

ILLINOIS POLLUTION CONTROL BOARD
August 14, 1986

MOBIL OIL COMPANY,)
)
Petitioner,)
)
v.) PCB 86-45
)
ILLINOIS ENVIRONMENTAL PROTECTION)
AGENCY,)
)
Respondent.)

EUGENE W. BEELER, JR. AND ARTHUR G. HOFMANN APPEARED ON BEHALF OF THE PETITIONER;

THOMAS DAVIS APPEARED ON BEHALF OF THE RESPONDENT.

OPINION AND ORDER OF THE BOARD (by J. Marlin):

On March 31, 1986 Mobil Oil Company (Mobil) filed a petition for variance extension from 35 Ill. Adm. Code 304.122 as it relates to the 3.0 mg/l ammonia nitrogen standard applicable to Mobil's Joliet Refinery's discharge into the Des Plaines River. Mobil waived hearing. Citizen objections to the variance and a request for hearing were filed on April 24 and April 26. A Board order of May 9, 1986, addressed the citizen filings and ordered that a hearing be held in this matter. On May 6, the Illinois Environmental Protection Agency (Agency) filed a recommendation that the variance request be granted, but with some modification. Mobil filed a response to the Agency Recommendation on May 9. The Agency filed a motion to amend its Recommendation on June 26, 1986. That motion is granted. Hearing was held on July 15, 1986. On July 30, Mobil filed a motion for leave to file a compilation of materials to be incorporated by reference. That motion is also granted.

Mobil owns and operates a conventional fuels petroleum refinery with a rated capacity of 180,000 barrels per day located in Will County. The refinery discharges 2.74 million gallons of effluent per day. Stormwater, noncontact cooling water and process water are discharged from the facility into the Des Plaines River. The process water and contaminated surface runoff (1600 gpm) are treated in Mobil's wastewater treatment plant (WWTP) which consists of an API separator, a dissolved air flotation unit, an equilization basin for primary treatment and a conventional activated sludge facility for secondary treatment. Treated effluent from the final clarifier is routed through a 4.98 million gallon guard basin where it is retained for

approximately 51 hours and then aerated in the final aeration cone prior to release to the Des Plaines River. The effluent meets all discharge standards other than ammonia nitrogen.

Mobil has been granted five previous variances from the ammonia nitrogen standard of Section 304.122 (old Rule 406, Chapter 3): (PCB 77-22, PCB 78-97, PCB 80-54, PCB 82-36 and PCB 84-37. In PCB 84-37, 60 PCB 97, Sept. 20, 1984, variance was granted until July 1, 1986 subject to certain conditions, including an ammonia nitrogen effluent limitation of 25 mg/l monthly average and 35 mg/l daily maximum concentration.

In the present petition, Mobil requests an ammonia nitrogen effluent limitation of 25 mg/l monthly average and 40 mg/l daily maximum concentration until final action is taken on its site specific regulatory proposal, R84-16 (Pet. at 8). The Agency recommends standards of 5 mg/l annual average, 10 mg/l monthly average and 30 mg/l daily maximum.

In the past 13 years, Mobil has expended considerable time and effort in its attempt to reach ultimate compliance with the ammonia standards. The total cost of ammonia related capital expenditures is in excess of \$2.1 million (Pet. at 3). The average annual operating cost for ammonia reduction projects during the last five years has been \$1,801,000, including amortization of capital investments (Pet. Table 2). Equalization system improvements and continuous dissolved oxygen monitoring in the aeration basins cost an additional \$64,000 between 1982 and 1985 (Pet. at 3). Projects have included the purchase and installation of a nitrification pilot plant, nitrification inhibition studies, mutant bacteria trials, alkalinity addition and temperature control in the aeration basins. Since 1973, these efforts have reduced Mobil's discharged ammonia concentration by 96 percent (Id).

In 1973, Mobil's discharge averaged 77 mg/l ammonia nitrogen. In 1979 and 1980 it averaged 13 and 17 mg/l, respectively. During 1984 and 1985, the average was down to 3 mg/l (Pet. Table 1). Reports filed August 7, 1986, as part of the R84-16 record, indicate that the monthly averages for the first six months of 1986 range from 7 mg/l in January to zero in March and June. The daily maximum range is from 0 to 16.

Mobil contends the requested monthly average limitations of 25 mg/l and daily average limitations of 40 mg/l are justified because the waste water treatment plant can experience variability in ammonia loading due to the nitrogen content of crude oil and in ammonia discharge due to nitrification inhibition. During periods when the biological treatment system is out of service for repair or maintenance, nitrification capability is greatly reduced. (The Board notes that a provisional variance may be appropriate at such times.) Mobil also points out that the 40 mg/l maximum was exceeded twice during the previous variance period (Pet. at 7). The Agency

believes that the presently achievable performance supports more stringent levels than those requested (Agency rec. at 2).

