

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

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DEC 31 2009

STATE OF ILLINOIS  
Pollution Control Board

IN THE MATTER OF:

SITE SPECIFIC RULE FOR CITY OF	)	
JOLIET TREATMENT PLANT	)	
FLOURIDE AND COPPER	)	R07-21
DISCHARGES, 35 ILL. ADM.	)	(Site-Specific Rulemaking - Water)
CODE 303.432	)	
Petitioner,	)	

NOTICE OF FILING

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**PLEASE TAKE NOTICE** that on December 31, 2009 we filed with the Office of the Clerk of the Pollution Control Board an original and ten copies of the attached **Joliet's Amended Petition for Site-Specific Regulation** a copy of each which is served upon you.

Respectfully submitted,

THE CITY OF JOLIET

By:   
One of Its Attorneys

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**THIS FILING IS BEING SUBMITTED ON RECYCLED PAPER**

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	)	

**CITY OF JOLIET'S AMMENDED PETITION FOR SITE-SPECIFIC REGULATION**

NOW COMES, THE CITY OF JOLIET (hereinafter, "Joliet"), by and through its attorneys, Drinker Biddle & Reath LLP , and pursuant to 415 ILCS 5/27, 35 Ill. Adm. Code Sections 102.208 and 102.210, petitions the Illinois Pollution Control Board ("IPCB") for a site specific copper and fluoride limits, as follows:

**I. PROPOSED SITE-SPECIFIC RULE**

As proposed, the site-specific standard requested by Petitioners would provide as follows:

**Section 303.432 Juncture of Hickory Creek and Des Plaines River**

The general use water quality standards for copper (STORET Number 01040) and fluoride (STORET Number 00951) found at Sections 302.208 (e) and (g) and the provisions for determining water quality based effluent limitations found at Section 304.105 shall not apply to that portion of the Hickory Creek downstream from the Joliet Street bridge in Joliet, to the juncture with the Des Plaines River that receives the discharge from the Joliet East Side waste water treatment plant until the time that Joliet completes the construction and places into service a new discharge to the Des Planes River. In the interim Joliet discharge shall comply with a copper limit of 0.15 mg/l and a fluoride limit of 3.5 mg/l as daily maximum values.

As explained more fully herein, these interim copper and fluoride limits as applied to the discharge into the designated receiving water will be protective of aquatic life, human health, and the environment as a whole. Moreover, adoption of these proposed interim site specific limits will allow socially and economically valuable services located in Joliet, Illinois to continue in

conformance with applicable requirements while Joliet obtains the necessary financing to construct and finishes the construction of a new outfall to the Des Plaines River..

## **II. STATEMENT OF REASONS**

In accordance with the Board's procedural rules at 35 Ill. Adm. Code Sections 102.202 and 102.210, Joliet submits the information required to support this site specific petition. The information addresses the need for this requested interim site specific copper and fluoride limits applicable to Joliet's Eastside waste water treatment plant ("Eastside WWTP"), the reason why compliance with the general rule is not technically or economically reasonable, a description of the area affected by the proposed site specific rule and the environmental impact of the proposed copper and fluoride limits on the affected area.

### **A. Existing Physical Conditions**

Joliet provides wastewater collection and treatment to an approved service area of over 50.5 square miles with a current population of 143,000 and a projected population of 180,000. Joliet currently owns and operates three waste water treatment plants. Of these three plants, only the Eastside WWTP is the subject of this petition. Joliet's Eastside WWTP is located at 1021 McKinley Avenue in Joliet, Illinois at latitude + 4130220 and longitude - 08805320. Joliet's Eastside WWTP serves approximately 90,000 customers which are comprised of 26,123 residential, 1,620 commercial, and 57 industrial connections. Flow to the Eastside WWTP is approximately split between 80% residential and 20% commercial/industrial. Joliet has an extensive approved pre-treatment program.

The Eastside WWTP is a conventional activated sludge plant with anaerobic digesters. The plant was originally constructed in 1955 and has proceeded with upgrades and expansions. The most recent upgrade was completed on 1991. As presently configured and permitted, the Eastside WWTP has a design average flow of 18.2 million gallons per day ("mgd") and a design

maximum flow of 45.5 mgd. The Eastside WWTP is designed to treat biological oxygen demand (“BOD”), solids, ammonia nitrogen, and bacteria. Like most publicly owned waste water treatment plants (“POTWs”), the Joliet Eastside WWTP was not designed to remove soluble inorganic anions such as fluoride or cations such as copper.

