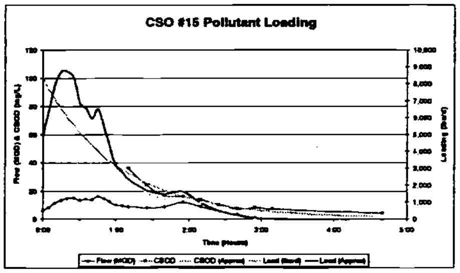
Muncie, Indiana

HNTB

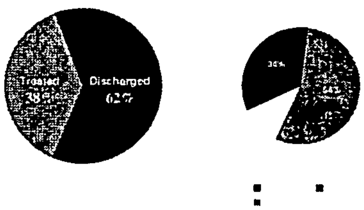
Muncie, Indiana Flow Monitoring & Sampling Program



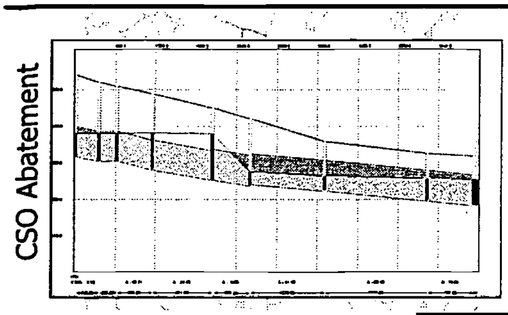
CSO Pollutant Loadings



Annual Average Wet Weather Flows



In-System Storage



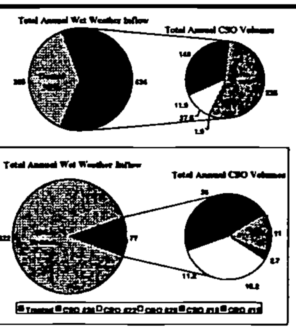
HNTB

Recommended Alternatives

- In-System Storage
- Raise Weir Height
- Storage Reservoir
- Increased Treatment

HNTB

Annual Average Wet Weather Flows



HNTB

East Chicago Project Engineering Costs

- Review / Revise Sewer Use Ordinance
- SRCER
  $ TBD
- Long Term Control Plan (LTCP)
  - Phased Approach
  - $48,000 for Phase I
  - $150,000 total cost (approximate)

HNTB

Questions & Answers

HNTB

EAST CHICAGO SANITARY DISTRICT **Public Meeting Agenda**

Location Pastrick Branch Library Date July 25, 2002

Subject Combined Sewer Overflow Control Program, East Chicago Sanitary District

Introduction – Sanitary District and its mission

Combined Sewers

Definition

History of sewer transport systems – combined was 'state of the art' prior to 1965.

Operation in East Chicago

Rules Regarding Combined Sewers

Need for Operational Plans – Nine minimum controls – optimize existing facilities

Need for Reporting – Frequency, duration, volume of discharges

Water Quality Goals – fishable/swimmable or highest attainable use

Need for Capital Improvements – starts with Long Term Control Planning

Long Term Control Planning

Understand existing system

Evaluate alternative control technologies

Select best available control technology

Develop implementation plan – schedule, prioritization (sensitive areas first), based on financial capability

Public involvement – Questions and comments

EAST CHICAGO SANITARY DISTRICT

Public Meeting Sign-in Sheet

Location Pastrick Branch Library

Date July 25, 2002

Subject Combined Sewer Overflow Control Program, East Chicago Sanitary District

NAME	ADDRESS AND PHONE
MICHAEL SUTY	4213 ELM ST E. CHICAGO, IND 46312
Joseph Johns	4806 McCook Ave E. Chicago IN
Esthela Quiroga	2308 Purdue Dr. East Chicago, IN 46312
PETER S. BARANYA.	1374 W. 94th St. Crown Point, In.
Nick Menninga	111 N. Canal Suite 1250 Chicago IL 60302

PUBLISHER'S AFFIDAVIT

NOTICE OF PUBLIC HEARING

The Board of Sanitary Commissioners of the Sanitary Board of East Chicago, Indiana, (ECSD) will conduct a public hearing on the 25th day of July, 2002 at 6:00 p.m. at the Patrick Branch Library, 1008 West Chicago Avenue, East Chicago, Indiana 46312. The hearing will be regarding the Combined Sewer Overflow Long Term Control Plan being considered by ECSO.

This will be the first in a series of public hearings intended to inform and solicit comments regarding the Long Term Control Plan and its associated work tasks. The purpose of the public hearing shall be to discuss the Long Term Control Plan. A written summary of the project including a description of the proposed work plan will be made available to all attendees.

Written comments will be accepted during the hearing and for a period of ten (10) days following the hearing.

7/22 1248706

State of Indiana)
) ss:
Lake County)

Personally appeared before me, a notary public in and for said county and state, the undersigned DELAYNE KROL who, being duly sworn, says that She is Legal Clerk of the TIMES newspaper of general circulation printed and published in the English language in the (city) (town) of Munster in the state and county aforesaid, and that the printed matter attached hereto is a true copy, which was duly published in said paper for ONE time ____, the dates of publication being as follows:

July 22 2002

Delayne Krol

Subscribed and sworn to before me this 29 day of July, 2002.

Jane E Hutts
Notary Public

My commission expires: 08-10-09

Combined Sewer Overflow Long Term Control Planning

East Chicago, Indiana

July 25, 2002

CSO Long Term Control Planning

- East Chicago Sanitary District
- Combined Sewers
- Rules And Regulations
- Long Term Control Planning
- Participation

East Chicago, Indiana HNTB

Introduction

- East Chicago Sanitary District
  - Background
  - Mission
  - Facilities
  - Staff

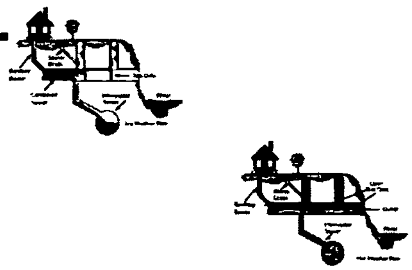
East Chicago, Indiana HNTB

Combined Sewers

- Definition
- History
- Operation In East Chicago

East Chicago, Indiana

HNTB



East Chicago, Indiana

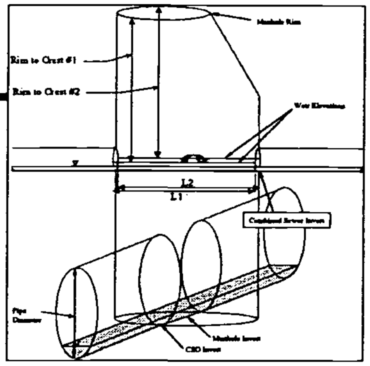
HNTB

Why Combined ?

- Sanitary Sewers - To Treatment Plant
- Storm Sewers - To River
- Combined Sewer Carries Sanitary Waste for Treatment in Dry Weather, Stormwater to River in Wet Weather
- Less Expensive to Build Combined Sewer
- Thought to be Environmentally Acceptable

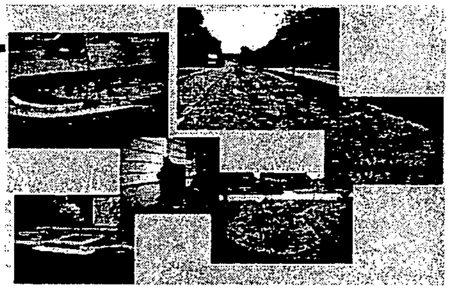
East Chicago, Indiana

HNTB



East Chicago, Indiana

HNTB



East Chicago, Indiana

HNTB

Combined Sewer

- Definition
- History
- Operation In East Chicago

East Chicago, Indiana

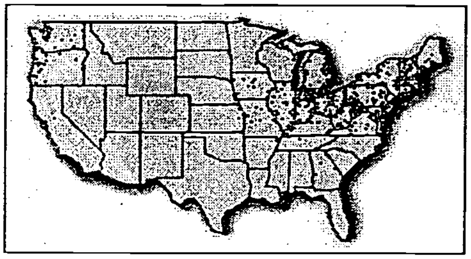
HNTB

State of the Art Before 1965

East Chicago, Indiana

HNTB

Used Across the Country



East Chicago, Indiana

HNTB

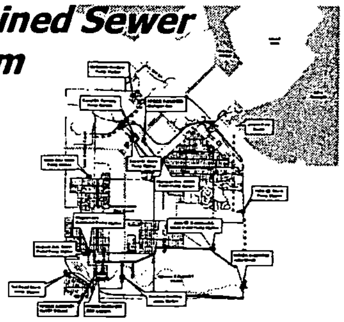
Combined Sewer

- Definition
- History
- Operation In East Chicago

East Chicago, Indiana

HNTB

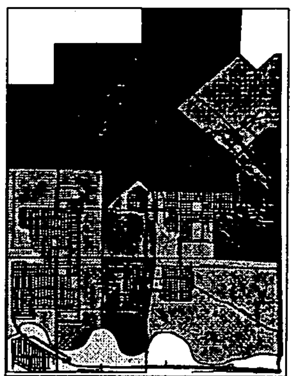
East Chicago's Combined Sewer System



East Chicago, Indiana

HNTB

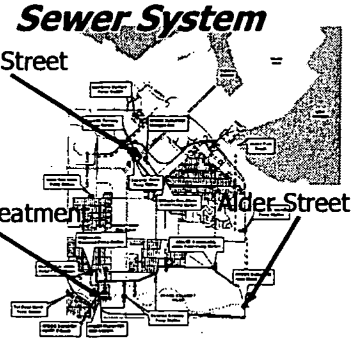
Drainage Basins in East Chicago



East Chicago, Indiana

HNTB

East Chicago's Combined Sewer System

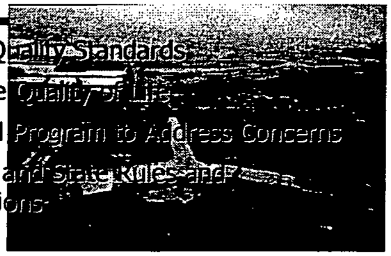


East Chicago, Indiana

HNTB

What Is the Concern?

