

ILLINOIS POLLUTION CONTROL BOARD
January 3, 1974

CITY OF CARBONDALE)
PETITIONER)

v.)

PCB 73-430

ENVIRONMENTAL PROTECTION AGENCY)
RESPONDENT)

JOHN PAUL WOMICK, ATTORNEY, in behalf of the CITY OF CARBONDALE
DEL HASCHENMEYER, ASSISTANT ATTORNEY GENERAL, in behalf of the EN-
VIRONMENTAL PROTECTION AGENCY

OPINION AND ORDER OF THE BOARD (by Mr. Marder)

This case comes to the Board on Petition of the City of Carbon-
dale for variances from: Rule 203 A, Rule 203F, Rule 404, Rule 405,
and Rule 1002 of Chapter 3 of the Water Pollution Regulations of Ill-
inois, filed with the Board October 10, 1973. The Agency filed its
recommendation on November 20, 1973. A hearing was held and testimony
taken on November 30, 1973. No citizens appeared to be heard at the
hearing.

Petitioner made two motions at the hearing. The first was to the
fact that a hearing was taking place. It was the contention of the
Petitioner that because the Agency recommendation was filed late, that
it should be held for naught, and since there would then be no object-
ions to a grant of the variances, hearing should not be held. Section
37 of the Environmental Protection Act (Chap. 111 1/2 Ill. Revised
Statutes 1037) states:

"If the Board, in its discretion, concludes that a hear-
ing would be advisable, or if the Agency or any other per-
son files a written objection to the grant of such vari-
ance within 21 days, then a hearing shall be held..."

The Board determined that a hearing should be held and so ordered
on November 29, 1973.

The second motion related to the Agency's failure to file its
recommendation within the 21-day limit as prescribed in Rule 403 (a),
Procedural Rules of the Illinois Pollution Control Board. The Petit-
itioner contends that because the recommendation is so late, it should
be stricken.

In Benjamin Harris & Company v. Environmental Protection Agency, PCB 73-215, the Board allowed a recommendation filed 48 days late to remain in the record, even though it was filed only two days before the hearing. The Board said, "We do not interpret it (Rule 403 [a]) to mean that a recommendation must be stricken if filed after 21 days." The Petitioner has not shown that it was prejudiced because of late filing of the recommendation.

Petitioner's motions are denied and the record as submitted by the hearing officer shall be considered in its entirety.

Petitioner is a municipal corporation located in Jackson County, Illinois. It encompasses an area of approximately 10 square miles, and has a population presently estimated at 26,756 (Pet. P. 2). It is the home of Southern Illinois University. The city and the university have grown dramatically as reflected by the city's population of 14,670 in 1960 to its present level.

Existing Facilities: Northwest Treatment Plant

This plant is a trickling filter plant with anaerobic sludge digestion and sludge drying beds. It discharges an effluent, the average quality of which is BOD, 21.2 mg/l and suspended solids 30 mg/l, to Little Crab Orchard Creek, tributary to Crab Orchard Creek and the Big Muddy River. The plant's capacity is .75 mgd or a population equivalent of 7500 (R. 8).

Southeast Treatment Plant:

This plant employs the contact stabilization type of activated sludge treatment system. It discharges an average effluent the quality of which is BOD 15.5 mg/l and suspended solids 13.5 mg/l to Crab Orchard Creek, which is tributary to the Big Muddy River. The plant's design capacity is 5.0 mgd or a population equivalent of 40,000 (R. 8).

