

ILLINOIS POLLUTION CONTROL BOARD
January 23, 1997

DEKALB SANITARY DISTRICT,)
)
Petitioner,)
)
v.) PCB 97-78
) (Variance - NPDES)
)
ILLINOIS ENVIRONMENTAL)
PROTECTION AGENCY,)
)
Respondent.)

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

On October 30 1996 the DeKalb Sanitary District (District) filed a request for variance from the Board's regulations at 35 Ill. Adm. Code 304.141 and 304.120(c), as they apply to the District's effluent discharges of carbonaceous biochemical oxygen demand (CBOD₅) and total suspended solids (TSS).¹ The District requests the variance for a period of four months to complete construction of its tertiary facility.

On December 2, 1996 the Illinois Environmental Protection Agency (Agency) filed its recommendation, recommending that the variance be granted with certain conditions.² The District did not file a response to the Agency's recommendation. The District waived hearing in its petition, and no hearing was held.

The Board's responsibility in this matter arises from the Environmental Protection Act (Act) (415 ILCS 5/1 *et seq.* (1994).) The Board is charged in the Act with the responsibility of granting variance from Board regulations whenever it is found that compliance with the regulations would impose an arbitrary or unreasonable hardship upon the petitioner. (415 ILCS 5/35(a).) The Agency is required to appear in hearings on variance petitions. (415 ILCS 5/4(f).) The Agency is also charged, among other matters, with the responsibility of investigating each variance petition and making a recommendation to the Board as to the disposition of the petition. (415 ILCS 5/37(a).)

BACKGROUND

The District states that it has received two provisional variances to perform rehabilitation and corrosion control on the sand filter units, and past experience has indicated that it can achieve CBOD₅ monthly averages of 15 mg/1 with a daily maximum of 30 mg/1

¹ The petition filed by the District will be referenced to as "Pet. at " and petitioners exhibits will be referenced to as "Exh. at ."

² The Agency's recommendation will be referred to as "Rec. at ."

and TSS monthly averages of 30 mg/1 with a daily maximum of 50 mg/1.³ (Pet. at 1.) The District is requesting the variance so that it may exceed its National Pollution Discharge Elimination System (NPDES) permit discharge limits for TSS and CBOD₅ for its main wastewater treatment plant for a period of four months during tertiary facility rehabilitation scheduled concurrent with ongoing plant expansion. (Pet. at 1.) The Agency states that the District is "requesting a variance from the Illinois PCB's regulations requiring discharges of five-day carbonaceous biochemical oxygen demand (CBOD₅) and total suspended solids (TSS) not to exceed 10 and 12 milligrams per liter monthly average, respectively, as found at 35 Ill. Adm. Code 304.120(c)." (Rec. at 1.) The Agency also states that the District is seeking relief from 35 Ill. Adm. Code 304.141(a) NPDES Effluent Standards. (Rec. at 1.) The Agency further asserts that the requested variance would specifically provide relief from the requirements of 35 Ill. Adm. Code 304.120(c) and 304.141(a). (Rec. at 1.)

The District's main plant serves a Facilities Planning Area which includes the City of DeKalb, the Town of Cortland, and adjacent commercial and industrial areas. (Pet. at 2.) The District claims that the limits of the Facilities Planning Area are as indicated in the Facility Plan on file with the Agency (EPA No. C171334). (Pet. at 2.) The District asserts that the population served is approximately 40,000 persons. The District employs 15 persons at its facility. (Pet. at 2.)

The District's main wastewater treatment plant currently discharges approximately 5.99 MGD (average daily flow) of treated plant effluent. (Pet. at 2.) The District's plant discharges directly to the South Branch of the Kishwaukee River at designated 001 STP outfall. (Pet. at 2.) Currently, there is a major expansion project underway which will increase plant capacity due to need caused by substantial development in this area. (Pet. at 2.) The District states that the rehabilitation of the tertiary filter building includes removal of all eight cell appurtenances, structural repairs, replacement of cell filtration elements, miscellaneous valve repairs and replacements, a new control system, preservation, and media replacement, and will cost \$386,192. (Pet. at 2.) The Agency asserts that the District is presently involved in a 8.85 million dollar improvement and expansion project for its facility. (Rec. at 2.) The Agency claims that only a portion of this project involves a comprehensive overhaul of the eight tertiary filter cells at the facility to repair damage caused by wear and corrosion. (Rec. at 2.) The Agency states that "[t]his work will include removal of the existing filter media, hold down beams, perimeter anchors, the entire underdrain system, the backwash trough V-notch weirs, the splash plates and the underdrain support channels." (Rec. at 2.)

