

ILLINOIS POLLUTION CONTROL BOARD

August 6, 2009

IN THE MATTER OF:)
)
CITY OF GALVA SITE SPECIFIC WATER) R09-11
QUALITY STANDARD FOR BORON) (Site-Specific Rulemaking - Water)
DISCHARGES TO EDWARDS RIVER AND)
MUD RUN CREEK:)
35 ILL. ADM. CODE 303.447 AND 303.448)

Proposed Rule. Final Notice.

OPINION AND ORDER OF THE BOARD (by G.T. Girard):

On October 17, 2008, the City of Galva (Galva) filed a proposal for site-specific rulemaking pursuant to Section 28 of the Environmental Protection Act (Act) (415 ILCS 5/28 (2006)). The proposal (Prop.) seeks to establish a 3.0 milligram per liter (mg/L) alternative boron water quality standard to the generally applicable 1.0 mg/L boron water quality standard in 35 Ill. Adm. Code 302.208(g). The alternative standard for boron would apply to certain segments of an unnamed tributary to the South Branch of the Edwards River, the South Branch of the Edwards River, and Mud Run Creek. These waters receive discharges from the two Sewage Treatment Plants (STPs) operated by Galva.

The Board heard testimony and received comments from Illinois Environmental Protection Agency (Agency) and Galva. On June 18, 2009, the Board found the rule as proposed by Galva was technically feasible and economically reasonable and is protective of human health and the environment. Therefore, the Board adopted the rule for second notice as the rule was proposed for first notice making only nonsubstantive changes. The Board filed the rule with the Joint Committee on Administrative Rules (JCAR). On July 14, 2009, JCAR issued a certificate of no objection.

Today the Board adopts the rule for final notice making no changes as JCAR recommended none. The Board will briefly describe the procedural background and then summarize the rule. The Board will then discuss the reasons for proceeding to final notice.

PROCEDURAL BACKGROUND

On October 17, 2008, Galva filed the proposal along with a technical support document (TSD) and motions requesting the Board to waive the requirement for 200 signatures on the petition and to expedite consideration of the petition. See 415 ILCS 5/28 (2006); 35 Ill. Adm. Code 102.202(g) and 101.512. The Board received no responses to the motions and pursuant to Section 101.500(d), any objection to the granting of the motions was deemed waived. 35 Ill. Adm. Code 101.500(d).

On February 5, 2009, the Board proposed for first notice the rule as proposed by Galva without comment on the merits of the proposal. The Board also granted the motion to waive the signature requirement of Section 102.202(g); however, the Board denied the motion for expedited consideration. On March 6, 2009, the rule was published for first notice in the *Illinois Register*. See 33 Ill. Reg. 3898 (Mar. 6, 2009).

On February 19, 2009, in accordance with Section 27(b) of the Act (415 ILCS 5/27(b) (2006)), the Board requested that the Department of Commerce and Economic Opportunity (DCEO) conduct an economic impact study for this rulemaking. On March 4, 2009, the Board received a response from DCEO, indicating that no economic impact study would be performed. At the public hearing held on March 31, 2009, the Board solicited comments on DCEO's decision not to conduct an economic impact study. No comments were offered. Tr. at 3-4.

The Board held a public hearing on March 31, 2009, in Galva. At the hearing Galva presented witnesses in support of the proposal and the Agency presented testimony. The Board received two public comments, one from Galva (PC 2) and one from the Agency (PC 1).

On June 18, 2009, the Board adopted the rule for second notice, making no substantive changes from the first notice. On July 14, 2009, JCAR issued a certificate of no objection.

RULE

The rule establishes an alternative water quality standard for boron in three streams, an unnamed tributary of the South Branch of the Edwards River, the Edwards River and Mud Run Creek, that receive discharges from Galva's two sewage treatment plants (STP). Section 302.208(g) of the Board's water quality rules (35 Ill. Adm. Code 302.208(g)) establishes a general use water quality standard for boron of 1.0 milligram per liter (mg/L). The site specific rule sets a water quality standard of 3.0 mg/L for segments of all three streams. Galva's Northeast STP is an activated sludge plant that ultimately discharges into an unnamed tributary of the South Branch of the Edwards River. The Southwest STP is an aerated lagoon system, discharging into Mud Run Creek, a tributary of Walnut Creek, which is a tributary of the Spoon River.

