

ILLINOIS POLLUTION CONTROL BOARD
May 9, 1986

IN THE MATTER OF:)
)
JOINT PETITION OF THE CITY) PCB 85-212
OF MORTON AND THE ILLINOIS)
ENVIRONMENTAL PROTECTION)
AGENCY FOR EXCEPTION TO THE)
COMBINED SEWER OVERFLOW)
REGULATIONS)

MR. THOMAS E. DAVIES APPEARED ON BEHALF OF THE CITY OF MORTON;

MR. E. WILLIAM HUTTON APPEARED ON BEHALF OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY.

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

This matter comes before the Board upon a December 26, 1985 joint petition filed by the City of Morton ("Morton") and the Illinois Environmental Protection Agency ("Agency"). The petition seeks exception to 35 Ill. Adm. Code 306.305(b) (treatment of overflows and bypasses) as it applies to Morton's existing combined sewer overflow ("CSO") facilities and one of its sewage treatment plants.

Hearing was held March 31, 1986, at the Morton Village Hall. At hearing the Joint Petitioners amended their request to include exception from 35 Ill. Adm. Code 306.305(a) as this section relates to treatment requirements of the first flush of storm flows (R at 51; Ex. N).

CSO REGULATIONS

The CSO regulations are contained in 35 Ill. Adm. Code, Subtitle C, Chapter I, Part 306. They were amended in R81-17, 51 PCB 383, March 24, 1983. Section 306.305 provides as follows:

All combined sewer overflows and treatment plant bypasses shall be given sufficient treatment to prevent pollution, or the violation of applicable water standards unless an exception has been granted by the Board pursuant to Subpart D.

Sufficient treatment shall consist of the following:

- a) All dry weather flows, and the first flush of storm flows as determined by the Agency, shall meet the applicable effluent standards; and
- b) Additional flows, as determined by the Agency but not less than ten times to (sic) average dry weather flow for the design year, shall

receive a minimum of primary treatment and disinfection with adequate retention time; and

- c) Flows in excess of those described in subsection (b) shall be treated, in whole or in part, to the extent necessary to prevent accumulations of sludge deposits, floating debris and solids in accordance with 35 Ill. Adm. Code 302.203, and to prevent depression of oxygen levels; or
- d) Compliance with a treatment program authorized by the Board in an exception granted pursuant to Subpart D.

Subpart D allows the discharger to file a petition for an exception either singly, or jointly with the Agency as Morton has done. A joint petition may seek an exception based on minimal discharge impact as provided in Section 306.361(a):

An exception justification based upon minimal discharge impact shall include, as a minimum, an evaluation of receiving stream ratios, known stream uses, accessibility to stream and side land use activities (residential, commercial, agricultural, industrial, recreational), frequency and extent of overflow events, inspections of unnatural bottom deposits, odors, unnatural floating material or color, stream morphology and results of limited stream chemical analyses.

Pursuant to 306.361(a) Morton and the Agency assert that overflows from its combined storm and sanitary sewer system have minimal impact on the water quality of, and do not restrict the use of, Prairie Creek (the receiving stream).

BACKGROUND

Morton has a population of 14,200, and is located in Tazewell County along Interstate 74 approximately 10 miles east of Peoria and 30 miles west of Bloomington. Petitioner owns and operates two sewage treatment plants, referred to as Plants 2 and 3. These plants serve the southern and northern portions of Morton, respectively. The service area of Plant 3 does not contain any combined sewers, so is not directly related to Morton's petition.

Plant 2 is designed to treat an average flow of 2.4 million gallons per day (mgd) and to give complete treatment to a peak flow of 6.0 mgd. All flows in excess of 6.0 mgd are bypassed after passing through a coarse (3-inch) bar screen. Bypassing occurs either by gravity through a 30-inch gravity bypass (if the stage of Prairie Creek permits), or by pumping at the excess flow pump station located at the facility. This bypass is designated as outfall 002.

As is the case with many Midwestern communities, older sewer lines in Morton were often constructed as combined sewers. Morton has, since 1980, undertaken a program to separate many of the combined sewer lines (Ex. C and D). Morton has also significantly increased interceptor capacity, thereby allowing diversion of combined sewer flow to Plant 2 for treatment. Over the period 1980 to date these efforts have allowed Morton to eliminate eight CSOs (R. at 8). In combination with other programs, including improvements to the hydraulic capacity of Prairie Creek, Morton has spent approximately \$3 million to date designed at least in part to reduce CSO impacts (R. at 4). Petitioners contend that additional improvements needed to come into complete compliance with CSO regulations would cost a minimum of \$1,101,000, and would produce little environmental benefit (Joint Petition, p. 1, 7).

In addition to the Plant 2 bypass, Morton presently has two remaining CSOs. These, designated as outfalls 011 and 015, are both located within the central commercial section of Morton where separation of sewers has been most difficult. Nevertheless, as a condition to granting of the requested exception, Morton has agreed to eliminate overflow 015. Thus, the requested exception relates only to the plant bypass CSO outfall 002, to outfall 011, and to outfall 015 during its remaining period of service.