Petitioner reports (Pet. P. 37) that the quantity and type of raw wastewater processed is as follows (influent):

	N.W. Plant	S.E. Plant
Average daily flow	0.622 mgd	3.53 mgd
Average BOD ₅	149 mg/l	221 mg/l
Average temp.	64° F.	64.5° F.
Average S/S	131 mg/l	145.6 mg/l
Average Set. Solids	1.1 mg/l	4.6 mg/l
Average PH	7.0	7.1

The Agency in its recommendation (Pg. 4) reports the following data as it pertains to recent operations of both the Northwest and Southeast plants:

AGENCY EFFLUENT GRAB SAMPLES

Northwest Sewage Treatment Plant

<u>Date</u>	<u>BOD (mg/l)</u>	<u>TSS (mg/l)</u>	<u>Fecal Coliform (Counts/100 ml)</u>	<u>NH₃-N (mg/l)</u>
Jan 17/73	3	37	<100	3.8
Feb 26/73	12	14	<100	1.5
Mar 16/73	11	24	<100	0.43
Apr 16/73	3	16	<100	1.7
May 18/73	4	21	<100	0.88
Jul 12/73*	45	340	1,600	32.0

* Samples collected after the drawing off of anaerobic digester supernatant.

AGENCY EFFLUENT GRAB SAMPLES
Southeast Sewage Treatment Plant

<u>Date</u>	<u>BOD (mg/l)</u>	<u>TSS (mg/l)</u>	<u>Fecal Coliform (Counts/100 ml)</u>	<u>NH₃-N (mg/l)</u>
Jan 17/73	4	6	2,900	14.0
Feb 26/73	3	1	<100	12.0
Mar 16/73	17	6	<100	8.8
Apr 16/73	4	18	<100	13.0
May 18/73	18	22	<100	18.0
Jun 8/73	10	7	<100	8.5
Jul 12/73	10	20	<100	8.0

Rule 203 (a) provides that the state's waters shall be free "from unnatural sludge or bottom deposits, floating debris, visible oil, odor, unnatural plant or algae growth, unnatural color or turbidity, or matter in concentrates or combinations toxic or harmful to human, animal, plant, or aquatic life of other than natural origin." Petitioner requests relief from this rule only to the extent that a variance from Rule 404 would cause Petitioner to violate this rule for both the Northwest and Southeast plants.

Rule 203 (F) provides that there shall not be a concentration of ammonia nitrogen exceeding 1.5 mg/l. Petitioner requests relief from this rule for both the Northwest and Southeast plants.

Rule 404 (b) as it applies to this case provides that on and after July 1, 1972, no effluent source whose untreated wasteload is 10,000 population equivalent or more shall exceed 20 mg/l of BOD or 25 mg/l suspended solids. Petitioner requests relief from this rule for the Northwest plant.

Rule 404 (c) as it applies to this case provides that on or after December 31, 1974 (this rule amended by new Rule 406 as applied to Petitioner by Board Order date July 19, 1973, In the Matter of Water Pollution Regulation Amendments, PCB R-73-3, R-73-4) no effluent whose dilution ratio is less than five to one shall exceed 10 mg/l BOD₅ or 12

mg/l suspended solids. Relief is requested for both plants (Northwest and Southeast).

Rule 404 (f) as it applies to Petitioner states that on or after December 31, 1974 (amended by Board Order PCB R-73-3, R-73-4), no effluent whose dilution ratio is less than one to one shall exceed 4 mg/l of BOD₅ mg/l.

Rule 405 states that no effluent covered by Part 4 of Chapter 3 of the Rules shall exceed 400 fecal coliforms per 100 ml after July 31, 1972.

Rule 1002 states that a project completion schedule for modification of wastewater facilities to comply with effluent standards other than Rules 407 and 408 that were originally set to go into effect on December 31, 1973, was to be filed by September 1, 1972.

It is understood that in the past the City of Carbondale has done a commendable job in controlling water pollution (Agency Rec. P. 7). The problem that faces the city of Carbondale is that which faces other municipalities in upgrading their wastewater systems: That problem is funds. The city has been attempting to obtain grant funding from the Federal government. In its petition the city alleges, and the Agency denies in its recommendation, that through administrative errors and poor advice from the Agency, the city lost an offered grant to upgrade the Northwest plant, and a #2 priority position for FY 1973 funding was lost by a decision of the Agency that the old Northeast plant should be closed and cost effectiveness analyses be prepared within 7 days as to the one plant versus the two plant concept. The city was then relegated to the 21st position in the priority list. Further delays took place which took the city past July 1, 1973. As of that date infiltration-inflow studies are required to be submitted with grant applications. Such studies are now in progress, but their completion time is estimated at 12-18 months from now.

