

ILLINOIS POLLUTION CONTROL BOARD
December 7, 2006

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)

Proposed Rule. Second Notice.

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

Today the Board adopts the site-specific revisions to the total dissolved solids (TDS) water quality standards in the Lower Des Plaines River for second-notice review by the Joint Committee on Administrative Rules (JCAR). 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). The Board adopted ExxonMobil's proposal for first notice without commenting on the merits of the proposal on March 2, 2006.

Since the publication of the first notice, the Board has conducted a public hearing in Joliet on June 14, 2006, and received comments from the petitioner and the Agency. The Illinois Environmental Protection Agency (Agency) submitted testimony and comments supporting ExxonMobil's site-specific rule proposal. Based on the record in this rulemaking, the Board adopts for second notice the rule proposal at first notice with minor changes. The Board is conducting this proceeding under the general rulemaking provisions of the Act (415 ILCS/5-27, 28 (2004)), the Administrative Procedures Act (APA) (5 ILCS 100/5-40 (2002)), and the Board's procedural rules (35 Ill. Adm. Code 102).

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 Interstate 55 (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 USEPA and several states. *Id.* at 1.

In this opinion, the Board first delineates the procedural history of this rulemaking. As background for this rulemaking, the Board then reviews the operations and history at the Joliet Refinery, as well as the consent decree requiring Exxon Mobil to reduce air emissions. Next, the Board discusses the water quality in the relevant river segment and the expected impact of this rule on that stretch of water and on other dischargers. The Board then evaluates whether there are any technically feasible and economically reasonable alternatives to the proposed rule. Finally, the Board considers input from the Agency, the Illinois Department of Natural Resources' (DNR), and USEPA.

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.

The Board adopted the proposed rule for purposes of first notice under the APA in its March 2, 2006 order, which began a 45-day period during which any person could file a public comment with the Board. The Board granted the motion for expedited consideration without commenting on the merits of the proposal. 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 from the Department of Commerce and Economic Opportunity (DCEO) on March 2, 2006. To date, the Board has not received a response to that request.

BACKGROUND

In this part of the opinion, the Board first provides background on the Joliet Refinery and information regarding the consent decree ExxonMobil signed to reduce air pollution, compliance with which will increase TDS in the Joliet Refinery's wastewater effluent. The Board then reviews wastewater treatment at the Joliet Refinery.

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.*

ISSUES

In this section, the Board evaluates justifications and issues surrounding the proposed rule as discussed by ExxonMobil in its petition, comments and testimony, and by the Agency in its testimony and comments. The issues addressed include: the water quality of the relevant segment of the Des Plaines River, the impact of the rule on a variance the Board previously granted to the CITGO Lemont Refinery, and on other dischargers to the water body, the lack of available alternatives to the proposal, and input from the DNR and USEPA.

Water Quality

ExxonMobil claims that the requested site-specific rule will not lead to substantially and significantly more adverse environment or health effects than the currently applicable rule. *See* Pet. at 8 and PC 2 at 4.

The refinery discharges into the Des Plaines River. *See* Pet at 8. The segment of the Des Plaines River from the refinery discharge point up to the I-55 bridge is designated a secondary contact water with a limit of 1500 mg/L for TDS. Pet. at 8, 35 Ill. Adm. Code 302.407.. The segment of the Des Plaines River below the I-55 bridge, is designated as general use water with a 1000 mg/L limit for TDS. Pet. at 8, 35 Ill. Adm. Code 302.208. The proposed site-specific rule would set a concentration limit of 1,686 mg/L for TDS in the portion of the Des Plaines River running from the ExxonMobil refinery wastewater discharge point located at I-55 and Arsenal Road to the confluence of the Des Plaines River with the Kankakee River. *Id.* at 3.

The refinery discharges effluent into a stretch of the Des Plaines River where monitoring has indicated exceedences above the applicable TDS water quality standards. Pet. at 3. Specifically, the petition states that on January 25, 2001, the following maximum TDS levels were observed: 1,194 mg/L at the I-55 bridge (beginning of General Use Water); and 1,595 mg/L upstream of the refinery discharge point where secondary contact standards apply. Pet. at 9. ExxonMobil claims that no other exceedences have been documented at the I-55 bridge or downstream of the refinery discharge point since 2001. *Id.*

The implications of the observed exceedences are discussed in a report by James E. Huff, P.E. entitled, *Predicted Water Quality Impacts on the Des Plaines River from the Proposed Wet Gas Scrubber from the ExxonMobil Joliet Refinery*. *See* Pet. Exh. 6. Mr. Huff's report finds that previous exceedences of the General Use TDS standard in 2001 were attributable to highway deicing practices. *Id.* at 6. The report further notes that the relevant section of the Des Plaines River is listed as impaired in the Illinois Water Quality Report 2002, but that such impairment is not attributable to sulfates or TDS. *Id.* None of the reasons this segment of the Des Plaines River is listed as impaired under Section 303(d) of the Clean Water Act are related to TDS or sulfate. *See* Pet. at 12.

