

ILLINOIS POLLUTION CONTROL BOARD
September 13, 1989

THE VILLAGE OF SAUGET,)
)
 Petitioner,)
)
 v.) PCB 89-86
) (Variance)
 ILLINOIS ENVIRONMENTAL)
 PROTECTION AGENCY,)
)
 Respondent.)

LEE R. CUNNINGHAM AND RICHARD J. KISSEL, OF GARDNER, CARTON & DOUGLAS, APPEARED ON BEHALF OF PETITIONER;

RICHARD C. WARRINGTON, JR., APPEARED ON BEHALF OF RESPONDENT.

OPINION AND ORDER OF THE BOARD (by R. C. Flemal):

This matter comes before the Board upon a May 16, 1989 petition for variance extension filed by the Village of Sauget ("Sauget") requesting an extension of the variance granted until September 8, 1989 in PCB 88-18. Sauget requests variance from 35 Ill. Adm. Code 304.106, as it relates to the color of the effluent discharged from Sauget's American Bottoms Regional Treatment Facility ("AB Plant"). Section 304.106 reads:

In addition to the other requirements of this Part, no effluent shall contain settleable solids, floating debris, visible oil, grease, scum or sludge solids. Color, odor and turbidity must be reduced to below obvious levels.

On August 9, 1989, the Agency filed its Recommendation ("Rec") instant, which motion was granted by the Hearing Officer at hearing. Hearing was held on August 10, 1989. Members of the public were present and participated in the hearing. Sauget filed its brief on August 14, 1989. The Agency waived filing of a brief.

Background

The description and operation of the AB Plant was stated in detail in the PCB 88-18 Opinion and it is not necessary to reiterate that full description here. Suffice it to state that the AB Plant is a regional wastewater treatment plant located at #1 American Bottoms Road in Sauget, St. Clair County, Illinois. The AB Plant was designed to provide primary and secondary treatment to the untreated flows from the City of East St. Louis,

the Village of Cahokia, and the Commonfields of Cahokia Public Water District, and secondary treatment to flows from Sauget's Physical/Chemical ("P/C") Plant. The communities which discharge into this new regional system contain several major industrial facilities that are now being served by the AB Plant. A major such industrial discharge is Monsanto Company's Krummrich Plant located in Sauget. (PCB 88-18 at 6)

In addition to other treatment processes, the AB Plant employs a powdered activated carbon treatment with wet air regeneration ("PACT/WAR") system. After the PACT/WAR system became operational in 1986, Sauget was informed of certain deficiencies in the system whereby it would not operate as designed. During the time that Sauget was operating the PACT/WAR system, specifically on December 2, 1987, a fire and explosion occurred in one of the six heat exchangers, which rendered one of the two WAR units inoperable. (PCB 88-18 at 8-9).

On September 8, 1988, the Board in PCB 88-18 found that Sauget would suffer an arbitrary or unreasonable hardship if denied variance solely for the color parameter. The Board found that such hardship was due to the December 2, 1987 accident and the resultant inability to provide PACT/WAR treatment. In its Opinion, the Board noted a lack of information on the origin of the color of the AB Plant's effluent (which is yellow to greenish-yellow), as well as whether or not the addition of powdered activated carbon ("PAC") and in what amount would accomplish compliance with the color requirement. The Board therefore granted Sauget variance from Section 304.106 as it relates to color, with the following conditions quoted here in part:

[Sauget shall]:

- a) Investigate and determine the origin of the color that appears in the ABRTF [AB Plant] effluent. Sauget shall investigate methods by which it can achieve compliance with the color standard of Section 304.106. Pretreatment requirements and controls shall be included in Sauget's investigation;
- b) Sauget shall select a method by which it can achieve compliance with the color standard of Section 304.106; . . .

Origin of the Color

George R. Schillinger, General Manager of the AB and P/C Plants, testified that through visual comparison, he determined that the P/C Plant effluent was more colored than any of the other wastestreams influent to the AB Plant. Carrying his

investigation further, he discovered through visual and spectrophotometric analysis that Monsanto Company's wastestream is the most highly colored of the wastestreams which flow to the P/C Plant. Mr. Schillinger then stated that Sauget requested Monsanto to identify the particular chemicals causing color in its wastestream (R. at 39-41).

Max W. McCombs, General Superintendent of Government and Environmental Affairs at Monsanto Company's Krummrich Plant, described the analyses conducted at Monsanto's facility to determine which compounds might contribute to the color of the AB effluent. He stated that the results of the analyses indicate that three compounds exhibited color at levels at which they are present in the AB Plant effluent. These are: orthonitroaniline ("ONA"), paranitroaniline ("PNA"), and 4-nitrodiphenylamine ("4-NDPA"). Although he believes that these are the major color bodies, he stated that the complexity of the wastewater systems at the Monsanto facility make it impossible to ensure identification of every compound which may contribute to the color of the effluent, especially in light of variable pH, salt and metal content (R. at 69-71).

