ILLINOIS POLLUTION CONTROL BOARD
June 20, 1986

NATIONAL STARCH & CHEMICAL CORPORATION,	)	
Petitioner,	)	
v.	)	PCB 86-88
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY,	)	
Respondent.	)	

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

This provisional variance request comes before the Board upon a June 20, 1986 Recommendation of the Illinois Environmental Protection Agency (Agency). The Agency recommends that a 45-day provisional variance be granted to National Starch & Chemical Corporation (NSC) from 35 Ill. Adm. Code 304.120 as it relates to total suspended solids (TSS) to allow the discharge of treated wastewater from a partially completed sludge storage lagoon, thereby enabling the Petitioner to exceed the TSS effluent limit in its NPDES Permit No. IL0000621 of 25 milligrams per liter (mg/l) as a monthly average and 50 mg/l as a daily maximum.

National Starch & Chemical Corporation owns and operates wastewater treatment facilities at its manufacturing plant located along the Illinois River in Meredosia, Morgan County, Illinois. The Petitioner's wastewater treatment facilities include an activated sludge plant for the treatment of domestic wastes, flow equalization, grit basins, a primary clarifloculator, chemical treatment, nutrient addition, pressure sand filters, activated sludge process, chemical sludge lagoons, and land disposal of biological sludge for the treatment of industrial process wastewater. (Rec. 1). The company's industrial wastewater treatment facilities have a design average flow of 0.374 million gallons per day (MGD) and its combined effluents are discharged into the Illinois River pursuant to the appropriate NPDES permit authorization. (Rec. 1).

The Petitioner received the requisite authorization to allow the construction of a sludge lagoon to be used in conjunction with its existing wastewater treatment facilities pursuant to Agency Permit No. 1985-EB-1459 and Department of the Army Permit No. P-1585. However, because of Illinois River flooding, the start of the necessary construction work on the sludge lagoon was unavoidably delayed until the middle of June, 1985. Similarly,

because of unusually heavy rainfall and high Illinois River stages during November of 1985, the Petitioner halted construction work on the sludge lagoon just prior to the completion of the bentonite sealing.

To equalize water levels in order to prevent differential head conditions, NSC piped its treatment plant effluent to the lagoon. If excessive differential head conditions had been allowed to occur, this might have caused possible damage to the lagoon berms. (Rec. 1). Moreover, in anticipation of spring flood levels which commonly occur in this locale, the Petitioner retained its effluent in the lagoon over the winter months. According to the company, algae growth in the lagoon has been promoted by the clear water plant effluents, and the overabundant algae growth has allegedly necessitated a variance because the contents of the lagoon are higher in total suspended solids than can be discharged within NPDES Permit limits for average daily discharges.

Additionally, the Petitioner has stated that dewatering of the lagoon by recycling through the treatment process is not a feasible alternative, since such dewatering activities cannot proceed at a rate high enough to ensure the completion of the sludge storage lagoon in this construction season without a concomitant degradation of the wastewater treatment plant's effluent quality. Thus, the Petitioner claims that the proposed dewatering of the sludge lagoon by allowing direct discharges into the Illinois River will allow the completion of the lagoon's construction in the shortest possible time, thereby facilitating the discontinuation of the utilization of the existing lagoons now in service which are not protected from river flooding.

Attachment 1 to the company's variance request indicates the following sample analysis from NSC's new sludge lagoon:

SUMMARY OF SAMPLE ANALYSIS
FROM NEW SLUDGE LAGOON

From daily samples taken between March 1, 1986 - June 1, 1986
(Analysis of National Starch Lab)

Parameter	Maximum	Minimum	Typical
pH	7.2	7.2	7.2
BOD_5 (mg/l)	12	6	6 - 12
TSS (mg/l)	40	16	28 - 34

(Attachment 1)

As is readily apparent from the above water sampling data, the total suspended solids concentrations from the new sludge lagoon are presently below the 50 mg/l allowable daily maximum as

set forth in the Petitioner's NPDES Permit. However, as a result of the algae growth within the lagoon, the high suspended solids concentration typically ranging from 28 mg/l to 34 mg/l is ordinarily above the average daily discharge limit of 25 mg/l delineated in the company's NPDES Permit. Nonetheless, the Petitioner does not expect its total suspended solids concentration to exceed 50 mg/l during the dewatering process in which approximately ten million gallons (i.e., the remaining volume in the sludge lagoon) are to be discharged directly into the Illinois River. Therefore, the Petitioner plans to discharge the total volume of water remaining in the lagoon (i.e., about 10 million gallons) over a 45 day time period at a rate of about 0.22 million gallons per day with an anticipated total suspended solids concentration less than 50 mg/l. (Rec. 2).

