

ILLINOIS POLLUTION CONTROL BOARD
May 5, 1994

AKZO CHEMICALS, INC.,)	
)	
Petitioner,)	
)	
v.)	PCB 94-76
)	(Variance)
ILLINOIS ENVIRONMENTAL)	
PROTECTION AGENCY,)	
)	
Respondent.)	

OPINION AND ORDER OF THE BOARD (by R.C. Flemal):

This matter comes before the Board on the filing by AKZO Chemicals, Inc. (AKZO), on February 25, 1994 of a petition for variance. AKZO seeks variance from requirements of the Board's water pollution control regulations found at 35 Ill. Adm. Code 302.208 and 304.105 as these sections apply to the discharge of total dissolved solids (TDS), chloride, sulfate, and boron from AKZO's Morris, Illinois, facility. AKZO requests that the variance be retroactive to October 27, 1993 and terminate either three years from the date of the variance or upon modification of AKZO's National Pollution Discharge Elimination System (NPDES) permit to include the adjusted standard relief sought in AS 93-8, whichever is sooner.

The Board's responsibility in this matter arises from the Environmental Protection Act (Act) (415 ILCS 5/1 et seq. (1992).) The Board is charged there with the responsibility of granting variance from Board regulations whenever it is found that compliance with the regulations would impose an arbitrary or unreasonable hardship upon the petitioner. (415 ILCS 5/35(a).) The Illinois Environmental Protection Agency (Agency) is required to appear in hearings on variance petitions. (415 ILCS 5/4(f).) The Agency is also charged, among other matters, with the responsibility of investigating each variance petition and making a recommendation to the Board as to the disposition of the petition. (415 ILCS 5/37(a).)

The Agency filed its variance recommendation (Rec.) on March 28, 1994. The Agency contends that an arbitrary or unreasonable hardship would be imposed on AKZO in the absence of the requested relief. (Rec. at ¶6.) Accordingly, the Agency recommends grant of variance, subject to conditions.

AKZO has waived hearing and no hearing has been held.

As presented below, the Board finds that AKZO has met its burden of demonstrating that immediate compliance with the

regulations at issue would impose an arbitrary or unreasonable hardship. Accordingly, the variance request will be granted.

BACKGROUND

AKZO owns and operates a facility located near Morris, Illinois, at which AKZO produces glycerine, nitrile, amines and other fatty acid nitrogen derivatives. The products are used primarily as surfactants in a variety of industrial processes and in the production of agricultural, personal care, food, and chemical products. (Pet. at p. 2.) The major raw materials used include tallow, coconut oil, soybean oil, ammonia, hydrogen, methyl chloride, acrylonitrile, isopropyl alcohol, ethanol, formaldehyde, and water. (Pet. at p. 3.)

AKZO holds NPDES permit No. IL0026069 for discharges from its Morris facility¹. The permit was issued on September 27, 1990 and modified effective November 24, 1992; the permit expires on October 1, 1994.

The instant variance petition addresses outfall 002, one of the two external discharge points² identified in AKZO's NPDES permit. Discharge through outfall 002 is to Aux Sable Creek at a point approximately one mile above the creek's mouth at the Illinois River.

Outfall 002 is the discharge point of wastewaters from AKZO's steam generating boilers, water softener regeneration, and stormwater runoff. The steam generation and water softener wastestreams are the primary sources of the four contaminants at issue. (Pet. at p. 3.) The water softener wastestream, which is approximately 2,000 gallons per day (Pet. at p.7), is the more concentrated of the two wastestreams. (Pet. at p. 9.)

TDS, chloride, sulfate, and boron are each increased in concentration due to boiler steam loss and consumptive steam use. In addition, TDS, chloride, and sulfate are added to the wastestream waters as the result of pH adjustment and water softening, both of which are necessary for boiler operation. (Pet. at p. 4.)

¹ The NPDES permit is Exhibit 1 attached to AKZO's petition.

² The second outfall, 001, is from an underdrain system. AKZO collects all process waters, which are then biologically treated, stored, and ultimately used for spray irrigation of crops. (Pet. at 3.) The underdrain is located beneath the irrigation field. As with outfall 002, discharge through outfall 001 is to Aux Sable Creek.

