

rainfall, groundwater would seep into the ditch, and combine with land runoff. The Marquette Street drain carried the runoff to Lake DePue, a shallow oxbow lake created by the changing course of the Illinois River. Lake DePue is in equilibrium with the Illinois River, rising and falling as the river level varies.

In March of 1978, the State of Illinois commenced a civil action against NJZ in Bureau County, Illinois Circuit Court. (People of the State of Illinois v. Gulf & Western Industries and the New Jersey Zinc Co., Case No. 78-CH-4). The Agency asserted that water conveyed by the open ditch contained levels of metals in excess of the contaminant levels in 35 Ill. Adm. Code 304.124 (or Rule 408, as it was then identified). The Agency sought injunctive relief that would require NJZ to take action to reduce the metals contained in the ditch water. The action was resolved by entry of a Consent Order and Agreement on October 30, 1981. This Order directed NJZ to make certain physical changes to reduce the amount of metals picked up by stormwater runoff and to convey that stormwater runoff in a manner so as to isolate it from groundwater seepage. The remedial measures required under the Court Order were completed by August 1985, to the Agency's satisfaction. The Agency subsequently approved the construction and released \$200,000 of a \$225,000 performance bond. The remaining \$25,000 was released at the expiration of the Consent Order on October 30, 1986.

Pursuant to the terms of the Consent Order, and subsequent federal regulations found at 40 CFR Section 122.26, NJZ is required to secure an NPDES permit. The present NPDES permit places effluent limits on the discharge of certain parameters. NJZ's variance petition requests relief from six of those parameters.

Parameter	All Concentrations in mg/l			
	Current Limits ¹		Requested Limits	
	30-Day Average & Daily Max.		30-Day Average & Daily Max.	
cadmium	0.15	0.3	0.5	1.0
copper	0.5	1.0	2.0	4.0
iron	2.0	4.0	3.0	6.0
manganese	1.0	2.0	5.0	10.0
TSS	15	30	75	150
zinc	1.0	2.0	25	50

NJZ requests that it be allowed to subtract the upstream concentration of any parameter in determining its effluent values.

In the Opinion and Order in PCB 86-187, the Board granted NJZ a variance until November 30, 1988 at which time NJZ was to submit a plan for ultimate compliance with the Agency. The

1. These values are directly from 35 Ill. Adm. Code 304.124(a). and the Averaging rule at 35 Ill. Adm. Code 304.104(a).

petition for variance includes the Petitioner's compliance plan.

PETITIONER'S COMPLIANCE PLAN

In the compliance plan, NJZ proposes the use of "iron-rich material" (hereinafter "IRM") as a medium for control of heavy metals in the seepage and runoff. The IRM is a granular, porous product with high internal surface area of up to 10 square meters per gram. The natural basicity of this material (9.0-10.5) is ideally suited to the precipitation of heavy metals from aqueous systems and the high internal porosity acts to capture the precipitated hydroxides and hold them within the matrix.

In the August 18, 1988 filing, of the Petition for Extension of Variance, NJZ stated that it had successfully employed this control system at another plant and offered the following explanation of the compliance plan.

As part of its compliance plan, the company proposes to line the trench upstream of the cinder bank with a layer of iron-rich material. This trench has been observed to have a number of sub-surface seeps from the high ground water table. By forcing these seeps to percolate through a layer of IRM, the contained heavy metals should be precipitated and absorbed. The IRM material will be held in place by a layer of six-inch crushed stone, allowing for flow of all surface water from the surrounding property.

A second phase of the project will be to install a "slurry wall" of IRM between the cinder bank and the storm water sewer. This IRM barrier should act to intercept heavy metals which would migrate toward the storm sewer and toward Lake DePue.

The Company also proposes to obtain the necessary permission to replace broken sewer lines beneath Marquette Street to install an IRM-lined collection sump at the south end of Marquette Street where there is some evidence of heavy metal migration through hydrostatic pressure.

In addition to this work, the Company proposes to perform annual water quality surveys in Lake DePue and will provide regular monitoring of water quality at its Site III sample point. To allow for completion of the proposed improvements and a meaningful evaluation of results thereafter, the Company will require a variance through November 30, 1993.

NJZ has committed to implementing the compliance plan in accordance with the following schedule:

- a. Begin to construct IRM upstream trench lining outlined in the compliance plan by April 30, 1989. Construction would

commence in the spring construction season immediately following the Board's grant of a variance.

- b. Complete construction of IRM upstream trench lining by August 31, 1989.
- c. Complete construction of IRM slurry wall by August 30, 1990.
- d. Complete construction of the IRM collection sump by April 30, 1991.
- e. Submit an interim report evaluating the effectiveness of the compliance plan by November 30, 1992.
- f. Submit a final report evaluating the effectiveness of the compliance plan by November 30, 1993.

