ILLINOIS POLLUTION CONTROL BOARD
February 24, 1983

A.S. HANSEN, Inc.,	)	
	)	
Petitioner,	)	
	)	
v.	)	PCB 81-177
	)	
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY,	)	
	)	
Respondent.	)	

MR. VINCENT LOMBARDI, SEMMELMAN AND LOMBARDI, APPEARED ON BEHALF OF A.S. HANSEN, INC.;
MS. MARY DRAKE APPEARED ON BEHALF OF THE ENVIRONMENTAL PROTECTION AGENCY.

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

This matter comes before the Board upon a November 6, 1981 petition for variance filed by A.S. Hansen, Inc. (Hansen). Pursuant to a more information order entered November 19, 1981, Hansen filed an amended petition on January 13, 1982. A recommendation to deny the requested variance was filed by the Illinois Environmental Protection Agency (Agency) on July 14, 1982 and a hearing was held on that petition on July 15, 1982. On November 1, 1982 Hansen moved for postponement of a decision, for substitution of attorneys (James Warchall of Sidley and Austin replaced Vincent Lombardi) and for leave to file a second amended petition, among other things. Those motions were granted by Board Order of November 12, 1982 and a second amended petition was filed on November 13, 1982, which requested a second hearing. Such hearing was authorized on December 30, 1982 and an amended recommendation that variance be granted in part was filed by the Agency on January 19, 1983. On the following day Hansen waived its hearing request, and that waiver was accepted by the Board on January 27, 1983.

Hansen requests relief in its Second Amended Petition for Variance from the following Water Pollution Rules:

1. Section 304.105, in conjunction with the dissolved oxygen water quality standards of Sections 302.206 and 302.502, for a period of 18 months, to allow it to discharge wastewater containing up to 15 mg/l of 5-day biochemical oxygen demand (BOD_5) and 15 mg/l total suspended solids (TSS);

2. Section 304.105, in conjunction with the fecal coliform water quality standards of 302.209 and 302.505, for a period of six months, to allow it to discharge wastewater containing fecal coliform in amounts up to 300 per 100 ml;

3. Section 304.120(d), the BOD_5 and TSS effluent standards for the Lake Michigan basin, for a period of 18 months, to allow it to discharge wastewater containing up to 15 mg/l BOD_5 and 15 mg/l TSS.

The Board notes that Section 302.209 (Fecal Coliform) was deleted on October 14, 1982 in R77-12 (Docket D) and the Agency argues that such relief is no longer necessary. However, on February 1, 1983 the First District Appellate Court stayed the effectiveness of that rulemaking and the request for such relief remains appropriate. Further, in order for complete relief, the Board construes the petition to request relief from Section 304.121 concerning fecal coliform effluent limitations which are obviously not being met at present.

Hansen was issued NPDES Permit No. IL0022632 which expired on December 31, 1979. A timely application for renewal of this permit was received by the Agency on March 18, 1980 with supplemental information received on July 18, 1980. On April 23, 1981 the Agency notified Petitioner that its permit could not be issued unless a variance is obtained due to its determination that Hansen's discharge caused or contributed to dissolved oxygen water quality violations.

Hansen owns and operates a wastewater treatment plant which treats domestic wastewater from its actuarial and consulting firm. Approximately 200 persons are employed at Petitioner's firm at 1080 Green Bay Road, Lake Bluff, Lake County, Illinois. Wastewater is treated in a septic tank which is followed by two sand filters and chlorination facilities prior to being discharged to an unnamed ditch which is tributary to Lake Michigan. This facility has a design average flow of 0.004 million gallons per day (MGD) and a design maximum flow of 0.006 MGD.

Discharge Monitoring Reports (DMR's) submitted by Hansen, reports by the North Shore Sanitary District (NSSD) and Agency grab samples show the following:

Date	Source	BOD_5	TSS	Fecal Coliform
4/5/74	Agency	34	11	330,000
10/24/74	Agency	15-	8	230,000
7/77	DMR	14 avg.	13.9 avg.	10-
8/77	DMR	5 avg.	22.8 avg.	5-
9/77	DMR	12.5 avg.	10.5 avg.	5.0
4/8/81	Agency	4	21	62,000
10/8/81	Agency	47	270	500,000
11/14/81	NSSD	23-	72	2-
1/20/82	NSSD	15-	2072	100-
3/1/82	Agency	3	47	10-
3/82	DMR	2-	22	*
4/82	DMR	2-	17	20-
5/11/82	NSSD	132+	13	100-
5/28/82	NSSD	19	22	6000+
5/82	DMR	132+	13	100-
6/27/82	NSSD	3+	9	*

Date	Source	BOD_5	TSS	Fecal Coliform
7/20/82	NSSD	25+	36	20+
7/20/82	Agency	12	14	*
7/20/82 - 8/12/82	DMR	71	4	*
8/12/82	NSSD	71	4	33,000
8/24/82	NSSD	104	9	260
8/12-24/82	DMR	104	9	*
10/82	DMR	30	5	10
11/10/82	NSSD	3+	4	2+
11/17/82	NSSD	10	2	5+
11/82	DMR	6	3	3

* not reported
\+ more than
\- less than

Neither Hansen nor the Agency have presented evidence of dissolved oxygen violations within the unnamed ditch which receives Hansen's discharge nor at the immediate vicinity of the ditch's confluence with Lake Michigan. Therefore, it has not been demonstrated that variances from Sections 302.206 (Dissolved Oxygen) and 302.502 (Lake Michigan Dissolved Oxygen) are necessary. Variance from those sections is accordingly denied.

