

ILLINOIS POLLUTION CONTROL BOARD
December 8 , 1977

TEXACO, INC., a)
Delaware corporation,)
)
Petitioner,)
)
v.) PCB 77-154
)
ENVIRONMENTAL PROTECTION AGENCY,)
)
Respondent.)

Mr. Mark H. Virshbo appeared on behalf of Petitioner.
Ms. Susan H. Shumway, Assistant Attorney General, appeared
on behalf of the Respondent.

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

On June 8, 1977, Petitioner filed a Motion seeking a determination under Rule 302 in Chapter 3: Water Pollution Regulations that a stream known as Deep Run Creek be reclassified as a secondary contact water. In the alternative, Texaco submitted a variance petition requesting relief from certain provisions of Chapter 3: Water Pollution Regulations until May 1, 1978. Specifically, a variance is requested from Rule 203(f) as it applies to ammonia nitrogen and total dissolved solids (TDS) and from the Rule 203(i) maximum temperature requirements.

On June 28, 1977, the Board set this matter for hearing following the Agency's Objection to the variance. The Agency submitted a Recommendation on July 27, 1977, and an Amended Recommendation on October 11, 1977, to deny the Motion for Reclassification and to grant the variance subject to certain conditions. After numerous continuances and pro tanto waivers of the statutory deadline, a hearing was held on October 11, 1977, in which Petitioner withdrew its Motion to Reclassify Deep Run Creek and submitted its variance as amended by their Response of August 29, 1977. During the hearing, the Agency withdrew their Objection to the variance and both parties stipulated to facts in the Petition and the Recommendation as amended; the parties further agreed to a proposed plan as part of the settlement that Petitioner construct a pumping station to divert the wastewater discharge from the Deep Run Creek into the Chicago Sanitary and Ship Canal.

The Board has held that the stipulation and proposed settlement between parties is not appropriate in a variance proceeding. Illini Beef Packers, Inc., PCB 76-117 (September 29, 1977). In this case, the Board will act in response to the Petition as amended to reflect the changes at the hearing and will consider the Agency's action as a recommendation favorable to grant of the variance.

Petitioner owns and operates a petroleum refinery which is located on the eastern bank of the Chicago Sanitary and Ship Canal in Lockport, Illinois. The refinery withdraws an annual average of 17,132 gpm from the Ship Canal and returns its once-through cooling waters (approximately 60%) to the Ship Canal; the refinery's process wastewater which is treated and discharged into the Deep Run Creek, is the subject of this variance petition (Pet. p10, 11).

Deep Run Creek is 3.7 miles in length and averages 100 feet in width; dry weather flow is estimated as less than 972 gpm. In the 1960's, the Petitioner and others enlarged the channel to allow for the increased discharges from nearby operations. In the present form, the Deep Run Creek receives overflows from the Illinois and Michigan Canal and serves as a backwater for the Sanitary Canal. At this time, the Deep Run Creek receives discharges from Petitioner's refinery at a rate of 4250 gpm and from the Lockport Sewage Treatment Plant at 694 gpm (Pet. p3, 4, 9). According to monitoring reports taken from Deep Run Creek downstream from the Texaco discharge (January, 1975, to January, 1977), the 1.5 mg/l ammonia nitrogen standard (as N) was exceeded in one-half of the readings while violation of the 1000 mg/l total dissolved solid standard occurred once during the two-year period. In addition, the monitoring report indicates that the maximum temperature water quality standard was exceeded on four occasions during the two-year reporting period (Rec. p7).

Petitioner alleges that the quality of the wastewater discharge for especially ammonia nitrogen and TDS are aggravated by background levels present in the intake water from the Ship Canal and thereby claims background allowances under Rule 401 (b) for those parameters. The Board does not agree. As stated in pertinent part, the concentration in question must be:

"...entirely from influent contamination, evaporation and/or the incidental traces of materials not utilized or produced in the activity of the source of the waste (Rule 401(b))."

Since Petitioner's refinery produces significant concentrations of ammonia nitrogen and TDS in its processes, the discharge must comply with the standard without an allowance for background for the discharge into Deep Run Creek.

The refinery's discharge rate leaves no zone of passage as required by Rule 201 of Chapter 3. Petitioner claims that the mixing zone and zone of passage requirements do not apply to the treatment facility for any of the parameters. The Board cannot agree. Rule 201 of Chapter 3 establishes mixing zones to provide an adequate zone of passage for aquatic life in the stream. In this matter, Petitioner's discharge of 4250 gpm of the Deep Run Creek exceeds the natural mixing zone boundaries and may thereby block any reasonable zone of passage in violation of Rule 201.

According to the proposed compliance plan, the Petitioner estimates that the construction of the pumping station and related appurtenances to divert the discharge to the Ship Canal will cost \$200,000. Prior to this Petition, the refinery had devoted much time and money in efforts to control air and waterborne emissions. In 1970, Petitioner built a sophisticated wastewater treatment plant at a cost of \$6 million. In 1972, it constructed two 10-acre storm retention ponds equipped with oil skimmers costing \$300,000. In efforts to improve air quality, the refinery has installed a Sulfur Recovery Unit with Tail Gas Treating costing in excess of \$2.6 million and CO boilers and electrostatic precipitators costing \$8.8 million. At the present time, Petitioner contemplates additional projects to improve its air and water performance at a cost of \$1.5 million (Pet. p26). Furthermore, Petitioner has set up a water conservation and recycling plan to reduce the amount of effluent discharged and to meet certain limitations imposed by the refinery's NPDES permit. This latter program is expected to increase concentrations of ammonia nitrogen and TDS in the future (Pet. p14, 15).

