

ILLINOIS POLLUTION CONTROL BOARD
February 15, 2007

IN THE MATTER OF:)
)
REVISIONS TO WATER QUALITY) R06-24
STANDARDS FOR TOTAL DISSOLVED) (Site-Specific Rulemaking - Water)
SOLIDS IN THE LOWER DES PLAINES)
RIVER EXXONMOBIL OIL)
CORPORATION: PROPOSED 35 ILL.)
ADM. CODE 303.445)

Adopted Rule. Final Order.

OPINION AND ORDER OF THE BOARD (by T.E. Johnson):

On February 7, 2006, ExxonMobil Oil Corporation's (ExxonMobil) filed a petition for rulemaking pursuant to Section 28 of the Environmental Protection Act (Act) (415 ILCS 28 (2004)) to change the water quality standards in a portion of the Des Plaines River, allowing ExxonMobil's Joliet Refinery (Joliet Refinery) to increase its discharge of total dissolved solids (TDS). A hearing was held on June 14, 2006.

By today's action the Board adopts the proposed amendments. The rules adopted here are substantively unchanged from those adopted in the Board's first-notice and second-notice opinion and order. On December 7, 2006, the Board proposed the rulemaking for second notice. The Board directed that the rule be submitted to the Joint Committee on Administrative Rules (JCAR) for second-notice review. The rulemaking was considered at the February 6, 2007 JCAR meeting, and JCAR issued a certification of no objection to the rule. The following opinion will explain the proposal background, summarize the procedural history, and discuss the economic reasonableness and technical feasibility of the rule.

BACKGROUND

In this part of the opinion, the Board first provides background on the proposed site-specific rule, the Joliet Refinery, and the consent decree ExxonMobil signed to reduce air pollution. The Board then reviews wastewater treatment at the Joliet Refinery.

Proposed Rule

ExxonMobil seeks a site-specific rule for a portion of the Des Plaines River that would apply in lieu of the Board's TDS water quality standards for general use waters (35 Ill. Adm. Code 302.208(g)) and secondary contact and indigenous aquatic life use waters (35 Ill. Adm. Code 302.407). *See* Pet. at 2. Under the proposed rule, the portion of the Des Plaines River that would be subject to the new standards runs from the Joliet refinery wastewater discharge point, located at Interstate55 (I-55) and Arsenal Road, to the confluence of the Des Plaines River with the Kankakee River. *Id.* at 3. The proposed site-specific rule would set a water quality standard

of 1,686 mg/L for TDS that would apply from November 1 through April 30, of each year. *Id.* at 3. ExxonMobil expects increases in its TDS discharges because it will be installing pollution control equipment to reduce air emissions in an effort to comply with a consent decree the company entered into with the United States Environmental Protection Agency (USEPA) and several states. *Id.* at 1.

Joliet Refinery

The ExxonMobil Joliet Refinery is located approximately 50 miles southwest of Chicago in Channahon Township, Will County, on 1,300 acres of land adjacent to I-55 at the Arsenal Road exit. *See* Pet. at 4. The Des Plaines River runs along the north end of the refinery's campus. *Id.* The Joliet Army Arsenal, which is being redeveloped as an industrial complex, is to the east of the facility and the Midewin National Tallgrass Prairie is to the south of the refinery. *Id.* at 4.

Operations began at the Joliet Refinery in 1972. *See* Pet. at 5. ExxonMobil currently employs 600 full-time employees and 150 contractor employees at the Joliet site. *Id.* at 4. The refinery is certified as a STAR worksite, which is a voluntary safety program of the United States Occupational Safety and Health Administration (OSHA). *Id.* at 5. The refinery operates 24-hours a day to produce approximately nine million gallons of gasoline and diesel fuel per day. *Id.* at 5. The facility has a processing capacity of 240,000 barrels or 10.1 million gallons per day. *Id.* In addition to gasoline, the facility produces liquefied petroleum gas, propylene, asphalt, sulfur, and petroleum coke. *Id.* at 5. The refinery draws approximately 10.2 million gallons of water per day from the Des Plaines River and two million gallons of water daily from wells and, in turn, the facility discharges 12.3 million gallons of wastewater per day into the Des Plaines River. *Id.* The refinery draws water from and discharges to the Des Plaines River at approximately 1,000 feet east of the I-55 Bridge. *Id.*

Consent Decree

ExxonMobil will be retrofitting the Joliet Refinery to reduce air emissions in an effort to comply with a consent decree it entered into with the USEPA and the States of Illinois, Louisiana and Montana. Pet. at 1. The consent decree was a settlement for ExxonMobil's alleged violations of the New Source Review Program. *See* PC 2 at 1. The United States District Court for the Northern District of Illinois entered the consent decree on December 13, 2005. *See* Pet. at 6. A copy of the consent decree was attached to ExxonMobil's petition. *See* Pet. Exh. 1.

