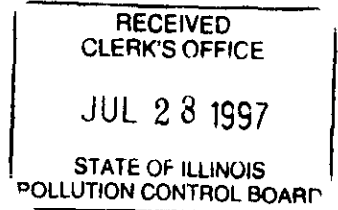


BEFORE THE POLLUTION CONTROL BOARD
OF THE STATE OF ILLINOIS



IN THE MATTER OF:)
)
SITE SPECIFIC PETITION OF)
MOBIL OIL CORPORATION FOR)
RELIEF FROM 35 ILL. ADM. CODE 304.122,)
AMMONIA NITROGEN EFFLUENT STANDARDS)

R97-28
(Water - Regulatory)

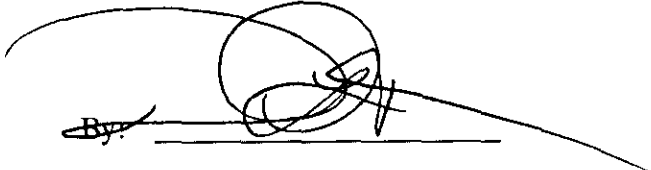
NOTICE OF FILING

To: Ms. Dorothy Gunn
Clerk
Pollution Control Board
100 West Randolph, Suite 11-500

Margaret P. Howard, Esq.
Illinois Environmental Protection Agency
2200 Churchill Road
Springfield, Illinois 62794

PLEASE TAKE NOTICE that this day I have filed with the Illinois Pollution Control Board the **PETITIONER'S POST-HEARING BRIEF** on behalf of Mobil Oil Corporation. Copies are attached and served upon you.

Respectfully submitted,

A handwritten signature in black ink, consisting of several loops and a long horizontal stroke extending to the right. Below the signature is a horizontal line with the word "By:" written above it.

Dated: July 28, 1997

ROSS & HARDIES
James T. Harrington, Esq.
David L. Rieser, Esq.
David A. Piech, Esq.
150 North Michigan Avenue
Suite 2500
Chicago, Illinois 60601
(312) 558-1000

BEFORE THE POLLUTION CONTROL BOARD
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RECEIVED
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PETITIONER'S POST-HEARING BRIEF

The Petitioner, Mobil Oil Corporation, ("Mobil") by and through its attorneys, Ross & Hardies, files this post-hearing brief in support of its petition for site specific relief from 35 Ill. Adm. Code 304.122. Mobil states that it presented evidence in the record which completely supports the requested relief pursuant to the Illinois Environmental Protection Act ("Act") and asks the Board to adopt the site specific regulation proposed for 35 Ill. Adm. Code 304.214.

PROCEDURAL BACKGROUND

Mobil has always sought to bring its Joliet Refinery into compliance with Pollution Control Board regulations regarding ammonia nitrogen effluent standards. After several variances regarding ammonia nitrogen, Mobil sought and obtained site specific relief when the Board adopted Section 304.214 on January 7, 1988. (In the matter of: Proposal of Mobil Oil Corporation to Amend the Water Pollution Regulations, R84-16). The Board limited that relief, however, by providing that it would expire after five years.

Although Mobil achieved complete compliance with the Board's general ammonia nitrogen effluent standard during the time of the site specific relief, modifications to the treatment system to comply with other environmental regulations resulted in

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diminished nitrification. In 1993, Mobil sought and obtained an additional variance in order to investigate and attempt to correct the source of the nitrification problem. (Mobil Oil Corp v. IEPA, PCB 93-151). This variance was extended by one year when Mobil determined that it needed additional time to evaluate the operation of the treatment facility after the completion of modifications recommended as a result of the investigation. (Mobil Oil Corp. v. IEPA, PCB 96-214).

Having thoroughly evaluated the treatment facility's ability to achieve consistent nitrification and having reevaluated other compliance options, Mobil filed this site specific petition on April 24, 1997. The Board granted a waiver of the requirement to obtain 200 signatures and appropriate hearing notices were issued. Mobil witnesses testified at a hearing held on July 2, 1997 in Bolingbrook, Illinois. The Agency appeared at the hearing and stated that it agreed with the relief. No members of the public testified at the hearing.

