

ILLINOIS POLLUTION CONTROL BOARD

January 24, 1974

ENVIRONMENTAL PROTECTION AGENCY,)
)
 Complainant,)
)
 v.) PCB 72-489
)
 STEPAN CHEMICAL COMPANY, a)
 Delaware Corporation,)
)
 Respondent.)
)
 STEPAN CHEMICAL COMPANY, a)
 Delaware Corporation,)
)
 Petitioner,)
)
 v.) PCB 73-184
)
 ENVIRONMENTAL PROTECTION AGENCY,)
)
 Respondent.)

James Rubin and Stephen Wiss, Assistant Attorneys General for the EPA
Henry Handzell, Attorney for the EPA
James W. Gladden, Jr. and John Bleveans, Attorneys for Stepan
Chemical Company

OPINION AND ORDER OF THE BOARD (by Mr. Henss)

This enforcement action (#72-489) and variance (#73-184) were consolidated for disposition. The enforcement case was initiated by the Environmental Protection Agency on December 13, 1972. Respondent Stepan Chemical was charged with violating an effluent restriction contained in SWB permit No. 1969-EA-701, and this was alleged to be a violation of Section 12(b) of the Environmental Protection Act. Respondent was also charged with causing, or allowing the discharge of color, total suspended solids, BOD₅, fecal coliform, and turbidity so as to cause or tend to cause water pollution. The discharges have allegedly occurred each day of operation since November 10, 1971 in violation of Section 12(a) of the Act, Rule 1.08(10)(b)(3) of SWB-14, Rules 401(c), 403 and 404(a) of the Illinois Water Pollution Control Regulations.

In response to the Agency Complaint, Stepan filed its Petition for Variance on May 2, 1973 requesting relief from Rule 404(f) of the Regulations. A public hearing was held on the consolidated cases on July 19, 1973.

At the public hearing the parties informed the hearing officer that they had entered into an agreement which they believed would dispose of all the issues, consistent with the public interest. They informed the hearing officer that signed copies of the proposed settlement agreement and the Agency recommendation would be filed the following week.

For reasons still unknown, the parties did not submit the proposed settlement until 5 months later. In addition, the Agency failed to submit a Recommendation in the variance case, and has therefore, not complied with the requirements of Section 37 of the Act. This failure was explicitly pointed out to the Agency in our Order dated September 20, 1973.

Stepan Chemical Company operates a chemical plant in Will County near the Des Plaines River known as the Millsdale Plant. At this plant Stepan produces phthalic anhydride, liquid detergent intermediates, dry cleaning emulsifiers, polyurethane foam systems and high purity speciality chemicals for the cosmetic industry.

In October 1969 Stepan was granted a permit by the Sanitary Water Board (SWB) to install and operate a secondary waste treatment facility. This facility was designed to produce an effluent which would have no more than 30 mg/l of BOD and 35 mg/l of suspended solids. The new equipment for the facility consisted of a storm water lagoon, an equalization tank, chemical feeding equipment, a 1.4 million gallon aeriated biological oxidation reactor, two final settling tanks, two aerobic digesters, a chlorination contact chamber and aeration facilities. The secondary waste treatment facility, designed by the Horton Process Division of Chicago Bridge and Iron Company based upon specifications developed by Betz Laboratories, was completed in December 1970 at a cost of over \$1,100,000. The new facility discharged to Cedar Creek about 1600' from the confluence of Cedar Creek with the Des Plaines River.

Performance test conducted in May 1971 indicated that the facility had the capability of producing an effluent with an average BOD concentration of 7.1 mg/l. However, since its installation, Stepan has encountered problems in achieving a consistent effluent of no more than 30 mg/l BOD and 37 mg/l suspended solids primarily because of surge loadings to the waste water treatment facility. Copies of Stepan's monthly effluent reports filed with the Agency since November 10, 1971 show several instances of BOD discharges in excess of 600 mg/l and at least 37 discharges in excess of 100 mg/l.

In May 1972 Stepan retained the services of E. T. Erickson, a registered professional chemical engineer, to review the operation of the waste water treatment facility. Erickson recommended that Stepan establish regular maintenance schedules, change the movement of sludge and the levels of sludge in various parts of the waste treatment facility, and change the nutrient feed ratio of ammonia and phosphate. Erickson also recommended that equipment be installed to monitor the discharges from the various production facilities. Since Erickson felt surge loadings had been the primary problem with the facility, he recommended that Stepan consider ways to reduce spills.

Stepan claims to have followed Erickson's recommendations and further to have undertaken studies to determine ways of reducing the loading to the waste treatment facility. It was stated that the studies by the Stepan engineering department resulted in the development of a program which is now being put into effect.