Prior to September, 1982, Hansen's efforts to achieve compliance centered around rebuilding the sand bed filters (including substituting larger size sand for the sand previously used) to reduce BOD_5 and TSS discharges, and unclogging pipes in the facility that were believed to contribute to wastewater surges. Having had limited success in those endeavors, in September, 1982, Hansen retained an engineering consulting firm to study its treatment facilities, recommend and implement improvements that could be short-term, and develop, if possible, an economically feasible plan to upgrade the facilities to assure ultimate compliance with the BOD_5, TSS, dissolved oxygen and fecal coliform standards.

Hansen has instituted the following improvements to its wastewater treatment facility:

1. Hansen has made certain improvements to the facility's chlorination system, including relocation of the chlorine pump switch electrodes, that have reduced the frequency of fecal coliform exceedances.

2. Hansen has negotiated and drafted a contract to employ an experienced and licensed wastewater engineer to supervise operation of the facility.

3. Hansen has begun keeping daily records of wastewater flow through water usage records and has begun testing pH and chlorine residual daily.

4. Hansen is instituting a program of weekly effluent sampling with the cooperation of the North Shore Sanitary District.

5. Hansen has planned, and is in the process of preparing a permit application for, the installation of a contact chlorination system to reduce fecal coliform to less than 200 per 100 ml. In connection with the new system, Hansen will install a chlorine contact tank with baffles, a new chlorine pump, and flow controls to alleviate the problems caused by wastewater surges that have occurred in the past.

Hansen's consultant has come to the tentative conclusion that with improved operation of the treatment facility and installation of a new chlorination system, the following effluent levels can be consistently met: BOD_5 - 15 mg/l; TSS - 15 mg/l; fecal coliform - 200 per 100 ml.

Hansen's consultant has studied means of compliance with the Lake Michigan basin BOD_5 and TSS effluent standards and has concluded that four alternative means of complying with these standards are theoretically possible: (a) constructing a new wastewater treatment facility; (b) spray irrigation in the summer months and hauling wastewater to the NSSD in the winter months or, alternatively, hauling to NSSD year-round; (c) connecting to an existing sewer system; and (d) obtaining a site-specific rule change of the current BOD_5 and TSS effluent standards and the dissolved oxygen water quality standard.

Modification of the existing treatment facilities to comply with the stringent Lake Michigan basin BOD_5 and TSS standards would, practically speaking, amount to the construction of a new package plant. This would require a capital investment of well in excess of $100,000 and yearly operating expenses exceeding $15,500.

Hansen argues that hauling to the NSSD and spray irrigation during the summer months are also neither practicable nor economically feasible. Spray irrigation would be inordinately expensive in comparison with any possible benefits, because it could be used only during the summer months. Hauling the sewage from Petitioner's facility to the NSSD would cost a minimum of $50,000 per year and would cause significant storage and transportation problems.

Hansen believes that connection to an existing wastewater treatment facility may be a viable future option for ultimate compliance with the Board's effluent standards, but that this option is not presently available. Hansen has been denied permission by the Great Lakes Naval Training Center to connect to its sewer system and indicates its belief that neither the Village of Lake Bluff nor the City of North Chicago will extend sewer service to unincorporated areas until such time as those

areas are annexed. No annexation proceedings are currently pending or, to Hansen's knowledge, contemplated. Even if connection to an existing sewer system was possible, its cost, estimated by NSSD at $140,000 is great.

The fourth alternative, obtaining a site-specific rule change, may be appropriate, but Hansen does not presently possess sufficient data to initiate a rule change proceeding.

Both Hansen and the Agency agree that the environmental impact of Hansen's discharge is minimal. As noted above, Hansen discharges only 4,000 gallons of wastewater per day. Thus, at the rate of 15 mg/l of TSS, the total suspended solids discharged from Hansen's facility would amount to approximately 240 grams per day, (although Hansen had incorrectly calculated it as 120 grams per day). The environmental impact of this amount is hardly significant. Moreover, Hansen's discharge is to an unnamed ditch that is less than two feet wide throughout its course from above Hansen's property to its discharge into the lake. The unnamed ditch is not used for recreational purposes and is not a habitat for fish or other significant aquatic life. Any aesthetic value the ditch might have would not be impaired by BOD_5, TSS and fecal coliform discharges in the concentrations that Hansen requests in this variance petition.