The District states that the tertiary facility at issue is composed of eight individual sand filtration cells housed in one building with supporting pumps, compressors, and electrical control components. (Pet. at 2.) The District asserts that each of the filtration cells is fabricated from steel, with I-beam underdrain support rails and that ten inches of sand is located above the stainless steel screens that are supported by the above underdrain rail system.

³ The District's prior provisional variances were granted in PCB 93-127, July, 1, 1993 and PCB 96-104, November 16, 1995.

(Pet. at 2.) The District states that the wastewater is filtered through the above described filtration system removing CBOD₅ and TSS prior to disinfection and discharge to the receiving stream. (Pet. at 2.) The District claims that frequently the underdrain support system fails and treatment unit corrosion, among other issues associated with the operation of the facility, must be corrected to assure future process reliability and compliance with the NPDES limits as defined in the District's NPDES permit. (Pet. at 2.) The District states that its eight cell sand filter process was designed to meet the 10 CBOD₅/12 TSS daily limits with seven cells in operation and one backwash condition. (Pet. at 2.) However, the District maintains as the cells fail and no longer function, the system begins to have fewer units "on-line" to meet requirements and the viable units become overloaded and thus fail more frequently. (Pet. at 2.)

The District claims that excessive man hours, downtime and expenses have been the result of structural problems and that the advanced stage of deterioration and high maintenance requirements dictated that a major renovation be prudent to enable it to continue to meet discharge limits well into 21st century. (Pet. at 2.) The District states that by undertaking the renovation concurrently with the ongoing plant expansion it will ensure greater reliability of its tertiary treatment component for the next twenty plus years. (Pet. at 2.) The District asserts that the replacement components will remain basically the same as those existing, however, the equipment currently is in an advanced state of deterioration and will be replaced with state-of-the-art components. (Pet. at 3.) The District claims that the structural rehabilitation will provide the cell components with an extended life-expectancy through better design of supporting structures and replacement of existing decayed infrastructure. (Pet. at 3.)

The Agency states that it agrees with the facts described in the District's petition and believes, after viewing all the facts, that the only means to perform the necessary refurbishing work described above is to remove the tertiary filters from service. (Rec. at 3.) Furthermore, the Agency agrees with the District's statement that the only means of compliance is to employ an alternate tertiary treatment system during the four month period, and that no such alternative system is presently available to the District. (Rec. at 3-4.)

REGULATORY FRAMEWORK

The District is requesting a variance from the Board's water regulations set forth at 35 Ill. Adm. Code 304.141, NPDES Effluent Standards, and 35 Ill. Adm. Code 304.120, Deoxygenating Wastes. The pertinent language of those sections are as follows:

Section 304.141 NPDES Effluent Standards

- a) No person to whom an NPDES Permit has been issued may discharge any contaminant in his effluent in excess of the standards and limitations for that contaminant which are set forth in his permit.

Section 304.120 Deoxygenating Wastes

c) No effluent whose dilution ratio is less than five to one shall exceed 10 mg/1 of BOD₅ or 12 mg/1 of suspended solids, except that sources employing third-stage treatment lagoons shall be exempt from this subsection provided all of the following conditions are met:

1) The waste source qualifies under one of the following categories:

A) Any wastewater treatment works with an untreated waste load less than 2500 population equivalents which is sufficiently isolated that combining with other sources to aggregate 2500 population equivalents or more is not practicable.

B) Any wastewater treatment works in existence and employing third stage treatment lagoons on January 1, 1986 whose untreated waste load is 5000 population equivalents or less and sufficiently isolated that combining to aggregate 5000 population equivalents or more is not practicable.

C) Any wastewater treatment works with an untreated waste load of 5000 population equivalents or less, which has reached the end of its useful life by January 1, 1987, and is sufficiently isolated that combining to aggregate 5000 population equivalents or more is not practicable.

D) Any wastewater treatment works with an untreated waste load of 5000 population equivalents or less which has reached the end of its useful life and which has received an adjusted standard determination from the Board that it qualifies for a lagoon exemption. Such a Board determination will only be made in an adjusted standard proceeding, held in accordance with Section 28.1 of the Environmental Protection Act (Ill. Rev. Stat. 1987, ch. 111 ½, par. 1028.1) and applicable procedures set forth by 35 Ill. Adm. Code 106.

i) In an adjusted standard proceeding the Board may determine that the petitioning wastewater treatment source qualifies for a lagoon exemption if the wastewater treatment works proves that it is so situated that a land treatment system is not a suitable treatment alternative. Factors relevant to a suitability finding may include the following: cost; influent character; geographic characteristics; climate; soil conditions; hydrologic conditions; and the availability of irrigable land.