The Agency denies allegations as to its own culpability as to the delays that the city has encountered over the past three years. The record at hearing did not bring out these points, and so the Board reaches no conclusions as to their truth. They are noted as one of Petitioner's reasons for delay in compliance.

The city further alleges a very tight financial situation. The city now has a bonded indebtedness of \$13 million (R. 46), which is only \$1 million away from its debt limit ceiling. Also, because of changes in the Federal government's arrangement with the city for supplying water from Crab Orchard Lake, the city has had to embark on a \$7 million project to construct a new water reservoir. Water and sewer rates in the city have increased 63% over the past 3 1/2 years (R. 53). The city doubts that the citizens would approve another bond issue that would increase their rates still further. They also feel that it would be extremely difficult to find buyers for bonds issued, since the debt limit is already so high (Pet. P. 48).

Petitioner should be cognizant of the Board's power to order bonding over a community's debt limit (League of Women Voters v. North Shore Sanitary District, PCB 70-7, 12, 13, 14).

The Agency questioned the relationship of the city's compliance plan to obtaining grant money (Agency Rec. P. 7). To this question, the city through its treasurer and finance director, Paul T. Sorgen, stated that if Federal money would not be available, the city would attempt to comply by gathering whatever available money it could to meet its obligation to its citizens and the state to provide for environmental control to preserve the state's water quality.

The Board takes notice of the fact that control of sewage is not done by hooking up a simple control device to a unit at a small cost and short construction lead time. It is expensive and time-consuming work that should be done in a thorough manner and done right the first time. To have a "crash program" of compliance would be inordinately expensive and wasteful.

The city has been working to bring its facilities into compliance for quite some time in furtherance of its desire to upgrade its facilities. It has retained the engineering firm of Clark Dietz & Associates of Urbana, who prepared extensive reports as to population growth and how the present system must be upgraded to handle the population. These reports contained data as to the upgrading of sewage collection facilities, along with future needs of the entire wastewater system through the year 2000. Though most of these reports are not relevant to the questions before the Board, they are appreciated. Their inclusion allowed the Board to put into perspective the magnitude of the work facing the city.

The city, with the aid of its consulting engineers, has determined that to bring its system into compliance in the most reasonable yet inexpensive way, the following actions must be taken:

Project I: Chlorination, effluent pump station, and outfall sewer from Northwest plant to the Big Muddy River (this last proposal is to allow the plant's effluent to be discharged to a waterway where it would have a higher dilution ratio and thusly allow for a higher BOD and suspended solids in the effluent (R. 11)).

Project II: Expansion of the Northwest plant (It is unclear from the record whether this would be a rise to 2.5 mgd, 2.0 mgd, or 1.5 mgd).

Project III: An outfall sewer from the Southeast plant to the Big Muddy River.

Project IV: Sewer system repair and reconstruction.

These actions are to be completed in three steps. Based on the requirements to get grant money:

- Step I. 1. Infiltration-inflow analysis: Northwest sewer system begun July 1973.
2. Infiltration-inflow analysis: Southeast sewer system work begun August 1973.

3. Sewer system evaluation - Northwest system.
4. Sewer system evaluation - Southeast system.
5. Revised preliminary design report - Northwest plant and sewer system.
6. Preliminary design report Southeast plant and sewer system.
7. Prepare and enact equitable use charge and industrial waste recovery system as per U.S. Environmental Protection Agency guidelines.
8. Revise environmental assessment and hold public hearings.

Step 2. Final engineering designs based on data collected in Step One.

Step 3. Construction

Project I - Chlorination, effluent, pump station and outfall sewer from Northwest plant to the Big Muddy River.

Project II - Expansion of the Northwest plant to 1.5 or 2.0 mgd.

Project III - Outfall sewer from existing Southeast plant to the Big Muddy River.