In addition to eliminating overflow 015, Morton proposes, as conditions to granting of the requested exception, to undertake several improvement projects. These include provision of primary treatment and chlorination plus flow measurement and sampling of all flows bypassed through outfall 002; reduction of overflows at outfall 011 by separation of additional areas of combined sewer area tributary to 011; elimination of the possibility of solids deposition downstream of outfall 011 by modifying the channel of Prairie Creek; and, elimination of the possibility of back-up into overflows 011 and 015 by installation of appropriate control structures. Morton also agrees to monitor the excess flow facilities and, should a swirl concentrator be employed as part of the improvements program, to provide an engineering study of the effectiveness of the concentrator.

DOCUMENTATION OF MINIMAL IMPACT

The Village of Morton is located at, and the CSOs at issue herein discharge to, the headwaters of Prairie Creek. Throughout the reach in question Prairie Creek is an intermittent stream, with the principal discharge derived from runoff and groundwater infiltration within Morton itself. For these reasons CSO events tend to occur concurrently with high flows in Prairie Creek. A modeling study conducted by Morton indicates that for a one-year three-hour storm CSO 011 would contribute approximately 17% of the flow in Prairie Creek at the point of discharge and approximately 11% downstream beyond the developed area of Morton (R. at 21). Similarly, bypass 002 would contribute 10% of the

flow of Prairie Creek at the point of discharge, but this would decrease to 4% immediately downstream due to the addition of a large tributary (R. at 22).

There are no impoundments on Prairie Creek; points of public access are limited to road crossings; for significant periods during the year there is virtually no flow. As such, there is little recreational use of the stream and virtually no fishing activities (Ex. E, p. 14). Prairie Creek joins the Mackinaw River approximately 10 miles south of Plant 2; the Mackinaw is fished (Ex. E, p. 18). Petitioners believe that the first location where Morton's effluent might affect a drinking water supply is more than 100 miles downstream at Alton, Illinois, on the Mississippi River (Ex. E, p. 18).

Stream side land use varies along the reaches in question. For the initial 3500 feet downstream from outfalls 011 and 015 the adjacent land is zoned residential. The next 3300 feet is currently in agricultural use, but could potentially develop as residential. Thereafter, and including the point of outfall 002, adjacent land use is agricultural (Ex. E, p. 18).

Modeling studies have been undertaken by Morton to estimate the number of overflow events which can be anticipated annually from outfalls 011 and 015. These are 29 and 6, respectively (R. at 36). The frequency of bypassing through 002 is less certain, but is anticipated to be similar to that experienced during the first nine months of 1985 when three events, each of several days duration, occurred (R. at 11; Ex. E, p. 23). Bypassing experienced in 1983 and 1984 showed a pattern similar to that experienced in 1985 (Ex. 0).

Several stream inspections have been undertaken. The most recently reported occurred on October 18, 1985, and is detailed in Exhibit E (p. 16-17). No unnatural bottom deposits, odors, unnatural floating materials, or colors were noted to occur within the inspected areas of outfalls 011 and 015 or of the bypass outfall 002. However, at hearing Mr. James G. Roth, engineering consultant to Morton, indicated that he has occasionally seen sludge deposits and floatable materials downstream from outfall 011 (R. at 27, 46).

Through much of the residential sections of Morton the channel of Prairie Creek has been modified, including sections which have been paved. In the paved sections the channel averages 20 feet in width and has a bank height of 8 to 12 feet. In the relatively natural sections the channel width averages 10 feet and the bank heights average 5 to 8 feet (Ex. E, p. 17).

Most available chemical analyses on the CSOs and on Prairie Creek were made early in the program of work on CSO reductions. Much dates back to 1980. Therefore, these data reflect the overflow and interception facilities as then existent. The

substantial configuration changes subsequently made, including the reduction in CSO tributary areas and number of outfalls, plus the increase in interceptor capacity, have all been in the direction of lessening impact. Even with this perspective, analyses of biochemical oxygen demand (BOD) and total suspended solids (TSS) in outfall 011 made in 1980 indicate low concentrations. Petitioners conclude that high BOD wastes either are not deposited in the sewers to be scoured by high flows resulting from runoff, or are intercepted and diverted to Plant 2 in the early part of an event before overflow occurs (R. at 8). Elevated TSS concentrations, however, do occur in the CSO discharge. Petitioners believe that the majority of TSS loads comes from the storm sewer component of the combined sewers, and that they do not differ appreciably from the TSS loadings in the separate storm sewers (Ex. E, p. 24).

Some sampling of the water quality of Prairie Creek in the vicinity of outfall 002 has been undertaken by Morton as required by their NPDES permit. These samples show no water quality problems (Ex. E, p. 20). Similarly, analyses of water quality at the nearest downstream ambient water quality monitoring station, which is located on the Mackinaw River near South Pekin, indicates minimum or no water quality problems (Ex. E, p. 19).

