

ILLINOIS POLLUTION CONTROL BOARD
January 27, 1983

IBP, INC.,)	
)	
)	Petitioner,
)	
)	v.
)	PCB 82-131
)	
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY,)	
)	
)	Respondent.

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

This matter comes before the Board on the petition for variance of IBP, Inc. (IBP) filed November 1 and amended November 24, 1982. IBP seeks variance from a) 35 Ill. Adm. Code 309.102 to allow it to discharge wastewater even though the NPDES permit issued to the prior owner has expired, and IBP itself has no permit, and b) Section 304.120(a) as it relates to BOD₅, total suspended solids (TSS), pH and oil and grease (O & G).^{*} On November 24, 1982 IBP moved for expedited consideration of its petition, which is granted. On December 10, 1982 the Agency filed its Recommendation in support of grant of variance with conditions as to the BOD₅ and TSS parameters, but also suggested that the balance of the petition be denied as seeking unnecessary relief. Hearing was waived and none has been held.

In August, 1982 IBP purchased from Dubuque Packing Co. (Dubuque) a beef slaughter and processing plant located near Joslin in Rock Island County. Dubuque had applied for renewal of its NPDES permit on June 21, 1982, as it was due to expire July 1, 1982. No permit was denied or issued. IBP itself has not been issued an NPDES permit.

The plant is designed to slaughter 1,500 head/day of cattle, and to process 700 head/day. IBP wishes to expand the plant to a slaughter capacity of 2,635 head/day and an additional processing capacity of 4,000 head/day (to accommodate cattle slaughtered at other facilities). IBP expects to employ 250 personnel at initial start-up, and about 1,450 after expansion is completed.

^{*}As the O & G effluent limitation is contained in 304.124, and that for pH in 304.125, and not in 304.120(a), the Board construes this petition as seeking variance from these sections as well.

As part of the expansion, IBP seeks to upgrade the existing wastewater treatment facilities, which were constructed in 1970. During this expansion, for which interim effluent limitations are sought for about 18 months, IBP proposes to gradually increase its slaughter capacity to the aforementioned level of 2635 head/day, but to refrain from processing activities.

The existing facilities consist of 2 anaerobic lagoons (2.03 acres each), 1 aerated cell (.59 acres), and 3 aerobic lagoons (41.37, 28.49 and 11.24) acres, all operated in a series. Discharge is to the Rock River. IBP plans to add a third anaerobic lagoon, to abandon the cell and aerobic lagoons, and to construct a secondary treatment system consisting of an oxidation ditch with an intra-channel clarifier. Estimated costs of this work are \$2.1 million.

The original system was designed to handle waste from the slaughter, etc. of 1,350 head/day, resulting in a hydraulic loading of 1.41 mgd as an average and organic loading of 15,400 lbs/day, BOD₅ based on a six day work week. During the expansion period, IBP stated that the hydraulic loads will initially average .75 mgd and increase to 1.8 mgd. Ultimate organic loads are estimated to be 28,985 lb./day BOD₅, 9,222 lb./day oil and grease, 23,978 lb./day TSS. (The Agency notes that as IBP will not engage in processing during this expansion, that maximum hydraulic and organic loads are respectively estimated to be 1.32 mgd and 21,080 lb/day BOD₅.)

IBP asserts that the existing system is incapable of consistently treating waste loads to the effluent standards, even by storing treated wastewater in the aerobic lagoons on a seasonal basis. (Dubuque discharged effluent only 2-3 times yearly.) In fact, the entire system is filled to capacity with water that cannot be discharged because it fails to meet effluent standards. IBP therefore seeks to operate the system on a continuous discharge basis and proposes interim limits to be met during the expansion period. The proposed limitations, as contrasted with the effluent limitations, are

	<u>Proposed Limit</u>	<u>Effluent Standard</u>
BOD ₅	45 mg/l avg. 90 mg/l max.	20 mg/l max.
TSS	90 mg/l avg. 130 mg/l max.	25 mg/l max.
O & G	30 mg/l	15 mg/l
pH	6-10 mg/l	6-9 mg/l

IBP analysis of a single sample taken from the aerobic lagoon system September 21, 1982 shows readings of 19 mg/l BOD₅, 78 mg/l TSS, 1 mg/l O & G, and 9.3 mg/l pH. The Agency noted that Dubuque's Discharge Monitoring Reports for January-March, 1982 and February-March, 1981 show discharges at levels ranging in mg/l from 10.3 mg/l to 19.8 average and 10.3 to 27.0 maximum for BOD₅, 14.7 to 24.5 average and 14.9 to 30.0 for TSS, 1.5 to 2.3 average and 1.5 to 5.8 maximum for O & G, and 8.0 to 8.9 average and 8.3 to 8.9 maximum for pH.