Joliet’s Eastside WWTP discharges its wastewater pursuant to National Pollution Discharge Elimination System (“NPDES”) Permit Number IL0022519 issued by the Illinois Environmental Protection Agency (“IEPA”) on March 11, 2002. Joliet timely filed a renewal application prior to the expiration date of this permit of March 31, 2007. This permit remained effective until the IEPA issued a renewal permit on May 23, 2008 which became effective on June 1, 2008 (“Renewed NPDES Permit”) . As currently delineated in these NPDES permits, Joliet discharges to Hickory Creek at the juncture with the Des Plaines River.

The IEPA historically used the flow of the Des Plaines River for permitting purposes. However beginning with the NPDES permit issued on October 1, 1996, IEPA began to use the flow of Hickory Creek to determine if the discharge from Joliet’s Eastside WWTP would result in violations of the general use water quality standards applicable to Hickory Creek as required by 35 Ill. Adm. Code Section 304.105. Accordingly, Joliet’s NPDES permit issued in 2002 for the Eastside WWTP contained water quality based effluent limitations for copper of 0.0396 mg/l monthly average and 0.0671 mg/l daily maximum and 1.4 mg/l daily maximum for fluoride. A monthly average for fluoride was not provided in its NPDES permit.

These limitations were based on the water quality standards set forth in 35 Ill. Adm. Code Sections 302.208 (e) and (g). On March 30, 2007, Joliet entered into a Consent Order in the Circuit Court for the Twelfth Judicial Circuit in Will County, Illinois for case No. 05 CH 593 with the Illinois Attorney General and the IEPA. Section VIII C.1 and C.3 of the March 30, 2007 Consent Order, imposed an interim daily maximum limit for copper of 0.1156 mg/l and a

daily maximum fluoride discharge limit of 3.5 mg/l. Under the terms and conditions of the Consent Order it was envisioned that Joliet would pursue relief from the fluoride and copper limits set forth in its NPDES Permit. Pursuant to Section VIII C.3 of said Consent Order, the fluoride interim limit expires either on May 31, 2007 or on the date upon which a final decision regarding same could not be appealed. The Consent Order did not specify that the copper interim would expire on May 31, 2007 but rather, when amended in its NPDES permit or on the date upon which a final decision regarding same could not be appealed.

On May 5, 30, 2007 Joliet filed a site specific petition for relief from the water quality based effluent limitations that apply to Hickory Creek for copper and fluoride. This petition was accepted by the Board on June 21, 2007. As previously set forth in Section I of this Petition, Joliet is now requesting interim relief from the water quality based effluent limitations that apply to Hickory Creek for copper and fluoride until such time as it constructs and places into service a direct discharge to the Des Plaines River.

The Renewed NPDES Permit which was issued after Joliet filed the original petition that gave rise to this proceeding contains the interim limitations consistent with the Consent Order set forth above as limitations for Outfall 001. Joliet submitted a construction permit for a new direct discharge to the Des Plaines River. On December 18, 2009 IEPA issued the requested construction permit. Joliet submitted a request for State Revolving Loan Funding which was not acted upon this past fiscal year but remains active for funding in Fiscal Year 2011.

The Renewed NPDES Permit contains the following limitations for Copper and Zinc applicable to this new discharge to the Des Plaines River through Outfall 002:

<u>Parameter</u>	<u>Load Limits</u>	<u>Concentration Limits</u>
Copper	76 (190) 152 (379)	0.5 1.0
Zinc	152 (379) 304 (759)	1.0 2.0

The Renewed NPDES Permit does not contain a limitation for Fluoride for Outfall 002 because of the greatly recognized dilution.

