

MINNESOTA MINING AND MANUFACTURING COMPANY

cc: A. C. Boyden - 207-BW
R. C. Collins/J. A. Brown - 27-2
F. E. Edlund - 2-B
H. S. Parkinson - 207-1N
H. J. Wessel - 277-1W

ST. PAUL, MINNESOTA
INTEROFFICE CORRESPONDENCE
SUBJECT: Waste Disposal
Woodbury Dump Site

May 14, 1962

TO: D. H. COCHRAN - STAFF MANUFACTURING ENG. - 207-1N
FROM: J. T. LING - WATER & SANITARY ENG. DEPT. - 207-1N

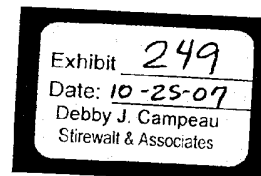
The waste disposal problem at our Woodbury Dump Site has been further investigated. The results of this investigation and the recommendations are briefly outlined as follows for your consideration.

- (1) Three earth core samples were drilled at the Woodbury Dump Site last January to study the degree of penetration of the waste chemicals at the dump site. Boring #1 was drilled through a waste disposal pit which was operated during the winter of 1960. Boring #2 was drilled through another waste dump pit, about 400' south of boring #1, which was operated during the spring of 1961. Boring #3 was drilled through clean soil about 1,600 ft. northwest of boring #1 as a control. The soil samples collected at various levels were analyzed by our Central Research Analytical Laboratory, of which a copy of the report is attached for your reference.

The ground water level is about 75' below ground surface. Laboratory data through the use of gas chromatographic technique with a hydrogen flame detector indicated that acetone was penetrated to the level of 75' at boring #1; ethanol, heptane, acetone, ethyl acetate, and methyl ethyl ketone were found at the elevation of 64' below ground in boring #2. Nothing was positively identified in samples which were collected in the control boring (boring #3). This indicates some of our liquid waste chemicals have reached 75' below ground within about one year of operation.

- (2) Laboratory tests of using Bentonite as the sealing material of the waste dump site were carried out through the joint effort of the Geology Department and the Department of Water and Sanitary Engineering. Soil and wet waste collected at the dump site were used in the laboratory during the test. It was found that a layer of local soil mixed with 10% Bentonite by volume would give a satisfactory seal. This report will be available for your reference shortly, as soon as the test is complete.
- (3) After discussion with Mr. Art Boyden and you, it was generally agreed that the final disposal of this wet waste would be incineration. Joseph Goder Incinerators, Inc. of Chicago, who have recently installed a waste solvent incinerator for the Upjohn Company of Kalamazoo,

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DISTRICT COURT, NO. 27-CV-10-28862

3M_MN00048247

Exhibit
2621

State of Minnesota v. 3M Co.,
Court File No. 27-CV-10-28862

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Michigan, were contacted. A preliminary proposal, including cost estimates, will be available within two weeks. A pilot incinerator which was installed to burn the scum at the Minneapolis-St. Paul Sewage Disposal Plant, Pigs Eye Island, designed by Goder Incinerators, will be put into operation next week. We shall have an opportunity to observe this operation.

RECOMMENDATIONS

- (1) Laboratory data substantiates the fact that waste chemicals are reaching the ground water level at the Woodbury Dump Site. While we are investigating the feasibility of incineration as the final method of disposal of wet waste, it is recommended that all future waste dump pits be lined with 10% Bentonite. The cost of this Bentonite lining is estimated at about \$1.75 to \$2.00 per square yard. The Water and Sanitary Engineering Department will furnish the necessary engineering drawings and operation procedures for the operation of this waste pit.
- (2) In view of the publicity of the ground water pollution in Newport, which was publicized in the St. Paul Dispatch last March, by Commercial Chemicals, who are handling our waste chemical wet scrap, it is recommended that two observation wells be drilled at the Woodbury Dump Site to monitor the condition of the nearby ground water. One of these observation wells will be located at the northwest corner of the site to observe the condition of ground water flowing toward our dump site, and the other observation well is to be used to examine the ground water condition as it passes through our dump pits. This data may provide very valuable evidence at a future date whenever a dispute of ground water pollution may occur. The cost of drilling these two observation wells is estimated at about \$1,500 to \$2,000.
- (3) After a final solution of disposal for our wet scrap is found, either through Commercial Chemicals or incinerators installed by 3M, the wet acid waste remains to be continuously disposed into the ground at the Woodbury site. After discussion with Mr. Bob Collins of our Geology Department, it was agreed that this acid waste should be dumped into pits located where the limestone formation occurs. Broken limestone pebbles, which are placed in the waste pit, should be used to neutralize this acid waste and the underground limestone formation overlaying the aquifer would provide the final neutralization before the waste liquid reaches the ground water. This operation is fairly less expensive and simple. The Water and Sanitary Engineering Department would furnish the necessary engineering and operation information for your use.

I hope this will bring you up to date on the overall waste disposal problem at the Woodbury Dump Site. We will continue to work with you to obtain an engineering cost estimate of an incinerator which can be used as the final disposal of our chemical waste scrap. It is our opinion the waste disposal problem has reached the point where some immediate action should be taken.

I shall be glad to discuss this matter with you at your earliest convenience.

JTI:pjs