In reference to the environmental impact of allowing the discharge of the sludge lagoon contents into the Illinois River, the Petitioner has indicated that the present contents of the lagoon are not significantly higher in total suspended solids than is allowed by NSC's existing NPDES Permit and that there will be high dilution of the proposed lagoon effluents because the typical flow rates in the Illinois River are about 12,000 to 14,000 cubic feet per second of water. (Attachment 1).

Similarly, the Agency has stated that it "agrees with Petitioner that the expected environmental impact of discharging the present contents of this lagoon directly to the Illinois River to be minimal due to the high dilution which will take place". (Rec. 2). Additionally, the Agency has noted that, during the Water Year 1984, the average flow in the Illinois River as measured at the Meredosia, Illinois water quality station was approximately 5,700 million gallons of water per day, indicating that high dilution of any discharge into the Illinois River would occur at that point. (Rec. 2).

The Agency has also indicated that there are no federal regulations that would preclude the granting of the requested provisional variance. Because the nearest surface public water supply is about 84 stream miles downstream at Alton, Illinois, there are no close downstream public water supplies which would be adversely affected by the granting of the requested relief. (Rec. 2).

The Petitioner maintains, and the Agency believes, that a denial of the requested provisional variance would create an arbitrary or unreasonable hardship because the new sludge lagoon is protected from river flooding and is designed to replace the existing lagoons which are not currently protected from river flooding. Therefore, if the Petitioner does not complete the necessary construction work during the present construction season, "the existing unprotected lagoons will have to remain in use with the potential for loss of the sludge due to river flooding". (Rec. 2).

The Agency has therefore concluded that compliance with the applicable standards would impose an arbitrary or unreasonable hardship upon the National Starch & Chemical Corporation. (Rec. 1). Accordingly, the Agency has recommended that the Board grant the Petitioner a provisional variance from 35 Ill. Adm. Code 304.120, subject to certain conditions.

Pursuant to Section 35(b) of the Illinois Environmental Protection Act, the Board will grant the provisional variance as recommended.

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

ORDER

The Petitioner, the National Starch & Chemical Corporation, is hereby granted a provisional variance from 35 Ill. Adm. Code 304.120 to allow the Petitioner's wastewater treatment facilities to exceed the total suspended solids (TSS) effluent limit set by its NPDES Permit No. IL0000621 of 25 milligrams per liter (mg/l) as a monthly average and 50 mg/l as a daily maximum, thereby allowing the discharge of treated wastewater from a partially completed sludge storage lagoon, subject to the following conditions:

1. The provisional variance shall commence when the dewatering of the lagoon is begun and shall continue for 45 days thereafter.

2. The discharge from the partially completed sludge storage lagoon shall be limited to 50 mg/l TSS as a 30 day average.

3. The Petitioner shall collect a composite sample of the discharge once per week and analyze the sample collected for biochemical oxygen demand and total suspended solids. The analysis results shall be recorded and submitted to the Agency with the Petitioner's monthly discharge monitoring reports.

4. The Petitioner shall notify Pat Lindsey of the Agency's Compliance Assurance Section via telephone at 217-782-9720 when dewatering of the lagoon is begun and ended. This oral communication and notification shall be supplemented by a written confirmation that shall be submitted within 5 days to:

Illinois Environmental Protection Agency
Division of Water Pollution Control
Compliance Assurance Section
2200 Churchill Road
Springfield, Illinois 62706
Attention: Pat Lindsey

5. Within 10 days of the date of the Board's Order, the Petitioner shall execute a Certification of Acceptance and Agreement which shall be sent to Mr. James Frost of the Agency at the following address:

Mr. James Frost
Illinois Environmental Protection Agency
Division of Water Pollution Control
2200 Churchill Road
Springfield, Illinois 62706

This certification shall have the following form:

I, (We), _____, having read the Order of the Illinois Pollution Control Board in PCB 86-88, dated June 20, 1986, understand and accept the said Order, realizing that such acceptance renders all terms and conditions thereto binding and enforceable.

_____
Petitioner

_____
By: Authorized Agent

_____
Title

_____
Date

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 20th day of June, 1986 by a vote of 7-0.

Dorothy M. Gunn
Dorothy M. Gunn, Clerk
Illinois Pollution Control Board