



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

JUN 30 2010

REPLY TO THE ATTENTION OF:
WN-16J

Al Keller, Manager
Permit Section, Division of Water Pollution Control
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276

Re: November 2009 Draft Permits for the Metropolitan Water Reclamation District of Greater Chicago (MWRD) Calumet, Stickney, and Northside Plants

Dear Mr. Keller:

The U.S. Environmental Protection Agency Region 5 previously reviewed and commented on the above-referenced public notice draft permits. There were a number of significant public comments raised on those draft permits, including comments raising concerns about the draft permits' provisions (or lack thereof) pertaining to mercury, polychlorinated biphenyls (PCBs), and nutrients. In light of those significant public comments, we offer the following additional recommendations pertaining to the permit, reflecting information that EPA has obtained subsequent to the date of our previous comments.

The review revealed that several water bodies impacted by discharges from the three relevant wastewater treatment plants are impaired and that these wastewater plants' effluent may contain contributing pollutants. In further evaluating the issues raised by the significant public comments, we sent a letter to MWRD requesting effluent and ambient data including flow, temperature, dissolved oxygen, mercury, PCBs, nitrite-nitrogen, nitrate-nitrogen, total Kjeldahl nitrogen, total nitrogen, and total phosphorus parameters. EPA received the requested data from MWRD. For your convenience, we have enclosed the MWRD response letter and a CD containing the data. We also completed a reasonable potential analysis for PCBs and mercury at all plants. Please see the enclosure. We are currently analyzing the nutrient data.

The Little Calumet River, North Branch of the Chicago River, North Shore Channel, Chicago Sanitary and Ship Canal (CSSC) and the Des Plaines River are all included on the State of Illinois' list of impaired waters under Section 303(d) of the Clean Water Act, with impairments being caused by a number of pollutants including mercury, PCBs, and total phosphorus. The Secondary Contact waterways of the Little Calumet River, the North Branch of the Chicago River and the CSSC are upstream of and flow

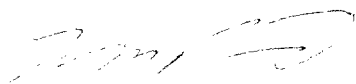
into the General Use waters of the Des Plaines River. EPA's analysis indicates that mercury discharges may have reasonable potential to cause or contribute to excursions beyond the human health criterion in the downstream General Use waters. EPA's analysis was based on conservative assumptions including no mass loss of mercury in downstream waters and no additional inflows or outflows.

We recommend that the Illinois Environmental Protection Agency (Illinois EPA) conduct its own reasonable potential analyses for mercury and nutrients for the Calumet, Stickney, and Northside plants prior to finalizing the permits for those plants, and include in the final permits appropriate water quality based effluent limitations where reasonable potential exists. We also recommend that Illinois EPA include in the finalized permits provisions requiring that the permittee use test methods 1631E for mercury and 1668 for PCBs. While EPA has not promulgated method 1668 as a 40 CFR part 136 method, we note that 40 CFR § 122.21(j)(4)(viii) allows use of an alternative in a permit application when the alternative is specified in the (prior) permit. It is appropriate for Illinois EPA to require methods 1631E and 1668 so the State can determine whether effluent limits for mercury or PCBs are required in future permits under 40 CFR § 122.44(d). Finally, we recommend that a meeting or telephone conference between Region 5 and Illinois EPA be scheduled to discuss the outcome of Illinois EPA's reasonable potential analysis. We are available to assist Illinois EPA throughout this process.

It is our expectation that Illinois EPA will appropriately address the issues raised by this letter before it finalizes the three referenced permits. Nevertheless, in light of the significant public comments on these and other issues, we have determined that the State must submit the permits that it proposes to finally issue (*i.e.*, the "proposed permit" as defined at 40 CFR § 122.2) to EPA in accordance with 40 CFR § 123.44(j), for EPA review in accordance with 40 CFR § 123.44.

If you should have any questions regarding this letter feel free to contact Janet Pellegrini of my staff at (312) 886-4298. For questions pertaining to the reasonable potential analysis please contact Rob Pepin at (312) 886-1505.