TESTIMONY PRESENTED AT THE HEARING

Mobil presented three witnesses at the hearing, Lilliana Gachich, Environmental Advisor for the Joliet Refinery; Dr John Koon, Principal of Parsons Engineering Science Inc. and James H. Huff of the consulting firm, Huff & Huff. Each witness prefiled testimony, which was admitted as an exhibit at the hearing, and then summarized that testimony at the hearing. Each witness was questioned by Board member Dr. Flemal regarding different aspects of their testimony.

Ms. Lilliana Gachich testified regarding plant operations and the configuration of the wastewater treatment plant. ("WWTP") (Exhibit 1, T.13-30.^{1/}) She described the elements of the WWTP and stated that it met federal Best Available Treatment (BAT) effluent standards regarding discharge and flow levels. (Exhibit 1, p. 1). She also noted that Mobil's efforts to conserve water used in the plant resulted in a less dilute wastewater which exacerbated the ammonia nitrogen compliance problems. (T.15). She described the historical performance of the WWTP, which showed improvement during the time of the previous site specific relief and then decline in nitrification efficiency after the installation of additional treatment equipment in 1992. (T.15-16).

Ms. Gachich outlined Mobil's efforts to investigate the source of the nitrification problems after the 1993 variance. (T.16-17, Exhibit 1, p.4). These included an optimization study and a study of potential inhibition sources in each of the waste streams. These studies determined that the Benzene Reduction Unit, installed in compliance with RCRA and NESHAPS regulations actually increased the toxicity of the wastewater, which affected nitrification. (Id.) Several other findings were made which led to substantial upgrades to the WWTP. These included replacement of caustic Merox Gasoline Treaters with non-caustic treaters and upgrading the WWTP itself to improve the performance of the clarifiers and aeration units. (T.17-18).

Ms. Gachich further testified that while these latest changes had improved performance significantly, they had not led to consistent compliance. (T.18). She noted

^{1/} References to the Transcript are denoted as "T." and then the page, i.e. "T. 5."

several exceedences from both known and unknown causes. She also explained that consistent nitrification would always be difficult to achieve because the crude oil sources to the refinery varied greatly in their nitrogen content. (T.19-20).

Dr. John Koon testified next for Mobil. Dr. Koon had prepared a study of the WWTP particularly with respect to nitrification (Exhibit 3) and he presented the results of that study in his testimony. (T. 33-42, Exhibit 4). Dr. Koon confirmed Ms. Gachich's description of the WWTP, the nitrification inhibition studies and the upgrades which were performed. He stated that the results of the studies were that degradation products in the biological system inhibited nitrification and that inhibitory influences could not be removed by treating or modifying influent waste streams. (T. 37-38).

Dr. Koon also evaluated the WWTP as a whole and found that it was properly designed and consistent with industry practice and guidelines. (T.39-40, Exhibit 4, p.9). Dr. Koon agreed with Ms. Gachich that the facility met and exceeded BAT Standards for the facility's category and stated that the facility actually discharged 18% of the ammonia nitrogen allowed under BAT. (Exhibit 3, pp.4-8 - 4-11)

Finally, Dr. Koon evaluated alternative treatment strategies. In his report he identified three which Mobil evaluated: powdered activated carbon (PACT); ion exchange; and breakpoint chlorination. (Exhibit 3, pp. 4-11 - 4-17) His report found that the additional cost to implement these strategies would range from \$2.2 million to \$9.2 million in capital costs and \$.8 million to \$1.9 million in additional operating costs. (Id.) He testified that the incremental costs of removing these additional pounds of ammonia nitrogen

would increase 7 to 20 times depending on the option selected. (Exhibit 4, pp. 10-11) These options would have additional environmental costs, including additional sludge disposal, handling of chlorine and required dechlorination. (Exhibit 3, Table 4.7) He concluded his testimony by stating that requiring further modification to achieve consistent compliance with the Board's general effluent standard would be technically infeasible and economically unreasonable. (T. 41).