Compliance Plan

Sauget has stated in its brief and testimony that it has investigated methods by which it can achieve compliance with the color standard. These are the present addition of PAC during secondary treatment processes, Monsanto's pretreatment program, and the installation of a diffuser.

Pursuant to an interim consent decree with the United States and the State of Illinois in a federal enforcement action¹, Sauget is presently adding PAC to its secondary treatment processes at a dosage rate of 29 mg/l and, if necessary, will increase the dosage rate to 35 mg/l in mid-September. Sauget claims that its calculations show there has been an increase of color removal efficiencies from 57% to 85% since the addition of PAC (R. at 43-44, Pet. Exh. 6-A). However, Sauget does not view PAC addition alone as a viable compliance option. As Sauget states:

[S]ince PAC addition may only be temporary, and may never be sufficient to achieve compliance due to possible adverse impacts on plant operations at higher dosage levels and exorbitant costs, Sauget does not

¹ U.S.A. and Illinois v. Sauget, Civil No. 88-5131 (S.D. Ill. Interim Consent Or. Mar. 15, 1989). The consent decree has been entered into the record of the instant matter as Attachment E to both the Petition and Petitioner's Exhibit 1.

view PAC addition as a viable final compliance option. However, PAC addition is continuing at a current cost of over \$600,000 per year and will continue at that cost or more as required by the interim consent order.

(Pet. Brief at 5)

Mr. McCombs further testified that Monsanto's pretreatment program, together with treatment provided at the AB Plant, will significantly reduce the discharge of the three principal color contributors, which thereby should reduce the color of the effluent. He explained that the United States Environmental Protection Agency ("USEPA") has established pretreatment limits for several industrial categories. Monsanto falls under the organic chemicals, plastics and synthetic fibers ("OCPSF") category, and is required to meet stringent discharge limits for certain chemicals by November 5, 1990. He stated that Monsanto is currently in the midst of designing process changes and pretreatment equipment to meet the OCPSF requirements.

Among the pretreatment programs Monsanto is intending to introduce is a system for recycling of wastewater and filtering of the wastewater through carbon columns (R. at 79). This program should make a significant reduction in the color of the Monsanto discharge. Specifically, Monsanto estimates current ONA discharges to be reduced 80 to 90% from present levels, current PNA discharges to be reduced 45 to 60%, and current 4-NDPA levels to be reduced 75% (R. at 74). Sauget believes that after pretreatment, the effluent color is anticipated to be quite faint (Pet. Brief at 8). Sauget presented samples in vials and photographs of samples in an attempt to indicate the anticipated color of the effluent after pretreatment and after PAC addition. It is questionable whether these samples accurately depict that color (see, Pet. Exhs. 6 and 9; Hearing Officer's comments R. at 58). It was also not stated whether Monsanto's pretreatment alone would be sufficient for compliance such that some additional treatment would no longer be necessary.

In addition to PAC treatment and pretreatment activities, Sauget is proceeding with plans to install a multiport diffuser. The diffuser is intended to serve multiple purposes, one of which to reduce the impact of color by inducing rapid mixing of the effluent into the receiving water body.

The diffuser in question consists of a pipe laid on the bottom of the river perpendicular to the river flow. The pipe has multiple ports or effluent release points along its length which each allow a fraction of the effluent to mix with river water in a segregated zone some distance downstream. The individual jets established along the diffuser length eventually merge and become fully established as one plume about one diffuser length downstream from the initial discharge point.

Water from the receiving stream is pulled into the plume area, and the result of this induced mixing is far greater dispersion of the effluents in a much smaller area (R. at 82-83).

The diffuser selected for the AB Plant effluent would be 100 feet long placed about 120 feet into the river from the existing outfall. It will have 20 ports and two variable speed pumps. Based upon USEPA modeling studies, Sauget expects that at the point of full establishment of the effluent plume, the ratio of river water to effluent is expected to be 78 to 1. With dispersion of each individual constituent or parameter contained within the effluent expected to be identical, dispersion of color is also expected to be 78 to 1 (R. at 88-90; Pet. Exh. 14).

Michael R. Corn, P.E., who testified on behalf of Sauget, explained that a series of laboratory tests were run using mixtures of river water and AB Plant effluent. He stated that at a mixture of 25 parts river water to one part effluent, laboratory analysts could no longer visually distinguish between the mixture and a sample of 100% river water. He stated that at the point where the plume reaches the river surface, the effluent is projected to consist of 127 parts river water to one part effluent, and its color will be the same as the rest of the river (R. at 92). Mr. Schillinger stated that Sauget will begin the process of obtaining permits for construction and operation of the diffuser, which it expects to be operational by late 1990 (R. at 63).