The consent decree requires ExxonMobil to install wet-gas scrubbers (WGS) and a catalytic sulfur dioxide (SO₂) additive technology (DESOX). *See* Pet. at 6. These technologies are expected to significantly reduce emissions of several air pollutants from the refinery, including a 95% reduction in sulfur dioxide emissions and a 50% reduction in the emission of nitrous oxides. *Id.* at 6. The WGS will contribute additional sulfate and TDS to the wastewater effluent from the refinery. *Id.* at 6.

As an attachment to its petition, ExxonMobil submitted a document entitled, *Process Description Along with Simplified Process Flow Diagrams*, describing the DESOX and WGS processes. *See* Pet. Exh. 3. The DESOX process is expected to capture SO₂ before processing through the WGS, and therefore the DESOX will limit the total increase of TDS into the wastewater discharge. *Id.* at 1. The WGS is expected to cause increased TDS wastewater discharges from the refinery. In turn, this will impact the concentration of TDS in the receiving waters. *See* Pet. Exh. 6 at 1.

Waste Water Treatment at the Joliet Refinery

ExxonMobil operates its wastewater treatment plant under a National Pollutant Discharge Elimination System (NPDES) permit issued by the Agency. *See* Pet. at 7. ExxonMobil attached a copy of the modified NPDES permit to its petition. *See* Pet. Exh. 7. The permit does not contain effluent limits on TDS. *Id.*, Pet. at 7. The Joliet Refinery's wastewater treatment plant (WWTP) includes physical/chemical and biological wastewater treatment processes, and performs primary, secondary, and tertiary treatment of the wastewater generated by the refinery. *See* Pet. at 7. The WWTP began operations in 1972 and included:

two pre-separator fumes for gross oil removal, two API separators for oil and total suspended solids removal, two activated sludge units that can be operated in both parallel and series, followed by the treated guard basin and aeration before discharge. *Id.*

The refinery has made a number of improvements to its wastewater treatment system over the years, including: the addition of a "large equalization basin/biological aerated lagoon, larger blowers on the activated sludge units, new internals in the secondary clarifier" and process changes in the refinery to reduce pollutant loadings on the treatment system. *Id.* at 7. The refinery also installed "facilities to reduce oil carryover from process units," implemented a "No Oil to Sewer" program plant-wide," and installed "access points in the sewer system to allow increased cleanouts." *Id.* ExxonMobil attached a diagram of the refinery's current wastewater treatment system to its petition. *See* Pet. Exh. 5.

ExxonMobil plans to expend approximately \$40,000,000 to meet total suspended solids limitations for its wastewater discharge. Pet. at 8. ExxonMobil plans to upgrade the current wastewater treatment plant in the following ways: upgrade the Sour Water Stripper for pH optimization, which Exxon expects will reduce ammonia by 50%, install "alternate piping to reroute [the fluid catalytic cracking unit (FCC)] feed tank water draws from the wastewater treatment plant to the light slop system," increase flow monitoring in the wastewater treatment plant and install "new internals in the dissolved air floatation unit." *Id.* at 8.

ExxonMobil is also evaluating three options for treatment of the purge stream from the WGS. *See* Exh. 3 at 5, Exh. 6 at 4. None of the options will alter the amount of TDS discharged to the receiving stream. *Id.*

PROCEDURAL HISTORY

On February 7, 2006, ExxonMobil filed a petition for a site-specific rule under Section 28 of the Act (415 ILCS 28 (2004)). On the same day, the Agency and ExxonMobil filed a joint motion asking the Board to expedite consideration of this petition and to waive the 200 signatures requirement.