The principal industries which discharge to the Morton system conduct pretreatment of their wastes. Additionally, a review of Plant 2 influent, effluent, and sludge data indicates that industrial waste loads are not significant and have not caused any treatment problems or upsets. Therefore, Petitioners conclude that no problems are expected from industrial wastes in the Plant bypass 002 (Ex. E, p. 15).

ISSUE OF THE FIRST FLUSH

Joint Petitioners originally requested exception only from the provisions of 306.305(b), and not from the first flush provision of 306.305(a). This position was based on the belief that the interceptor sewer configuration would allow all of the first flush to be routed to Plant 2, and that the 6.0 mgd maximum capacity of the plant would allow complete treatment of the first flush. Later reflection combined with uncertainties regarding the ability to calculate first flush has led Petitioners to reconsider this position. Although it is still considered to be highly probable that first flush will be treated in its entirety (R. at 22, 54), Petitioners desire exception from the first flush provision as protection against the possibility that some portion of the first flush under some circumstances would bypass the treatment plant or be discharged through outfall 011.

SUMMARY

In view of the above, the Board determines that granting of exception to the first flush provision of 35 Ill. Adm. Code 306.305(a) and to 35 Ill. Adm. Code 306.305(b) would produce

minimal discharge impact pursuant to the provisions of 35 Ill. Adm. Code 306.361(a). Accordingly, the requested exception shall be granted with the conditions proposed by the Joint Petitioners.

The Board notes that the Agency has emphasized that its support of the Joint Petition is predicated on the assumption that the relief is restricted only to those substantive requirements for effluent treatment of CSOs, and not to relief from water quality standards (R. at 52). Morton appears to have been aware of this condition, and has not objected to it. The Board itself notes that up to the present time, the United States Environmental Protection Agency has indicated that only variance (i.e. non-permanent) relief from water quality standards can be granted consistent with the Clean Water Act (see document entitled "Status Report on Discussions with USEPA", dated October 4, 1985; this document is part of the record of, and is cited in, Borden Chemical Company v. Illinois Environmental Protection Agency, PCB 82-82, PCB, December 5, 1985). To assure that this issue is clear, the Board will introduce into the Order, as proposed by Petitioners, language identifying the scope of the exception as granted.

ORDER

1. The Village of Morton (Village) is hereby granted an exception from the treatment requirements of 35 Ill. Adm. Code 306.305(a), as such provision relates to first flush of storm flows, and to 35 Ill. Adm. Cod 306.305(b), for discharges into Prairie Creek, subject to the following conditions:

- a. The Village shall provide excess flow treatment at Plant 2 for all excess flows reaching the plant, consisting of primary treatment followed by chlorine contact, including flow measurement and sampling, by September 30, 1988.
- b. The Village shall eliminate overflow O15 by constructing storm sewers to separate the sewers tributary to the overflow. The completion date is subject to IDOT/Morton Joint Project.
- c. The Village shall reduce overflows from outfall O11 by additional separation of storm and sanitary sewers, resulting in a remaining combined sewer area of 106.2 acres, by October, 1991.
- d. The Village shall provide Prairie Creek channel improvements to eliminate the possibility of solids deposition downstream of overflow O11 and convey the overflows to a point downstream of the developed area of the Village by October, 1992.

- e. The Village shall eliminate the possibility of Prairie Creek back-up into overflows 011 and 015 by September, 1986.
- f. The Village shall collect data and monitor the excess flow treatment facilities. If a swirl concentrator is used, an engineering evaluation as to its effectiveness compared with that of a more conventional primary clarifier should be submitted to IEPA within one year after items a), b), c), and e) have all been completed and the system has been in operation.

2. This grant of exception does not preclude the Agency from exercising its authority to require as a permit condition a) a CSO monitoring program sufficient to assess compliance with this exception and any other Board regulations, including Section 306.305(c); and b) other controls if needed for compliance, including compliance with water quality standards.

3. This grant of exception is not to be construed as affecting the enforceability of any provisions of this exception, other Board regulations, or the Act.

4. Within forty-five days of the date of this Order, the Village shall execute a Certification of Acceptance and Agreement to be bound to all terms and conditions of this exception. Said Certification shall be submitted to the Agency at 2200 Churchill Road, Springfield, Illinois 62706. The forty-five day period shall be held in abeyance during any period that this matter is being appealed. The form of said Certification shall be as follows:

CERTIFICATION

I, (We), _____, having read the Order of the Illinois Pollution Control Board, in PCB 85-212 dated May 9, 1986, understand and accept the said Order, realizing that such acceptance renders all terms and conditions thereto binding and enforceable.

Petitioner

By: Authorized Agent

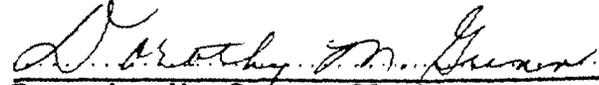
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IT IS SO ORDERED.

Board Members Joan Anderson, Jacob D. Dumelle and Bill Forcade concurred.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 9th day of May, 1986, by a vote of 7-0.



Dorothy M. Gunn, Clerk
Illinois Pollution Control Board