AKZO reports that the average daily concentration of TDS discharged over the 28 months preceding filing of its petition was approximately 3,000 mg/L. (Pet. at p. 4) Recent sample results for chloride, sulfate, and boron showed average concentrations of 1,566, 286, and 0.78 mg/L, respectively. (*Id.*) The maximum observed concentration for TDS was 6,180 mg/L. The maximum observed concentrations for the other three parameters were 2,960, 574, and 1.4 mg/L, respectively.

NPDES permit No. IL0026069 contains effluent limits for outfall 002 of 1,000 mg/l for TDS and 1.0 mg/L for boron. Both limits are equal to the in-stream water quality standard for the respective parameters as specified at 35 Ill. Adm. Code 302.208.

NPDES permit No. IL0026069 does not contain effluent limits for outfall 002 for either chloride or sulfate. However, pursuant to the operation of 35 Ill. Adm. Code 304.105³, the discharge through outfall 002 may not cause or contribute to a violation of an in-stream water quality standard. Water quality standards of 500 mg/L each for chloride and sulfate, are specified at 35 Ill. Adm. Code 302.208, and these stand, depending upon mixing conditions, as effective limits on the concentration of chloride and sulfate that AKZO may discharge.

The Agency proposes that there be imposed as a condition of grant of variance a cap on the permissible discharges from outfall 002 as follows:

<u>Parameter</u>	<u>Cap</u>
Boron	2.0 mg/L
Chloride	1,000 mg/L
Sulfate	1,000 mg/L
TDS	3,000 mg/L

AKZO presently has before the Board a petition⁴ for adjusted standard (AS 93-8) in which it requests that these same caps be determined to be the appropriate standards applicable at outfall 002. The Agency has expressed support for the granting of the adjusted standard.

³ In pertinent part, Section 304.105 reads: "... no effluent shall, alone or in combination with other sources, cause violation of any applicable water quality standard."

⁴ The original petition was filed on August 20, 1993. Amended petitions were filed on November 12, 1993 and February 2, 1994. The matter is currently being held for hearing.

HARDSHIP

AKZO is admittedly not now meeting the limits for TDS and boron specified in its NPDES permit, and is discharging TDS, chloride, sulfate, and boron at concentrations which arguably cause the in-stream water quality standards for these parameters to be exceeded.

AKZO contends that it cannot discharge at concentrations that would assure compliance with the NPDES limits and water quality standards without hardship. Moreover, AKZO contends that the environmental impact that would result from discharges at the level here under consideration are such as to cause the hardship to rise to the level of an arbitrary or unreasonable hardship.

AKZO has evaluated ten compliance alternatives, which vary in cost and ability to achieve compliance. AKZO notes the following about the alternatives:

1. Operation of the Boiler at an Abnormally High Blowdown Rate: would greatly increase fuel consumption and raise operating costs ca. \$155,000 annually; maintenance and chemical usage also expected to increase. (Pet. at p. 6.)
2. Installation of a Reverse Osmosis Treatment System with Offsite Disposal of Brine: capital cost would be \$640,000 to \$840,000, with disposal costs ranging between \$5.1 million and \$27.3 million. (Pet. at p. 7.)
- 2a. Offsite Disposal of Current Water Softener Wastewater: cost of approximately \$0.73 million per year. (Id.)
3. Reverse Osmosis System with Evaporation: evaporator would add \$500,000 to \$1.0 million to capital costs. (Id.)
4. Combining Outfalls 001 and 002: volume and content of outfall 002 effluent cannot be disposed via spray field; outfall 001 discharge is too limited to allow dilution of 002 volumes. (Pet. at p. 8-9.)
5. Optimization of Existing Sodium Zeolite System and Recycle of the Most Concentrated Rinse Streams: this alternative allows for compliance with the caps proposed by the Agency, but not with the existing standards for TDS, boron, chloride, or sulfate; intent is to recycle a portion of the brine rinse

and slow rinse streams and to truck the remainder for offsite disposal at the Morris POTW. (Pet. at p. 9.)