On March 2, 2006, the Board granted the motion for expedited consideration. The Board adopted the proposed rule for purposes of first notice under the APA without comment on the merits of the proposal, and thus began a 45-day period during which any person could file a public comment with the Board. The first-notice rule was published in the *Illinois Register* on March 17, 2006, and notice of publication was received from the Office of the Secretary of State on March 16, 2006. The Board received public comments from the Agency on July 5, 2006, and from ExxonMobil on July 11, 2006 and March 15, 2006.

On May 9, 2006, the Board scheduled a hearing for June 14, 2006, a prehearing Telephonic Status Conference for June 7, 2006, and ordered participants to prefile testimony and exhibits by May 31, 2006. The Board received prefiled testimony from the Agency and ExxonMobil on May 31, 2006 and June 2, 2006, respectively. On May 31, 2006, the Board received ExxonMobil's response to the Board's questions. James Huff, a registered professional engineer, and Stacey K. Ford, an employee of ExxonMobil and New Source Review Consent Decree Coordinator, both prefiled testimony on behalf of ExxonMobil. *See* Pet. Pre-File Test. Mark Twait, an environmental engineer with the Agency, prefiled testimony on behalf of that Agency. *See* Resp. Pre-File Test. On June 14, 2006, Stacey Ford and James Huff testified on behalf of ExxonMobil, and Scott Twait and Robert Mosher testified on behalf of the Agency. *See* Tr. at 4. All of the witnesses testified in favor of the proposed rule. *Id.*

The transcripts of the June 14, 2006 hearings were received by the Board on June 21, 2006, and promptly placed in the Clerk's Office On Line (COOL) on the Board's Web site at www.ipcb.state.il.us. Many other documents from this rulemaking are available through COOL, including Board opinions and orders, hearing officer orders, and public comments.

As required by Section 27(b) of the Act (415 ILCS 5/27(b) (2004)), the Board requested an economic impact study (ECIS) from the Department of Commerce and Economic Opportunity (DCEO) on March 2, 2006. In that letter, the Board asked the DCEO to provide a decision as soon as possible. No response to the letter was received. Based on this non-response and the DCEO's past assertions that it does not have the financial resources to perform ECIS studies, the Board considers that the DCEO decided not to conduct a study 30 days after the letter was sent – April 3, 2006. The Board's letter and the documents consisting of the DCEO's response were available to the public for more than 20 days prior to the June 14, 2006 hearing. The Board received no comments at the hearing on the DCEO's decision not to conduct an ECIS.

As noted, the Board conducted a public hearing in Joliet on June 14, 2006, and received comments from the petitioner and the Agency. The Agency submitted testimony and comments supporting ExxonMobil's site-specific rule proposal.

In its second-notice opinion and order issued on December 7, 2006, the Board found that adoption of ExxonMobil's proposed site-specific rule was warranted, and proposed the rulemaking for second-notice review by the JCAR. The Board incorporated the non-substantive first-notice changes suggested by JCAR into the proposal.

JCAR considered the second-notice proposal at its February 6, 2007 meeting and determined that no objection would be made. JCAR suggested minor non-substantive changes, and issued a formal certification of no objection to the proposed rulemaking on February 6, 2007. The second-notice period ended on February 8, 2007, when the Board received notification from JCAR that no objection will be issued. *See* 5 ILCS 100/5-40(c) (2002); 35 Ill. Adm. Code 102.606. Other than the non-substantive comments suggested by JCAR, the Board received no comments during the second-notice period.

DISCUSSION

At first notice, the Board accepted the proposal for hearing, and adopted the proposed amendments for the purpose of first notice under the Administrative Procedures Act (APA) without commenting on the merits of the proposal.

In its second-notice opinion, the Board found that the proposed site-specific rule is technically feasible and economically reasonable and will not have an adverse economic impact on the People of Illinois. Specifically, the Board agreed with the participants that "economically or technically feasible" treatment options that would allow the Joliet Refinery to comply with current water quality standards for TDS in the receiving waters are not available. Further, the Board agreed with ExxonMobil and the Agency that increased concentration of TDS in the relevant segment of the Des Plaines River will not substantially or significantly adversely affect the environment. The Board found that the proposed rule would most likely end any exceedences of TDS water quality standard in this segment of the Des Plaines River, and therefore allow for a mixing zone for TDS.