- Water Quality Standards
- Improve Quality of Life
- National Program to Address Concerns
- Federal and State Rules and Regulations



East Chicago, Indiana

HNTB

Rules and Regulations

- Developed by USEPA
- Delegated to State of Indiana
- Implemented through Existing Permits
- Actions Required

East Chicago, Indiana

HNTB

Operational Plan

- East Chicago's Done in 1995
- Demonstrates Understanding of System Operation
- Demonstrates Optimization of Existing Facilities
- Demonstrates Administrative Commitment

East Chicago, Indiana

HNTB

Reporting Requirements

- Described in Permit
- Routinely Provide Detailed Information About Discharges
  - Time
  - Duration
  - Volume

East Chicago, Indiana

HNTB

Water Quality Goals

- Currently Classified as a General Use Stream - Fishable/Swimmable
- Bacteria Levels are Main Concern
- Consideration of Highest Attainable Use

East Chicago, Indiana

HNTB

Need for New Facilities

- New Equipment *May* Be Needed to Meet Goals
- Facilities Could Capture or Treat More Flow
  - Complete Treatment
  - Disinfection
- Long Term Control Planning

East Chicago, Indiana

HNTB

Long Term Control Planning

- Evaluation of Existing System Conditions
  - SWMM

East Chicago, Indiana

HNTB

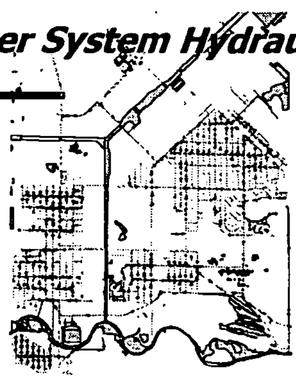
Model Applications

- Available pipe capacities
- Identification of hydraulic deficiencies (for reduction of basement backups)
- IDEM Requirements
  - Nine Minimum Controls
  - Use Attainability Analysis
  - Long Term Control Plan

East Chicago, Indiana

HNTB

Sewer System Hydraulics



East Chicago, Indiana

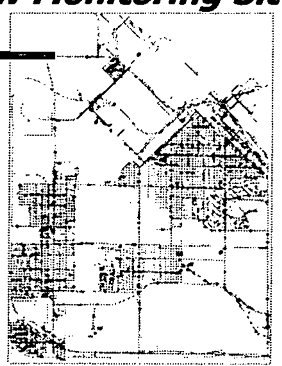
HNTB

East Chicago Hydrology

East Chicago, Indiana

HNTB

Flow Monitoring Sites



East Chicago, Indiana

HNTB

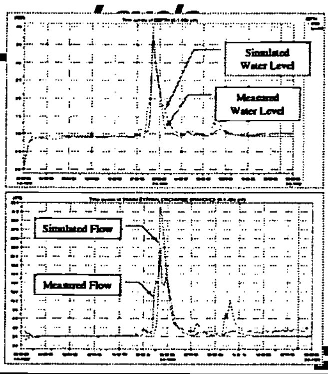
Long Term Control Planning

- Evaluation of Existing System Conditions
  - SWMM
- Evaluation and Selection of Control Technologies

East Chicago, Indiana

HNTB

Comparison of Flows &



East Chicago, Indiana

HNTB

Alternatives

- Optimization of storage within the system, such as inlet control
- Additional sewer transportation facilities
- Additional storage alternatives
- Disinfection equipment
- Treatment Facilities - Ponds or 'high-tech' equipment

East Chicago, Indiana

HNTB

Long Term Control Planning

- Evaluation of Existing System Conditions
  - SWMM
- Evaluation and Selection of Control Technologies
- Develop Implementation Plan

East Chicago, Indiana

HNTB

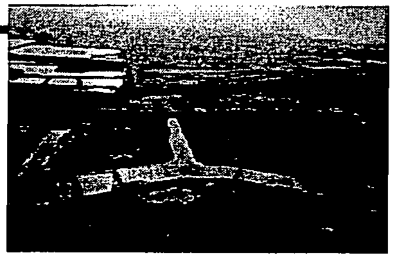
Long Term Control Planning

- Evaluation of Existing System Conditions
  - SWMM
- Evaluation and Selection of Control Technologies
- Develop Implementation Plan
- Public Involvement

East Chicago, Indiana HNTB

Questions & Comments

East Chicago, Indiana HNTB



East Chicago, Indiana

HNTB

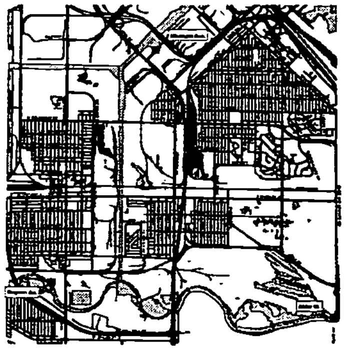
Combined Sewer Overflow Long Term Control Plan UPDATE

July 2003

Presenters: Matthew Berg
Guido Borgnini
Jennifer Matik

HNTB

East Chicago Combined Sewer System (CSS)



HNTB

Completed LTCP Activities

- Work Plan
- Characterization, Monitoring, and Modeling of the CSS
- Consideration of Sensitive Areas
- Maximization of Wet Weather Flows at the Wastewater Treatment Plant
- Public Meeting Held on July 25, 2002
- Development and Evaluation of CSO Control Alternatives
- Cost/Performance Considerations – "Knee of the Curve" Analysis

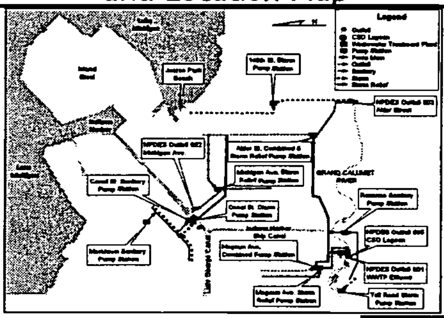
HNTB

Future LTCP Activities

- Implementation Schedule
- Financial Capability Analysis
- Define Post-Construction Monitoring Program
- Operational Plan Revisions
- Public Participation/Citizen Advisory Committee
- Incorporate Review Comments
- Assemble Report for IDEM Submittal
- IDEM Review

HNTB

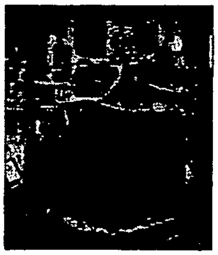
Pump Station and WWTP Schematic and Location Map



HNTB

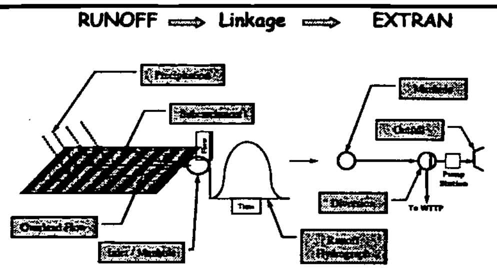
Alternative A No Action

- >85% Combined Sewage Captured for Treatment by Existing CSO Lagoon



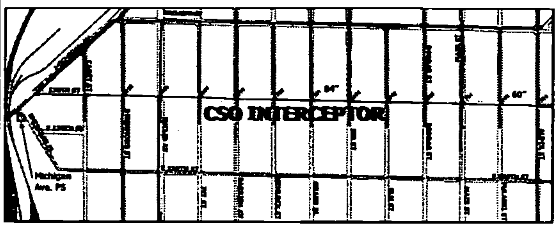
HNTB

SWMM (Storm Water Management Model) RUNOFF - EXTRAN



HNTB

Alternative C
Plan View of CSO Interceptor for Proposed In-System Storage

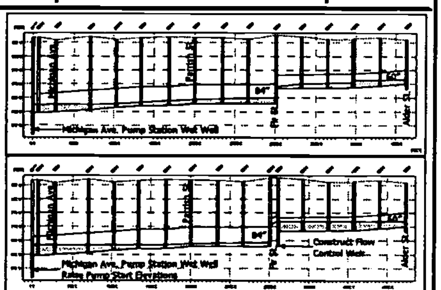


HNTB

Alternative C
Proposed In-System Storage in Michigan Ave. Pump Station CSO Interceptor

Hydraulic Grade Line Existing Conditions – 3-Month Event

Hydraulic Grade Line Proposed Conditions – 3-Month Event



HNTB

Hydraulic Structure Rehabilitation

Plugged Combined Sewer – Needs to be Cleaned Out
(Repair or Replacement Required at 34 Locations)

HNTB

Alternative C

- Alder Street Combined & CSO Pump Station and Tributary Basin
  - –Increase Pumping Capacity to WWTP
  - –Hydraulic Structure Rehabilitation

HNTB

Alternative C

- Magoun Avenue Combined & CSO Pump Station and Tributary Basin
  - –Modify Pump Operation So That Once WWTP Capacity Is Reached, All Flows Are Directed to the CSO Lagoon
  - –Hydraulic Structure Rehabilitation
- No Modifications at the WWTP or CSO Lagoon

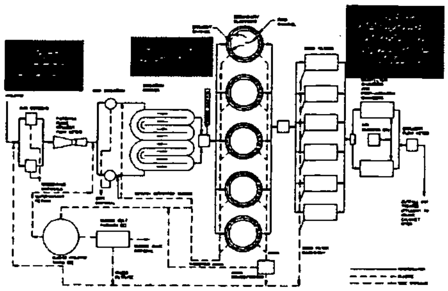
HNTB

Alternative D
In-System & WWTP Improvements

- $4.8 Million
- 98% Combined Sewage Captured for Treatment
- Includes Alternative C Improvements and WWTP Improvements