6. Isolation and Evaporation of High TDS Streams: same as #5, except for evaporation of water softener residual; cost of evaporator \$300,000 plus \$115,000 annual operating cost. (Pet. at p. 10.)
7. Discharge via Neighbor's Outfall: permission not attainable. (Pet. at p. 11.)
8. Pipeline to Illinois River: capital cost of \$400,000 and annual operating cost of \$35,000. (Id.)
9. Reverse Osmosis of Boiler Feed Water Followed by Direct Discharge: capital cost of \$500,000 to \$700,000 and annual operating cost of \$90,000 to \$100,000. (Pet. at p. 12.)
10. Demineralization of Boiler Feed Water: capital cost of \$600,000 to \$750,000 and annual operating cost of \$50,000 to \$140,000; no substantial reduction in TDS at outfall 002. (Pet. at p. 12-13.)

ENVIRONMENTAL IMPACT

The mere showing that compliance with a Board regulation would impose a hardship upon a petitioner is not sufficient for a variance to be granted. The petitioner must also demonstrate to the Board's satisfaction that the hardship outweighs any injury that would result from grant of the variance. This weighing of the consequences of a variance was recently capsulized by the appellate court in Marathon Oil Company v. IEPA and PCB (5th Dist. 1993, 610 N.E.2d 789,793, 182 Ill. Dec. 920,924):

The petitioner must *** show that the hardship it will encounter from the denial of the variance will outweigh any injury to the public or environment from the grant of the variance. Only if the hardship outweighs the injury does the evidence rise to the level of an arbitrary or unreasonable hardship.

In the instant matter, both AKZO and the Agency contend that there is minimal impact of the existing discharges on the receiving waterway, Aux Sable Creek. As principal evidence thereto, AKZO points to a study of Aux Sable Creek carried out by

the Agency in 1986⁵. AKZO contends that the conclusions of the study remain valid today since operations and processes at the Morris facility have not changed significantly since the Agency study. (Pet. at p. 5.)

The 1986 Agency study involved sampling of aquatic macroinvertebrates, habitat evaluation, and water quality sampling both above and below outfall 002. Among findings of the study were:

Macroinvertebrate communities were represented by a fairly diverse assemblage both above and below outfall 002.

There was no apparent adverse environmental impact in the vicinity of the AKZO outfall.

Macroinvertebrate results were similar to a study conducted in 1976, which also found little discernable impact.

Water quality was within acceptable limits for all regulated parameters.

Effluent concentrations result in increased, although not excess, downstream conductivity [TDS].

Adequate pools, in-stream cover, substrates, and canopy were present to support forage and sport fishes.

AKZO also cites to the results of a literature search conducted by it and submitted as part of the record in AS 93-8. AKZO contends that the literature search shows

*** that sufficient data exists to support the conclusion that the requested TDS, chloride and sulfate will not harm aquatic life. The literature search revealed data demonstrating that fresh water fish survived for several days to several weeks in levels of chloride, sulfate and TDS at levels much higher than those discharged by AKZO. (Pet. at p. 5.)

However, the Board notes that although AKZO has requested that the literature search in question be incorporated by reference into the instant record (Pet. at p. 5), AKZO has not followed the procedures necessary for that incorporation to take place (see 35 Ill. Adm. Code 101.106). Accordingly, that literature search is not in evidence before the Board.

⁵ The 1986 Agency study, entitled Intensive Survey of Aux Sable Creek (DW) in the Vicinity of AKZO Chemie America Morris, Illinois, July 1986, is Exhibit 5 to the Petition.

The Agency, for its part, "agrees with AKZO that granting this variance would have little, if any, adverse environmental impact" (Rec. at ¶7).

ADDITIONAL CONSIDERATIONS

The Board emphasizes that the conclusions it reaches based upon the record of the instant variance proceeding do not necessarily reflect on the merits of AKZO's adjusted standard proposal currently under consideration in Board docket AS 93-8. The burdens of proof and the standards of review in an adjusted standard and a variance are distinctly different (cf. Titles VII and IX of the Act). Moreover, the Board cannot lawfully prejudge the outcome of a pending regulatory proposal in considering a petition for variance. Similarly, the Board is not required to find that an arbitrary or unreasonable hardship exists exclusively because a regulatory standard is under review in an adjusted standard proceeding. (Section 35(a) of the Act.)