IBP asserts that there would be no adverse environmental impact if variance is granted. In support thereof IBP presented calculations concerning the incremental effects of the expected discharge under "worst case" conditions. It states that at the seven day - 10 year low stream flow of 1306 cfs in the Rock River at the point of discharge, concentrations of 45 mg/l BOD₅ and 90 mg/l TSS in treated effluent flow from 1.8 mgd would increase concentrations of these parameters respectively by 0.10 parts per million (ppm) and 0.19 ppm. IBP believes that at average stream flow conditions, this increase in concentration would be undetectable by current analytical methods.

The Agency concurs that the impact of IBP's BOD₅ and TSS discharges would be minimal. Twelve samples from a water quality monitoring station 2 miles upstream of the discharge taken between October, 1980 and September, 1981 show ranges for dissolved oxygen and TSS respectively to be between 7.3 and 14.9 mg/l, and 4 and 406 mg/l. Given the large volume of flow of the river, as well as the high background suspended solids within it, additional TSS and BOD₅ loadings are expected to have minimal, if any, short term adverse environmental impacts.

As an alternative method to achieve compliance, IBP has investigated the feasibility of expanding the existing anaerobic/aerobic lagoon system, and adding filtration equipment for removal of suspended solids, at a cost of \$2,580,800. This was rejected because it was determined that overall systems efficiencies would be marginal, and maintenance costs would be high.

IBP asserts that denial of variance would impose an arbitrary or unreasonable hardship on itself, the local community, and on area cattle feeders. IBP has invested \$15 million to date in the plant and property, and expects to expend significant amounts in expanding the plant's capacity. It asserts that if commencement of operations is postponed for 18 months that it will lose money, that the community will be denied the interim benefit of 250 to 1450 jobs, and that cattle feeders will lose access to IBP as a market.

The Agency is of the opinion that the TSS and BOD₅ variance request should be granted, based on its assessment of minimal environmental impact and acceptance of IBP's assertions concerning alternative compliance options and hardship. However,

it believes that IBP should not now be allowed to increase its kill rate beyond Dubuque's due to a potential of odor problems resulting from increased BOD loading in the aerobic lagoons.

A hydrogen sulfide (rotten egg) odor near the lagoons was noted by an Agency inspector in January and November, 1979 and in November, 1981. Air pollution control inspectors as well as local residents confirm the odor problem, described by the Agency as currently being "existing but not particularly severe".

The Agency has solicited data and views from IBP concerning this problem. The Illinois Recommended Standards for Sewage Works suggests a maximum of BOD loading of 22 lbs/acre/day for aerobic lagoons. At a kill rate of 2,635 head/day, the Agency calculates that the BOD loading on the first aerobic lagoon would range between a minimum of 39, maximum 213, and average 92 lbs/acre day. (This is calculated on a BOD loading to the aerated cell of 5,280 lbs/day, and the cell's percent BOD removal capabilities as being a maximum 69.4 and minimum -66.8 (sic) and average 28.2, based on performance data concerning the cell.) Thus, the Agency asserts that, on a theoretical level, there is no assurance that significant odors might not result at the 2,635 head/day kill rate.

The Agency therefore recommends two alternative conditions. The first is that the kill rate be limited to 1500 head/day until such time as sufficient proof is given to the Agency that BOD loadings to the first aerobic lagoon will not exceed 22 lbs/acre/day. (Improvement in the anaerobic lagoons' or aerated removal cell's capabilities or in the slaughterhouse' by-product recovery operation could result in lower BOD loadings.) The alternative condition would provide for an increased kill rate upon construction and operation of interim treatment system modifications or other measures to control lagoon odors. The Agency feels that the adequacy of such measures would be assured through Agency permit review. It also recommended, as general maintenance procedures that a complete grease cover be maintained on the anaerobic lagoons, and that the aerobic cell will not be allowed to go septic.