HNTB

Alternative D
WWTP Improvements



HNTB

Alternative E
New Remote Storage Facilities

- $9.7 Million
- 99% Combined Sewage Captured for Treatment

HNTB

Alternative E

- Michigan Avenue CSO Pump Station and Tributary Basin
  - Construct Aerated Storage Lagoon and Modify Pumps to Capture CSO's from a 1-Year Frequency Rainfall
  - Hydraulic Structure Rehabilitation

HNTB

Alternative E

- Alder Street Combined & CSO Pump Station and Tributary Basin
  - Construct Aerated Storage Lagoon and Modify Pumps to Capture CSO's from a 1-Year Frequency Rainfall
  - Hydraulic Structure Rehabilitation

HNTB

Alternative E

- Magoun Avenue CSO Pump Station and Tributary Basin
  - Hydraulic Structure Rehabilitation

HNTB

Alternative B – Complete Sewer Separation

- $70 Million
- Eliminates Combined Sewer Overflows
- Construct New Storm Sewers and Use Existing Combined Sewers as Sanitary Sewers
- CSO Pump Stations Become Stormwater Pump Stations (Michigan Ave., Alder St., and Magoun Ave.)
- No Modifications at the WWTP or CSO Lagoon

HNTB

Alternative C In-System Storage & Flow Maximization to Existing CSO Lagoon

- $0.6 Million
- 94% Combined Sewage Captured for Treatment

HNTB

Alternative C

- Michigan Avenue CSO Pump Station and Tributary Basin
  - In-System Storage in CSO Interceptor (Raise Pump Start Elevations and Construct Control Weir at 138th and Fir St.)
  - Hydraulic Structure Rehabilitation

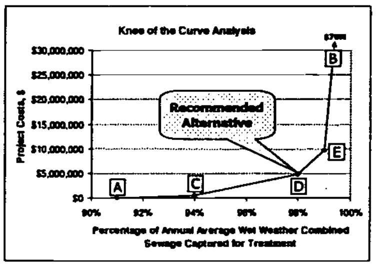
HNTB

Alternative E

- WWTP and CSO Lagoon
  - Disinfect CSO Lagoon Effluent by Replacing UV Equipment and Appurtenant Modifications

HNTB

Knee of the Curve Analysis



[A] No Action
[B] Complete Sewer Separation
[C] In-System Storage & Flow Maximization to Existing CSO Lagoon
[D] In-System & WWTP Improvements
[E] New Remote Storage Facilities

HNTB

Future LTCP Activities Due by April 1, 2004

- Implementation Schedule
- Financial Capability Analysis
- Define Post-Construction Monitoring Program
- Operational Plan Revisions
- Public Participation/Citizen Advisory Committee
- Incorporate Review Comments
- Assemble Report for IDEM Submittal
- IDEM Review

HNTB

EAST CHICAGO SANITARY DISTRICT

CSO LONG TERM CONTROL PLAN UPDATE

THURSDAY, OCTOBER 23, 2003

Prepared By
Matthew Berg PE, Project Manager
HNTB CORPORATION

- Completed Phase I and II Activities
    - Work Plan
    - Characterization, Monitoring and Modeling of the Combined Sewer System
    - Consideration of Sensitive Areas
    - Maximization of Wet Weather Flows at the Wastewater Treatment Plant
    - Public Meeting Held on July 25, 2002
    - Development and Evaluation of CSO Control Alternatives
    - Cost/Performance Considerations – "Knee of the Curve" Analysis

- Phase III Activities – In Progress
    - CSO Public Notification Procedures – See attached draft report section and map. Due to IDEM by November 9, 2003 with implementation 90 days thereafter.
    - Public Participation/Citizen Advisory Committee – Should be established by ECSD as soon as possible. First meeting should be held prior to November 21 to keep project on schedule.
    - Meeting with IDEM to review Phase I and II activities and work plan for Phase III – IDEM has been contacted and tentative meeting dates have been identified.
    - Financial Capability Analysis and Implementation Schedule – See attached request for financial information.

- Phase III Activities – Future
    - Define Post-Construction Monitoring Program
    - Minimization of Industrial Discharges During Wet Weather
    - Operational Plan Revisions
    - Final LTCP Report due to IDEM by April 1, 2004.

EAST CHICAGO SANITARY DISTRICT
COMBINED SEWER OVERFLOW
LONG TERM CONTROL PLAN

CITIZENS ADVISORY COMMITTEE

AGENDA 2/27/04

I. Background and Purpose of the Citizens Advisory Committee.

II. Review LTCP Tasks and Schedule

III. Review of CSO Locations/Streams

IV. Discussion of Possible Sensitive Areas

V. Existing Use of Streams & Community Goals for Streams

VI. CSO Control Alternatives

VII. Public Participation Activities

   a. City Newsletter Articles

   b. Public Hearing

   c. CSO Public Notification Procedures

VIII. Future Meetings

IX. Questions/Answers

HNTB
The HNTB Companies

Meeting Documentation

Project East Chicago Sanitary District LTCP **Job No.** 34243

Meeting Location ECSD WWTP Conference Room **Meeting Date** February 27, 2004

Subject Citizens Advisory Committee

Present

Michael J. Suty; Peter S. Baranyai; Brain Marciniak; Joseph Rivich; Ernest Jones
Richard Peterson; Donald Koliboski; Matthew Berg; Jennifer Matik

Discussion	Action/Response
Michael Suty opened the meeting by introducing each of the members of the Citizens Advisory Committee.	
LTCP Tasks and Schedule – Matt Berg presented an overview of the tasks involved in preparing a LTCP and noted that the NPDES permit requires the LTCP to be submitted to IDEM by April 1, 2004.	
CSO Locations/Streams – Pete Baranyai explained the history operation of the combined sewer system including the location of the three CSO's. (two CSO's discharge into the Grand Calumet River and one CSO discharges into the Indiana Harbor Ship Canal). It was also noted that the Hammond Sanitary District has a CSO that discharges to the Grand Calumet River at a location that is between the two East Chicago CSO's. It was also noted that Hammond has CSO discharges to the west and the Gary has CSO discharges to the East.	
Possible Sensitive Areas – IDEM's definition for sensitive areas was reviewed and discussed. No areas were identified as meeting IDEM's sensitive area criteria.	
Existing Use of Streams & Community Goals for Streams – It was noted that historically the Grand Calumet River and the Indiana Harbor Ship Canal were highly polluted and as a result public access was restricted and considered undesirable. However, Don Koliboski noted that it was the City's goal to one day be able to redevelop areas adjacent to the river in a manner that encourages public access.	
CSO Control Alternatives – The CSO Control Alternatives as contained in the draft report were reviewed and discussed.	

Authored By: Matthew C. Berg

HNTB
The HNTB Companies

Meeting Documentation (Cont'd)

Project East Chicago Sanitary District LTCP **Job No.** 34243

Meeting Location ______ **Meeting Date** February 27, 2004

Public Participation Activities – Matt Berg presented a suggested article to be published in the City's newsletter.	Mike Suty to arrange for article as reviewed in today's meeting to be published in the City's newsletter.
The procedures for notifying the public of an occurrence of a combined sewer overflow event were discussed.	Mike Suty and Pete Baranyai to work with City information officer to include CSO information on the City's web site.
Future Meetings – The next Citizens Advisory Committee Meeting was scheduled for Friday March 5, 2004 at 9:30 am in the conference room located at the ECSD WWTP. A public meeting to present the LTCP was scheduled for Thursday March 11, 2004 following the regularly scheduled Sanitary District Board Meeting.	Mike Suty to arrange for advertising the Public Meeting scheduled for March 11, 2004

The foregoing constitutes our understanding of the matters discussed and the conclusions reached. If there are any questions, corrections, omissions, or additional comments, please advise the author within five working days after receipt of these minutes.

Authored By: Matthew C. Berg

EAST CHICAGO SANITARY DISTRICT
COMBINED SEWER OVERFLOW
LONG TERM CONTROL PLAN

The East Chicago Sanitary District is developing a Long Term Control Plan to reduce the amount of combined sewage that overflows into the Grand Calumet River and the Indiana Harbor Ship Canal. The Indiana Department of Environmental Management (IDEM), which is responsible for regulating and enforcing state and federal standards for water quality in streams and waterways, has established April 1, 2004 as the deadline for East Chicago to complete the plan.

Most of East Chicago is served by a combined sewer system, which means that wastewater from homes, businesses and industries flows into the same pipes that also drain stormwater after a rainfall or snowmelt. During dry weather all of the wastewater is treated before it is discharged to the Grand Calumet River. However when it rains or snow melts, these combined sewers are overloaded because too much water goes down them at one time. When this happens, instead of backing up into your homes, the combined sewage is pumped into the river. This happens at three locations in East Chicago. At one of these locations the combined sewage is pumped into a lagoon for treatment prior to discharge to the river.

In the past, many cities in Indiana constructed combined sewers rather than separate sanitary and storm sewer systems. At the time, combined sewer systems were viewed as a cost-effective means of providing sewer service and improved drainage. However, since the 1960's, Indiana has approved only separate sanitary and storm water sewer systems. There are 105 Indiana municipalities that still have at least some portion of their wastewater collection systems where sanitary sewers and storm sewers remain as a combined sewer system. As a result, there are over 900 CSO outfalls in Indiana.

The Long Term Control Plan involves study of the existing sewer system and treatment plant, evaluating the impact of CSO's on the receiving streams, identification of sensitive areas on the receiving streams, the development of alternatives to comply with IDEM's regulations, an analysis of the financial capability and the impact on a typical residential household, along with development of a schedule and other details needed to implement the plan.