In addition, the Board agreed with ExxonMobil and the Agency that the aquatic toxicity data for sulfate presented by the Agency support the petitioner's assertion that the proposed TDS water quality standard of 1,686 mg/L for the affected segment of the Des Plaines River is within the toxicity threshold and protective of aquatic life. Further, the Board agreed with the participants that this segment of the Des Plaines River's impairment status under Section 303(d) of the Clean Water Act would most likely not be affected by an increased limit for TDS. The Board was convinced by the participants' assertion that a higher limit for TDS in this segment of the Des Plaines River is appropriate.

Because the Board determined that the proposed increased concentration limit in the receiving water is not expected to cause substantially adverse environmental impacts, and since the Agency cannot issue a permit with an effluent limit for TDS under the current standard because of previous exceedences in the receiving water, the Board concluded that a site-specific rule is appropriate in this instance.

The Board found that the proposed rule will not adversely impact the other dischargers into the relevant segment of the Des Plaines River, and that threatened or endangered species will not be impacted by the proposed rule. The Board noted that the USEPA has found that Section 303(c) of the Clean Water Act and 40 C.F.R. 131.11 are not impediments to the adoption of the proposed site-specific rule.

As in the second-notice order, the Board notes that as proposed, the standards would appear in new Section 303.445. The Board made several clarifying changes to the Part 303 table of contents and source note in the second-notice order, none of which warrant discussion.

The Board did not receive any comments on the modification, and the same language is included in today's order. Further, the Board has received no additional comments discussing economic reasonableness and technical feasibility of the proposed rule. Based on the record before it, the Board sees no reason to re-consider the conclusions made in the second-notice order. As noted, the Board did receive non-substantive comments from JCAR. The Board has incorporated the suggested changes into the adopted proposal, and has made further non-substantive clarifying changes that are not summarized in this order.

CONCLUSION

Based on the record before it, the Board finds that adoption of ExxonMobil's proposed site-specific rule is warranted.

ORDER

The Board directs the Clerk to file the following adopted rule with the Secretary of State for publication in the *Illinois Register* for final notice and adoption in the *Illinois Administrative Code*.

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE C: WATER POLLUTION
CHAPTER I: POLLUTION CONTROL BOARD

PART 303
WATER USE DESIGNATIONS AND SITE-SPECIFIC WATER QUALITY STANDARDS

SUBPART A: GENERAL PROVISIONS

Section	
303.100	Scope and Applicability
303.101	Multiple Designations
303.102	Rulemaking Required

SUBPART B: NONSPECIFIC WATER USE DESIGNATIONS

Section	
303.200	Scope and Applicability

303.201	General Use Waters
303.202	Public and Food Processing Water Supplies
303.203	Underground Waters
303.204	Secondary Contact and Indigenous Aquatic Life Waters
303.205	Outstanding Resource Waters
303.206	List of Outstanding Resource Waters

SUBPART C: SPECIFIC USE DESIGNATIONS AND SITE
SPECIFIC WATER QUALITY STANDARDS

Section	
303.300	Scope and Applicability
303.301	Organization
303.311	Ohio River Temperature
303.312	Waters Receiving Fluorspar Mine Drainage
303.321	Wabash River Temperature
303.322	Unnamed Tributary of the Vermilion River
303.323	Sugar Creek and Its Unnamed Tributary
303.326	Unnamed Tributary of Salt Creek, Salt Creek, and Little Wabash River
303.331	Mississippi River North Temperature
303.341	Mississippi River North Central Temperature
303.351	Mississippi River South Central Temperature
303.352	Unnamed Tributary of Wood River Creek
303.353	Schoenberger Creek; Unnamed Tributary of Cahokia Canal
303.361	Mississippi River South Temperature
303.400	Bankline Disposal Along the Illinois Waterway/River
303.430	Unnamed Tributary to Dutch Creek
303.431	Long Point Slough and Its Unnamed Tributary
303.441	Secondary Contact Waters
303.442	Waters Not Designated for Public Water Supply
303.443	Lake Michigan Basin
303.444	Salt Creek, Higgins Creek, West Branch of the DuPage River, Des Plaines River
<u>303.445</u>	<u>Total Dissolved Solids Water Quality Standard for the Lower Des Plaines River</u>

SUBPART D: THERMAL DISCHARGES

Section	
303.500	Scope and Applicability
303.501	Lake Sangchris Thermal Discharges
303.APPENDIX A	References to Previous Rules
303.APPENDIX B	Sources of Codified Sections

AUTHORITY: Implementing Section 13 and authorized by Sections 11(b) and 27 of the Environmental Protection Act [415 ILCS 5/13, 11(b) and 27].