Project IV - Sewer system repair, sealing, and extension required (Pet. P. 43-45).

The time schedule for compliance is as follows:

Step 1:

- | | |
|---|---------|
| 1. Infiltration-inflow analysis Northwest system | 3/1/74 |
| 2. Infiltration-inflow analysis Southeast system | 3/1/74 |
| 3. U.S. Environmental Protection Agency review and analysis | 6/1/74 |
| 4. Sewer system evaluation Northwest system | 12/1/74 |
| 5. Sewer system evaluation Southeast system | 4/1/75 |
| 6. Revised preliminary design report Northwest plant and sewer system | 12/1/74 |
| 7. Preliminary design report Southeast plant and sewer system | 4/1/74 |

8. Prepare user charge industrial waste cost re-covery system 10/1/75
9. Revised environmental assessment and public hearing 10/1/75

Step 2:

1. Complete design and secure easements, project I, new effluent pumping, chlorination, outfall Big Muddy River 2/1/75
2. Complete design Project II expansion Northwest plant 5/1/75
3. Complete design, easements Project III, outfall sewer from Southeast plant to Big Muddy River 4/1/76

Step 3: Construction

1. Environmental Protection Agency Review Project I 5/1/75
2. Open bids Project I 6/1/75
3. Award contract Project I 7/1/75
4. Begin operation Project I 12/1/75
5. Environmental Protection Agency Review Project II 8/1/75
6. Open bids Project II 9/1/75
7. Award contract Project II 10/1/75
8. Begin operation Project II 6/1/76
9. Environmental Protection Agency Review Project III 7/1/76
10. Open bids Project III 8/1/76
11. Award contract Project III 9/1/76
12. Begin operation Project III 12/31/77

The Board feels that this is a fair and adequate schedule, based on the size of the job to be done, and on the financial constraints on the city, which does not allow it to employ an army of people to do all the projects concurrently. The Board would appreciate in the future a breakdown as to the construction time as outlined in the schedule.

This extensive discussion of the background of the case is not nec-

essary to reach the conclusions that will follow. The purpose of the discussion is to allow the city in future variance petitions concerning this subject to rely on the record herein submitted with updates as to plans and costs as each new petition is filed.

To summarize the above numerical data the city's plans are simply as follows: To do nothing to the Southeast plant except divert the flow from the present receiving stream to the Big Muddy River. This project alone will allow conformance with the 1974 rules. This is a very important point. The existing plant is not overloaded as is the case in many similar actions before the Board; it merely suffers from poor geography. The regulation requiring 4 mg/l BOD and 5 mg/l S/S came into effect after this plant was constructed and thus is a new constraint put on the facility. The Agency noted in its investigation no visible pollution downstream of the plant (Agency Rec. P. 4). The plant as of now is producing effluent which would be acceptable in all but the most stringent conditions. The same is true for the Northwest plant. The only reason for Project II is to meet future growth - the plant is presently producing a quality effluent (from Agency Recent Data).

Perhaps the best indication of what the plants' effect on the receiving stream is could be gleaned from a review of the operating reports (Appendix B & C of Variance Petition). This was referred to by Mr. Schwegman (P. 26). The following table is a summary of results.

STREAM DATA

<u>Plant - Date</u>	<u>D.O. Upstream</u>	<u>D.O. Down.</u>	<u>BOD Up</u>	<u>BOD Down</u>
Southeast 1/73	12.2	12.3	4.3	5.3
" 2/73	12.6	12.7	4.3	4.3
" 3/73	-	-	3.2	3.2
" 4/73	13.9	13.1	4.4	3.2
" 5/73	8.0	7.9	7.5	7.5
" 6/73	7.3	6.8	-	-
Northwest 11/72	-	-	1.00	.75
" 12/72	10.0	8.3	3.1	3.6
" 1/73	8.3	6.8	3.4	7.9
" 2/73	7.9	7.0	3.2	8.0
" 3/73	9.1	8.7	4.2	7.4
" 4/73	9.9	9.2	6.8	4.1

From the above it would seem that the Southeast plant has a very small effect on the receiving stream, and the Northwest plant has a much greater effect. The Board notes that the compliance plan presented calls for completion of Project I by December 1975. This will remove the worst offender first.