Establishing and maintaining public input and participation is an essential part of the Long Term Control Plan. The Sanitary District will issue progress reports in future editions of this newsletter as well as on the City of East Chicago web site and at regular Sanitary District Board meetings. Public input and participation is being facilitated by a Citizens Advisory Committee. If you have any questions or concerns about this program please contact the East Chicago Sanitary District at (219) 391-8466.

1st Newsletter Article

EAST CHICAGO SANITARY DISTRICT
COMBINED SEWER OVERFLOW
LONG TERM CONTROL PLAN

CITIZENS ADVISORY COMMITTEE

AGENDA 3/5/04

I. Selection of CSO Control Alternative

II. Financial Capability Analysis

III. February 17, 2004 Letter from IDEM

IV. Implementation Schedule

V. Certification of the LTCP

VI. Public Participation Activities

   a. City Newsletter Articles

   b. Public Hearing Scheduled for March 11

   c. CSO Public Notification Procedures

VII. Future Meetings

VIII. Questions/Answers

HNTB
The HNTB Companies

Meeting Documentation

Project East Chicago Sanitary District LTCP **Job No.** 34243

Meeting Location ECSD WWTP Conference Room **Meeting Date** March 5, 2004

Subject Citizens Advisory Committee

Present

Michael J. Suty; Peter S. Baranyai; Brain Marciniak; Ernest Jones

Richard Peterson; Donald Koliboski; Matthew Berg;

Discussion	Action/Response
Michael Suty opened the meeting.	
Selection of CSO Control Alternative– Matt Berg presented a review of the alternatives. After discussion of the pros and cons of each alternative the consensus of the committee was the Alternative C-3 should be the selected alternative. Financial Capability Analysis – Matt Berg presented a review of the Financial Capability Analysis as given in Chapter 11 of the report.	
It was noted that in the calculation of the Total Wastewater Cost per Household, assumptions were made regarding financing the proposed improvements and that actual methods of financing would likely be different. The possibility of obtaining grants was discussed. It was decided to develop a more specific implementation schedule and submit the LTCP to IDEM, and to consider alternate financing or grant opportunities, while the plan is being reviewed by IDEM.	Matt Berg to revise the analysis to reflect the current bond rating.
Mike Suty noted that the Bond Rating for the sanitary district had recently been upgraded from BB to BBB.	
It was noted that the according to IDEM's guidelines the financial capability burden for the City of East Chicago is high and that the Corresponding length of time allowed by IDEM to implement the LTCP is 10 to 20 years.	
February 17, 2004 Letter from IDEM - This letter which encourages East Chicago to implement "early action" projects to reduce CSO's was reviewed and discussed.	The potential for "early action" projects to be considered when developing the proposed implementation schedule.
Implementation Schedule – The individual projects that comprise the selected Alternative C-3, were reviewed and the pro and cons of scheduling the various projects were discussed. The committee reached consensus on the general order and priority of the projects.	Matt Berg to prepare a more specific schedule based on the discussion at today's meeting for specific review at the next Citizen's Advisory Committee meeting.

Authored By: Matthew C. Berg

HNTB
The HNTB Companies

Meeting Documentation (Cont'd)

Project East Chicago Sanitary District LTCP **Job No.** 34243

Meeting Location ECSD WWTP Conference Room **Meeting Date** March 5, 2004

Certification of the LTCP – The requirements for certifying the LTCP as stated in the NPDES Permit were reviewed and discussed. Matt Berg presented a sample "Certificate" for use by the district.	Certification to be included with the LTCP when it is submitted to IDEM.
Public Participation – Items to be presented at the Public Meeting scheduled for March 11, 2004 were reviewed and discussed.	
Future Meetings – The next Citizens Advisory Committee Meeting was scheduled for Friday March 19, 2004 at 9:30 am in the conference room located at the ECSD WWTP.	

The foregoing constitutes our understanding of the matters discussed and the conclusions reached. If there are any questions, corrections, omissions, or additional comments, please advise the author within five working days after receipt of these minutes.

Authored By: Matthew C. Berg

3/5/04 CAC Meeting

Michael Suty Utility 391-8466

Peter S. Baranyai E.C.S.D, W.W.T.P. 391-8466

Matthew C. Berg HNTB 317 930-9119

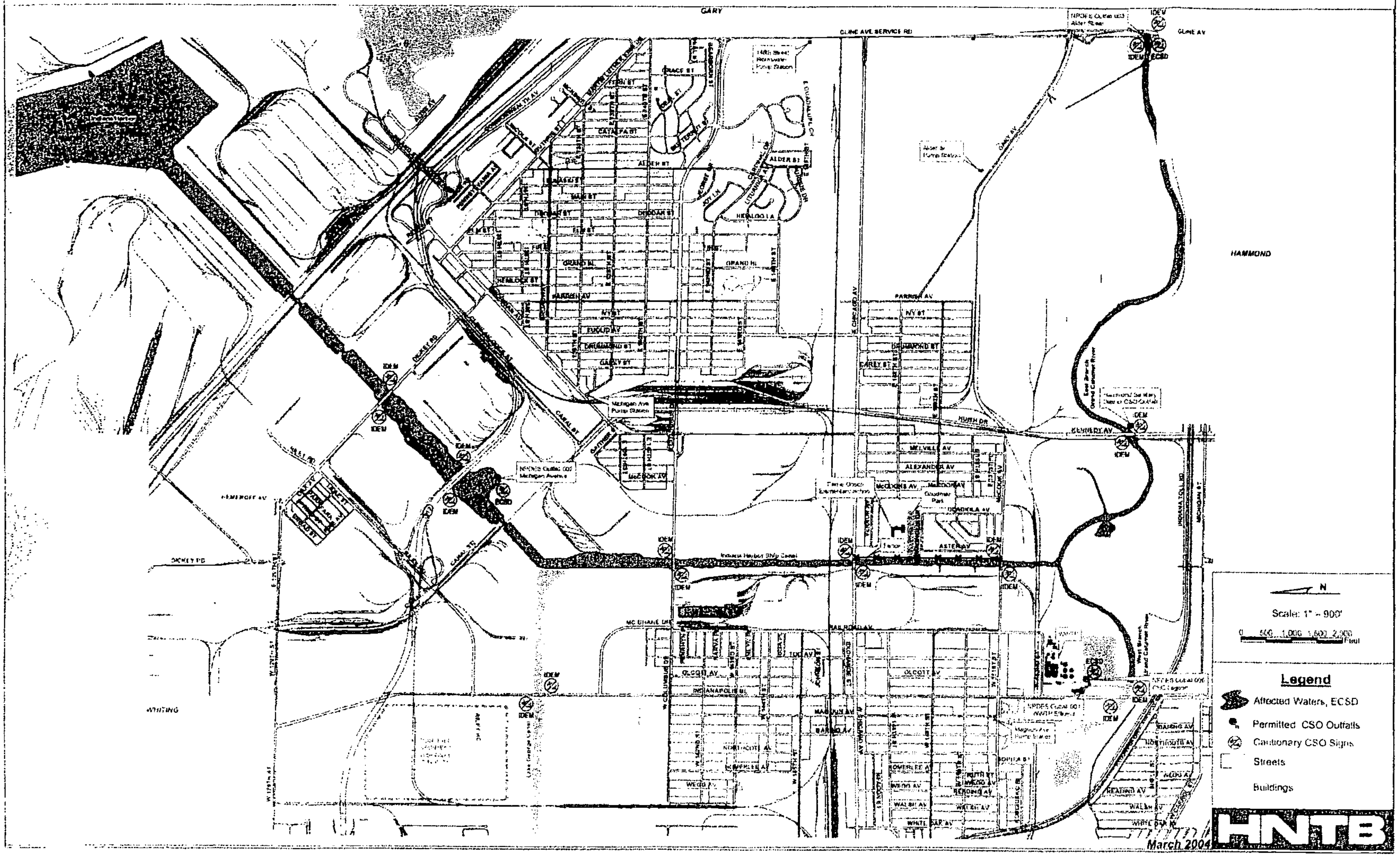
Donald Koliboski Mayor's Office 391-8200