Mobil contends that the ammonia content of the crude oil available to Midwestern refineries has been increasing as sources shift from the oil fields of the Middle East. Mobil asserts that this increase will make it more difficult to achieve consistently low levels in the effluent (R84-16 transcript, pp. 22-36; exhibit 1, exhibit 1A). The crude oil nitrogen content at the Joliet refinery has gone from a low of about 680 ppm in 1976 to a high of about 1450 ppm in 1984. In 1985 it was down to roughly 1120 ppm (figure attached to petition).

Both Mobil and the Agency agree that the effect of the ammonia loading to the river at levels in excess of the standard would be a minute increase in the river ammonia concentration, and accordingly that the environmental effects of grant of variance would be minimal. The Board concurs in this belief, as it has in granting previous variances, but particularly since Mobil's discharges in 1984 and 1985 on an average meet the standard, although excursions continue to occur.

The Board previously found that denial of variance would result in an arbitrary or unreasonable hardship "given that technically and economically feasible means of meeting the standard have not been identified despite Mobil's diligent efforts" (60 PCB at 99). The Board again so finds, noting that since that time, Mobil has continued its efforts at achieving compliance and has further improved its effluent quality.

The Board will accordingly grant variance beginning July 1, 1986 for a period of two years, or until final action is taken in R86-16, whichever first occurs. While the Board would anticipate taking such final action long before expiration of the variance period, the Board chooses this term to allow sufficient time to accommodate unforeseen contingencies. The variance term begins on July 1, 1986 in recognition of the fact that the variance petition was timely filed 90 days before expiration of the prior variance, of Mobil's diligent pursuit of its case in both this and the site specific action, and of its continuing compliance efforts.

As to the limitations and conditions of variance, the Agency correctly asserts that the Joliet refinery has produced high quality effluent during the past two years. The Board, however, does not presently find this to be sufficient reason to tighten the effluent limitations during the short life of the variance, and will impose the daily and monthly limits contained in the prior variance. Mobil has pointed out circumstances which could lead to exceedances of the current limitations. Mobil has made admirable progress in reducing its ammonia nitrogen discharge, and there is no reason to believe it will lessen its control

efforts during the period of this variance. However, the Board will emphasize that its choice of these higher limits is not to be construed as authorization for "backsliding".

The Board will reevaluate the daily and monthly effluent limitations while reaching a decision in R84-16; today's action is not to be construed as a predetermination of the outcome of that proceeding. The Board will additionally consider the issue of what, if any, annual limitation should be imposed in R84-16, and will not impose one as a condition of this variance.

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

ORDER

1) Mobil Oil Corporation is hereby granted a variance from 35 Ill. Adm. Code 304.122 for discharges from its Joliet Refinery, beginning July 1, 1986 and terminating July 1, 1988, or at such earlier time as the Board takes final action in R84-16, subject to the following conditions:

- A) Mobil's ammonia nitrogen effluent discharge shall not exceed a monthly average concentration of 25 mg/l and a daily maximum concentration of 35 mg/l during the period of this variance. Mobil shall, however, to the extent practicable, continue its efforts to produce effluent which complies with the limitations of Section 304.122.
- B) Mobil shall continue its research aimed at complying with the ammonia nitrogen standard and shall continue to submit bi-monthly reports to the Agency outlining its efforts to achieve compliance with 35 Ill. Adm. Code 304.122, including any studies on nitrification inhibition, alkalinity addition and any further pilot plant testing.

2) Within 45 days of the date of this Order, Mobil shall execute and forward to the Illinois Environmental Protection Agency, Compliance Assurance Unit, Water Pollution Control Division, 2200 Churchill Road, Springfield, Illinois 62706, a Certification of Acceptance and Agreement to be bound to all terms and conditions set forth in the Order. The 45 day period shall be held in abeyance during any period in which this matter is being appealed. The form shall be as shown below:

CERTIFICATION

I, (We), _____, hereby accept and agree to be bound by the above terms and conditions of the Order of the Pollution Control Board in PCB 86-45 dated August 14, 1986.

Petitioner

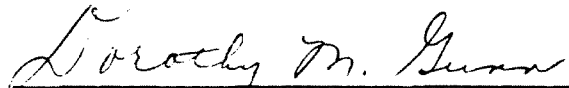
By: Authorized Agent

Title

Date

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 14th day of August, 1986 by a vote of 6-0.



Dorothy M. Gunn, Clerk
Illinois Pollution Control Board