Mr. James Huff then testified regarding the lack of environmental impact of the proposed relief and the basis for selecting the site specific effluent standards proposed by Mobil. (T. 42-55, Exhibit 6). He testified that he had prepared a report on behalf of Mobil to evaluate the area available for mixing in the receiving stream, the Des Plaines River, and used that information and USEPA guidance to arrive at three options for setting effluent standards. (Exhibit 5).

Mr. Huff took measurements in the Des Plaines River to identify the size of the plume of Mobil's discharge and tracked that plume to the Interstate 55 Bridge, the dividing line between the Secondary Contact waters and General Use waters. (T.45-46). Using ammonia nitrogen values calculated based on the identified plume size, he confirmed that the requested relief would be protective of water quality standards. (Id.)

He then calculated alternate effluent standards based on a USEPA Technical Guidance document favored by the IEPA and arrived at the values proposed for consideration in this petition. (T.47). He also evaluated the current NPDES limits^{2/} and confirmed that

^{2/} The NPDES permit for the facility was included in the record as Exhibit 2.

the maximum and average values derived from the USEPA technical Guidance document were the most stringent of the three alternatives. (T.48). He stated conclusively that the effluent discharged at these values would not come close to, let alone violate the water quality standards either for the Secondary Contact or the General Use sections of the Des Plaines River. (T.48-49).

In the course of evaluating the plume size, Mr. Huff also measured unionized ammonia nitrogen water quality values downstream of the facility. He found that these were in compliance with the Board's Secondary Contact and General Use water quality standards and demonstrated improvement in water quality since the last measurements were taken at these locations. (T.49-51).

THE TESTIMONY SUPPORTS MOBIL'S CLAIM FOR RELIEF

The Board should grant Mobil's site specific relief because Mobil's petition was completely supported by the testimony and exhibits presented at the hearing, agreed to by the Agency and unrebutted by any information presented in the record. Section 27(a) of the Act allows the Board to adopt "regulations specific to individual persons or sites." This section requires the Board to take into account numerous factors including the character of the area involved, the nature of the receiving water body and the technical feasibility and economic reasonableness of reducing the type of pollution involved.

Mobil submits that the testimony and exhibits of its witnesses meets the requirements of Section 27(a) in justifying Mobil's claim for relief. Ms. Gachich and Dr. Koon thoroughly described the refinery and the operation of its waste water treatment

system. They both also described Mobil's extraordinary efforts to identify the source of the problem which precludes Mobil from achieving consistent compliance with the Board's ammonia nitrogen effluent standards. They testified that Mobil has expended nearly \$8 million dollars in the last four years in order to investigate the source of the nitrification problem and to modify the system to optimize its ability to provide nitrification and meet the required standards. Dr. Koon testified that the current waste water treatment system is consistent with industry standards. In fact, he testified that if the refinery had not opted to use stringent water conservation practices, it might not have an ammonia nitrogen compliance problem.

Dr. Koon also described in detail, both in his report and in his testimony, the costs that would be incurred in installing additional treatment to meet the effluent standards. He stated in his testimony (Exhibit 4, p. 10) that the costs of the compliance alternatives were prohibitive, involving substantially higher per pound costs for ammonia nitrogen removal.

Finally, Mr. Huff testified that the releases at the requested effluent standards would not impact compliance with the water quality standards either on the Secondary Contact waterway to which the refinery discharges or on the General Use waterway some 1000 feet below the outfall. The effluent standards are based on USEPA Guidance encouraged for use by the IEPA in evaluating effluent standards and the IEPA agrees that these effluent standards are appropriate.