Environmental Impact

As the Agency states in its Recommendation, the only environmental impact documented in the record at present is the observation of obvious color in the river for a distance of five feet downstream of the AB Plant outfall (Rec. at par. 12). At distances greater than approximately five feet mixing is apparently sufficient such that the color of the effluent is no longer discernible.

In spite of the fact that the only request for variance made in this proceeding is with respect to the color standard, a substantial portion of the argument in this matter has been directed toward the issue of possible toxicity of the AB Plant effluent. Inasmuch as there is no request for variance from any toxicity standards, these arguments are irrelevant and therefore will not be summarized here.

Hardship

Sauget believes that immediate compliance with Section 304.106 as it pertains to color would impose an arbitrary or unreasonable hardship upon Sauget since "there is no presently available means of attaining compliance short of refusing to

accept the influents from the industries which contribute to the color of the AB Plant's effluent" (Petition at 9). Sauget asserts that the arbitrary or unreasonable hardship which the Board found in R88-18 is a continuing one. Sauget further asserts that although it has made satisfactory progress toward achieving compliance since the granting of the previous variance, it is unable to achieve compliance by September 8, 1989 (Pet. Brief at 11).

Board Determination

Based on the facts in the record, the Board finds that immediate compliance with 35 Ill. Adm. Code 304.106 as it pertains to color would impose an arbitrary or unreasonable hardship upon Sauget. The Board also finds that Sauget has demonstrated that satisfactory progress has been made toward achieving compliance during the term of the prior variance; Sauget has committed to methods of compliance and identified the origin of the color pursuant to the conditions of the prior variance. The Board therefore grants Sauget extension of variance.

In making its determination of the term of the variance, the Board notes that there is conflicting information in the record regarding the date which Sauget expects to be in compliance. The record contains a number of dates, such as November 5, 1990, the date that the OCPSF regulations are to be met, and January 31, 1991, the date that stable operation of Monsanto's pretreatment processes and equipment is to be attained. Sauget itself requests at least until September 13, 1990, one year from the date of grant of the variance. Conversely, the Agency recommends a grant for two years, until September 1991, or until the federal enforcement action is ruled upon (Rec. at par. 23). The Agency estimates that the federal action will be ready for trial in April 1990 (Rec. at par. 5), but ventures no opinion as to when final action can be anticipated. The Agency further states that variance can be granted consistent with federal law, since there are no federal laws specifically limiting color in effluents (Rec. at par. 21).

The Board believes that among this array of dates, two stand as particularly critical. These are the January 31, 1991 date and the conclusion of the federal action. Accordingly, the variance will be granted to terminate on the earlier of these two dates. In this manner, Monsanto should be able to fully implement its pretreatment program, which appears to offer the most viable compliance prospect for Sauget, while under the protection of the variance. However, should the federal action reach conclusion prior to January 1991, the Board believes that the variance should then terminate so that any prospect of conflict with the broader issues handled therein be removed.

The Board emphasizes that these findings relate solely to the matter of color, the subject of the instant variance request. They do not extend to other matters, including the matter of possible toxicity associated with the AB Plant's effluent, or other issues currently before the federal district court.

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

ORDER

The Board hereby grants the Village of Sauget extension of variance from 35 Ill. Adm. Code 304.106, as it relates to color. Variance shall begin on September 9, 1989 and extend until January 31, 1991, or until final action has been taken in United States of America and the State of Illinois v. The Village of Sauget, Illinois, Civil No. 88-5131 (S.D. Ill. filed May 13, 1988); whichever is sooner.

Within 45 days of the date of this Order, Petitioner shall execute and forward to Richard C. Warrington, Jr., Enforcement Programs, Illinois Environmental Protection Agency, 2200 Churchill Road, Springfield, Illinois 62794-9276, a Certification of Acceptance and Agreement to be bound to all terms and conditions of this variance. The 45-day period shall be held in abeyance during any period that this matter is being appealed. Failure to execute and forward the Certificate within 45 days renders this variance void and of no force and effect as a shield against enforcement of rules from which variance was granted. The form of said Certification shall be as follows:

CERTIFICATION

I (We), _____, hereby accept and agree to be bound by all terms and conditions of the Order of the Pollution Control Board in PCB 89-86, September 13, 1989.

Petitioner

Authorized Agent

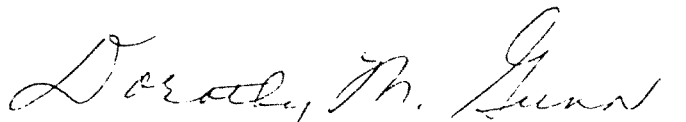
Title

Date

Section 41 of the Environmental Protection Act, Ill. Rev. Stat. 1987 ch. 111^{1/2} par. 1041, provides for appeal of final Orders of the Board within 35 days. The Rules of the Supreme Court of Illinois establish filing requirements.

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 13th day of September, 1989, by a vote of 7-0.



Dorothy M. Gunn, Clerk
Illinois Pollution Control Board