

ILLINOIS POLLUTION CONTROL BOARD
June 6, 1975

ENVIRONMENTAL PROTECTION AGENCY,)
Complainant,)
)
) PCB 74-351
)
)
WHEATON SANITARY DISTRICT, a)
Municipal Corporation,)
Respondent.)

Russel R. Eggert, Assistant Attorney General for Complainant;
David G. Mountcastle, appeared for Respondent.

OPINION AND ORDER OF THE BOARD (by Mr. Zeitlin):

This is an enforcement action filed by the Environmental Protection Agency (Agency) on September 24, 1974. Respondent, Wheaton Sanitary District (Wheaton), is charged with operating its sewage treatment plant in such a manner as to emit odors into the ambient atmosphere, said odors allegedly being contaminants within the meaning of Section 3(d) of the Environmental Protection Act (Act). Specifically, the Complaint alleges that since on or about April 1, 1974, and continuing intermittently until the filing of the Complaint, Respondent has caused or allowed the discharge of odors into the environment so as to cause or tend to cause air pollution, either alone or in combination with contaminants from other sources, in violation of Section 9(a) of the Environmental Protection Act.

The Wheaton Sanitary District owns and operates a facility known as the Wheaton Sanitary District Sewage Treatment Plant, (STP), which is located on Schaffner Road approximately one mile south of Roosevelt Road in Wheaton, DuPage County, Illinois.

The equipment at the STP includes two comminutors, two aerated grit channels, two raw sewage pump dry wells and pumps, one Magnetic Flow Meter, ten primary clarifiers, two high rate trickling filters with recirculation pumps, one gas chlorinator with control building, three anaerobic digesters and sludge drying beds having a total area of approximately 91,600 square feet. The treatment plant serves the entire city of Wheaton and certain areas adjacent to the City.

Hearings were held on November 21, 1974, November 22, 1974, December 18, 1974 and December 19, 1974. The November hearings were devoted primarily to the testimony given by nineteen (19) citizens who told of their experiences with the odors emanating from the Wheaton Sanitary District Sewage Treatment Plant. The Wheaton Sanitary District made no effort to deny the odors, but emphasized the following:

1. Odor detection or reaction is highly subjective.
2. There is some odor emanating from all sewage plants unless all equipment is covered.
3. Located in close proximity to the treatment plant is the Streams, a residential subdivision. All the Complainants, but one, live in the Streams. The treatment plant has been located on its present site since at least the 1920's while the Streams development was started only several years ago.

The citizen witness described the odor as "an untreated outhouse", "manure", "a human excrement type odor (R.7), "sewer odor" (R.32), "dirty diaper pail" (R.73). There was agreement among the witnesses that there was no odor prior to about April 1, 1974 and that the odor was present downwind from the plant continuously since then.

We find that the unanimity expressed by the citizen witnesses with regard to the offensive nature of the odors, the extent to which they were denied the use and enjoyment of their properties, and the general agreement that the odors started on or about April 1, 1974, is not answered by claims of subjective nature of odors, or existence of odors at all times in sewage treatment plants. We find the existence of the odors over such a long period of time to be due to a malfunction of the anaerobic digester which was not properly investigated and remedied in the shortest possible time. (Anaerobic digestion is a biologic process in which waste sewage sludge is changed by bacterial action into an innocuous substance which is stable, and no longer environmentally offensive.)

Respondent ascribes the entire problem to sewage-borne toxic metals that came into the plant during the third or fourth week in March, 1974 (R.358,359,360). It is asserted that the heavy metals are particularly toxic to the methane forming bacteria (R.357)(R.433).

The breakdown of the offensive organic material causing odors takes place in several stages. The final stage of digestion is the production of methane by methane forming bacteria. These bacteria are particularly sensitive to temperature, concentration of volatile acids, and toxic metals (copper, zinc, chromium). If these bacteria die off for some reason, the drawoff from the digester is no longer inoffensive, but is likely to produce a severe odor problem (R.354,357,385).

An upset in the digestion process is responsible for the development of odors when the digested sludge is drawn off. The Agency alleges, and has proven, that the digester problem is due at least in part to District negligence and cites the digester temperatures during January and February, 1974 to support its position. An examination of the Operating Report for January, 1974, shows that starting on January 23, the digester temperatures fell below 90°. March digester temperatures fell as low as 51° F. As late as May, the temperature for the digester rose once to 71° F, with the remaining days falling into the 50°-60° range (Ex.8). Since the optimum temperature for digester operation is between 95° and 100° F, (R.358), there were apparently some problems with the digesters before March. Regretfully, the record gives no indication as to the cause of these low temperatures, in spite of the fact that enough digester gas was being produced to do additional heating.