- ii) For the purposes of this subsection (D), a land treatment system is a wastewater treatment system which does not directly discharge treated effluent to waters of the State but instead uses the treated effluent to irrigate terrestrial vegetation.

In determining whether any variance is to be granted, the Act requires the Board to determine whether a petitioner has presented adequate proof that immediate compliance with the Board regulations at issue would impose an arbitrary or unreasonable hardship. (415 ILCS 5/35(a)(1994).) Further, the burden is on the petitioner to show that its claimed hardship outweighs the public interest in attaining compliance with regulations designed to protect the public. (Willowbrook Motel v. Pollution Control Board, 135 Ill. App.3d 343, 481 N.E.2d 1032 (1985).) Only with such a showing can the claimed hardship rise to the level of arbitrary or unreasonable hardship.

A further feature of a variance is that it is, by its nature, a temporary reprieve from compliance with the Board's regulations, and compliance is to be sought regardless of the hardship which the task of eventual compliance presents an individual polluter. (Monsanto Co. v. Pollution Control Board, 67 Ill.2d 276, 367 N.E.2d 684 (1977).) Accordingly, except in certain special circumstances, a variance petitioner is required, as a condition to grant of variance, to commit to a plan which is reasonably calculated to achieve compliance within the terms of the variance.

COMPLIANCE PLAN

The District states that the project start date was Fall 1996 and that the rehabilitation project is estimated to take four months. (Pet. at 3.) The District asserts that "[c]ompliance has been maintained during the past several years, however, corrective repairs at this time to the tertiary facility will assure continued reliability of the tertiary facility in the future." (Pet. at 3.) DeKalb claims that the past efforts to achieve compliance have included two provisional variances to allow for filter renewal which included sandblasting and painting as well as some structural improvements. (Pet. at 3.) The District maintains that the current project should provide it with a "new" filter process that should achieve and maintain compliance. (Pet. at 2-3.)

The District states that other compliance alternatives such as construction of alternative sand filtration facilities would be cost prohibitive and there is no suitable space near the existing facility. (Pet. at 3.) The District also considered storage of the wastewater flow but because the total daily wastewater flow, which is about six million gallons per day, goes through the sand filter, storage for four months (the projected time necessary for rehabilitation) is not feasible.

The District scheduled this work and requests variance relief for the winter months because the plant flows are lower, more predictable during those months, and Northern Illinois University is on vacation for about four weeks during this time. (Pet. at 3.) The District claims that it will utilize the remaining treatment components to maximum efficiency by re-

calculating and using additional primary clarifiers to enhance suspended solids and CBOD₅ removal. (Pet. at 4.) The District states that the analysis of the wastewater prior to the sand filtration treatment facility has indicated the following mg/1 concentrations:

	<u>CBOD₅</u>	<u>TSS</u>
Monthly Average	10 mg/1	25 mg/1
Daily Maximum	20 mg/1	42 mg/1

The District's belief is that it can achieve the following numerical interim discharge limits:

	<u>CBOD₅</u>	<u>TSS</u>
Monthly Average	15 mg/1	30 mg/1
Daily Maximum	30 mg/1	50 mg/1

The District states that "[t]he requested interim discharge limits suggested are a bit higher than those seen prior to the sand filtration process, thus allowing a little room for wet weather flows, if any are experienced over the duration of the variance." (Pet. at 4.)

The Agency states that the District's project will ensure compliance in the future and continued protection of the environment. (Rec. at 3.) The Agency also maintains that the District's monthly averages for those contaminants have been well below the permit limits for the past twelve months. (Rec. at 4.)

ENVIRONMENTAL IMPACT

The District states that there will be no adverse impact upon the receiving stream during the tertiary facility rehabilitation. (Pet. at 3.) The District asserts that the months of scheduled rehabilitation (November, December, January, and February) are normally below average in organic discharge from the treatment facility and rarely experience the high flows associated with Spring and Summer months. (Pet. at 3.) Finally, the recreational activity in the receiving stream is non-existent during the aforementioned months. (Pet. at 3.)

The Agency states that after review of the facts in this matter, it agrees with the District's statement that no adverse environmental impact is anticipated on the receiving stream during the rehabilitation project. (Rec. 4-5.)

HARDSHIP

The District asserts that compliance with 35 Ill. Adm. Code 304.141 and 304.120 would impose an arbitrary or unreasonable hardship upon it for the following reasons:

- (a) There is no question that the sand filters are in dire need of rehabilitation and renewal. Unfortunately, filter requires temporarily taking this part of the wastewater treatment process off-line and out of service; and
- (b) Alternative methods to assure compliance with NPDES CBOD₅/TSS limits are either cost prohibitive or physically impossible.

