

ILLINOIS POLLUTION CONTROL BOARD
December 9, 1971

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ENVIRONMENTAL PROTECTION AGENCY	)	
	)	
v.	)	PCB 71-272
	)	
SOIL ENRICHMENT MATERIALS CORPORATION	)	
	)	

Opinion of the Board (by Mr. Dumelle)

A complaint on behalf of the Environmental Protection Agency (EPA) was filed by the Attorney General in this matter on September 13, 1971. Soil Enrichment Materials Corporation (SEMCO) was alleged to have caused or to have tended to cause water pollution on six separate occasions between February 22 and August 7, 1971 all in violation of the Environmental Protection Act and/or a condition of the permit issued to SEMCO by the Sanitary Water Board (one of this Board's and the Environmental Protection Agency's predecessors) on May 27, 1970. The condition of the permit which SEMCO is alleged to have violated is Condition 9 which requires the maintenance of a constraining berm around the sludge application areas.^{1]} A money penalty and cease and desist order were asked for by the EPA.

The parties agreed to submit the controversy to the Board upon a Stipulation and Supplemental Stipulation transmitted to the Board on November 8, 1971. The total agreement is comprised of 19 numbered paragraphs and a number of exhibits. We find this Board to be limited to the factual matters in the stipulation but not necessarily constrained to the conclusions expressed in the stipulation. We accept the parties agreement as to the factual matters in this proceeding which has expedited resolution of this controversy by eliminating the necessity of a hearing. We must emphasize, both for the instant parties and for the guidance of future parties before

1] Permit #1970 - GA-342

Condition #9 - This permit is issued on the basis that a perimeter berm of adequate construction and height will be constructed around the sludge application areas to retain all runoff during or immediately after the application of sludge before the material has been plowed into the ground. The perimeter berm shall be adequate to insure the capture and storage of runoff from the most severe historical storm of record which has ever occurred in the area, all in accordance with the intent stated in the February 26, 1970 letter to this Board from Bauer Engineering, Inc. under the heading of "Prevention of Surface Runoff".

the Board, that parties can only enter into binding stipulations with regard to facts and not to legal conclusions. It is the Board's function to draw the appropriate legal conclusions from the facts. Within the generally recognized limitations of public policy and reasonableness parties may enter into stipulations or agreements in respect to either controversial or uncontroverted matters of fact and questions of law. Any subject matter involving the parties rights may be made the subject of a stipulation and the Board must look with favor on such agreements which have the effect of avoiding delay, trouble and expense by simplifying, shortening and settling contested matters. All, however, must be bound by the rule that parties may not by their admissions of law bind the Board to adopt their point of view. In this case, as in others, we want to make two aspects of stipulations clear; we welcome parties' agreement as to questions of law and legal conclusions but are not necessarily bound by them. (See, *Wiegall v. One LaSalle Co.* 75 Ill. App. 2d 272 (1966) at 276).

SEMCO owns and controls certain facilities in Douglas County, Illinois, designed and used for the purpose of applying sludge from the Metropolitan Sanitary District of Greater Chicago (MSD) to farm lands controlled by SEMCO. SEMCO's facilities include a sludge unloading trench, a sludge storage lagoon, piping and pumping equipment and spraying facilities. The Douglas County facility is part of the MSD's utilization plans for nutrient-rich liquid wastes. The underlying rationale of transporting digested metropolitan Chicago sewage sludge to Douglas County is to make a beneficial use of the digested sludge rather than conceptionalizing it as a waste product to be dealt with as a "problem". In principle the nutrient-rich liquid waste is to be applied to the land in such a way as to not hydraulically disrupt the surface soil condition. As the liquid filters down through the crop land it is used by the crop root system, the plant nutrients being transformed by bacteria into a form used by the plants for growth. The carrier-water continues downward, being filtered as it moves, and becomes part of the ground water supply.

The Environmental Protection Act defines "waters" as "all accumulations of water, surface and underground, natural, and artificial, public and private, or parts thereof, which are wholly or partially within, flow through, or border upon this State."^{2]} In this case we are not considering the sludge leachate which migrates through the ground. We are, rather, concerned about the sludge contaminated water which escapes through a break in the restraint, or which is directed to an area outside of the contained area and flows into a drainage ditch or other water course and ultimately pollutes or threatens to pollute the waters of this state.

2] Ill. Rev. Stat. Ch. 111-1/2 § 1003 (c)

The digested sludge is characterized by the EPA as a pollutant by reason of its concentration of heavy metals and suspended solids (Stipulation paragraph 14). In at least two places in the stipulation the sludge is said to contain no pathogenic organisms (paragraph 6, 14). However, the presence of pathogens in the sludge is manifest from even a casual observation of the exhibits attached to the stipulation. Both fecal coliform and fecal streptococcus are noted in varying quantities among the samples (Exhibit B-8, D-5, D-6, D-8). There are also references in the stipulation to use of chlorine, presumably as a disinfectant. Further, we can take official notice of the oxygen-demanding qualities of sludge and its nutrient content. We could not be far off the mark (in the absence of a description in the record) in characterizing the digested sludge as being approximately 3-6% solids and rich in nitrogen and phosphorus and containing an array of materials in lesser quantities which we can generically refer to as contaminants.

On February 22, 1971, an accumulation of surface water containing dissolved and suspended sludge materials escaped around the end of the berm and ultimately into the natural surface drainage. Upon the request of the EPA, the berm was extended to prevent the recurrence of the incident. It is believed that all of the runoff was cleared up (paragraph 7). The flow of the surface water was apparently caused by the frozen condition of the ground and high rate of rain fall at the time (Ex. A-3).