**B. Affected Sources and Facilities and Character of the Area Involved**

Joliet is the only source affected by this Site specific request as it is the only source that discharges into Hickory Creek downstream from the Joliet Street Bridge to the juncture of the Des Plaines River. Additionally, there are no withdrawals of water by any users from this stream segment. Joliet has conducted investigations to determine whether any industrial users whose discharges could significantly contribute to its excess copper and fluoride effluent discharge have in actuality caused the same. Joliet's investigations concluded that there are no significant industrial sources that are contributing to Joliet's excess copper and fluoride limits. However, these sources are in areas of the city that are not tributary to Joliet's Eastside WWTP. Further, Joliet does not add fluoride to its water for dental health purposes. Consequently, Joliet could not determine any specific source(s) contributing to its fluoride discharge. Joliet believes that the fluoride levels in its effluent discharge are a direct result of the fluoride concentration in the public water supply provided to the customers tributary to the Eastside WWTP.

With respect to copper, Joliet consulted the services of Analytical Chemistry and Environmental Services Inc. ("ACES") to perform a study. The results of this study are contained in a report "Hickory Creek and Copper Study" dated August 20, 2000. According to this study, it appears that the copper discharge excursions coincided with the implementation of the Safe Drinking Water Act mandate in 1997. Specifically, this act requires that cities implement a corrosion prevention program to reduce lead and copper in their drinking supplies. Based on ACES investigations and testing of the Eastside's WWTP effluent, this very low concentration limit for copper has been exceeded on an intermittent and infrequent basis. After extensive investigations, Joliet has been unable to determine the exact cause of its copper

excursions other than its initial conclusions that the exceedances appear to be related to the use of a corrosion inhibitor that was used by Joliet's public water supply in order to comply with the Safe Water Drinking Water mandate. Due to the high volume of new construction projects which coincided with the previous incursions, it appears that a sufficient time is required for the phosphate to build the coating on new pipes and reduce the amount of copper leaching into the water supply. With the reduction of new construction projects and the passage of time, Joliet has seen some signs of stabilization in these concentrations at the treatment plants. However when new construction resumes, Joliet has no reason to believe that this stabilization will continue.

1. Affected Sources for Fluoride

As indicated previously, Joliet has been unable to identify any industrial users as the primary sources of fluoride in Joliet's wastewater discharge. Therefore, the only affected source is Joliet's Eastside WWTP.

2. Affected Sources for Copper

As indicated above, there are no sources of copper that would be affected by the proposed site specific water quality standards other than Joliet's Eastside WWTP and Joliet could not identify any industrial users that were significantly contributing to the excess copper.

3. Users of Affected Water Segments

Waters from the Eastside WWTP are discharged into the Hickory Creek at the juncture of the Des Plaines River. However, other than the Joliet Eastside WWTP there are no other discharges to the affected water quality segment. Further, there is very little recreational use that takes place. There have been few, if any, observed recreational boating usages and only occasional bank fisherman in this stream reach.

4. Characteristic of Surrounding Land Use

Joliet's Eastside WWTP is located on a peninsula formed by Hickory Creek and the Des Plaines River. To the northeast of the plant there is a small residential area. To the east of Joliet's Eastside WWTP is the former site of the McKinley School which was closed and torn down approximately 15 years ago. To the west of the Eastside WWTP is the Des Plaines River and Hickory Creek to the south. Accordingly, the Eastside WWTP is essentially isolated.

C. Nature of the Receiving Body of Water

According to Joliet's NPDES Permit, the Eastside WWTP facility discharges into Hickory Creek. Hickory Creek is designated as a general use water body. 35 Ill. Adm. Code Section 303.201. Notwithstanding such, Joliet has performed various conductivity tests and based on these tests, it appears that the waters to which it discharges are those of the Des Plaines River. In order to understand how this has occurred, it is important to understand that over time, Hickory Creek has undergone significant physical modifications for purposes of flood control. These modifications have included dredging, channelization, and modification of the bank along near the Des Plaines River juncture. Additionally, the flow control structures of the Des Plaines River have changed the Des Plaines River including the area of this particular juncture. Consequently, as a result of these changes and as shown by the conductivity tests, in actuality the discharge from its Eastside WWTP is into waters of the Des Plaines River. Therefore, in reality there is no impact to the waters of Hickory Creek resulting from the Eastside WWTP discharge.