The Agency agrees that denial of this variance would pose an arbitrary and unreasonable hardship on the District during the tertiary filter rehabilitation project, as described in Section 35(a) of the Act. (Rec. at 2-3.) Additionally, the Agency asserts that the granting of this variance request, with the conditions described below, should allow the District to continue to operate its facility during the tertiary filter rehabilitation project without the possibility of violating the Board's regulations and consequently facing enforcement action.

CONSISTENCY WITH FEDERAL LAW

The District provides no statement as to whether the grant of the requested variance would be consistent with federal law. The Agency states that there are no applicable federal laws or regulations which would preclude the granting of this variance.

CONCLUSION

Based on the record, the Board finds that the District has established that immediate compliance with 35 Ill. Adm. Code 304.120(c) and 304.141(a) constitutes an arbitrary or unreasonable hardship. The Board also finds that the temporary relief provided by this variance does not pose a risk to environmental health. The District has demonstrated the impact to the environment will be minimal during the variance period. The District's requested interim effluent limitations are only slightly higher than the applicable limitations to allow for wet weather flows if any are experienced. Additionally, we agree that the granting of variance will be consistent with federal law.

The District requested that the variance term start upon the initiation of the bypassing of the tertiary filter system and continue for four months. The Board cannot determine from the record if the tertiary filter has been bypassed or when it will be bypassed. Since the District argues that the environmental impact will be minimal during the winter months and that rehabilitation is scheduled for November, December, January, and February the Board will start the variance term as of the date of this order and end the variance term on March 31, 1997 to ensure the environmental impact is minimal.

This opinion constitutes the Board findings of fact and conclusions of law in this matter.

ORDER

The Board hereby grants the DeKalb Sanitary District a variance from 35 Ill. Adm. Code 304.141(a) and 304.120(c) so that it may complete its rehabilitation of its facility. The variance is subject to the following conditions:

- 1. The variance shall commence upon the date of this order if initiation of bypassing of the tertiary filter system has begun and continue until March 31, 1997;
- 2. During the period of the variance, the effluent discharged shall meet the following limits, expressed in milligrams per liter:

	<u>CBOD₅</u>	<u>TSS</u>
Monthly Average	15	30
Daily Maximum	30	50;

- 3. All other terms and conditions of DeKalb Sanitary District’s NPDES permit will remain in effect during the variance period;
- 4. The DeKalb Sanitary District shall notify Eugene Forster, Illinois Environmental Protection Agency, Field Operations Section, Rockford Regional Office, at (815) 987-7755 when work on the tertiary filters begins, or began, and again when the filters are returned to service. Written confirmation of each notice shall be sent within five (5) working days to the following address:

Illinois Environmental Protection Agency
 Bureau of Water
 Compliance Assurance Section
 2200 Churchill Road
 Post Office Box 19276
 Springfield, Illinois 62794-9276
 Attn: Mark T. Books

- 5. During this variance, the DeKalb Sanitary District shall operate its wastewater treatment facility so as to produce the best effluent practicable. Additionally, the DeKalb Sanitary District shall perform the necessary work on the tertiary filters as expeditiously as possible to minimize the time period the filter is out of service;

IT IS SO ORDERED.

Board Member K. M. Hennessey abstained.

If the petitioner chooses to accept this variance subject to the above order, within forty-five days of the grant of the variance, the petitioner must execute and forward the attached certificate of acceptance and agreement to:

Charles W. Gunnarson, Assistant Counsel
Illinois Environmental Protection Agency
Division of Legal Counsel
2200 Churchill Road
Post Office Box 19276
Springfield, Illinois 62794-9276

Once executed and received, that certificate of acceptance and agreement shall bind the petitioner to all terms and conditions of the granted variance. The 45-day period shall be held in abeyance during any period that this matter is appealed. Failure to execute and forward the certificate within 45-days renders this variance void. The form of certificate is as follows:

CERTIFICATION

I (we), _____, hereby accept and agree to be bound by all terms and conditions of the opinion and order of the Pollution Control Board in PCB 97-78, January 23, 1997.

Petitioner _____

Authorized Agent _____

Title _____

Date _____

Section 41 of the Environmental Protection Act (415 ILCS 5/41) provides for the appeal of final Board orders within 35 days of the date of service of this order. (See also 35 Ill. Adm. Code 101.246, Motion for Reconsideration.)

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above opinion and order was adopted on the _____ day of _____, 1997 by a vote of _____.

Dorothy M. Gunn, Clerk
Illinois Pollution Control Board