During the night of April 29, 1971, sludge washed through a protective berm around a field tile catch basin in a field under irrigation. The catch basin had been protected from the sludge by a 12" berm around the perimeter and covering with a layer of heavy duty plastic. The weight of the sludge which collected on the plastic was enough to pull the plastic loose allowing the sludge to wash through the protective berm and enter the tile of the catch basin, which drained into an open railroad drainage ditch. There was little or no water in the drainage ditch at the time and the sludge was entrapped there. Upon discovery on April 30, spraying was immediately stopped and a berm was constructed across the drainage ditch to prevent further drainage of sludge. On the same day the catch basins were replugged with plywood and the berm was replaced with compacted earth. The tile was dug up and plugged near its terminal point and its contents pumped into a large storage lagoon (paragraph 8). A discernible flow of sludge apparently extended for approximately one-half mile in the drainage ditch (Ex. B-1).

On May 7, 1971, following a substantial rain after sludge had been applied, sludge over-ran a protective berm and flowed into a road ditch adjacent to SEMCO property. The situation was cleaned up in short order (paragraph 9). Not however before sludge had traveled down the drainage ditch for approximately one-eighth of a mile (Ex. C-1). Samples were collected from the ditch and from

the SEMCO field and analyzed for mercury. Concentrations of 18.4 and 2.9 mg/l of mercury respectively were noted (Ex. C-3, C-4). We find the three preceding incidents to be violations of the permit condition #9.

On June 28, 1971, SEMCO reported to EPA that a six inch diameter pressure rubber hose which connected a booster pump to the sludge pipeline from a lagoon to the spreading site had ruptured causing sludge to flow along a ditch and enter a subsurface 24" drainage tile. Upon discovery of the leak, operations were ceased and a cleanup followed. A berm was erected around the tile to prevent sludge from entering. The tile was then dug up and blocked. A portable pump and water truck were used to pump the sludge material back over the berm. Six gallons of Clorox Bleach were added to the ditch and tile. It was believed that all the lost sludge was contained. However, the field tile was then inspected at a downstream point and it was evident that an unknown quantity of sludge had entered the tile and flowed into a watercourse which flows directly to the Kaskaskia River. The point of discharge was viewed and a heavy concentration of sludge was noted. The watercourse was black for approximately the two-hundred and fifty yards which were viewed. No trace of the sludge could be found where the watercourse was inspected approximately three quarters of a mile below the point where the tile surfaces; apparently because of the low velocity of the stream the sludge had not yet reached that point (paragraph 10). Samples were taken from the break in the field tile which upon analysis showed a fecal coliform concentration of 1090/100 ml, total coliform of 22,000/100 ml and fecal streptococcus of 690/100 ml (Exhibits D-5). Another sample taken off-site showed higher concentrations of fecal and total coliform bacteria (Exhibit D-6). We find this incident to have caused water pollution.

On July 27, 1971, SEMCO reported to EPA that failure of a connecting clamp on the pipe line from the holding lagoon to the spreading site caused a small quantity of sludge to enter a road side ditch. The ditch was immediately blocked and no sludge reached any field tiles. The contained sludge was then diluted with wash water, chlorinated with HTH tablets, and pumped onto SEMCO property (paragraph 11). The Board finds no threat of water pollution in this incident though I would have so found. Had it been raining at the time the pollution would probably not have been contained.

On August 7, 1971 a pipeline broke at a "U" bend under a road causing sludge to flow into a ditch on the side of the road. The pump was shut off after a drop in line pressure was noted. As soon as the break was located, earth dams were made in the ditch to contain the sludge. The sludge was then pumped out of the ditch onto adjacent SEMCO property. The area was cleaned and the earth dams in the ditch were removed. The following corrective actions were instituted to prevent recurrence of this type of spill: (1) Additional walkie-talkie radios were procured so that immediate communication could be made with the personnel at the pumps at all times. (2) The personnel were instructed in how to interpret pressure gauge readings at the pumps and to shut off the pumps immediately if there were any indications of a pipe line failure. (3) Stakes and

an earth cover were used to secure the pipe line against pressure surges where the pipe line makes the "U" bend under the road. (4) T Field Superintendent was relieved of his duties and replaced (paragraph 12). An EPA memorandum attached to the stipulation of the facts in this incident indicates that the sludge involved in the spill on this date was not as well digested as other material previously received (Ex. F-4). The same exhibit reports that approximately 50,000 gallons of sludge was lost into SEMCO's drainage channel. Again the majority of the Board finds this incident not to constitute a threat to water pollution. I would have found otherwise. Had it been raining the 50,000 gallons of partially digested sludge probably could not have been contained.

Clearly the four occurrences first outlined above constitute separate violations of Section 12(a), (b) or (d) of the Environmental Protection Act^{3]} and/or Condition 9 of the permit issued by SEMCO. There are multiple violations connected with some of these several occurrences. In each instance in which the restraining berm was breached a violation of permit Condition 9 occurred. In the June 28 instance sludge reached protected waters and caused water pollution. The majority cannot find violations on July 27 or August 7, since there was neither pollution of a stream, violation of the permit conditions, nor proof of negligence such as to justify a finding that the risk ("threat") of pollution was unreasonable. Digested sludge may in fact be a "resource out of place" but it is also a serious contaminant if not handled properly. It is the intent of this opinion to reflect the Board's concern for care in handling digested sludge when land placement is undertaken. We will impose a penalty of \$500 for each violation for a total penalty of \$2,000. Further we will order SEMCO to cease and desist its violations of the Environmental Protection Act and the conditions of the permit.

This opinion constitutes the Board's findings of fact and conclusions of law in this proceeding. Mr. Aldrich will file a separate concurring opinion.

3] Ill. Rev. Stat. Ch. 111-1/2 § 1012(a), (b), (d)