Sincerely,



Kevin M. Pierard, Chief
NPDES Programs Branch

Enclosures

cc: Amy Dragovich, Illinois EPA
Rob Sulski, Illinois EPA

U. S. Environmental Protection Agency
Region 5 NPDES Branch
Reasonable Potential Analysis
Robert Pepin
June 2010

EPA conducted a reasonable potential analysis for mercury and PCBs. Effluent and ambient waterway data for the years 2005-2009 were provided by the MWRD for the three main treatment plants (Northside, Stickney, and Calumet) and for the receiving waterways in the Chicago River system. EPA used the methodology described in the March 1991 EPA/505/2-90-001 PB91-127415 Technical Support Document for Water Quality-based Toxics Control, assuming a log-normal distribution of the effluent data. The chemicals were considered conservative after discharge; no loss assumed, and no additional inputs of dilution water. Where data were below detection a concentration of 0 was assumed. The results of the analyses are summarized below.

PCBs

USEPA conducted a reasonable potential analysis for PCBs. However, the outcome of the analysis is not meaningful because all effluent and ambient data were below the reporting level (300 to 500 ng/L) and the reporting level is well above the human health National Recommended Water Quality Criteria (0.064 ng/L); at <http://epa.gov/waterscience/criteria/wqctable/>. EPA method 1668 has an estimated minimum level of 0.050 to 1 ng/L dependent on the congener to be measured. While these levels are above the National Recommended Criterion, method 1668 is much more sensitive than the method that MWRD currently employs. The State should require MWRD to use method 1668.

Mercury

A reasonable potential analysis was conducted for mercury for all three plants. The analysis considered both the Secondary Contact Use criterion of 500 ng/L and the General Use criterion of 12 ng/L. The results indicate no reasonable potential for all three plants to cause or contribute to an exceedence of the Secondary Contact Use criterion, but all three were determined to have reasonable potential to cause or contribute to exceedences of the General Use criterion. Based on this analysis, water quality-based effluent limits for mercury should be established for all three facilities. Further, the reporting level provided by the MWRD ranged from 9-50 ng/L. The EPA approved method 1631E has a minimum level of 0.5 ng/L. Because of the sensitivity of method 1631E in relation to the General Use criterion for mercury, the State should require this method to be used by the MWRD.

Attachment

		Mercury WQC (ug/L)		Flows ¹	
		Secondary Contact	General Use		
		302.407	302.208(f)	Statistic	Mixing (35 IAC) (302.102)
USE	Acute		2.6	7Q10	25%
	Chronic		1.3	7Q10	25%
	Human 1	0.5	0.012	7Q10	25%
	Human 2				
	Ind/Agric				
Other					

	Statistic	Northside	Stickney	Calumet
Effluent Flow		515	1857	548
Background Flow		0	311	20
n		260	260	261
n (<RL)		226	217	250
Max		0.320	0.260	0.100
Mean		0.0076	0.0106	0.0022
CoV		3.6580	2.9617	5.3076
α		0.95	0.95	0.95
Multiplier		0.3575	0.3863	0.3135
PEQ		0.1144	0.0964	0.0311
RP?		YES*	YES*	YES*
<i>*General Use</i>				

¹ A dilution flow is not provided for the Calumet plant since the Little Calumet River is impaired for mercury.

Protecting Our Water Environment

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Metropolitan Water Reclamation District of Greater Chicago
100 East Erie Street Chicago, Illinois 60611-3154 f: 312.751.7926 312.751.7900

Richard Lanyon

Executive Director

richard.lanyon@mwrdd.org

April 14, 2010

Mr. Kevin M. Pierard
Chief of NPDES Programs Branch
United States Environmental Protection Agency
Region 5
77 West Jackson Boulevard
Chicago, IL 60604-3590

Dear Mr. Pierard:

SUBJECT: Response to File WN-16J, USEPA Region 5: Request for Monitoring Data from the Metropolitan Water Reclamation District of Greater Chicago

In response to your April 8, 2010 letter requesting monitoring data and information we have compiled the following for your use:

1. USEPA Region 5 Data Request 2005-2009 Effluent Data Large Plants.xls. This workbook contains worksheet tabs by plant and by year. Information contained includes: flow (millions of gallons per day), dissolved oxygen (DO) mg/L, total Kjeldahl nitrogen (TKN) mg/L, NO₂-N+NO₃-N mg/L, total nitrogen (Total N) (calculated) mg/L, phosphorus mg/L, temperature and mercury µg/L.
2. USEPA Region 5 Data Request 2005-2009 Waterways.xls. This workbook contains worksheet tabs by year. Each year is sorted by waterway location. The first worksheet tab is a description of each waterway sample location. Information contained includes DO, temperature, NO₂+NO₃-N, TKN, Total N, phosphorous and mercury.
3. USEPA Region 5 Data Request PCBs 2005-2009 Waterways and Large Plants.xls. This workbook contains three worksheet tabs 1) Waterway Locations 2) Waterway PCBs µg/L and 3) Plant Effluent PCBs. **Note:** All sample results for PCBs were non-detects.
4. CDOMReqData 12M04Y10.xls: This workbook contains continuous DO monitoring data for years 2005-2009, sorted by location and includes hourly

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readings. There is a worksheet tab which lists the monitoring stations and 16 tabs, one for each location.

5. 2007 AWQA Program Quality Assurance Plan (QAPP).pdf. Included within this file is the requested information such as sampling frequency, sampling locations, sample depth, latitude & longitude as well as test methods utilized. **Note:** All test methods used are approved methods contained in 40 CFR Part 136.

The data are in Excel format and the files are on the attached CD.

If you have any further questions or require more information please contact Mr. Louis Kollias, Director of Monitoring and Research, at (312) 751-5190 or Louis.Kollias@mwr.org.

Very truly yours,



Richard Lanyon
Executive Director

LK:TG:bk

Attachments

cc: L. Kollias
F. Feldman
O. Jamjun



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

APR - 8 2010

REPLY TO THE ATTENTION OF:
WN-16J

Richard Lanyon, General Superintendent
Metropolitan Water Reclamation
District of Greater Chicago
100 East Erie Street
Chicago, Illinois 60611-3154

Re: Information Request - Metropolitan Water Reclamation District of Greater Chicago's (MWRD);
November 9, 2009, permit for the Calumet Water Reclamation Plant (WRP), IL0028061
November 11, 2009 permit for the Stickney Water Reclamation Plant, IL0028053, and
November 12, 2009 permit for the Northside Water Reclamation Plant, IL0028088

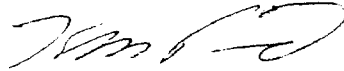
Dear Mr. Lanyon:

The U.S. Environmental Protection Agency, Region 5, reviewed the above-referenced public notice permits for the Calumet, Stickney and Northside Water Reclamation Plants (WRPs). That review revealed various use impairments for each of the receiving water bodies with potential contributing pollutants that may be contained in the effluent from these WRPs. In order to complete our permit review for these WRPs we are requesting data of the MWRD.

Please provide the following information electronically and in a tab delimited formation with column names as headings: Sampling information that contains the most recent 5 years of data regarding mercury, polychlorinated biphenyls and nutrients (total nitrogen including nitrite and nitrate, and phosphorus) including (1) all ambient water samples; (2) Calumet, Stickney and Northside WRPs effluent water samples and (3) associated dissolved oxygen, percent saturation, temperature and effluent flow (when applicable). Include for all ambient, effluent and associated parameter samples, the sampling frequency, sampling location, sample dates, sample depths, latitude, longitude and if available, easting/northing projection information. Additionally, specify test methods utilized and test results with units for each parameter.

Please provide this information within seven days of receipt of this letter. If you have any questions or require additional information concerning this matter you may contact me or Janet Pellegrini of my staff at (312) 886-4448 or (312) 886-4298 respectively.

Sincerely,

A handwritten signature in black ink, appearing to read 'Kevin M. Pierard', written in a cursive style.

Kevin M. Pierard, Chief
NPDES Programs Branch

cc: Al Keller Illinois EPA,
Rob Sulski, Illinois EPA, Des Plaines Office