In addition to the two Sections of the Board's regulations for which AKZO specifically requests variance, the Agency recommends that variance additionally be granted with respect to 35 Ill. Adm. Code 304.141. Section 304.141 specifies, among other matters, that no person may discharge any contaminant in excess of the standards and limitations that are set in the NPDES permit. Inasmuch as today's grant of variance provides for discharges in excess of the NPDES limits, the Board agrees with the Agency that variance from Section 304.141 is appropriate.

Lastly, the Board notes that it does not ordinarily grant variance where petitioner has not submitted and committed to a specific plan for attaining compliance with the regulations in question. However, the Board has entertained exception to this principle where (1) petitioner has exhausted compliance options, (2) petitioner is actively pursuing permanent relief, (3) the term of variance is for the limited time necessary to resolve the matter of permanent relief, and (4) hardship of immediate compliance clearly outweighs impact of grant of the variance.

CONCLUSION

Based upon its review of the hardship AKZO would encounter, and the environmental impact that would result from grant of variance, the Board finds that immediate compliance with the regulations at issue would rise to the level of an arbitrary or unreasonable hardship. The variance will accordingly be granted, subject to conditions consistent with this opinion.

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

ORDER

Petitioner, AKZO Chemicals, Inc. (AKZO), is hereby granted variance from 35 Ill. Adm. Code 302.208, 304.105, and 304.141 as these sections apply to discharge of total dissolved solids (TDS), chloride, sulfate, and boron from outfall 002 located at AKZO's Morris, Illinois, facility. This grant of variance is subject to the following conditions:

- (1) Variance is effective beginning October 27, 1993 and terminating on the earlier of:
 - (a) May 5, 1997; or
 - (b) The date of modification of AKZO's NPDES permit to include any adjusted standard relief granted in Board adjusted standard proceeding docketed as AS 93-8.
- (2) During the term of the variance, concentrations in the effluent discharge from AKZO's outfall 002 may not exceed the following limits, measured as daily maximum concentration:

<u>Parameter</u>	<u>Limit</u>
Boron	2.0 mg/L
Chloride	1,000 mg/L
Sulfate	1,000 mg/L
TDS	3,000 mg/L

- (3) AKZO shall continue during the term of variance to conduct measures designed to reduce its TDS, chloride, sulfate, and boron discharge levels.
- (4) AKZO shall continue during the term of variance to comply with all provisions of its NPDES permit except as explicitly provided herein.
- (5) If adjusted standard relief is denied in the AS 93-8 proceeding, AKZO shall submit a compliance plan to the Agency within three months from the date of the Board's final opinion and order in that proceeding.

Within 45 days of the date of this order, Petitioner shall execute and forward to Margaret P. Howard, Division of Legal Counsel, Illinois Environmental Protection Agency, 2200 Churchill Road, Post Office Box 19276, Springfield, Illinois 62794-9276, a Certification of Acceptance and Agreement to be bound to all terms and conditions of this variance. The 45-day period shall be held in abeyance during any period that this matter is being appealed. Failure to execute and forward the Certificate within 45 days renders this variance void and of no force and effect as

a shield against enforcement of rules from which variance was granted. The form of said Certification shall be as follows:

CERTIFICATION

I (We), _____,
hereby accept and agree to be bound by all terms and conditions
of the order of the Pollution Control Board in PCB 94-76, May 5,
1994.

Petitioner

Authorized Agent

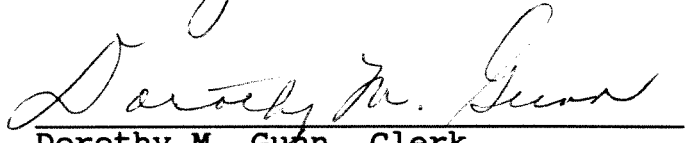
Title

Date

IT IS SO ORDERED.

Section 41 of the Environmental Protection Act (415 ILCS 5/41 (1992)) 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".)

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above opinion and order was adopted on the 5th day of May, 1994 by a vote of 6-0.



Dorothy M. Gunn, Clerk
Illinois Pollution Control Board