Mr. Huff's report reviews TDS exceedences in 2001, and found that during that year, if the Joliet Refinery had been using the WGS, the number of exceedences would have increased from three to four. *Id.* at 5. Mr. Huff asserts that the increased number of exceedences would

have been caused by contributions from the WGS both at the Joliet Refinery and that from the CITGO Lemont Refinery further upstream. *Id.*

The Section 302.208 General Use Water Quality standards apply to all waters that are designated General Use, except for those in which mixing is allowed. *See* 35 Ill. Adm. Code Section 302.208. ExxonMobil claims that the Agency has not issued a permit for the Joliet Refinery's TDS discharges into the Des Plaines River because Section 302.102(b)(9) of the Board's rules does not allow for a mixing zone when the water quality of the receiving water is already in violation for the constituent in question, as is the case here. *See* Pet. at 1. There are occasional violations of TDS in the Des Plaines River in the months of November through April, which petitioner claims are the result of "snow-melt conditions and the resulting run-off of dissolved solids." *Id.* at 3.

ExxonMobil filed an application for the Joliet Refinery's current NPDES permit renewal on December 2, 2002. *Id.* at 7. The modified NPDES permit does not include an effluent limit for TDS. *Id.* at 7, Pet. Exh. 4. Illinois does not have specific effluent limits on TDS. *See* Pet. at 11-12. If effluent limits were implemented for a source, those limits would be based upon the Water Quality Based Effluent Limits. *Id.* Under such a scenario, water quality standards must be achieved at the edge of the mixing zone. *Id.* at 12.

In 1997, ExxonMobil commissioned a study to evaluate the mixing zone and zone of initial dilution from the Joliet Refinery discharge point into the Des Plaines River. *See* PC 2 Att. 14. ExxonMobil filed a copy of this study with its post-hearing comments. *Id.* Based on the 1997 mixing zone determination, ExxonMobil estimates a 21:1 dilution of the total discharge from the refinery. *Id.* and PC. 2. Att. 14. ExxonMobil projects that under the proposed rule, there would be an increase of 91 mg/L of TDS at the edge of the mixing zone. *Id.*

However, ExxonMobil asserts that the Agency "has developed substantial information showing the sulfate water quality standard should be much higher – roughly at or above the TDS levels proposed herein for the winter months." Pet. at 4.

Mr. Huff asserts that the Agency has secured approval from USEPA for a proposal to eliminate the TDS General Use Water Quality Standard. *See* Pet. Pre-File Test. at 6-7 and PC 2 at 5. Mr. Huff claims that ExxonMobil would no longer need the proposed site-specific rule if the Board adopts the Agency's expected proposal. *See* Tr. at 7.

The Agency confirms that it cannot allow a mixing zone where the receiving stream does not meet the water quality standard for the relevant constituent. *See* Ag. Pre-File Test. at 2. Therefore, the Agency claims it cannot issue an NPDES permit to ExxonMobil allowing for the increased discharge of TDS from the facility, absent a rule change. *Id.*

Regarding aquatic toxicity effects of TDS, the Agency contends that the new aquatic life toxicity data indicates the level of sulfate that sensitive species can tolerate. Ag. Pre-File Test. at 3. The Agency finds that when this new information regarding sulfate toxicity is coupled with existing chloride standards, a TDS concentrative of 3,000 mg/L would be sufficiently protective and ExxonMobil's proposed standard clearly falls within that threshold. *Id.* The Agency notes

that the new sulfate toxicity information was not available when the current sulfate and TDS water quality standards were adopted by the Board. *Id.* at 3.