Boron is naturally occurring in the groundwater that surrounds Galva and is thus inherent in Galva's water supply. Boron is an inorganic element derived from compounds called borates which are found in oceans, sedimentary rocks, coal, shale, and some soils. The boron in Galva's potable water and effluent is not a result of human activity but occurs naturally.

The Agency incorporated a permit condition in Galva's Southwest STP permit that sets an effluent standard for boron of 1.0 mg/L. The boron standard found in the Board's rules was adopted in 1972 to implement the requirements of the Clean Water Act (33 U.S.C. §§1251 *et seq.*). In adopting the boron standard the Board stated that the water quality standard was based on evidence that high levels of boron can harm irrigated crops. Prop. at 10, citing Effluent Criteria, R70-8; Water Quality Standards Revisions, R71-14; Water Quality Standards Revisions for Intrastate Waters (SWB-14), R71-20 (consltd.) (Mar. 7, 1972). The Agency applied the 1.0

mg/L boron standard to Galva's effluent limit even though the Board declined to adopt an effluent limit for boron.

At second notice, the Board discussed in detail the comments and testimony from Galva and the Agency, which are the only comments received in the proceeding. *See In the Matter of: Galva Site Specific Water Quality Standard for Boron Discharges to Edwards River and Mud Run Creek*, R09-11 (June 18, 2009). After carefully reviewing all the information in the record, the Board found that the site specific rule is economically reasonable and technically feasible. Further the Board found that the site specific rule will be protective of human health and the environment. Therefore the Board proceeded to second notice with the rule language as follows:

Section 303.447 Unnamed Tributary of the South Branch Edwards River
and South Branch Edwards River

The general use water quality standard for boron at 35 Ill. Adm. Code 302.208(g) does not apply to the waters of the State that are located from the point of discharge of the publicly owned treatment works located at 523 NE 9th Street in Galva, known as the Galva Northeast Sewage Treatment Plant, to an unnamed tributary of the South Branch of the Edwards River (the discharge point being located in Henry County, Township 14 North, Range 4 East, occupying portions of Sections 21, 26, 27, 28, 33, 34, and 35 in the Fourth Principal Meridian, Latitude N 41.175°, Longitude: W 90.035°) to the confluence of unnamed tributary with the South Branch Edwards River; to the confluence with the Edwards River. Boron levels in these waters must meet a water quality standard for boron of 3.0 mg/L.

Section 303.448 Mud Run Creek

The general use water quality standard for boron set forth at 35 Ill. Adm. Code 302.208(g) does not apply to the waters of the State that are located from the point of discharge of the publicly owned treatment works located at ½ mile South of the Burlington Northern Santa Fe Railroad and SW 4th Street in Galva, known as the Galva Southwest Sewage Treatment Plant, to Mud Run Creek (the point is located in Henry County, Township 14 North, Range 4 East, occupying portions of Sections 21, 26, 27, 28, 33, 34 and 35 of the Fourth Principal Meridian, Latitude: N 41.154°, Longitude W. 90.053°) to the confluence of Mud Run Creek with Walnut Creek. Boron levels in these waters must meet a water quality standard for boron of 3.0 mg/L.

DISCUSSION

As previously discussed, the Board proceeded to first notice without commenting on the rule proposal. However at second notice the Board evaluated the comments and testimony provided by the Agency and Galva in making the Board's determination that proceeding to second notice was appropriate. *See generally In the Matter of: Galva Site Specific Water*

Quality Standard for Boron Discharges to Edwards River and Mud Run Creek, R09-11 (June 18, 2009).

In considering the technical feasibility and economic reasonableness of the alternatives, the Board noted that the source of excess boron in Galva's STP discharges is the groundwater from aquifers that supply Galva's potable water. Galva presented evidence that Galva investigated various compliance alternatives, including treatment to remove excess boron from: 1) the potable water supply, 2) the effluent from the STPs. Galva also investigated the potential for a new potable water well, or obtaining alternative drinking water sources from neighboring cities of Kewanee and Galesburg. The treatment options evaluated included ion exchange and reverse osmosis (RO).

The Board found that each of the options explored by Galva presents technical challenges. The evidence presented by Galva indicates that treatment by ion exchange or RO might reduce boron in the effluent or potable water supply; however the processes will result in substantial waste disposal issues. Drilling a new shallow well presents the uncertainty of finding an adequate water supply. Sharing a potable water supply with neighboring Galesburg would entail a substantial construction project for the 20 to 25-mile water transmission line. In addition to the technical challenges, Galva faces estimated capital costs ranging from \$2 million to \$13.6 million.