Richard Paterson Sanitary Board 391-4039

Grant Jones Engineering 391-8355

Brian Marciniak ECWD 391-8487

East Chicago Sanitary District CSO Public Notification



3/11/04 Public Meeting

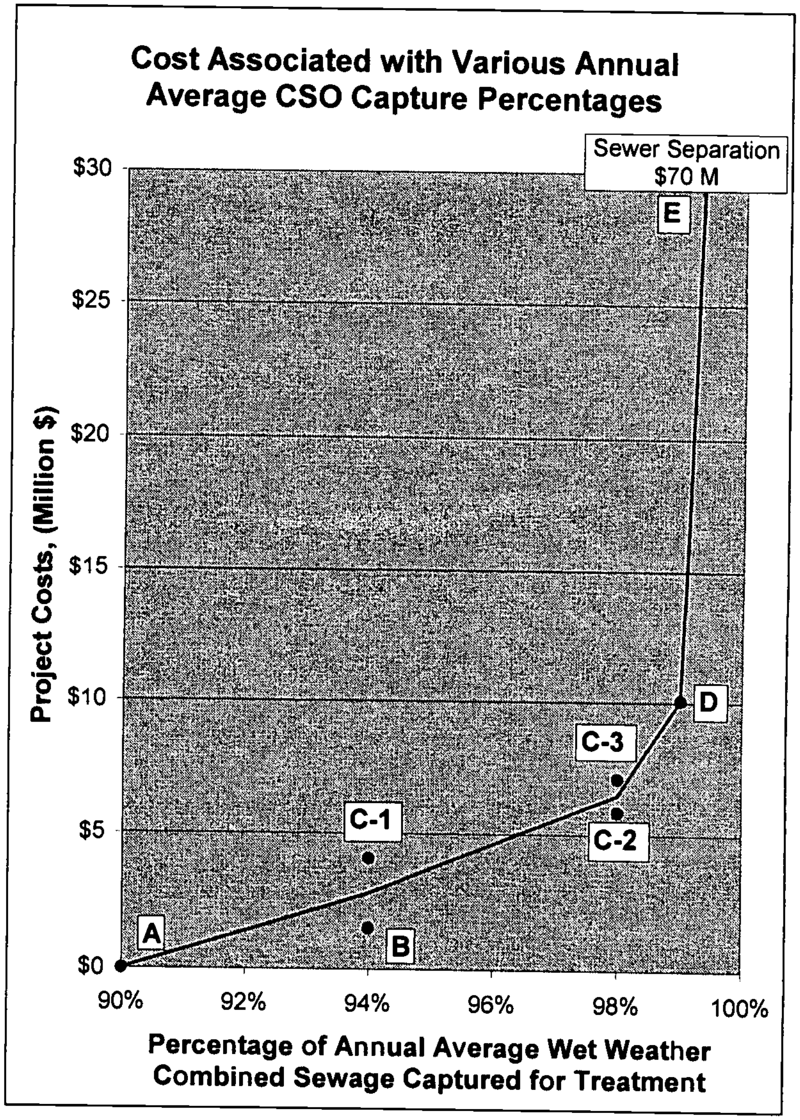
EAST CHICAGO CSO (COMBINED SEWER OVERFLOW) LONG TERM CONTROL PLAN

3/11/04 Public Mtg

SUMMARY OF ALTERNATIVES

PROJECTS	PROJECT COST (Million $)	ALTERNATIVE A	B	C-1	C-2	C-3	D	E
COLLECTION SYSTEM PROJECTS								
No Action	$0.0	X						
In-System Storage using Michigan Av. Pump Station Influent Interceptor (Construct Weir Structure at Fir Street and modify pump controls)	$0.02		X	X	X	X		
In-System Storage at Alder St. Pump Station using abandoned piping	$0.75		X	X	X	X		
Increase Flow to CSO Lagoon (Replace dry weather pumps at the Alder St. Pump Station @27 MGD capacity and modify operation of the Magoun and Alder St. Pump Stations)	$0.5		X	X				
Increase Flow to CSO Lagoon (Replace dry weather pumps at the Alder St. Pump Station @30 MGD capacity and modify operation of the Magoun and Alder St. Pump Stations)	$0.6				X	X		
Rehabilitation of CSO Weir Structures	$0.2		X	X	X	X	X	
Remote Storage/Treatment Facilities @ Michigan Av. Pump Station.	$4.2						X	
Remote Storage/Treatment Facilities @ Alder St. Pump Station.	$3.1						X	
Complete Sewer Separation	$70.0							X
WWTP PROJECTS								
No Action	$0.0	X						
Replace Influent Mechanical Bar Screens	$1.1			X	X	X	X	
Disinfect CSO Lagoon Effluent (UV equipment replacement @ 36 MGD capacity w/ necessary diversion chamber and yard piping)	$1.5			X			X	
Disinfect CSO Lagoon Effluent (UV equipment replacement @ 40 MGD capacity w/ necessary diversion chamber and yard piping)	$1.5				X	X		
Final Clarifier Addition	$1.7				X	X		
CSO Lagoon Pump Station & Forcemain	$1.3					X		
ALTERNATIVE TOTAL PROJECT COST (Million $)		$0.0	$1.5	$4.1	$5.9	$7.1	$10.1	$70.0
% of ANNUAL AVERAGE WET WEATHER FLOW CAPTURED FOR TREATMENT		90%	94%	94%	98%	98%	99%	100%

KNEE OF THE CURVE ANALYSIS



FINANCIAL CAPABILITY ASSESSMENT AND IMPLEMENTATION SCHEDULE

3/11/04 Public Meeting

WASTEWATER COST PER HOUSEHOLD INDICATOR

$$WW_{CPHI} = \frac{\text{Annualized LTCP} + \text{Existing Wastewater Costs per Household}}{\text{Annualized Median Household Income}} \times 100\%$$

$$WW_{CPHI} = \frac{\$52 + \$346}{\$26{,}538} \times 100\% = 1.5\% \text{ of MHI}$$

WW_{CPHI}	Overall Impact
<1%	Low Impact
1% to 2%	**Medium Impact**
> 2%	High Impact

SOCIO-ECONOMIC INDICATORS MATRIX SCORES

SEIM Factor	SEIM Value	Weak, Mid-Range, or Strong	Score
Median Household Income	$26,538	Weak	3
Average Unemployment Rate	6.9%	Weak	3
Overall New Debt per Capita	$4,181	Weak	3
Bond Rating	BBB	Mid-Range	2
Property Tax Revenue Collection Rate	97.4%	Mid-Range	2
Total Score			13
SEIM Average Score			2.6

FINANCIAL CAPABILITY AND IMPLEMENTATION TIME

SEIM Score	WWC_{CPHI} Below 1%	WWC_{CPHI} 1% to 2%	WWC_{CPHI} Above 2%	Length of Time for LTCP Implementation Schedule
Above 2.5	**Medium**	**High**	**High**	**High = 10 - 20 years**
1.5 to 2.5	Low	Medium	High	Medium = 5 - 10 years
Below 1.5	Low	Low	Medium	Low = 5 years

HNTB

EAST CHICAGO SANITARY DISTRICT
COMBINED SEWER OVERFLOW
LONG TERM CONTROL PLAN

CITIZENS ADVISORY COMMITTEE

AGENDA 3/19/04

I. Draft LTCP Report

II. Implementation Schedule

III. Certification of the LTCP

IV. Public Participation Activities

   a. City Newsletter Articles

V. Future Meetings

VI. Questions/Answers

EAST CHICAGO SANITARY DISTRICT
COMBINED SEWER OVERFLOW
LONG TERM CONTROL PLAN

CITIZENS ADVISORY COMMITTEE MEETING 3/19/04

Name	Contact Information
Matthew C Berg	312 930 9119
Ernest Jones	391-8355
Jennifer Matik	312-930-9119
Richard Peterson	391-4039
Brian Marciniak	391-8487
Michael J. Suty	391-8466
Peter S. Baranyai	219-391-8466

HNTB
The HNTB Companies

Meeting Documentation

Project East Chicago Sanitary District LTCP **Job No.** 34243

Meeting Location ECSD WWTP Conference Room **Meeting Date** March 19, 2004

Subject Citizen's Advisory Committee

Present Matthew C. Berg, Ernest Jones, Jennifer Matik, Richard Peterson, Brian Marciniak, Michael J. Suty, Peter S. Baranyai

Discussion	Action/Response
Draft LTCP Report:	HNTB to edit wording on page 1-6
Five copies of the draft report were distributed to CAC.	CAC to submit comments to HNTB by March 29, 2004.
Mr. Suty commented that the last paragraph on page 1-6 needs to be reworded.	HNTB to send copies of the final report to East Chicago Sanitary District so they can send them to IDEM by April 1, 2004.
Implementation Schedule: The implementation schedule as presented in Figure 11-1 and summarized in Table 1-1 (see attached) was reviewed and discussed.	HNTB to finalize report with implementation schedule as shown in attached documents from the draft report.
Schedule may depend on when IDEM is finished with their review. Three projects (In-system storage using Michigan Av. Pump Station influent interceptor, in-system storage at Alder St. Pump Station using abandoned piping tributary to 145th St. Pump Station and rehabilitation of the CSO Weir Structures), were considered as "early action" projects.	
Currently, the LTCP projects are scheduled to be completed over a 15 year period.	
Certification of the LTCP: IDEM's certification requirements were reviewed. Matt Berg presented a draft certification form for the City's use.	The "Certification of the East Chicago Sanitary District, Indiana Combined Sewer Overflow Long Term Control Plan" should be signed by Peter Baranyai before the plan is submitted to IDEM.
Public Participation Activities: A draft of a 2nd article to be published in the City's Newsletter was distributed and discussed.	Mr. Suty to edit the draft article and to arrange for publishing in the City's Newsletter.
Future Meetings: No future meetings were scheduled at this time.	

