

ILLINOIS POLLUTION CONTROL BOARD
December 19, 1974

OLIN CORPORATION)
Petitioner,)
)
v.) PCB 73-484
)
ENVIRONMENTAL PROTECTION AGENCY)
Respondent,)
)

MR. RANDALL ROBERTSON, ESQ., LUEDERS, ROBERTSON, AND KONZEN
appeared on behalf of the Petitioner;
MR. HENRY J. HANDZEL, JR., ESQ., and MR. RICHARD BARDELAN, ESQ.,
appeared on behalf of the Environmental Protection Agency;

OPINION AND ORDER OF THE BOARD (by Mr. Dumelle):

This petition was filed with the Pollution Control Board on November 14, 1973 and requests variance from provisions of Section 12(a) of the Environmental Protection Act (Act), that portion of Section 203(f), Part II, Chapter 3 of the Illinois Pollution Control Board's Rules and Regulations Governing Water Pollution Control which establish a maximum water quality concentration level of 0.02 mg/l for copper and from Section 404(f) of the Rules and Regulations, also in Chapter 3.

Amendment to Petition was filed on April 30, 1974, striking request from variance from Section 12(a) of the Act.

Olin Corporation, a Virginia corporation authorized to do business in the State of Illinois, operates a plant consisting of an area of approximately 1732 acres at East Alton, Illinois. In its Zone 17 it conducts a brass casting operation and manufactures copper, copper base alloy slabs and copper alloy tubing; in its Zones 1 and 7, it manufactures brass strip and fabricated products, metallic and shot shell ammunition, and operates a steam generating plant and potable water treatment plant; and in Zone 4, it manufactures shot shell ammunition and primer explosives. Approximately 5700 workers are employed at Petitioner's East Alton location. Testimony was presented stating that the annual payroll was \$60,000,000, property taxes were \$1,000,000 per year, and the local purchases (Madison Co.) for supplies and services were \$2,000,000 annually (R. 24).

The federal government has designated the area from which Petitioner hires as a labor surplus area, and Petitioner has an approved plan to employ disadvantaged individuals from this area (Pet. 5).

Petitioner's wastewater effluent enters the Wood River through two separate outfalls. These are located at 6000 feet and 1200 feet from the confluence of the Wood River and Mississippi River (Olin Ex. V). The Wood River is a low flow, non-navigable stream and has a seven-day ten-year low flow of zero at the Zone 6 WWTF discharge. Since the dilution ratio is less than 1:1, Petitioner must meet the water quality standards of 4 mg/l BOD, 5 mg/l S.S. and 0.02 mg/l for copper (Rule 404(f) Part IV-Effluent Standards).

Petitioner has two wastewater treatment facilities (WWTF) designated as Zone 6 WWTF, and Zone 17 WWTF. The raw materials processed in the area discharging to Zone 17 plant consist of 1,401,000 lbs/day of virgin and scrap brass, copper, nickel, zinc, lead and tin. The raw materials processed in the area discharging to the Zone 6 plant consist of 1,349,000 lbs/day of brass, aluminum, lead and plastics (Pet. Ex. F).

Petitioner engaged the consulting firm of Ryckman, Edgerley, Tomlinson and Associates (RETA) in 1966 to study volume and characterization of the wastewater from the plant. As a result of extensive study, RETA recommended, and Olin accepted, a Lime Precipitation and Polymer Coagulation and Flocculation Process. Engineering was started in 1970 and was completed in 1971. Construction started in November 1971 and was completed in December, 1973, when the plant (Zone 6) was placed in service.

The design criteria were as follows:

Flow - 6.25 mgd
Effluent BOD - 10 mg/l
Suspended Solids - 12 mg/l
Copper Concentration - 1 mg/l

In March of 1972, the Board adopted Rules 203 and 404. This had the effect of requiring an effluent having a BOD of 4 mg/l, S.S. of 5 mg/l and copper concentration of 0.02 mg/l, since there would be a dilution ratio of less than 1:1 when discharged to the Wood River.

Zone 17 plant, with a process similar to Zone 6 plant but with a design flow of .86 MGD, was started up in February, 1974. The design criteria were the same as for Zone 6 plant.

Both plants have improved on the design criteria as to BOD, S.S. and copper. However, the Water Pollution Regulations have not been met. The copper concentrations have gone below 0.5 mg/l and the BODs and suspended solids have been held well below the design of 10 and 12 mg/l but have frequently exceeded the 4 and 5.

Petitioner requests a variance for copper concentrations to be allowed not to exceed 0.5 mg/l for both Zone 6 and Zone 17 plants, and for BOD and S.S. for Zone 6 plant from the 4 and 5 mg/l.

Petitioner has engaged RETA to study the possibility of reducing the copper concentration to water quality standards. The recommendation was made to recirculate the effluent through the treatment process. This was carefully studied and the conclusion is that no improvement could be effected by this method.

Four other systems were also studied. These are 1) Sulphide precipitation, and multi-media filters, 2) Recarbonation, multi-media filters and carbon absorption, 3) Recarbonation, multi-media filters and ion exchange, and 4) Recarbonation, multi-media filters and reverse osmosis.

The technical feasibility of all of these is doubtful since they have never been tried on Olin's type of wastewater, or on so large a scale. The costs would also be inordinately high (Olin Exhibit I-1, J, K); about \$500,000 to \$2,760,000 per annum.

Petitioner alleges, and the EPA concurs, that the Wood River, from the Zone 6 discharge to its confluence with the Mississippi River is not used by the public for any beneficial purpose and further, since it is bordered exclusively by industry, its public accessibility is minimal (Pet. 6)(R. 13, 14).

Sampling by both the Agency and Olin indicate that no physical degradation of the Wood River has taken place as a result of Olin's discharge, (Olin Ex. H-1, and EPA Ex. 1).

We conclude that Olin should be granted a variance from the copper standard of 0.02 mg/l to be allowed a discharge of 0.5 mg/l, on the basis that they have diligently pursued several avenues of possible compliance and that there will be minimal public harm. Because we are granting a variance from Rule 203(f) as to copper, a variance from Rule 404(f)(ii)(A) is not necessary.

We are not granting variance for BOD and suspended solids because the Agency has indicated Petitioner should qualify for a "Pfeffer" exemption under Rule 404(f)(ii) with the granting of the variance for copper from Rule 203(f).

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

ORDER

It is the Order of the Illinois Pollution Control Board that;

1. Petitioner be granted a variance from Rule 203(f) of Chapter 3 solely for the discharge of copper, for a period of one year from the date of this Order upon the following conditions:

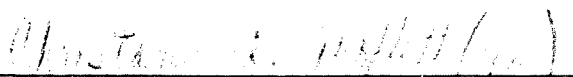
(a) That Petitioner's discharges from Zones 6 and 17 wastewater treatment facilities not exceed 0.5 mg/l of copper.

(b) That Petitioner continue to investigate additional means of controlling its effluent discharges of copper.

(c) That Petitioner submit quarterly progress reports to the Agency on its investigations.

2. All requests for variances from other provisions of Chapter 3 of the rules are denied.

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board, hereby certify the above Opinion and Order were adopted on the 19th day of December, 1974 by a vote of 4-0.



Christan L. Moffett, Clerk
Illinois Pollution Control Board