The Agency confirms that it plans to propose changes to the current TDS standard for Secondary Contact Waters and General Use Waters. *See* Tr. at 68. The Agency indicated that it is prepared to file a petition for changes to the General Use Water Quality standards for TDS, and the Agency estimates it will file the proposal to change the secondary contact water quality standard for TDS within a year.¹ *Id.*

The Agency states that the relevant segment of the Des Plaines River is on the Illinois 303(d) List with uses impaired for aquatic life and fish consumption. *See* Agency Pre-File Test. at 2. Section 303(d) of the Clean Water Act requires states to identify water bodies with impaired water quality. *See* IEPA, *Illinois 2004 Section 303(d) List*, at 1 (Nov. 2004). Although the relevant segment of the Des Plaines River has had exceedances of the water quality standard for TDS, those exceedances are not thought to be the cause of the water body's placement on the 303(d) list. *See* Ag. Prefiled Test. at 2. In this regard, the Agency notes "the potential causes of impairments given for the segment at that time were copper, sedimentation/siltation, other flow regime alterations, total suspended solids (TSS), DDT (statistical guideline), PCBs, (statistical guideline), mercury (statistical guideline), and total phosphorus (statistical guideline)." *Id.* The Agency testified that should the Board grant this rule, the additional discharges from the ExxonMobil Refinery will not impact the 303(d) status of the Des Plaines River and that TDS and sulfate are not connected with such impairments. *Id.*

The Agency has researched the impact of TDS on aquatic life and in that process it developed a document entitled, *Draft Justification for Changing Water Quality Standards for Sulfate, Total Dissolved Solids and Mixing Zones* (Jan. 21, 2004). Ag. Prefiled Test. at 2. This draft was made available to the public, and the Agency believes that ExxonMobil may have relied upon the conclusions in the draft document in its petition. *Id.* at 4. The Agency asserts that the "preliminary draft justification is out-dated in some respects, but that the conclusions are valid." *Id.* The Agency therefore believes that if ExxonMobil relied on the conclusions of this document, ExxonMobil is justified in doing so. *Id.*

The participants in this rulemaking agree TDS is not toxic to aquatic life in streams similar to the Des Plaines River. "Toxicity test results on TDS indicate that even the most sensitive species tested show no adverse effect at the levels likely to be found in the receiving waters involved in the requested relief." PC 1 at 2.

The Agency finds that "[t]his site-specific rule will not result in aquatic toxicity" and that "[t]he additional constituents to be discharged by ExxonMobil, sulfate and TDS, [] have no

¹ On October 23, 2006, the Agency filed with the Board a proposal to delete the TDS water quality standard in Section 302.208 of the Board's regulations. *See* Proposed Amendments to 35 Ill. Adm. Code 302.102(b)(6), 302.102(b)(8), 302.102(b)(10), 302.208(g), 309.103(c)(3), 405.109(b)(2)(A), 405.109(b)(2)(B), 406.100(d); REPEALED 35 Ill. Adm. Code 406.203, Part 407; and Proposed New 35 Ill. Adm. Code 302.208(h), R07-9 at 10-11 (Oct. 23, 2006). The Board accepted R07-9 for hearing on November 16, 2006.

bearing on the 303(d) status of the water body.” Agency Post-Hearing Comments at 3, Ag. Prefiled Test. at 2.

The Agency relied upon and considered a report by Dr. Soucek in reaching its conclusions to support the proposal. *See* Agency Pre-File Test. at 5. The report is entitled, *Effects of Water Quality on Acute and Chronic Toxicity of Sulfate to Freshwater Biovalues, Ceriodaphnia dubia, and Hyalella azteca*. *Id.* at 4, Ag. Exh. A, B, C and D. The Agency filed a copy of the report as an attachment to its Pre-File Testimony. *See* Ag. Exh. A, B, C and D.

Discussion

The Board agrees 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 believes that the proposed rule will 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. The TDS concentration at the edge of the mixing zone is not expected to violate the new standard.

The Board agrees with ExxonMobil and the Agency that the new 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 agrees with the participants that this segment of the Des Plaines River’s impairment status under Section 303(d) of the Clean Water Act will most likely not be affected by an increased limit for TDS. The Board is convinced by the participants’ assertion that a higher limit for TDS in this segment of the Des Plaines River is appropriate.

Further, the Board agrees with the parties that a site-specific rule is the appropriate route for addressing the Joliet Refinery’s expected increase in TDS discharges. Because 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, a site-specific rule is appropriate here.