Agency inspectors and area residents identified two other aspects of the plant's operations as causing odor problems of more severity than the lagoon odor. The most severe odor has come from the rendering room, apparently because doors have occasionally been left open since an afterburner has become inoperable. The Agency recommends that the TSS and BOD variance be conditioned on compliance with an existing air permit issued to IBP's predecessor and subject to transfer to IBP.

Odors from paunch manure land application were the subject of a variance petition by Dubuque (PCB 76-117) and a permit denial appeal (PCB 80-95), which resulted in issuance of a water pollution permit also subject to transfer to IBP. Again, the Agency recommends that this variance be conditioned on compliance with that permit.

The Agency recommends denial of variance concerning the O & G and pH parameters on the grounds that relief is unnecessary. As to pH, Section 304.125(d)(1) provides that the 9 mg/l maximum can be exceeded if the elevated level is caused entirely by algae in the lagoons. In the Agency's opinion, IBP is covered by this provision. As to O & G, the Agency believes that by applying the averaging rule of Section 304.104(a)(2), IBP will be able to comply with the 304.124(a) standard.

It further believes that no relief is needed from 309.102. It reasons that since Dubuque had made a timely application for renewal of its permit, that the permit remains in effect pursuant to Ill. Rev. Stat. Ch. 127, §1016(a). This permit would therefore be subject to transfer to IBP at its request, pursuant to 40 CFR 122.14(a), as modified by any variance granted by the Board.

Balancing the minimal, if any, environmental effects of grant of variance as to the BOD and TSS parameters against the economic harm to IBP and the surrounding community, the Board finds that denial of variance would impose an arbitrary or unreasonable hardship. An 18-month variance from Section 304.120(a) is granted as to these parameters, subject to conditions.

As to rendering room and paunch manure application odors, the Board declines to condition grant of this variance on compliance with other permits which may or may not be transferred to IBP, and which govern activities which have not been alleged by either party to be ongoing during the variance term. As to lagoon odors, based upon this record the Board is unable to fashion any reasonable condition to minimize potential odors based on slaughter rates. The figures as given would tend to indicate that a 22 lb/acre/day BOD loading to the first aerobic lagoon can be maintained even at a 1500 head/day rate only if the aerated cell operates at a 70% removal capacity; no data has been presented to confirm that noisome odors will be eliminated if the 22 lbs/acre/day BOD loading is maintained. Inclusion of a specific BOD loading figure could give the appearance that the Board was--as it is not--condoning an odor nuisance up to a specific slaughter rate, and was thereby insulating IBP from possible enforcement. The Board will therefore include only a general condition requiring IBP to take all reasonable measures to prevent escape of annoying odors.

Variance from Sections 304.124, 304.125 and 309.102 is denied as unnecessary.

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

ORDER

1. Petitioner IBP, Inc. is granted variance from 35 Ill. Adm. Code 304.120(a) for its Joslyn beef slaughter and processing plant subject to the following conditions;

a) This variance shall expire four months after completion of upgraded wastewater treatment facilities if completion occurs between November and March, or 2 months thereafter if completion occurs between April and October. In no event shall variance extend beyond July 1, 1984.

b) During the term of this variance, existing treatment facilities may be operated on a consistent discharge basis. Discharge shall meet the following effluent limitations:

BOD₅ -- 45 mg/l 30 day average, 90 mg/l maximum
TSS -- 90 mg/l 30 day average, 130 mg/l daily maximum

c) As expeditiously as is practicable, IBP shall upgrade its existing treatment facilities as outlined in its November 1, 1982 variance petition. In the interim, the existing facilities shall be operated and maintained in the best manner practicable. A complete grease cover shall be maintained on the anaerobic lagoons, and the aerobic cell shall not be allowed to become septic.

d) IBP shall take all reasonable measures to ensure that no odors will escape which may be injurious to the health of, or unreasonably interfere with the enjoyment of life or property of, nearby residents.

2. Variance from 35 Ill. Adm. Code 304.124, 304.125 and 309.102 is denied as unnecessary.

3. Within forty-five days of the date of this Order, Petitioner shall execute and forward to the Illinois Environmental Protection Agency, 2200 Churchill Road, Springfield, Illinois 62706, a Certificate of Acceptance and Agreement 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 82-131 dated _____, 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

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 21st day of February, 1983 by a vote of 5-0.

Christan L. Moffett

Christan L. Moffett, Clerk
Illinois Pollution Control Board