It is true that the ditch empties into Lake Michigan. However, the small amount of flow of the ditch and the probability that BOD_5 is reduced, and dissolved oxygen increased, along the one and one-quarter mile course of the ditch, suggests that no harm would be done to Lake Michigan by discharges meeting the effluent limitations requested in this variance proceeding. Further, the nearest drinking water intake to the confluence of the ditch and Lake Michigan is approximately 2 miles north at the Great Lake Naval Training Base.

In its original recommendation, the Agency noted that the ditch flows through a subdivision on its course towards the lake and suggested that fecal coliform levels in the effluent might present a danger to health. However, since Hansen's fecal coliform variance request is for a short period of time and largely during cold weather months, this potential short-term danger is not of such magnitude as to indicate denial of the requested six-month fecal coliform variance.

Since Hansen is in the process of upgrading its chlorination facilities, a short term variance from the water quality and effluent standards would seem appropriate and should not affect any of the water supplies on Lake Michigan. The Board notes, however, that the Lake Michigan water quality limitation for fecal coliform is 20/100 ml (Water Pollution Rules, Section 302.505), not 200/100 ml as stated in paragraphs 5,6(e) and 7 of the second amended variance petition, and appropriate design, construction, and operation of the chlorination facilities must be made.

Hansen presents four basic methods it could use to come into compliance, as noted above, and is requesting until December 15, 1983 to evaluate which of these methods to use and then, apparently, another 6 months to implement its choice. Although the Agency agrees that a variance for a period of 18 months seems reasonable, it argues that allowing Hansen almost a year to decide on a compliance plan seems exceedingly long and could jeopardize ultimate compliance by the end of the remaining six month period. The Board agrees with the Agency and notes, for example, that if an economic impact study is required for a site-specific regulatory proceeding, a minimum of 9 months would probably be necessary for adoption of the regulation. Further if Hansen pursues such a rule change, probably more than the few stream dissolved oxygen readings will be necessary for these proceedings as Hansen's environmental study implies will be done.

Although not mentioned in the petition, Hansen has a 1.0 mg/l phosphorus limitation which most likely is not being met. As a result, any compliance plan should also address this contaminant.

Due to the relatively small discharge of wastewater per day, the requested limits being 15/15 BOD_5/TSS, the comparatively short variance period requested for the high fecal coliform discharge, the size of the business, and past efforts made to achieve compliance, the Board concludes it would be an arbitrary or unreasonable hardship upon Hansen to deny variance.

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

ORDER

1. A.S. Hansen, Inc. is hereby granted variance from Sections 302.505 (Lake Michigan Fecal Coliform), 302.209 and 304.105 (Water Quality Standards) as it relates to fecal coliform, and 304.121 (Bacteria Effluent Standard) until July 1, 1983;

2. Hansen is hereby granted variance from 304.120(d) (Lake Michigan BOD_5/TSS) and 304.104 (Water Quality Standards) as it relates to BOD_5 and TSS until July 1, 1984.

3. Hansen's discharge shall not exceed the following limitations during the respective variance terms:

   a. Fecal coliform shall not exceed a maximum geometric mean of 300 per 100 ml, based on a minimum of five samples taken over not more than a 30-day period through July 1, 1983;

   b. BOD_5 shall not exceed 15 mg/l through July 1, 1984;

   c. Suspended solids shall not exceed 15 mg/l through July 1, 1984.

4. Hansen shall monitor fecal coliform, BOD_5, suspended solids, flows, pH and phosphorus and report monthly on Discharge Monitoring Reports (DMR's);

5. Hansen shall sample for the parameters listed in Condition 4 at least weekly;

6. Hansen shall adhere to the following schedule for coming into compliance:

   Present Compliance Plan to the Agency on or before July 1, 1983;

   Submit Complete Permit Application on or before October 1, 1983; and

   Complete Compliance Plan and meet all limitations on or before July 1, 1984

6. Hansen shall complete and/or maintain all items listed in sub-paragraphs (a)-(e) in paragraph 6 of the Second Amended Petition.

7. Within forty-five days of the date of this Order, Hansen shall execute and forward to Illinois Environmental Protection Agency, Water Pollution Control, Variance Unit, 2200 Churchill Road, Springfield, Illinois 62706, a Certificate of Acceptance agreeing to be bound to all terms and conditions of this variance. This forty-five day period shall be held in abeyance for any period this matter is being appealed. The form of the certificate shall be as follows:

CERTIFICATE

I, (We), _____, having read the Order of the Illinois Pollution Control Board in PCB 81-177, dated February 24, 1983, understand and accept the said Order, realizing that such acceptance renders all terms and conditions thereto binding and enforceable.

_____
Petitioner

_____
By: Authorized Agency

_____
Title

_____
Date

8. The request for variance from Sections 302.206 (Dissolved Oxygen) and 302.502 (Lake Michigan Dissolved Oxygen) is hereby denied.

IT IS SO ORDERED.

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 24th day of November, 1983 by a vote of 5-0.

Christan L. Moffett, Clerk
Illinois Pollution Control Board