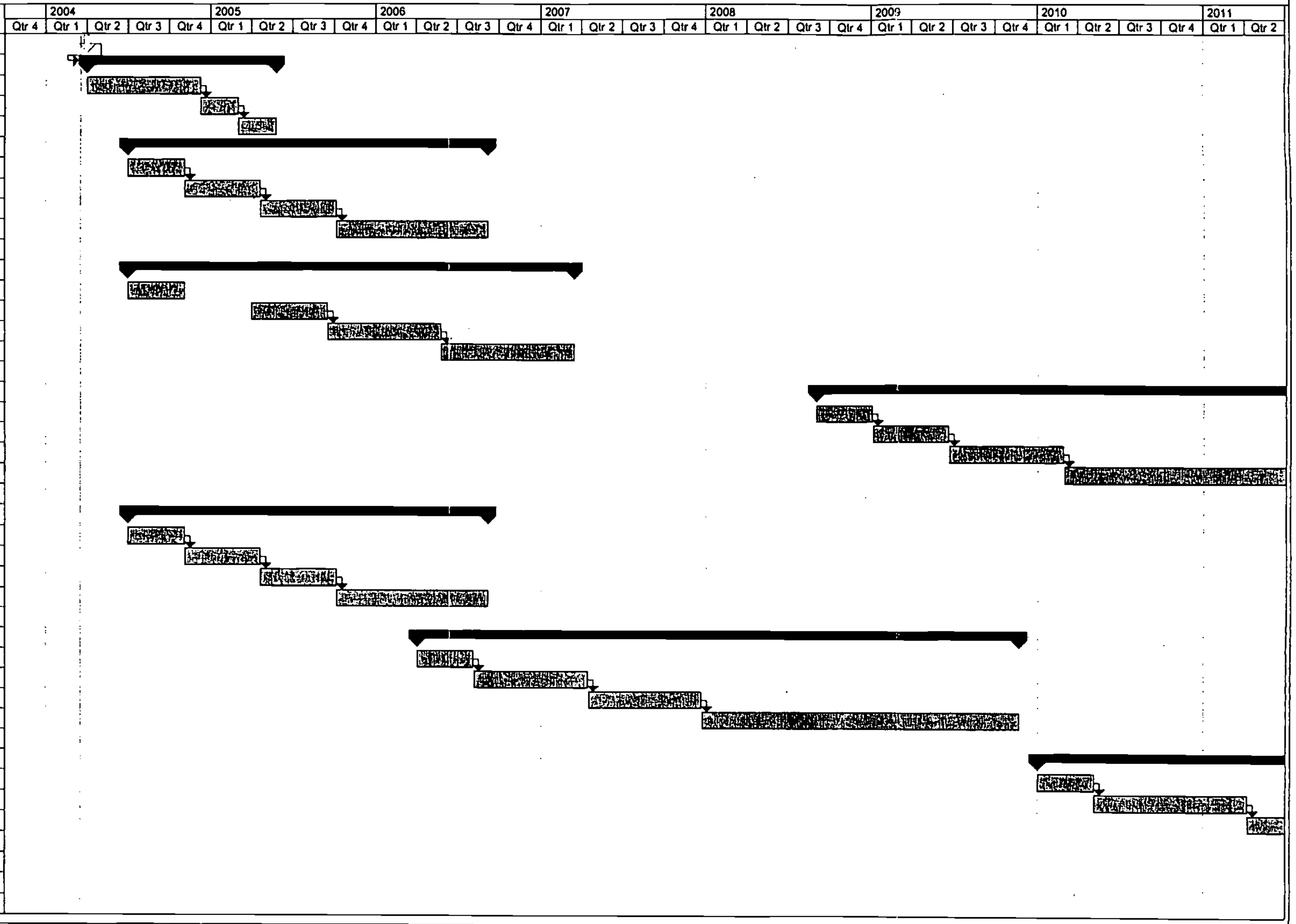
The foregoing constitutes our understanding of the matters discussed and the conclusions reached. If there are any questions, corrections, omissions, or additional comments, please advise the author within five working days after receipt of these minutes.

Authored By: Jennifer Matik **Issue Date:**

Copy To: Meeting Participants, Read File

EAST CHICA[illegible]RY DISTRICT
LONG TERM CONTROL PL[illegible]EMENTATION SCHEDULE

ID	Task Name
1	**Submit LTCP to IDEM**
2	**LTCP Review and Approval**
3	IDEM Review and Comments
4	East Chicago Response
5	IDEM Approval
6	**In-System Storage at Michigan Ave. Pump Station**
7	Preliminary Engineering Report
8	Final Design
9	Review and Permitting
10	Bidding and Construction
11	
12	**In-Sytem Storage at Alder St. Pump Station**
13	Preliminary Engineering Report
14	Final Design
15	Review and Permitting
16	Bidding and Construction
17	
18	**Alder Street Pump Station Improvements**
19	Preliminary Engineering Report
20	Final Design
21	Review and Permitting
22	Bidding and Construction
23	
24	**Rehabilitation of CSO Weir Structures**
25	Preliminary Engineering Report
26	Final Design
27	Review and Permitting
28	Bidding and Construction
29	
30	**Replace Influent Mechanical Bar Screens @ WWTP**
31	Preliminary Engineering Report
32	Final Design
33	Review and Permitting
34	Bidding and Construction
35	
36	**UV Disinfection System Improvements**
37	Preliminary Engineering Report
38	Final Design
39	Review and Permitting
40	Bidding and Construction
41	
42	
43	

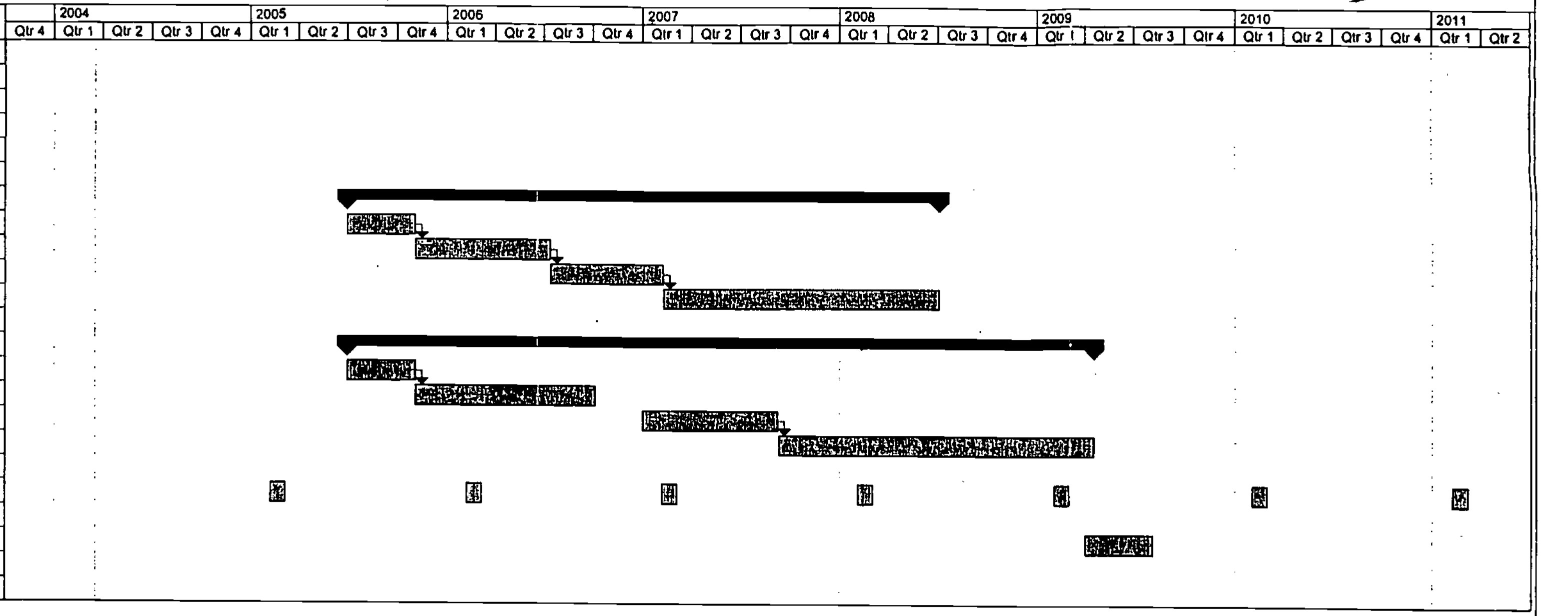


Project: ECSOLTCP
Date: Thu 3/18/04

Task		Progress		Summary		External Tasks		Deadline	
Split		Milestone		Project Summary		External Milestone			

EAST CHICA RY DISTRICT
LONG TERM CONTROL P EMENTATION SCHEDULE

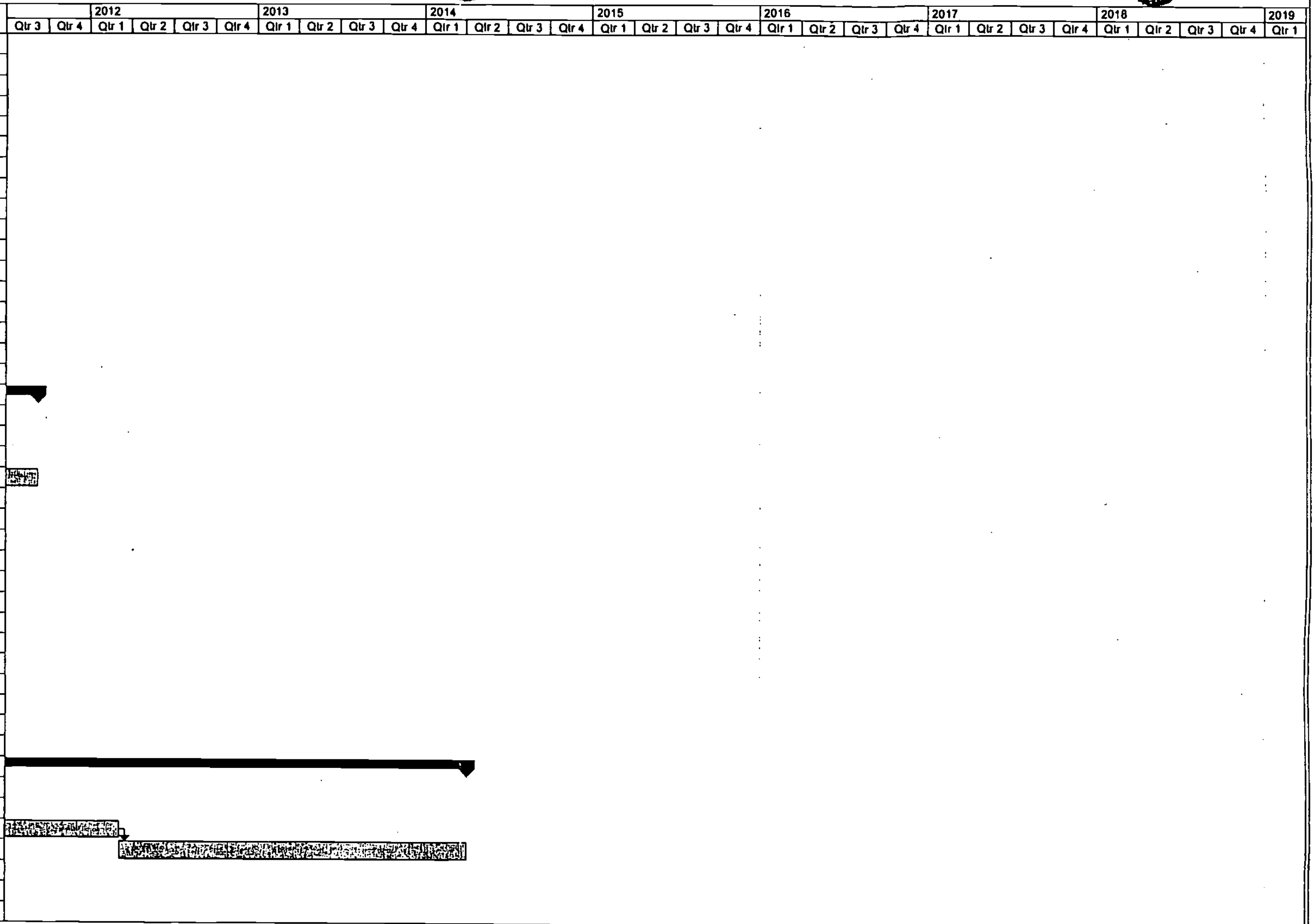
ID	Task Name
44	**Final Clarifier Addition**
45	Preliminary Engineering Report
46	Final Design
47	Review and Permitting
48	Bidding and Construction
49	
50	**CSO Lagoon Forcemain**
51	Preliminary Engineering Report
52	Final Design
53	Review and Permitting
54	Bidding and Construction
55	
56	**CSO Lagoon Pump Station**
57	Preliminary Engineering Report
58	Final Design
59	Review and Permitting
60	Bidding and Construction
61	
62	**Post Construction Monitoring**
77	
78	**LTCP Review and Update @ Year 5**
79	
80	**LTCP Review and Update @ Year 10**