In April 1973 Stepan entered into a contract with Erickson which gave Erickson complete and independent authority to operate the waste treatment plant. Since that time the pretreatment lagoon has been drained and dredged, the equalization tank in the waste treatment facility was drained and new influent and discharge lines installed which will retain the fluid in the tank for the requisite time, and necessary piping for recirculation has been installed.

These projects were not completed until September 1973. While the effect of the projects has been to cause a significant improvement in the effluent from the treatment plant, data for the last six months shows that the plant effluent has averaged 42 mg/l BOD and 32 mg/l suspended solids.

The parties expect that, when start-up problems which are usually associated with major changes in a system are resolved, the system will consistently meet the standard. Improvements are also expected when Stepan personnel become proficient in operating the pre-treatment lagoon and recirculation system. Mr. Erickson is presently working with Stepan to insure that compliance is achieved by February 15, 1974.

Thus, while Stepan has not yet achieved the reduction in BOD and suspended solids requisite for compliance with Rule 404(a) in discharges to the Des Plaines River, it appears that Stepan may achieve the required levels after "fine tuning" adjustments and operator training has been completed.

In the interim period after the Complaint was filed but before the signing of the proposed settlement, Stepan claims to have undertaken and completed the following actions to improve the operation of its waste treatment facility:

1. Installed and operated a new surface condenser vacuum system in process buildings "M" and "F". This system will reduce the hydraulic loading to the waste water treatment plant by approximately 70,000 gallons and will remove from the waste water treatment plant approximately 200,000 lbs. of methanol and approximately 100,000 lbs. of n-hexanol per year. The new system replaced a system of barometric condensers in those buildings.
2. Installed and operated a closed compressor system for unloading ethylene oxide from tank cars to storage. This will eliminate approximately 200 lbs. a day of ethylene oxide from the waste treatment system.
3. Ceased discharging methanol from the methanol recovery column to waste water treatment plant. This will eliminate an additional 2200 lbs. per day of methanol from the waste water treatment system.
4. Installed and operated a cooling tower which will recycle most of the non-contact cooling water in the plant. This will reduce the hydraulic load to the waste water treatment plant by approximately 300,000 gallons per day.
5. Installed a lime dike to prevent the possibility of any runoff to Cedar Creek from the area where the sludge from the waste water treatment plant is discarded.
6. Installed new drainage ditches which will divert storm water from the higher land east of the plant away from the drainage system to the waste water treatment plant.
7. Surveyed plant operations for areas where spills may occur and instituted strict housekeeping procedures to protect against spills.

As part of the proposed settlement program, Stepan proposes to institute the following programs:

1. Beginning December 1, 1973 and continuing through April 30, 1974 Stepan will continuously monitor the influent to and the effluent from the waste water treatment plant and will run a weekly BOD test of the effluent on a composite sample collected during the week.
2. At monthly intervals, beginning on the 31st day of the month after the entry of an order by the Board Stepan will report to the Board and the Agency on its progress under the above described program. The report shall include the results of the test done with respect to the operation of the waste water treatment plant. Representatives of the Agency shall have the right to visit Stepan's plant during working hours upon reasonable notice.
3. Stepan agrees to execute within 30 days from the approval of the proposed program, a performance bond in the amount of \$5,000 to guarantee the performance of the test referred to in Part 1 above.
4. Stepan agrees to file a complete construction permit application on or before February 15, 1974 specifying the manner in which it will divert the discharge from its waste water treatment plant to the Des Plaines River. Within 90 days from receipt of a construction permit, but in no event later than July 15, 1974, Stepan agrees to operate its waste water treatment facility so that there will be no discharge from that facility to Cedar Creek.
5. Stepan agrees to execute within 30 days from the approval of the proposed settlement, a forfeiture bond for liquidated damages in the amount of \$30,000 in the event that Stepan fails to perform the acts set forth in part 4 above.
6. Stepan agrees that the discharge from its waste water treatment facility when diverted to the Des Plaines River will be in compliance with Rule 404(a), and that pursuant to Rule 404(b)(ii), the discharge from its waste water treatment facility will be

reduced to 20 mg/l BOD and 25 mg/l suspended solids on or before December 31, 1974. If the effluent requirements for the Des Plaines River are changed at any time in the future, Stepan agrees to operate its waste water treatment facility in compliance with such new requirements.

7. Stepan agrees to submit and obtain construction permits for all future modifications in its waste treatment facilities. On or before January 1, 1974 Stepan will submit necessary permit applications for all modifications made in the new waste water treatment facility from April 1, 1973 to date. Stepan shall also submit on or before February 15, 1974 a compliance program, pursuant to Rule 1002, showing how it intends to achieve a discharge of 20 mg/l BOD and 25 mg/l suspended solids on or before December 31, 1974 and, a further program to assure a consistent discharge of 30 mg/l BOD and 37 mg/l suspended solids when the discharge of the waste water treatment system is diverted to the Des Plaines River.