The relief requested is plainly consistent with Federal law. Federal regulations require facilities to meet effluent standards included in NPDES permits based on BAT standards adopted for individual industries. Ms. Gachich and Dr. Koon both testified that the Mobil facility meets and exceeds that BAT requirements for its industry category. Mobil will continue to meet and exceed these federal requirements and the issuance of this relief will have no impact on Mobil's compliance with those standards.

The Board should grant site specific relief because consistent compliance with the effluent standard has been shown to be technically infeasible and economically unreasonable and the requested effluent standards will not threaten water quality for the receiving stream. Mobil has made strenuous efforts to achieve compliance and, while those efforts have led to significant improvements in the ability of its wastewater treatment system to achieve a high level of nitrification, they have not led to a consistent and reliable level of compliance. In other cases the Board has granted relief where compliance with an effluent standard was shown to have an extremely high cost but no environmental impact since water quality was not affected. (In the Matter of Amerock Corporation, Rockford Facility, R87-33). In this case, Mobil has spent millions of dollars and has upgraded its facility significantly to achieve compliance but has not been able to ensure that it will consistently meet the Board's regulations. Mobil has also demonstrated that the relief will have no significant environmental impact. Mobil has worked closely with the Agency regarding this ammonia nitrogen issues and the Agency agrees that the requested relief should be granted. In light of these facts, site specific relief is appropriate and should be granted.

As a final matter, Dr. Flemal asked at the hearing whether the relief should be expressed in terms of a "daily composite" as had been done when the Board originally adopted Section 304.214, or as a "daily maximum" as proposed here. (T. 56). It is Mobil's and the Agency's intention that the term refer to a limitation which can not be exceeded based on one day's composite sample. The Agency encouraged the use of "daily maximum" in this proposal because it is consistent with the terms of the NPDES permit issued to the facility (Exhibit 2) as well as the Agency's authority to set NPDES conditions. (35 Ill. Adm. Code 309.143). While not used consistently, the terms "maximum" or "daily maximum" have been used to express other site specific relief limits. (See 35 Ill. Adm. Code 304.209 and 304.213). Mobil requests that the term "daily maximum" be used here, since it is consistent with the NPDES permit which would calculate that daily maximum by the use of a 24 hour composite sample.

WHEREFORE, for the reasons stated in this petition, MOBIL OIL CORPORATION respectfully requests this Board to grant Mobil's petition and adopt the following site specific regulation:

Section 304.214

- a) This Section applies to discharges from Mobil Oil Corporation's Refinery, located near Joliet, into the Des Plaines River.
- b) The requirements of Section 304.122(b) shall not apply to Mobil's discharge. Instead Mobil's discharge shall not exceed the following limitations:

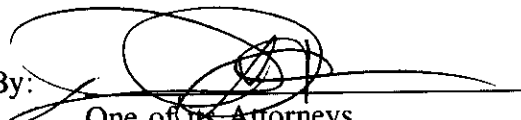
CONSTITUENT	CONCENTRATION (mg/l)
Ammonia Nitrogen	
<u>Monthly Average</u>	<u>9.0</u>
<u>Daily Maximum</u>	<u>23.0</u>

c) Section 304.104(a) shall not apply to this Section. Monthly average and daily composites are as defined in Section 304.104(b).

d) Mobil shall monitor the nitrogen concentration of its oil feedstocks and report on an annual basis such concentrations to the Agency. The report shall be filed with the Agency by January 31 of each year.

Respectfully submitted

MOBIL OIL CORPORATION

By: 
One of its Attorneys

DATED: July 28, 1997

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(312) 558-1000

CERTIFICATE OF SERVICE

I, DAVID L. RIESER, an attorney, hereby certify that on July 28, 1997, I caused copies of the foregoing **PETITIONER'S POST-HEARING BRIEF** to be served upon:

Ms. Dorothy Gunn
Clerk
Pollution Control Board
100 West Randolph, Suite 11-500

Margaret P. Howard, Esq.
Illinois Environmental Protection Agency
2200 Churchill Road
Springfield, Illinois 62794

By: 