Impact of Rule on Other Dischargers

CITGO

ExxonMobil in its petition for a site-specific rule claims that based on the information the Agency provides, no other parties discharge substantial quantities of TDS into this stretch of the Des Plaines River and therefore, other dischargers would not be affected by this request. Pet. at 4. However, the Board previously granted a variance to CITGO Petroleum Corporation and PDV Midwest Refining (CITGO) for their oil refinery in Lemont, Will County. CITGO Petroleum Corporation and PDV Midwest Refining, L.L.C. v. IEPA, PCB 05-85, slip op. at 1 (Apr. 21, 2005). The variance allowed for increased discharge of TDS into the Chicago Sanitary and Ship Canal, which flows into the Des Plaines River, because of the installation of a WGS at

that facility. *Id.* The Board directed ExxonMobil to address the impact of the proposed site-specific rule on the variance the Board previously granted to the Lemont refinery. *See Revisions to the Water Quality Standards for Total Dissolved Solids in the Lower Des Plaines River Exxonmobil Oil Corporation: Proposed 35 Ill. Adm. Code 303.445, PCB R06-24, slip op. at 3 (Mar. 2, 2006).*

The prefiled testimony of James E. Huff, on behalf of ExxonMobil, addresses this issue. *See Pet. Pre-File Test.* Mr. Huff testified that the increase in average TDS loading to the River from the Lemont Refinery and the Joliet Refinery combined will be 348,000 pounds per day. *Tr. at 6.* Mr. Huff's report entitled, *Predicted Water Quality Impacts on the Des Plaines River from the Proposed Wet Gas Scrubber From ExxonMobil Joliet Refinery*, further details the expected impact of the proposed site-specific rule on the CITGO variance and the combined impact of the increased discharges from the ExxonMobil Joliet Refinery and the CITGO Lemont Refinery. *See Pet. Exh. 6 at 4.* Mr. Huff finds that the combined contribution from the CITGO Lemont Refinery and the ExxonMobil Joliet Refinery will not cause water quality violations for TDS in the Illinois River further downstream. *Id. at 4.*

In response to the Board's request for more information regarding the impact of the proposed rule on the previously granted CITGO variance, Mr. Huff's report identifies several regulatory schemes that he believes may impact CITGO's ability to obtain a permit. *Pet. Exh. 6 at 5.* Illinois does not have specific effluent limits on nitrates, sulfates or TDS, so limits would therefore have to be based on water quality standards. *Id.* Further, Mr. Huff points to the fact that USEPA has not promulgated categorical effluent limits for sulfate, TDS, or nitrate. The report refers to the *Illinois Water Quality Report 2002*, which lists the Ship Canal and the Des Plaines River as impaired waterways and states that none of the reasons for impairment are attributable to sulfates or TDS. *Id. at 6.* Mr. Huff predicts that the expected impact on the receiving stream will be incremental and not negative. *Id.* Mr. Huff concludes "there is sufficient assimilative capacity in the Des Plaines River for the [WGS] blowdown from both refineries." *Id. at 6.*

The Agency asserts that this site-specific rulemaking would make some of the conditions of the CITGO variance unnecessary. This rule would also make a portion of the CITGO variance unnecessary, specifically the segment of the Des Plaines River downstream of the ExxonMobil discharge. *PC 1 at 2.* The Agency states that should this site-specific rule be adopted, CITGO will continue to need the variance, but conditions 3, 5, 6, 7, and 10 will no longer be necessary. *Id.*

Discussion

The Board finds that the proposed rule is not in conflict with the variance the Board previously granted to the CITGO Lemont Refinery. Although the proposed rule might make a portion of the CITGO variance and conditions therein unnecessary, this is not determinative to the Board's decision regarding the current site-specific rule. The Board finds the impact of the proposed rule on the previously granted variance negligible, and will proceed accordingly.

Dischargers other than CITGO

The Agency notes that the Channahon wastewater treatment facility, BASF, the ExxonMobil tank farm, Loder Cronkiaan and the Dow Chemical polystyrene plant are the dischargers into the Des Plaines River downstream of the ExxonMobil Refinery within the applicable segment of the site-specific rule. *See* Ag. Prefiled Test. at 3. The Agency asserts that none of these sources discharge high levels of TDS nor indicate the need for water quality based TDS limitations. *Id.*

Discussion

Based on the record, the Board finds that the proposed rule will not adversely impact the other dischargers into the relevant segment of the Des Plaines River.

Lack of Alternatives to the Proposed Site-Specific Rule

ExxonMobil claims that available technologies for removing TDS from the wastewater are limited. *See* Pet at 14, PC 2 at 3. ExxonMobil elaborates on the feasibility of a number of control technologies and concludes that none are feasible to control TDS in the effluent from this refinery. Electrodialysis, ExxonMobil alleges, has never been applied in the refinery industry “on the scale required at the refinery.” *Id.* In addition, ExxonMobil contends that biological sulfate reduction allegedly will not reduce overall TDS concentrations, and that reverse osmosis concentration will not work because the concentration of sodium sulfate is too high here. *Id.*

ExxonMobil asserts that the option of using evaporation/crystallization is energy-intensive, would cause an increase in air emissions of carbon dioxide, the removal of existing tankage to provide space for the system, and would cost \$36,000,000 to \$56,000,000, with an additional \$1,000,000 in operating costs annually. Pet. at 15 –16. ExxonMobil further claims that evaporation/crystallization has not been used by other refineries using similar WGS systems, and therefore, ExxonMobil believes further assessment would be necessary prior to electing such a method. *Id.* at 16.