The Board finds as follows:

1. The variance from Rule 203 A is denied.
2. The variance from Rule 203 F is granted.
3. The variance from Rule 404 (b) is denied.

4. The variance from Rule 404 (c) is denied.
5. The variance from Rule 404 (f) is denied.
6. The variance from Rule 405 is denied.
7. The variance from Rule 1002 is granted.

The variance from Rule 203 a is denied. The record shows that there is no actual violation of this rule by Petitioner (Agency Rec. P. 4-5). The granting of a variance presupposes a continuing violation of law (R. 56). (Swords v. Environmental Protection Agency PCB 70-6.) To be granted a variance the Petitioner must be in violation of the law (Environmental Protection Agency v. Borden Chemical Company, PCB 71-23).

The variance from Rule 405 is denied for the same reason as 203 a. There is no violation. Rule 405 states that for a violation the effluent must exceed 400 fecal coliform per 100 ml. The Agency recommendation (P. 4) shows coliforms of less than 100/100 ml. To avoid future prosecution, the City should continue to use chlorination on the North-west plant.

The variance from Rule 404 (b) is denied for the same reasons as above. To violate this section, the effluent source must have an untreated wasteload of 10,000 population equivalent or more. The North-west plant has a population equivalent, as shown in the record and not rebutted, of 7500. There is no violation.

The variances from Rules 404 (c) and (f) are denied because there is no violation at this time. As mentioned above, by Board order (July 19, 1973) in R 73-3 and R 73-4 these effluent standards do not go into effect until December 31, 1974. With no regulation in effect, there is no violation. When there is no violation, a variance cannot be granted (Swords v. Environmental Protection Agency, supra, and Environmental Protection Agency v. Borden Chemical Company, supra). The Board will look with favor on a variance petition brought by Petitioner at the proper time.

The variance from Rule 203 f will be granted. It is shown that Petitioner is in violation of this rule. Petitioner's hardships in bringing about compliance with this rule are outlined above as to the long-range improvements that must be done on the plants and funding for such projects. Environmental impact data is greatly lacking on this point, and before the Board will grant any future variances from this rule, such data must be provided to the Board.

The variance from Rule 1002 is also to be granted. The city has shown in its petition that there have been certain delays beyond its control in formulating definite compliance plans. This variance will be limited to 120 days. At this time a plan shall be submitted to the Agency detailing compliance, with cost figures and proposed financing arrangements included. These proposed financing arrangements shall be based both on a possible federal funding and/or funding should no federal

grants be available.

One further point will be made in closing. The Board finds that there is confusion between the parties as to which regulations are indeed applicable. It would be incumbent for Petitioner to spend some time reviewing Regulation 404 and its subsections. This review should be made with the full cooperation of the Environmental Protection Agency. It is clear that if both plants were to continue discharging to their present discharge streams, Rule 404 (f) would apply. However, 404 (f) (ii) is in effect an exception clause. It would behoove Petitioner to explore the economics of meeting this exception clause in comparison with its proposed plan.

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

ORDER

IT IS THE ORDER of the Pollution Control Board that:

1. Variance from Rule 203 a is denied without prejudice.
2. Variance from Rule 203 (f) is granted for one year from the entry of this Order. Any subsequent variance petition from this rule shall be filed at least 90 days before this variance expires.
3. Variance from Rule 404 (Sections (b) (c) and (f) are dismissed without prejudice.
4. Variance from Rule 405 is denied without prejudice.
5. Variance from Rule 1002 is granted for 120 days from receipt of this Order by Petitioner. The compliance plan required shall include proposed financing for the project schedule as discussed in the Opinion.

IT IS SO ORDERED.

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board, certify that the above Opinion and Order was adopted by the Board on the 3rd day of January, 1974, by a vote of 5 to 0.