Project: ECSDLTCP Date: Thu 3/18/04	Task	Progress	Summary	External Tasks	Deadline
	Split	Milestone	Project Summary	External Milestone	

EAST CHICA RY DISTRICT
LONG TERM CONTROL I EMENTATION SCHEDULE

ID	Task Name
1	**Submit LTCP to IDEM**
2	**LTCP Review and Approval**
3	IDEM Review and Comments
4	East Chicago Response
5	IDEM Approval
6	**In-System Storage at Michigan Ave. Pump Station**
7	Preliminary Engineering Report
8	Final Design
9	Review and Permitting
10	Bidding and Construction
11	
12	**In-Sytem Storage at Alder St. Pump Station**
13	Preliminary Engineering Report
14	Final Design
15	Review and Permitting
16	Bidding and Construction
17	
18	**Alder Street Pump Station Improvements**
19	Preliminary Engineering Report
20	Final Design
21	Review and Permitting
22	Bidding and Construction
23	
24	**Rehabilitation of CSO Weir Structures**
25	Preliminary Engineering Report
26	Final Design
27	Review and Permitting
28	Bidding and Construction
29	
30	**Replace Influent Mechanical Bar Screens @ WWTP**
31	Preliminary Engineering Report
32	Final Design
33	Review and Permitting
34	Bidding and Construction
35	
36	**UV Disinfection System Improvements**
37	Preliminary Engineering Report
38	Final Design
39	Review and Permitting
40	Bidding and Construction
41	
42	
43	

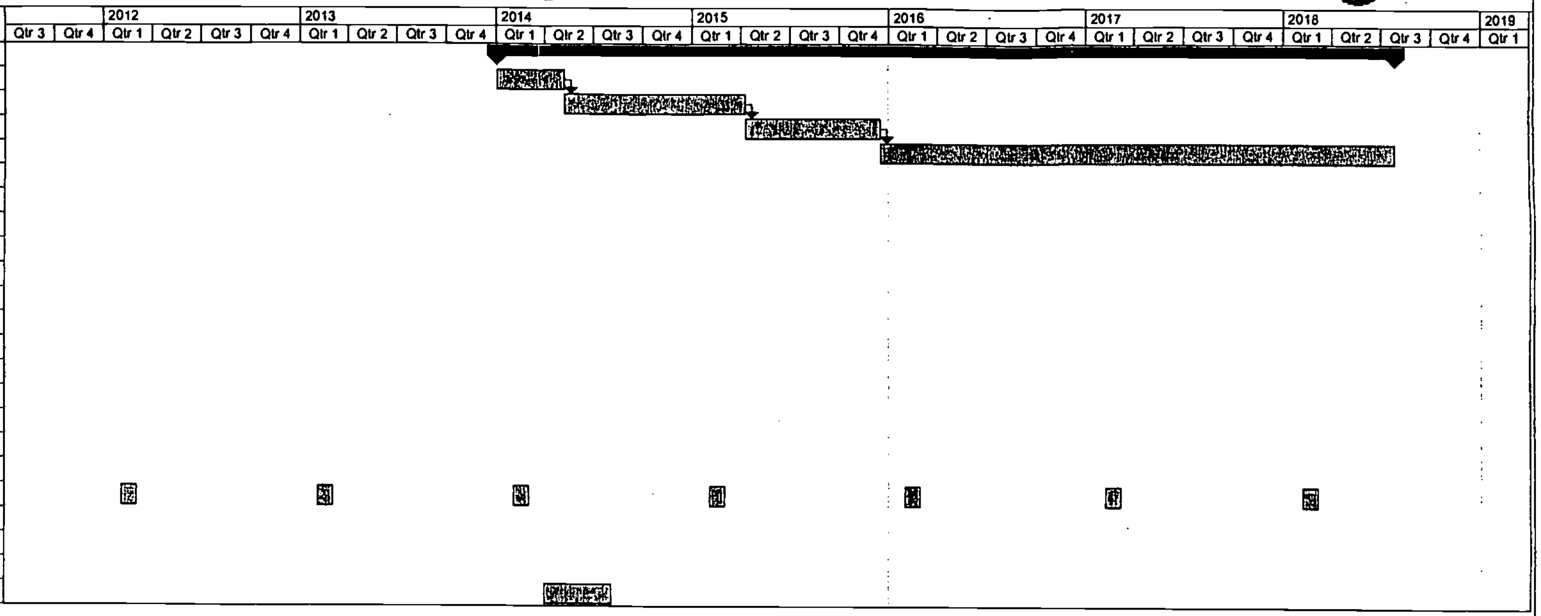


Project: ECSDLTCP
Date: Thu 3/18/04

Task | Progress | Summary | External Tasks | Deadline
Split | Milestone | Project Summary | External Milestone

EAST CHICA Y DISTRICT
LONG TERM CONTROL PL MENTATION SCHEDULE

ID	Task Name
44	**Final Clarifier Addition**
45	Preliminary Engineering Report
46	Final Design
47	Review and Permitting
48	Bidding and Construction
49	
50	**CSO Lagoon Forcemain**
51	Preliminary Engineering Report
52	Final Design
53	Review and Permitting
54	Bidding and Construction
55	
56	**CSO Lagoon Pump Station**
57	Preliminary Engineering Report
58	Final Design
59	Review and Permitting
60	Bidding and Construction
61	
62	**Post Construction Monitoring**
77	
78	**LTCP Review and Update @ Year 5**
79	
80	**LTCP Review and Update @ Year 10**



Project: ECSOLTCP Date: Thu 3/18/04	Task		Progress		Summary		External Tasks		Deadline	
	Split		Milestone		Project Summary		External Milestone			

TABLE 1-1
RECOMMENDED CSO CONTROLS AND PROBABLE PROJECT COSTS for ALTERNATIVE C-3

CSO CONTROL PROJECT DESCRIPTION	PROBABLE PROJECT COST (MILLION $)	TARGETED IMPLEMENTATION TIME	
Collection System Projects:		**Start Preliminary Engineering**	**Complete Construction**
In-System Storage using Michigan Avenue Pump Station Influent Interceptor	$0.02	3rd Qtr 2004	3rd Qtr 2006
In-System Storage at Alder Street Pump Station using abandoned piping tributary to 145th Street Pump Station	$0.8	3rd Qtr 2004	1st Qtr 2007
Increase Flow to CSO Lagoon (Replace dry weather pumps at the Alder Street Pump Station @ 30 MGD capacity and modify operation of the Magoun and Alder Street Pump Stations)	$0.6	3rd Qtr 2008	3rd Qtr 2011
Rehabilitation of CSO Weir Structures	$0.2	3rd Qtr 2004	3rd Qtr 2006
Wastewater Treatment Plant Projects:			
Replace Influent Mechanical Bar Screens	$1.1	2nd Qtr 2006	4th Qtr 2009
UV Disinfection System Improvements	$1.5	1st Qtr 2010	2nd Qtr 2014
Final Clarifier Addition	$1.7	1st Qtr 2014	3rd Qtr 2018
CSO Lagoon Forcemain	$0.4	3rd Qtr 2005	3rd Qtr 2008
CSO Lagoon Pump Station	$0.9	3rd Qtr 2005	2nd Qtr 2009

EAST CHICAGO SANITARY DISTRICT
COMBINED SEWER OVERFLOW
LONG TERM CONTROL PLAN

The East Chicago Sanitary District is developing a Long Term Control Plan (LTCP) to reduce the amount of combined sewage that overflows into the Grand Calumet River and the Indiana Harbor Ship Canal.

Seven alternatives were presented to the Citizens Advisory Committee for review and selection. The alternatives ranged from no action to complete sewer separation, with varying levels of CSO control. The alternative that was selected includes collection system projects (using existing pipes to store combined sewage when it rains or when snow melts, increasing flow to the CSO Lagoon, and rehabilitating CSO weir structures, which control the amount of combined sewage that gets pumped to the Grand Calumet River and Indiana Harbor Ship Canal) and wastewater treatment plant projects (replacing influent mechanical bar screens which prevent large debris from entering the treatment facility and damaging equipment, UV disinfection of CSO Lagoon effluent, adding a final clarifier, and adding a CSO Lagoon forcemain and pump station). This alternative was chosen because it makes the best use of existing facilities, allows the project to proceed in a logical stepwise fashion and provides the best value for the expected reduction in combined sewer overflows. The estimated cost to implement all of the selected projects is approximately seven million dollars.