SOURCE: Filed with the Secretary of State January 1, 1978; amended at 2 Ill. Reg. 27, p. 221, effective July 5, 1978; amended at 3 Ill. Reg. 20, p. 95, effective May 17, 1979; amended at 5 Ill. Reg. 11592, effective October 19, 1981; codified at 6 Ill. Reg. 7818; amended at 6 Ill. Reg. 11161, effective September 7, 1982; amended at 7 Ill. Reg. 8111, effective June 23, 1983; amended in R87-27 at 12 Ill. Reg. 9917, effective May 27, 1988; amended in R87-2 at 13 Ill. Reg. 15649, effective September 22, 1989; amended in R87-36 at 14 Ill. Reg. 9460, effective May 31, 1990; amended in R86-14 at 14 Ill. Reg. 20724, effective December 18, 1990; amended in R89-14(C) at 16 Ill. Reg. 14684, effective September 10, 1992; amended in R92-17 at 18 Ill. Reg. 2981, effective February 14, 1994; amended in R91-23 at 18 Ill. Reg. 13457, effective August 19, 1994; amended in R93-13 at 19 Ill. Reg. 1310, effective January 30, 1995; amended in R95-14 at 20 Ill. Reg. 3534, effective February 8, 1996; amended in R97-25 at 22 Ill. Reg. 1403, effective December 24, 1997; amended in R01-13 at 26 Ill. Reg. 3517, effective February 22, 2002; amended in R03-11 at 28 Ill. Reg. 3071, effective February 4, 2004; amended in R06-24 at 31 Ill. Reg. _____, effective _____.

SUBPART C: SPECIFIC USE DESIGNATIONS AND SITE
SPECIFIC WATER QUALITY STANDARDS

Section 303.445 Total Dissolved Solids Water Quality Standard for the Lower Des Plaines River

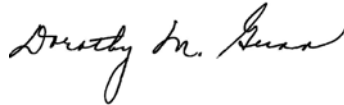
- a) Beginning November 1 and continuing through April 30 of each year, the total dissolved solids (TDS) water quality standard for Secondary Contact and Indigenous Aquatic Life Use waters in 35 Ill. Adm. Code 302.407 does not apply to the portion of the Des Plaines River from the ExxonMobil refinery wastewater treatment plant discharge point located at Interstate 55 and Arsenal Road (said point being located in Will County, T34N, R9E, S15, Latitude: 41°, 25', 20" North, Longitude: 88°, 11', 20" West) and continuing to the Interstate 55 bridge. TDS levels in these waters must instead meet a water quality standard for TDS (STORET Number 70300) of 1,686 mg/L.
- b) Beginning November 1 and continuing through April 30 of each year, the TDS water quality standard for General Use Waters in 35 Ill. Adm. Code 302.208 does not apply to the Des Plaines River from the Interstate 55 bridge to the confluence of the Des Plaines River with the Kankakee River. TDS levels in these waters must instead meet a water quality standard for TDS (STORET Number 70300) of 1,686 mg/L.

Source: Added at 31 Ill. Reg. _____, effective _____)

IT IS SO ORDERED.

Section 41(a) of the Environmental Protection Act provides that final Board orders may be appealed directly to the Illinois Appellate Court within 35 days after the Board serves the order. 415 ILCS 5/41(a) (2004); *see also* 35 Ill. Adm. Code 101.300(d)(2), 101.906, 102.706. Illinois Supreme Court Rule 335 establishes filing requirements that apply when the Illinois Appellate Court, by statute, directly reviews administrative orders. 172 Ill. 2d R. 335. The Board's procedural rules provide that motions for the Board to reconsider or modify its final orders may be filed with the Board within 35 days after the order is received. 35 Ill. Adm. Code 101.520; *see also* 35 Ill. Adm. Code 101.902, 102.700, 102.702.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution control Board, certify that the Board adopted the above opinion and order on February 15, 2007, by a vote of 4-0.

A handwritten signature in cursive script that reads "Dorothy M. Gunn".

Dorothy M. Gunn, Clerk
Illinois Pollution Control Board