ExxonMobil claims that short-term episodic storage is “neither technically feasible nor economically reasonable.” Pet. at 16. ExxonMobil maintains that it would have to remove existing tankage to make space for a 200,000-barrel storage tank and other equipment; that short-term episodic storage would require at a cost of \$13,200,000; and that, therefore, short-term episodic storage is neither economically reasonable nor technically feasible. *Id.*

The Agency agrees with ExxonMobil that treating the refineries effluent for TDS is not “economically or technically feasible.” Post-Hearing Comments at 3.

Discussion

The Board agrees 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. Accordingly, the Board finds that the proposal is economically reasonable and technically feasible, and will proceed to second-notice review.

Additional Considerations

The Agency consulted DNR regarding the presence of threatened or endangered species that may be affected by the proposed rule. On December 19, 2005, DNR responded that “no threatened and endangered species or natural areas were affected.” Agency Prefiled Test. at 2; PC 1, Att.

The Agency stated that ExxonMobil’s site-specific request is consistent with the federal regulations at 40 C.F.R. 131.11(b)(1)(ii), which allows a federal site-specific water quality criterion when sensitive species of aquatic life have been demonstrated to be protected by the new standard through laboratory test toxicity. Tr. at 35-36. In this regard, the Agency testified that USEPA Region 5 has given preliminary approval of the ExxonMobil site-specific standard under its obligation to review state water quality standards under the Clean Water Act. Tr. at 36. In this regard, the Agency cites a USEPA letter dated April 24, 2006, wherein the USEPA states it had reviewed the information regarding the technical basis for the proposed site-specific rule and determined that such rule would be in keeping with Section 303(c) of the Clean Water Act and 40 C.F.R. 131.11. *See* PC 1 at 3. ExxonMobil included a copy of the letter the Agency wrote to USEPA requesting approval of the proposed rule as an attachment to its petition. *See* Pet. Exh. 3.

Discussion

Based upon the DNR finding, it is clear that the proposed rule will not impact threatened or endangered species. In addition, 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.

CONCLUSION

For second-notice consideration by JCAR, the Board proposes new site-specific TDS water quality standards for a designated portion of the lower Des Plaines River. As proposed, the standards would appear in new Section 303.445. The Board also makes several clarifying changes to the Part 303 table of contents and source note, none of which warrant discussion.

The proposed water quality standard are needed because ExxonMobil’s wastewater effluent will have higher TDS levels once the new WGS air pollution equipment is operating at the Joliet Refinery. ExxonMobil is adding the WGS because the company must reduce air emissions under a consent decree with USEPA and several states. Based on this record, the increased concentration of TDS in the lower Des Plaines River will not cause substantially adverse environmental impacts. Further, the Board finds 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. *See* 415 ILCS 5/27(a), (b) (2004).

ORDER

The Board proposes the following new rule for second notice and directs the Clerk to submit the proposal to JCAR. Additions to the rules proposed for first notice are double-underlined; deletions appear stricken.

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
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303.102	Rulemaking Required

SUBPART B: NONSPECIFIC WATER USE DESIGNATIONS

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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

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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
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303.331	Mississippi River North Temperature
303.341	Mississippi River North Central Temperature
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303.400	Bankline Disposal Along the Illinois Waterway/River
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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 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

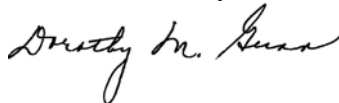
<u>Section 303.445</u>	<u>Total Dissolved Solids Water Quality Standard for the Lower Des Plaines River</u>
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- a) Beginning November 1 and continuing through April 30 of each year, the total dissolved solids (TDS) water quality standard for Secondary Contact and Indigenous Aquatic ~~Life~~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 ~~such~~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 35b 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 ~~such~~these waters must instead meet water quality standard for TDS (STORET Number 70300) of 1,685 mg/L.

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

IT IS SO ORDERED.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution control Board, certify that the Board adopted the above opinion and order on December 7, 2006, by a vote of 4-0.



Dorothy M. Gunn, Clerk
Illinois Pollution Control Board