The Board further found that the evidence of the capital costs necessary for any of the compliance alternatives as well as the technical difficulties of the alternatives exemplify that the alternatives are not technically feasible and economically reasonable given the lack of significant environmental impact as discussed below. Therefore the Board found that of all the alternatives evaluated, the proposed site specific standard of 3.0 mg/L for boron is the only technically feasible and economically reasonable alternative.

As to the environmental impact of the proposed rule, the Board found that the proposed site specific rule will not negatively impact human health or the environment and should be adopted. The Board's finding is based on the record in this proceeding which provides substantial information indicating that the proposed rule will not negatively impact either aquatic life or human health. Further, with no irrigation along the streams that will be impacted by the site specific rule, there is no negative impact to plant life.

The Board's finding is consistent with the Board's numerous precedents granting adjusted standards and site specific rules for boron. See *Petition of City of Springfield Office of Public Utilities for an Adjusted Standard from 35 Ill. Adm. Code 302.208(e)*, AS 94-9 (Dec. 1, 1994); *Petition of Illinois Power Company (Baldwin Power Plant) for an Adjusted Standard from 35 Ill. Adm. Code 302.208 and 35 Ill. Adm. Code 304.105 Regarding the Parameter Boron*, AS 96-1 (May 2, 1996); *Petition of Central Illinois Light Company (Duck Creek Station) for Adjusted Standard From 35 Ill. Adm. Code 302.208 and 35 Ill. Adm. Code 304.105 Regarding The Parameter Boron*, AS 96-8 (June 20, 1996).

The Board notes that the record indicates the Agency is cooperating with the Illinois Natural History Survey (INHS) to generate additional boron toxicity studies to supplement the

current database. Such data would help to ensure that boron general use standards proposed in the future would be protective of aquatic life. The results of the Agency/INHS study is expected to bolster the scientific justification for the revision of the general use boron water quality standard. If the Agency/INHS study results in new boron toxicity information that raises any concerns with the site specific standards or renders such standards as moot, the Board expects the Agency to address those concerns as a part of its proposal to revise the general use standards. The Board notes that in the past, the Board has revised existing site specific rules to make them consistent with the adopted revisions to the rule of general applicability. *See Proposed New and Updated Rules for Measurement and Numerical Sound Emissions Standards Amendments to 35 Ill. Adm. Code 901 and 910, (R03-9) March 2, 2006.*

CONCLUSION

The Board finds that Galva's site specific rule is economically feasible and technically reasonable. Further, the Board finds that the record establishes that the site specific rule will be protective of human health and the environment. Therefore, the Board finds that proceeding to final notice with this rule is appropriate.

ORDER

The Board directs the Clerk to cause the filing of the following rule for final notice with the Secretary of State.

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

~~DESIGNATIONS~~ 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
303.445	Total Dissolved Solids Water Quality Standard for the Lower Des Plaines River
303.446	Boron Water Quality Standard for Segments of the Sangamon River and the Illinois River
<u>303.447</u>	<u>Unnamed Tributary of the South Branch Edwards River and South Branch Edwards River</u>
<u>303.448</u>	<u>Mud Run Creek</u>

SUBPART D: THERMAL DISCHARGES

Section	
303.500	Scope and Applicability
303.501 <u>303.502</u>	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. 4440, effective February 27, 2007; amended in R09-8 at 33 Ill. Reg. 7903 effective May 29, 2009; amended in R09-11 at _____ Ill. Reg. _____, effective _____.

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

Section 303.447 Unnamed Tributary of the South Branch Edwards River and South Branch Edwards River

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(Source: Added at 33 Ill. Reg. _____, effective _____)

Section 303.448 Mud Run Creek

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(Source: Added at 33 Ill. Reg. _____, effective _____)

IT IS SO ORDERED.

Board Member Shundar Lin abstained.

I, John T. Therriault, Assistant Clerk of the Illinois Pollution Control Board, certify that the Board adopted the above opinion and order on June 18, 2009, by a vote of 4-0, Member Lin Abstained.

A handwritten signature in black ink that reads "John T. Therriault". The signature is written in a cursive style with a long horizontal flourish extending to the right.

John T. Therriault, Assistant Clerk
Illinois Pollution Control Board