

ILLINOIS POLLUTION CONTROL BOARD

April 4, 1996

IN MATTER OF:)
)
PETITION OF ILLINOIS DEPARTMENT) AS 96-5
OF TRANSPORTATION, DISTRICT 8 FOR) (Adjusted Standard - Water)
AN ADJUSTED STANDARD FROM 35 Ill.)
Adm. Code 304.124)

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

On October 19, 1995, the Board granted the Illinois Department of Transportation (IDOT) an adjusted standard from 35 Ill. Adm. Code 304.124 for iron (total) discharged from the IDOT deep well system known as the Venice System outside Venice, Madison County, Illinois. (Petition of IDOT for an adjusted standard from 35 Ill. Adm. Code 304.124), AS95-8, (October 19, 1995). On November 15, 1995, IDOT filed a motion to reconsider the Board's October 19, 1995, opinion and order. With the motion, IDOT filed an amended petition seeking an adjusted standard from 35 Ill. Adm. Code 304.124 for total suspended solids as well as iron. On December 20, 1995, by order of the Board, the amended petition attached to the November 15, 1995, motion to reconsider was docketed in this docket as a new petition for adjusted standard.

In its petition, IDOT waived hearing in this matter and the Board has received no requests for a hearing. Therefore no hearing was held. On December 20, 1995, the Board received a response from the Illinois Environmental Protection Agency (Agency) recommending that the adjusted standard be granted. Based upon the record and upon review of the factors involved in the consideration of adjusted standards, the Board finds that IDOT has demonstrated that the adjusted standard is warranted. Therefore, the Board will grant the requested adjusted standard with conditions for the reasons discussed below.

ADJUSTED STANDARD PROCEDURE

The Board's responsibility in this matter arises from the Environmental Protection Act (Act) (415 ILCS 5/1 et seq.). The Board is charged therein to "determine, define and implement the environmental control standards applicable in the State of Illinois" (415 ILCS 5/5(b)) and to "grant***an adjusted standard for persons who can justify such an adjustment" (415 ILCS 5/28/1(a)). More generally, the Board's responsibility in this matter is based on the system of checks and balances integral to Illinois environmental governance: the Board is charged with the rulemaking and principal adjudicatory functions, and the Agency is responsible for carrying out the principal administrative duties.

The Act provides that a petitioner may request and the Board may grant, an environmental standard that is different from the standard that would otherwise apply to the

petitioner pursuant to a rule of general applicability. Such a standard is called an adjusted standard. The general procedures that govern an adjusted standard proceeding are found at Section 28.1 of the Act and within the Board's procedural rules at 35 Ill. Adm. Code 106.

Where, as here, the regulation of general applicability does not specify a level of justification required for a petitioner to qualify for an adjusted standard, the Act at Section 28.1(c) specifies four demonstrations that must be made by a successful petitioner:

- 1) Factors relating to that petitioner are substantially and significantly different from the factors relied upon by the Board in adopting the general regulation applicable to that petitioner;
- 2) The existence of those factors justifies an adjusted standard;
- 3) The requested standard will not result in environmental or health effects substantially or significantly more adverse than the effects considered by the Board in adopting the rule of general applicability; and
- 4) The adjusted standard is consistent with any applicable federal law.

RULES OF GENERAL APPLICABILITY

IDOT seeks an adjusted standard from the Board's regulations for additional contaminants contained in 35 Ill. Adm. Code 304.124 that provides in pertinent part:

Section 304.124 Additional Contaminants

- a) No person shall cause or allow the concentration of the following constituents in any effluent to exceed the following levels, subject to the averaging rules contained in Section 304.104(a).

CONSTITUENT	STORET NUMBER	CONCENTRATION mg/L

Iron (total)	01045	2.0
Total Suspended Solids	00530	15.0

- d) Unless otherwise indicated, concentrations refer to the total amount of the constituent present in all phases, whether solid, suspended or dissolved, elemental or combined, including all oxidation states. Where constituents are commonly measured as other than total, the word "total" is inserted for clarity.

FACILITY DESCRIPTION

IDOT owns and operates seven deep wells which comprise a single well field known as the Venice System. (Pet. at 3.)¹ The Venice System operates along a levee near the Illinois Route 3 railroad viaduct in Venice, Madison County, Illinois. (Ag. at 4.) These wells are used exclusively to pump water, through a common header pipe, to the Mississippi River for water table control at the viaduct. (Pet. at 3; Ag. at 4.) At this location under the railroad viaduct, Illinois Route 3 has an average daily vehicle load of 8,400, and without pumping, the road would be impassable. (Ag. at 4.)