However, we cannot doubt that the massive failure experienced after March was caused by an influx of heavy metals. The analysis made by the Agency on samples taken on July 11, 1974, July 18, 1974 and July 22, 1974, clearly show that the digesters and primary clarifier contained considerable amounts of heavy metals (Resp. Ex. 12).

We must take particular notice, in examining Resp. Ex. 12, that sheets dated 7-11-74, indicate that the holding time in Digester #1 may have been drastically reduced from the design holding time, due to a buildup of ash in the bottom half of the digester.

The sharp differences in solids and chromium concentrations proves that very poor mixing took place in the digester. The concentrations of about 20% and higher below the 12' level clearly indicates a very strong likelihood that there has been a buildup for some time and that the reduction in holding time may have been a major factor in causing digester failure. The importance of mixing and its relation to holding time are both fully understood by Respondent (R.381,382). However, it was not until the mixing tube of Digester #2 was found inoperative that this was acknowledged (R.382). We are convinced that a thorough study of the problem had not been made and this may account for the extended time over which it has existed.

We find that the Wheaton Sanitary District did in fact operate its sewage treatment plant in a manner which caused air pollution in violation of Section 9(a) of the Act.

In reaching this conclusion, we have thoroughly considered - as we must - the reasonableness of the Wheaton Sanitary District's odor emissions, including the factors enumerated in Section 33(c) of the Environmental Protection Act.

1. As our discussion above clearly shows, the character of the emissions from the sewage treatment plant were such as to seriously interfere with the normal enjoyment of life and property, particularly insofar as those emissions affected the citizen witnesses who presented testimony at the hearings in this matter.

2. The social and economic value of a properly operated sewage treatment plant need not be explained here. But when these plants are improperly operated, as we have found was the case here, they in part lose their value; instead of abating pollution, as is their function, they in fact become a pollution source. While the value of such pollution source here is high if properly operated, it is clear that the sewage plant at issue here should not even have been such a source.

3. Insofar as the witness testimony in this matter indicates that the sewage treatment plant did not become a source of offensive odors until 1974, the Wheaton Sanitary District's priority of location in the area involved dates only from that time for purposes of our consideration here. Therefore, despite the Wheaton Sanitary District's protestations to the contrary, it does not - as a source of odors - have priority of location, even as regards the Streams development, discussed above. Further, it is patent that an improperly operated sewage treatment plant is unsuitable for any area; by nature of our findings here, we need not consider the suitability of a properly run plant for the area in question.

4. As is plain from the remainder of our Opinion and Order, it is eminently practical and reasonable to eliminate the odor emissions here. The plant merely need be run right.

We shall not, however, impose a penalty in this case. Respondent has apparently made a considerable effort to abate its acknowledged odor problem. A cease and desist order was issued after one source of chrome was discovered through persistent searches of sewers tributary to the treatment plant (R. 368, 369). Wheaton Sanitary District made repeated efforts to dispose of the contaminated sludge after the odor problem became intolerable (R. 372, 373). After the source of chrome was discovered in October, 1974, and eliminated, digester temperatures began a return to the normal range, and the pH imbalance has been partially corrected (R. 380). Normal operation was expected within a few months (R. 441). In addition, improvements are being made at the plant with the expectation of meeting all requirements (R. 442). For these reasons, we feel that it would serve no purpose to impose a civil penalty in this case.

We therefore order the District to cease and desist from operating its plant in such a manner as to emit odors into the ambient atmosphere, which constitute air pollution in violation of Section 9(a) of the Act; and to make a careful and detailed study of the causes of the failure to continually produce a digester drawoff which is not offensive, as had been done prior to April, 1974. We order Respondent to report the results of this study to the Agency within 90 days of the date of this Order, and to submit a plan of action which could be put into effect if there should be a repetition of the odor problems.

This Opinion constitutes the Board's finding of fact and conclusions of law.

ORDER

IT IS THE ORDER of the Pollution Control Board that Respondent Wheaton Sanitary District cease and desist from operating its Sewage Treatment Plant in violation of Section 9(a) of the Environmental Protection Act, subject to the following conditions:

1. Respondent shall make a thorough study of the causes and aggravating factors of digester failure and report the results to the Environmental Protection Agency within 90 days of the date of this Order.

2. Within 90 days of the date of this Order Respondent shall submit to the Environmental Protection Agency a plan of action to be put into effect if there should be a recurrence of digester failure.

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board hereby certify that the above Opinion and Order were adopted on the 6th day of June, 1975 by a vote of 5 to 0.



Christan L. Moffett, Clerk
ILLINOIS POLLUTION CONTROL BOARD