Upon acceptance by the Board of the proposed settlement, Stepan agrees to remit \$12,500 to the State of Illinois. Acceptance of the proposed settlement by the Board is to be deemed the grant of a variance for Stepan to continue its waste water treatment plant as outlined in the program.

It was also stipulated that Stepan's time for performance of any term of this proposed stipulation and settlement may be extended by the Board for good cause upon application by Stepan after reasonable opportunity for the Agency to respond to any such application. (Presumably any extension beyond the term of variance would necessitate the filing of a new variance petition.)

The final section of the proposed settlement calls for all remaining obligations of Stepan to cease upon the occurrence of one or more of the following events:

1. The permanent cessation, for any reason, of operations at the Millsdale Plant;
2. The obtaining by Stepan from the Board of an explicit written release of such obligations.

In the Petition for Variance, Stepan estimated that 3,000' of pipe at a minimum cost of \$90,000 would be required to discharge its effluent to the Des Plaines River. At that time Petitioner felt such an expense would impose an arbitrary and unreasonable hardship completely disproportionate to the actual benefit to the water quality of 1600' of Cedar Creek.

Stepan now plans to install the pipe and divert its effluent to the Des Plaines River by July 15, 1974. The Board heartily approves of this change in attitude by Stepan. The Des Plaines River, by far, has the greater assimilative capacity of the two streams involved. Once the diversion is completed, Cedar Creek should be able to recover and assume its proper role in the area's ecosystem.

We find the proposed settlement agreement to be a reasonable resolution of all issues involved. Stepan's abatement program has already produced a significant improvement in the quality of its effluent. Both parties believe that the goal of compliance with Rule 404(a) will be achieved on or before February 15, 1974. The \$12,500 penalty to be imposed for Stepan's past violations is fair in light of the degree of pollution and length of time involved.

Petitioner has filed a Motion to Withdraw Petition for Variance. This action was conditioned on our acceptance of the proposed settlement, particularly paragraph J which called for a grant of the variance. This Motion must be denied. While Stepan is entitled to a variance, we do not think that variance should be granted in an enforcement case. Therefore, we shall grant Stepan a variance in PCB 73-184 in lieu of paragraph J of the proposed settlement agreement.

The record at this time does not allow the granting of a full year's variance. Stepan's discharge is and will continue to be going to Cedar Creek until about July 15, 1974. The standard applicable to Cedar Creek [Rule 404(f)] requires that Stepan discharge an effluent containing not more than 4 mg/l BOD and 5 mg/l suspended solids. We believe that the minimum acceptable is a positive showing that Stepan can at least consistently produce an effluent meeting the higher standard of 30 mg/l BOD and 37 mg/l suspended solids. As noted above, Stepan believes the showing will be made by February 15, 1974. Therefore, we shall establish that Standard as a condition of the variance during the time Stepan is discharging to Cedar Creek. If the Standard is being met, no variance will be necessary following diversion to Des Plaines.

We think Stepan should submit both compliance plans called for in the settlement. This will have the effect of allowing the Agency to have full knowledge of Stepan's future abatement undertakings particularly as Stepan pursues the 20 mg/l BOD and 25 mg/l suspended solids standard.

ORDER

1. The Pollution Control Board hereby accepts the amended stipulation and proposal for settlement submitted by Stepan Chemical Company and the Environmental Protection Agency except for Paragraph J.
2. Stepan Chemical is granted variance from Rule 404(f) of the Illinois Water Pollution Control Regulations until July 15, 1974 upon condition that its effluent not exceed 30 mg/l BOD and 37 mg/l suspended solids after February 15, 1974.
3. Pursuant to Paragraph I of the Amended Stipulation and Proposal for Settlement, Stepan shall submit by February 15, 1974:
 - A. A program assuring a consistent discharge of no more than 30 mg/l BOD and 37 mg/l suspended solids when the discharge from the waste water treatment system is diverted to the Des Plaines River;
 - B. A compliance plan pursuant to Rule 1002, showing how it intends to achieve a discharge of no more than 20 mg/l BOD and 25 mg/l suspended solids on or before December 31, 1974.
4. Stepan Chemical Company shall, within 30 days from the date of this order, pay to the State of Illinois the sum of \$12,500 for past violations found herein. Penalty payment by certified check or money order payable to the State of Illinois shall be made to: Fiscal Services Division, Illinois EPA, 2200 Churchill Road, Springfield, Illinois 62706.

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board hereby certify the above Opinion and Order was adopted this 24th day of January, 1974 by a vote of 5 to 0.

Christan L. Moffett