Further, if one uses the mixing zone dilution formula as applied to the Des Plaines River flow and the size of the discharge, Joliet's copper and fluoride effluent values do not produce values that would exceed the general use water quality standards. However, if one uses the mixing zone regulation as applied to a discharge to Hickory Creek, Joliet's WWTP effluent values are in excess of water quality based effluent limitations as set forth in its NPDES permit.



Joliet's proposed site specific limits as set forth herein, do not exceed the effluent limitations of 0.5 mg/l for copper and 15.0 mg/l for fluoride contained in 35 Ill. Adm. Code Section 304.124.

Joliet has conducted sampling and analysis of the Hickory Stream. Samples were taken twice per week from May 16, 2006 to June 9, 2006 upstream from the Joliet Street bridge at the mid-point of the creek; downstream before the creek enters the Des Plaines River approximately fifteen feet from the shoreline; and a third sample was taken from the Eastside WWTP discharge area. The sample from the discharge area was taken from the weir overflow just prior to discharge into the Hickory Creek. Based on the sampling results, the downstream copper ranged anywhere from 0.016 mg/l to 0.041mg/l and fluoride 0.60 mg/l to 0.90 mg/l. The upstream sampling copper limits were found to be anywhere from 0.013 mg/l to 0.025 mg/l while fluoride samples ranged from 0.30 mg/l to 0.45 mg/l. The discharge at the Eastside WWTP showed copper limits ranged from 0.019 mg/l to 0.169 mg/l while fluoride ranged from 1.4 mg/l to 2.9 mg/l.

**D. Available Treatment or Control Options**

Joliet is not aware of any treatments or control options to reduce the level of copper or fluoride in its effluent discharge that could be utilized to comply with the water quality based effluent limits in its NPDES permit. Notwithstanding such, there is one technical solution which would consist of building a discharge structure to re-route the discharge from Joliet's WWTP to the Des Plaines River at a distance of approximately 100 yards through an 84 inch concrete discharge sewer at an estimated cost of \$ 1,500,000.

**E. Technical Feasibility and Economic Reasonableness of Reducing Fluoride & Copper**

The technical solution of re-routing the discharge from Joliet's Eastside WWTP while technically feasible has not been economically reasonable and would not be so with out the availability of State Revolving Loan Fund assistance coupled with the combination of the

ongoing Long Term Control Plan that Joliet has developed. Joliet is hopeful that its currently pending application for State Revolving Loan Funding will be acted upon favorably in FY 2011 and it will receive the necessary funding to proceed with this project. Joliet currently estimates that it will take 3 months to award a construction contract and 12 months to complete construction once funding is received.

**F. Other Similar Persons' or Sites' Ability to Comply with the General Rule**

Joliet is unaware of any other persons or sites ability to comply with the general rule.

**G. Economic Impact of the Proposed Rule**

The economic benefit of the proposed rule is that it would save Joliet the cost of financing on its own the \$1,500,000 to relocate its discharge to the Des Plaines River. To date this cost would be a wasted cost which would interfere with other community needs, because in actuality, the Joliet Eastside WWTP is discharging into Des Plaines Rivers waters. Moreover, the relocation of such discharge structure would do nothing to improve the water quality. Notwithstanding, Joliet is committed to the ultimate construction of a new direct discharge to the Des Plaines River and has obtained the necessary construction permit authorization for this construction after committing in excess of \$100,000 dollars to design and prepare the necessary permit applications. Joliet has pending before IEPA an application for Stare Revolving Loan Funding. In the interim, Joliet could best serve its customers by using its economic resources to ensure continued compliance with the appropriate interim effluent limits proposed herein.

**H. Detailed Assessment of the Environmental Impact of the Proposed Change**

As provided herein, there would be no environmental impacts with the proposed change. First, conductivity testing has shown that the actual waters in which the Eastside WWTP is discharging to are those of the Des Plaines River. Second, using the mixing dilution formula as applied to the Des Plaines River flow, Joliet's Eastside WWTP's effluent discharge and the

requested limitation will not exceed the general use water quality standards for either copper or fluoride. Third, the Eastside WWTP effluent is the only discharge in that segment of the Des Plaines River juncture with Hickory Creek. Fourth, there will be no impact to the minimal recreational uses at said juncture. Fifth, Joliet will construct and utilize a new discharge line to directly discharge to the Des Plaines River upon receiving State Revolving Loan Funding.