After construction of the improvements by April 30, 1991, their effect on effluent concentrations must be analyzed. NJZ proposes to collect one year's worth of effluent data (from April 1991 through April 1992) to aid in this analysis. The results of lake water quality sampling performed in April of 1992 will also be examined to preliminarily assess the effect of the improvements. The proposed schedule provides for seven months to compile the data, prepare a report, and review the result with Illinois EPA, by November of 1992. The company believes that an additional year of evaluation (November 1992 through November 1993) is required to determine the longer-term effectiveness of the improvements.

In addition to the improvements, NJZ proposes to conduct annual studies of Lake DePue during the project construction and evaluation period:

- a. Perform annual water quality sampling at Lake DePue in 1989 through 1993 in April or May of each year.
- b. By September 30 each year, 1989 through 1993, submit results of water quality sampling and report to Illinois EPA.

HARDSHIP AND ENVIRONMENTAL IMPACT

In its petition for variance, NJZ fails to present an argument that compliance with Section 304.124 during the requested variance would result in an arbitrary or unreasonable

hardship. However, based on the record, there is no apparent way for NJZ to come into compliance during the requested compliance period.

Contrasting with the issue of hardship is the issue of environmental impact. Both the Agency and NJZ believe that the risk of environmental harm is minimal at present levels of discharge. The Agency states that the impact of discharges on Lake DePue and the Illinois River has shown improvement since the Petitioner implemented remedial efforts. The Agency did express concern about water quality in the lake and in the groundwater as well as concern for the effect of the metals upon fish and wildlife. However, the Agency concluded that there was no apparent threat to public health because of the present discharge. NJZ's timely compliance with 35 Ill. Adm. Code 304.124 should significantly reduce the risk to the environment.

AGENCY RECOMMENDATION

In its recommendation of October 12, 1988, the Agency stated that it would recommend that the variance request be granted and that the interim effluent limitations continue in effect if concerns about the possible hazardous nature of IRM can be reduced. In response, NJZ filed information regarding the non-hazardous status of IRM with the Board on October 25, 1988. Further, NJZ addressed the issue of the non-hazardous nature of IRM at hearing. After receiving the materials submitted and the additional testimony, the Agency recommended that the variance be granted. (R. 71).

CONCLUSION

The Board finds that compliance with the regulations would result in an arbitrary or unreasonable hardship on NJZ. Accordingly, the variance will be granted with conditions consistent with this Opinion.

This Opinion constitutes the Board's findings of fact and conclusions of law in this matter.

ORDER

New Jersey Zinc Company is hereby granted a variance from 35 Ill. Adm. Code 304.124(a), as it pertains to cadmium, copper, iron, manganese, zinc, and total suspended solids, subject to the following conditions:

1. This variance will expire November 30, 1993.
2. During the term of this variance, the

following interim limits shall apply to New Jersey Zinc's discharge:

<u>Parameter</u>	<u>30-Day Av. Max.</u>	<u>Daily</u>
cadmium	0.5	1.0
copper	2.0	4.0
iron	3.0	6.0
manganese	5.0	10.0
TSS	75	150
zinc	25	50

3. Sampling and analysis of effluent parameters shall be in accordance with New Jersey Zinc's NPDES permit. However, in determining whether compliance has occurred, New Jersey Zinc may subtract the concentration of any background level of contaminant determined by sampling at Point II of their NPDES permit. All sampling and analysis data shall be reported to the Illinois Environmental Protection Agency;
4. New Jersey Zinc shall submit quarterly reports to the Illinois Environmental Protection Agency, within 15 days of each calendar quarter;
5. Within 45 days after the date of this Opinion and Order, New Jersey Zinc shall execute and send to:

Illinois Environmental Protection
Agency
Attention: Thomas Davis
Enforcement Programs
2200 Churchill Road
Springfield, IL 62794-9276

a certificate of acceptance of this variance by which it agrees to be bound by the terms and conditions contained herein. This variance will be void if New Jersey Zinc fails to execute and forward the certificate within the 45-day period. The 45-day period shall be held in abeyance for any period during which the matter is appealed. The form of the certification shall be as follows:

CERTIFICATION

I, (We) _____, having read the Opinion and Order of the Illinois Pollution Control Board in PCB 88-130, dated January 19, 1989, understand and accept the said Opinion and Order, realizing that such acceptance renders all terms and conditions thereto binding and enforceable.

Petitioner

Authorized Agent

Title

Date

Section 41 of the Environmental Protection Act (Ill. Rev. Stat. ch. 111^{1/2}, par. 1041, 1985, provides for appeal of final Orders of the Board within 35 days. The Rules of the Supreme Court of Illinois establish filing requirements.

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 19th day of JANUARY, 1989, by a vote of 7-0.

Dorothy M. Gunn IAH.
Dorothy M. Gunn, Clerk,
Illinois Pollution Control Board