At the present time, the quality of the effluent for ammonia nitrogen, TDS, and temperature is as follows:

- 1) The refinery's discharge of ammonia nitrogen to the Deep Run Creek amounted to an annual average of 201.3 kg/day for 1975 which was reduced to 112.3 kg/day during 1976 (Pet. p14); discharge concentrations for ammonia nitrogen are 6.7 mg/l from April to November and 15.3 mg/l from December through March (Pet. Resp. p2, 3).

- 2) The discharge of total dissolved solids ranges from 800 to 1750 mg/l with an average of 1082 mg/l. Reduced flows from the treatment facility will increase concentrations to range between 1000 and 2100 mg/l (Pet. p15) with an average of 1500 mg/l (Pet. Resp. p2).
- 3) The temperature of the refinery's discharge to Deep Run Creek which ranges between 90° and 100°F in the summer months and 65° and 76°F in the remaining months is apt to cause violations of the ambient water temperatures of Deep Run Creek which ranges from 33°F to 85° during the year (Pet. p15, 16).

The Agency points out that the refinery is meeting the Best Practicable Control Technology Available pursuant to the FWPCA P.L.92-500 as required by its NPDES permit for most of the requirements, except that it is encountering problems with the suspended solids and the ammonia nitrogen limits at the same time (Rec. p14, 15)

A biological survey to determine the condition of Deep Run Creek downstream from the discharge was conducted by the Agency on December 10, 1975, and June 15, 1976. The Agency, based on these surveys, concludes that but for Petitioner's present discharge, a diversified biota would exist (Rec. p5-10). Additionally, the waters downstream from the discharge contain sludge-like deposits which cause oil slicks when disturbed.

If Petitioner's proposed diversion were implemented, the Agency claims that the diversion into the Ship Canal would meet the applicable requirements for BOD, suspended solids, total dissolved solids, temperature and mixing zone requirements of Chapter 3 because it would then be subject to the less stringent water quality standards of Rule 205 for secondary contact waters. However, the Agency believes that Petitioner's proposed discharge may violate the State effluent limits of Rule 406, Chapter 3 and Federal mass discharge limits for suspended solids (Rec. p16).

Despite these shortcomings, the refinery is making headway toward controlling their air and water emissions. In light of Petitioner's prior efforts and the proposed plan, the Board finds that to require immediate compliance with the water quality standards in the Deep Run Creek would impose an arbitrary and

unreasonable hardship. The Board will hereby grant a variance to Petitioner from the Rule 201 zone of passage requirement, from Rule 203(f) as it applies to ammonia nitrogen and TDS, and from the Rule 203(i) maximum temperature requirements for the Deep Run Creek until May 1, 1978.

The Board considers the proposed diversion to be a reasonable plan to correct the water quality problems in Deep Run Creek. However, this diversion may be only an interim solution. In the event that the Board reclassifies the Ship Canal as a primary contact water, Petitioner will be required to meet these water quality standards of Rule 203.

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

ORDER

The Petitioner is granted a variance to the Lockport Refinery from Rules 201, Rule 203(f) for ammonia nitrogen and total dissolved solids and from Rule 203(i) for the Deep Run Creek until May 1, 1978, subject to the following conditions:

- a) Petitioner is granted a variance from Rule 203(f) with respect to total dissolved solids, subject to the limitation that Petitioner's discharge shall not contain more than 1500 mg/l of total dissolved solids based on the monthly averages nor more than 2100 mg/l on any given day.
- b) Petitioner is granted a variance from the zone of passage requirements of Rule 201.
- c) Petitioner is granted a variance from Rule 203(i) subject to the condition that Petitioner's discharge temperature shall not exceed 100°F in summer nor 76°F for the remainder of the year.
- d) Petitioner is granted a variance from Rule 203(f) with respect to ammonia nitrogen subject to the condition that Petitioner's discharge shall not exceed 6.7 mg/l (gross) for the months April through November and 15.3 mg/l (gross) for the months December through March nor 30 mg/l (gross) on any given day nor 8.7 mg/l as a twelve-month running average of monthly averages.

- e) Petitioner shall be required to meet the mass discharge limits in Petitioner's NPDES permit and to implement best practicable control technology to achieve compliance with the water quality standards of Chapter 3.
- f) Not later than March 1, 1978, Petitioner shall prepare a report for presentation to the Agency detailing the effectiveness of Petitioner's water pollution control program with particular reference to the ammonia nitrogen and total suspended solids components of Petitioner's discharge. Should this report determine that the existing hardware of Petitioner's water pollution control system be inadequate to meet the applicable limits for total suspended solids and ammonia nitrogen, then that report shall detail the steps Petitioner will take and the equipment and operating techniques will utilize in order to assure compliance with those standards.
- g) Petitioner shall apply for all necessary modification of its NPDES permit.

Petitioner shall within forty-five (45) days after the date of the Board Order, herein, execute and forward to the Illinois Environmental Protection Agency, Variance Section, Manager, Division of Water Pollution Control, 2200 Churchill Road, Springfield, Illinois, 62706, and the Illinois Pollution Control Board, a Certificate of Acceptance and Agreement to be bound by all of the terms and conditions of the variance. The forty-five day period herein shall not run during judicial review of this variance pursuant to Section 41 of the Environmental Protection Act. The form of said certification shall be as follows:

CERTIFICATION

I, (We), _____ having read and fully understanding the Order of the Illinois Pollution Control Board in PCB 77-154, hereby accept said Order and agree to be bound by all of the terms and conditions thereof.

SIGNED

TITLE

DATE

IT IS SO ORDERED.

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board, hereby certify the above Opinion and Order were adopted on the 8th day of December, 1977 by a vote of 4-0.

Christan L. Moffett
Christan L. Moffett, Clerk
Illinois Pollution Control Board