### **III. SYNOPSIS OF TESTIMONY**

Petitioners will call several individuals to testify in support of the facts set forth herein. Information regarding same will be provided prior to hearing.

### **IV. MOTION FOR WAIVER OF SIGNATURE REQUIREMENT**

In a separate motion simultaneous with the original petition, Joliet requested that the Illinois Pollution Control Board waive the requirement set forth at 35 Ill. Adm. Code Section 102.202 (f) that requires a petition for rulemaking to be signed by at least 200 persons.

### **V. STATEMENT OF RECENCY**

The rule proposed in this Petition does not amend any existing IPCB rules but, instead, requests that the IPCB adopt the proposed interim limits for copper and fluoride notwithstanding the calculation of water quality based effluent limitations based upon the water quality standards set forth in Part 302.208, by establishing the new site-specific interim rules proposed herein. The new site-specific rule to be added would amend the most recent version of Part 303 published on the IPCB's website, which was last amended at 31 Ill. Reg. 4440, effective February 27, 2007.

### **VI. ATTACHMENTS**

Attachments will be provided after petitioner has had the opportunity to meet with the IEPA regarding the proposed site specific regulation and said documents will be presented at the hearing in this matter.

## **VII. CONSISTENCY WITH FEDERAL LAW**

The IPCB has previously recognized that it has authority and broad discretion consistent with federal law, to adopt water quality and effluent standards that do not adversely affect the designated uses of a water body.

Generally, states must adopt water quality standards which protect the designated use of interstate and intrastate waters. 33 U.S.C. § 1313 (c). The IPCB has adopted water quality standards at 35 Ill. Adm. Code § 302.203 in compliance with federal law. States may also revise water quality standards. See 40 CFR § 131.4.

\* \* \*

The IPCB has stated previously that federal directives give it “broad discretion in determining the appropriate standard of control to apply discharges from waste treatment plants.” In re Site Specific exception to effluent standards for the Illinois American Water Company, East St. Louis Treatment Plant (February 2, 1989), R85-11, slip. op. at 10.

*In the Matter of Petition of Illinois American Water Company's Alton Public Water Supply Replacement Facility*, AS 99-66, 2000 WL 141967 at \*25 (Ill. PCB September 7, 2000).

Therefore, the IPCB has authority pursuant to the broad discretion provided it pursuant to federal directives, to determine that the site specific effluent standards requested by Joliet is the appropriate standard to be applied, and will be protective of the water bodies identified herein.

## **VIII. CONCLUSION**

Joliet respectfully requests that the IPCB grant the site specific interim relief requested in this petition. The water quality based effluent limits in Joliet's 2002 NPDES permit ignore the actual amount of dilution of the waters to which Joliet's Eastside WWTP's discharges. The site specific interim relief requested in this petition addresses the discrepancy and provides the appropriate copper and

fluoride effluent limits that should apply to the Eastside WWTP until such time as Joliet completes and places into service a new direct discharge to the Des Plaines River.

The conductivity studies have shown that the waters at this juncture are those of the Des Plaines River and therefore, it is appropriate that the water quality standards including the applicable mixing zone dilution formula be used to calculate the need for water quality based effluent limit. Further, there would be no environmental impacts to the area in question or to the minimal recreational uses.

WHEREFORE, for the above and foregoing reasons, the Petitioner, Joliet respectfully requests that the Illinois Pollution Control Board promulgate the interim site-specific effluent limitation for copper and fluoride as requested herein, and/or grant such other relief as is appropriate and just.

Respectfully submitted,

THE CITY OF JOLIET

By:



One of Its Attorneys

**Dated: December 31, 2009**

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**CERTIFICATE OF SERVICE**

I, the undersigned, certify that I have served the attached **Amended Petition for Site-Specific** by First Class Mail, postage pre-paid on December 31, 2009 upon the following:

Illinois Pollution Control Board  
Richard McGill – Hearing Officer  
100 West Randolph  
Suite 11-500  
Chicago, IL 60601

Illinois Environmental Protection Agency  
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