Due to naturally occurring iron concentrations, the ground water pumped from the Venice System may cause exceedence of the effluent standards for dissolved iron and total suspended solids (TSS) as set forth in Section 304.124. (Pet. at 3.) The groundwater in this system is "not known to have been contaminated by any human activity". (Ag. at 4.) The dissolved iron in the groundwater "quickly combines with the oxygen in the air to form insoluble iron oxide". (*Id.*) The flow rate ranges from a maximum rate of six million gallons per day (mgd) or 9.3 cubic feet per second (cfs) to an average rate of 4.3 mgd or 6.7 cfs. (Ag. at 4-5.) The discharge commonly contains more than the effluent limitation of 2.0 milligrams per liter (mg/L) of total iron and 15 mg/L of TSS. (Ag. at 5.)

RELIEF REQUESTED

IDOT is asking for an adjusted standard to allow IDOT to discharge into the Mississippi river the pumped groundwater with effluent levels for Total Suspended Solids TSS of 40 mg/L. (Pet. at 3.) Specifically IDOT is requesting that:

- 1) The effluent standard for iron (total) shall be 20 mg/L for the Venice deep well system discharge. The effluent standard for Iron (total) found at 35 Ill. Adm. Code 304.124 shall not apply to this Mississippi River discharge.
- 2) The requirements of 35 Ill. Adm. Code 304.124, as that section relates to the effluent standard for Iron (total), shall not apply to the effluent discharges from the Illinois Department of Transportation's deep well Venice System, provided that the effluent standard established in this adjusted standard is met.
- 3) The effluent standard for Total Suspended Solids shall be 40 mg/L for the Venice deep well system discharge. The effluent standard for Total Suspended

¹ IDOT's petition will be cited as "Pet. at ___"; the Agency's response will be cited as "Ag. at ___".

Solids found at 35 Ill. Adm. Code 304.124 shall not apply to this Mississippi River discharge.

- 4) The requirements of 35 Ill. Adm. Code 304.124, as that section relates to the effluent standards for Total Suspended Solids, shall not apply to the effluent discharges from the Illinois Department of Transportation's deep well Venice System, provided that the effluent standard established in this adjusted standard is met.

In order to comply with the proposed adjusted standard, the Illinois Department of Transportation (IDOT) would continue to operate the Venice System as it presently operates. There would be no capital costs or operating costs for IDOT to comply with the adjusted standards.

(Pet. at 9.)

On October 19, 1995, the Board granted an adjusted standard which will allow an effluent standard of 20 mg/L for iron (total) for the Venice System discharge. (See AS95-8.) Therefore, the Board will only address the adjusted standard for TSS.

AGENCY RESPONSE

The Agency generally supports the requested adjusted standard for TSS. (Ag. at 9.) The Agency recommends that the Board grant the proposed language to include the requested alternative limitation of 40 mg/L TSS for the Venice System discharge. The Agency points out that such an alternative limitation is similar to the limitation the Board established for the Pfizer Corporation in 35 Ill. Adm. Code 304.204(c). (In the Matter of: Proposed Water Quality and Effluent Standards for Schoenberger Creek (Pfizer, East St. Louis) R81-29, June 16, 1983.) Both IDOT and the Pfizer Corporation withdraw groundwater with similar characteristics and the Agency asserts that the requested alternative level should provide relief with a margin of safety for compliance.

COMPLIANCE ALTERNATIVES

IDOT contracted with Horner and Shifrin, Inc. to prepare a report on the existing conditions and compliance alternatives for the Venice System. (Pet. at 6; Ag. at 5.) Two primary alternatives investigated in that report were conventional mechanical water treatment and outfall diffusion in the Mississippi river. (Pet. at 6-7.) According to the petitioner, the probable cost for a water treatment plant would be \$5,170,000; while the outfall diffusion system would cost \$1,000,000. (Pet. at 8.) The cost would be as follows:

	<u>Water Treatment Plant</u>	<u>River Outfall/ Diffusion System</u>
Construction	\$2,200,000	\$1,000,000
Annual Operation and Maintenance	\$267,000	--
Annual Chemical	\$113,000	--
Present Worth	\$5,170,000	\$1,000,000

(Pet. at 8.)

The Agency asserts that the river outfall diffusion system offered as an alternative for compliance would require IDOT to seek a permit modification for the delineation of a "mixing zone". (Ag. at 7.) The Agency states:

Consequently, the costs and design of an outfall/diffusion system are not properly before the Board when the Board is considering an adjusted standard from the effluent limit of 35 Ill. Adm. Code 304.124 for total iron and TSS, and when the determination of the optimum mixing efficiency is a duty of the Agency under 35 Ill. Adm. Code 302.102(d). There is no limitation of TSS in 35 Ill. Adm. Code 302.208.