A financial capability analysis was performed to evaluate East Chicago's ability to finance improvements associated with the Long Term Control Plan. The Citizens Advisory Committee is concerned with the financial impact to the citizens of East Chicago and is committed to developing a plan that minimizes financial impact. First the projects are scheduled to be completed over a __ year period, which will reduce the costs for each year of the plan. Other ways of financing these projects, such as grants and low interest loans, will also be researched in an effort to ease the financial burden on the citizens of East Chicago.

To provide an estimate of the potential impact to the typical household, initial assumptions were made on one way of financing the project. These calculations indicated that a household that is currently paying a sewer bill of $346 per year may see an increase of $52 per year.

The Long Term Control Plan will be submitted to the Indiana Department of Environmental Management for their review and approval. It is expected that the effectiveness of the individual projects will be monitored on a regular basis and that the plan will be updated accordingly.

Establishing and maintaining public input and participation is an essential part of the Long Term Control Plan. The Sanitary District will issue progress reports in future editions of this newsletter as well as on the City of East Chicago web site and at regular Sanitary District Board meetings. Public input and participation is being facilitated by the Citizens Advisory Committee. If you have any questions or concerns about this program please contact the East Chicago Sanitary District at (219) 391-8466.

EAST CHICAGO SANITARY DISTRICT
COMBINED SEWER OVERFLOW
LONG TERM CONTROL PLAN UPDATE

CITIZENS ADVISORY COMMITTEE

AGENDA 9/11/06

I. Review of Sewer System and Wastewater Treatment Facilities

II. The Problem. When it rains stormwater enters the combined sewer system, mixes with sanitary sewage and the combined stormwater and sewage overflows into the Grand Calumet River and the Indiana Harbor Ship Canal.

III. State and Federal laws require that the discharge of combined sewage be controlled and treated as needed to comply with water quality standards.

IV. Purpose of the Citizens Advisory Committee (see attached material)

V. March 2004 Long Term Control Plan (LTCP)

VI. Long Term Control Plan Update

   a. Indiana Department of Environmental Management (IDEM) Guidance for Design Storm Events

   b. Use Attainability Analysis

   c. September 22, 2006 Meeting with IDEM

VII. Future Citizens Advisory Committee Activities and Meetings

VIII. Questions/Answers

V. PUBLIC PARTICIPATION

Establishing and maintaining public input and participation is a required part of the Long Term Control Plan (LTCP) development. It is highly recommended that public participation begin early and continue throughout the development of the LTCP plan including, system characterization, sensitive area designation, selection of control alternatives, and final implementation of the control plan. Inviting early participation helps to insure that that public funds are prioritized and the control measures are focused on the uniqueness and priorities of the individual community. Effective public participation projects will include elements such as citizen advisory committees, public meetings and hearings, public education and involvement

A. Citizen Advisory Committees

Citizen Advisory Committees (CACs) should be formed in order to serve as "liaisons among municipal officials, NPDES permitting agencies, and the general public." The formation of this type of advisory committee is the recommended way to begin the public participation process. Typical members of the committee might include representatives from businesses, environmental groups, neighborhood associations, citizen activists, and municipal and elected officials. The specific tasks of the advisory committee may vary in different communities. However, the overall goal is to help the decision-makers of the community select long-term controls which best achieve the environmental goals of the community in an economically responsible manner and to assist in the determination of sensitive areas.

B. Public Meetings and Hearings

Public meetings and hearings should be conducted as part of a public participation process. Public meetings are typically a forum for describing and explaining control alternatives and soliciting feedback from the public as to priorities and alternatives.

Public meetings might be scheduled at key project milestones during the development of the Long Term Control Plan. Technically complex ideas and information must be presented in a way which is easily understandable to the general public. The discussion should provide a high degree of detail and background for all attendees. Some of the milestones that might be included in a public meeting are:

- Verification of sensitive areas identification
- Presentation of the work plan for the system characterization monitoring and assessment
- System characterization results
- Storm and river model results
- Cost-effective analysis results
- Presentation of control alternatives
- Control option selection

Public hearings are usually a more formal forum in which the agenda, including comments, questions, and responses are recorded. Typically only one or two public hearings will be held by IDEM, so that public interest groups, businesses, civic organizations and the general public can make official comments or pose questions to the municipality.

C. Public Education

Few people in a community will understand the complexities of CSOs and CSO control development. Therefore, educating the public early in the process is an important part of public participation and plays a significant role in getting public support for long term control plans. Some educational programs suggested in the EPA Long Term Control Plan Guidance and supported by this guidance include:

- Placement of informational and warning signs near CSO areas
- Media Coverage and Videotape production
- Speaker's bureau
- Newsletters
- Direct mailers, issue booklets, and bill inserts
- Educational software

D. Public Involvement

Participation programs that include involvement from the general public are much more likely to be effective at generating interest and input in the control plan. Some public involvement programs can include:

- Control alternative workshops,
- Funding task force,
- River committee,
- Community leader interviews,
- Telephone surveys, and/or
- Focus groups.

E. Community Notification Program

Under the requirements of SEA 431, the Indiana Water Pollution Control Board will adopt rules that establish requirements for community notification by NPDES permit holders. Notification of the potential health impacts of CSOs must be made by the CSO community (i.e. the permit holder) whenever information from a reliable source indicates that a CSO is occurring, or is reasonably likely to occur within the next 24 hours. Community notification will be an ongoing part of the CSO control plan.

The NPDES permit holders must provide for effective notice to the public. The NPDES permit holder should consider the following items to demonstrate an effective notice to the public has occurred, such as:

- Signs at Common Access Points
- Notice to Broadcasters
- Notice to Schools
- Notice to Downstream Communities and Users
- Timeliness of Notices
- Content of Notices
- Report to IDEM when Community Notifications have occurred

IDEM anticipates providing a draft rule on the implementation of a Community Notification Program for NPDES permit holders by October 31, 2001.

EAST CHICAGO SANITARY DISTRICT
CSO LTCP
CITIZENS' ADVISORY COMMITTEE

October 18, 2006
Meeting Summary

1. Introductions and Attendees

   a. Sign-in sheet (attached).

   b. CAC was introduced to Brett Barber, Greeley and Hansen.

2. Presentation Summary

   a. CAC was provided a general summary of the status of the LTCP update. A draft of the update had been provided to CAC members for review prior to the meeting.

   b. CAC was provided a summary of the methods of compliance available to CSO communities (attached):

      i. Meet WQS (eliminate CSOs or treat to meet WQS)
      ii. Design storm approach per IDEM draft policy
      iii. Revised designated use/use attainability analysis per SEA 620

   c. WWTP/CSO LTCP priorities were discussed.

3. CAC Feedback/Recommendations

   a. CAC members were continuing review of draft LTCP. Summary discussion was valuable to support their review.

   b. CAC members supported District evaluation of UAA approach as current rates are viewed as high (1.3% of MHI), as evidenced by comparison to IDEM guidance regarding substantial impact. CAC believes the community will resist increased rates beyond current levels. Believe that LTCP selected level of control and implementation has to balance cost and length of implementation schedule.

   c. CAC supported the District's recommendation that capital projects needed to keep the collection and treatment system in reliable working order (e.g. WWTP influent screening, effluent disinfection, aged pump station upgrades) are the highest priority as they benefit the reliability of treatment of both dry and wet weather flows. CAC supported maximization of use of the CSO treatment lagoon at the WWTP (as much flow from Alder Street subsystem to the WWTP as feasible).

Citizens Advisory Committee
Sign in Sheet

Date: October 18, 2006

1. TERRANCE LGL
2. Wanda Goodils
3. ENRIQUE Villareal
4. OSCAR MARTINEZ
5. JOHN BAKOTA

Al Velez

7. PETER BARANYAI
8. Brett Barber
9.
10.
11.
12.
13.

EAST CHICAGO SANITARY DISTRICT
CSO LTCP
CITIZENS' ADVISORY COMMITTEE

<u>March 19, 2007</u>
<u>Meeting Summary</u>

1. Introductions and Attendees

   a. Sign-in sheet (attached).

   b. CAC was introduced to Brett Barber, Greeley and Hansen.

2. Presentation Summary

   a. CAC was updated as to past discussions with IDEM and the scheduled March 27, 2007, meeting with IDEM to present the revised CSO LTCP. A draft of the update had been provided to CAC members for review prior to the meeting.

   b. WWTP/CSO LTCP proposed projects/priorities were reviewed. The CAC expressed strong support of the proposed LTCP.

3. CAC Feedback/Recommendations

   a. CAC members were continuing review of draft LTCP. Summary discussion was valuable to support their review.

   b. CAC members continue to support District evaluation of UAA approach as current rates are viewed as high. CAC believes the community will resist increased rates beyond current levels. Believe that LTCP selected level of control and implementation has to balance costs, benefits, and length of implementation schedule.

   c. CAC supported the District's recommendation that capital projects needed to keep the collection and treatment system in reliable working order (e.g. WWTP influent screening, effluent disinfection, aged pump station upgrades) are the highest priority as they benefit the reliability of treatment of both dry and wet weather flows. CAC supported maximization of use of the CSO treatment lagoon at the WWTP (as much flow from Alder Street subsystem to the WWTP as feasible).

   d. CAC supported sewer separation in Michigan Avenue redevelopment area. CAC cautioned that "schedule" of that work has to be sensitive to development progress and availability of funding from sources outside of rates.

March 19, 2007

Citizens Advisory Committee
Sign in Sheet

1. Oscar Martinez
2. Wanda Goldtils
3. John Bobita
4. Peter Baranyai
5. Henry Villarreal
- Ray Rueda
7. Brett Barber
8. Terrance Fay
9.
10.