(Ag. at 8.)

Thus, the Agency does not believe a diffusion system is an appropriate compliance alternative in the context of this adjusted standard.

With respect to the use of a treatment plant the Agency indicates that it believes the cost estimate "understates" the probable actual cost. (Ag. at 9.) The Agency points out that the estimates do not include professional fees for the design, bidding and construction supervision of the project. (*Id.*) Further the Agency believes that IDOT has underestimated the costs of maintenance of the facility and has failed to discuss the residual chlorine in the effluent from treatment. (*Id.*) The Agency maintains that the estimated expense is not justified by any environmental benefit. (*Id.*)

HEALTH AND ENVIRONMENTAL EFFECTS

IDOT maintains and the Agency generally agrees that the adjusted standard will not result in environmental or health effects substantially more adverse than the effects considered by the Board when adopting 35 Ill. Adm. Code 304.124. (Pet. at 21; Ag. at 10.) The

Agency bases this conclusion on the greater flow of the Mississippi River and the levels of dissolved oxygen and exiting concentrations of total suspended solids upstream of the Venice system discharge. (Ag. at 10.) The Agency states:

At maximum discharge of the Venice system, the 5000 to 1 dilution ratio will provide sufficient oxygen to convert the dissolved iron to the relatively non-toxic insoluble state. Furthermore, the velocity of the flow in the Mississippi will reduce the possibility of accumulated sediment.

(Ag. at 10-11.)

JUSTIFICATION

According to IDOT, the factors relied upon by the Board in adopting 35 Ill. Adm. Code 304.124 concerned potential adverse impacts upon aquatic life, crop irrigation and water supplies. (Pet. at 21.) IDOT maintains that if the adjusted standard is granted no such adverse impacts are anticipated. (Pet. at 21-22.) In addition, IDOT argues that the compliance alternatives are technically feasible but economically unreasonable as the alternatives are costly and could have adverse cross-media affects. (Pet. at 22-23.) Finally, IDOT maintains and the Agency agrees that the adjusted standard is consistent with federal law. (Pet. at 23; Ag. at 16.)

The Agency agrees that the factors relied upon by the Board in adopting 35 Ill. Adm. Code 304.124 are substantially and significantly different for IDOT. The Agency points out that:

In this case, where the groundwater is relatively uncontaminated by other pollutants, treating for iron and TSS alone is not economically reasonable, given the lack of expected environmental results.

(Ag. at 13.)

CONCLUSION

The iron and total suspended solids in the discharge from the Venice Water system is naturally occurring and is not known to have been contaminated by any human contact. Further, the Board is persuaded that any adverse impacts which may occur are not substantially more adverse than those impacts to be expected if the rule of general applicability was followed. Therefore, the Board finds that IDOT has demonstrated that the factors surrounding the request for adjusted standard are substantially and significantly different than the factors considered by the Board in adopting the rule of general applicability. Further, due to the substantial costs associated with the compliance alternatives presented by IDOT, the Board is persuaded that the alternatives for compliance would be economically unreasonable and would result in no increased environmental protection. Therefore, the Board will grant IDOT an

adjusted standard of 40 mg/L for total suspended solids in its discharge from the Venice System to the Mississippi River.

This opinion constitutes the Board findings of facts and conclusion of law.

ORDER

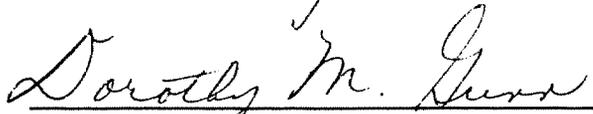
The Board hereby adopts the following adjusted standard, pursuant to the authority of Section 28.1 of the Environmental Protection Act:

- 1) The effluent standard for Total Suspended Solids shall be 40 mg/L for the Venice deep well system discharge. The effluent standard for Total Suspended Solids found at 35 Ill. Adm. Code 304.124 shall not apply to this Mississippi River discharge.
- 2) The requirements of 35 Ill. Adm. Code 304.124, as that section relates to the effluent standards for Total Suspended Solids, shall not apply to the effluent discharges from the Illinois Department of Transportation's deep well Venice System, provided that the effluent standard established in this adjusted standard is met.

Section 41 of the Environmental Protection Act (415 ILCS 5/41 (1994)) provides for the appeal of final Board orders within 35 days of the date of service of this order. The Rules of the Supreme Court of Illinois establish filing requirements. (See also 35 Ill. Adm. Code 101.246 "Motions for Reconsideration.")

IT IS SO ORDERED.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above opinion and order was adopted on the 4th day of April, 1996, by a vote of 7-0.


Dorothy M. Gunn, Clerk
Illinois Pollution Control Board