

From the desk of
Blair Williams

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C. Brian
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You might find it interesting

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4. Because of the potential water contamination hazard alternate methods of disposal were initiated as follows:

1960 - Redistilling of waste solvents and resale by a vendor to reduce the volume of liquids to be landfilled.

1961 - Experimentation with incineration of liquids began - no commercial equipment available.

1962 - Pilot burner (#1) placed in operation at Newport by Commercial Chemical Company.

1963 - A larger pilot burner (#2) placed in operation at Newport for liquids and pumpable solids, #1 burner scrapped.

1964 - Experimentation with incineration of pumpable and non-pumpable solids.

1965 - Commercial Chemical burner #3 installed at their new Savage site, for liquids, pumpable solids and non-pumpable solids. Burner #2 scrapped.

1966 - Landfill operations closed at Woodbury.
- Commercial Chemical burner #4 installed at Savage site.
- 3M incinerator for burning of solvent soaked trash and for burning of other classifications of wet scrap on a standby basis, installed and being shaken down at the Chemolite site.

5. Water contamination at the Woodbury landfill site first appeared in April, 1966. Details about this contamination follow.

Exhibit
1058

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

December 2 1966

CHRONOLOGICAL HISTORY

ST. PAUL - CHEMOLITE - HUTCHINSON WET SCRAP DISPOSAL

1. 3M must currently dispose of four million gallons of chemical wet scrap per year (St. Paul Plant, Laboratories, Chemolite, Hutchinson).
2. For handling purposes, wet scrap is classified into four categories:
 - liquids
 - pumpable solids
 - non-pumpable solids
 - solvent soaked trash, bottles, cans, etc.
3. Until 1960 the only method of disposal available was landfill. Landfill operations were gradually reduced from 1960 until 1966 when they were discontinued.
4. Because of the potential water contamination hazard alternate methods of disposal were initiated as follows:
 - 1960 - Redistilling of waste solvents and resale by a vendor to reduce the volume of liquids to be landfilled.
 - 1961 - Experimentation with incineration of liquids began - no commercial equipment available.
 - 1962 - Pilot burner (#1) placed in operation at Newport by Commercial Chemical Company.
 - 1963 - A larger pilot burner (#2) placed in operation at Newport for liquids and pumpable solids, #1 burner scrapped.
 - 1964 - Experimentation with incineration of pumpable and non-pumpable solids.
 - 1965 - Commercial Chemical burner #3 installed at their new Savage site, for liquids, pumpable solids and non-pumpable solids. Burner #2 scrapped.
 - 1966 - Landfill operations closed at Woodbury.
 - Commercial Chemical burner #4 installed at Savage site.
 - 3M incinerator for burning of solvent soaked trash and for burning of other classifications of wet scrap on a standby basis, installed and being shaken down at the Chemolite site.
5. Water contamination at the Woodbury landfill site first appeared in April, 1966. Details about this contamination follow.

Deceml 28, 1968

**CHRONOLOGICAL HISTORY
WOODBURY DISPOSAL SITE**

- Before 1959** All scrap buried at the Oakdale site owned by Mr. Abresh by contract. Abresh disposed waste materials for several other industries such as U.S. Gypsum and American Can at the same site. The Abresh site was almost full when Abresh died in 1959. 3M contracted with Terminal Warehouse who hauled and disposed of 3M scrap on Abresh property.
- 1960** St. Paul Terminal Warehouse purchased Woodbury Site. 3M signed a contract with Terminal Warehouse to dispose of waste scrap at this site. All waste scrap was disposed in unlined pits.
- August, 1961** 3M purchased Woodbury Site and took over the operation. 3M also took over the operation permit which was issued to Terminal Warehouse by the Woodbury Township Board.
- May, 1962** Three test holes were drilled in January, 1962. Acetone was found 75' below ground underneath the pit which was used during the winter of 1960. Acetone and heptane were found 64' below ground underneath the pit which was used during the spring of 1961. The ground water was 75' below ground.
- October, 1962** The first clay lined disposal pit was constructed.
- November, 1962** Two 2" observation wells were drilled at the site. Water samples were collected regularly for laboratory analysis.
- October, 1963** Two more clay lined pits and one limestone lined acid pit were constructed.
- November, 1963** Woodbury Township Board complained about our operation. The State Health Department joined with the township to investigate the problem. 3M stopped the disposal of acid scrap into the acid pit at Woodbury and built a new acid neutralization lined pit at Chemolite.
- December, 1963** The State Health Department wrote to 3M indicating that the state only agreed that the operation of our Woodbury Site be on a temporary basis. They requested that 3M should investigate other means of disposal such as incineration so that the land disposal operation could be terminated within about two years.
- March, 1964** 3M informed the State Health Department about the operation of our Chemolite pilot incinerator.

Decss. : 28, 1966

CHRONOLOGICAL HISTORY - WOODBURY DISPOSAL SITE (CONT.)

- April 18, 1966 Schussler complained about the odor problem from his well.
- April 19, 1966 3M collected water samples which confirmed an odor. 3M started intensive laboratory investigation to identify the source of this odor.
- April 28, 1966 The Township sent water samples to the State Health Department. The state laboratory confirmed odor, but no further laboratory analyses were performed. 3M has continually reduced the amount of scrap disposed of at the Woodbury Site since 1963. The 3M use of this site stopped entirely on this date.
- April 29, 1966 3M engineers met with other people within 3M concerned about this matter.
- May 9, 1966 The Township requested 3M to submit a list of waste chemicals disposed at the Woodbury Site.
- May 20, 1966 A list with a total of 19 chemicals and 6 solid waste materials was submitted to the Township Board upon their request.
- May 26, 1966 The analytical department of 3M Central Research Laboratory reviewed the progress on the laboratory identification of the source of odor. No conclusions were drawn at that time. The Township Board requested the University of Minnesota to analyze the water samples from Mr. Schussler's well. 3M agreed to pay the expense for this analysis up to \$300.
- June 13, 1966 The analytical department of 3M Central Research Laboratory reviewed the findings of the laboratory analysis which indicated that odor was due to a saturated hydrocarbon of approximately 1 ppm concentration identified as isopropyl ether.
- June 14, 1966 Engineering met with other people concerned within 3M and decided to install an activated carbon filter in Mr. Schussler's well which would remove the odor from the water.
- June 15, 1966 The first meeting was held between 3M engineers and 3M consulting hydrologist, Mr. Hickok.
- June 20, 1966 A second list of additional chemicals which supplemented the first list of chemicals was submitted to the Township Board.

December . , 1966

CHRONOLOGICAL HISTORY - WOODBURY DISPOSAL SITE (CONT.)

- June 23, 1966 An activated carbon filter was installed in Mr. Schussler's well, but Mr. Schussler refused to use the filtered water. 3M continued to haul water for Mr. Schussler's use.
- July 5, 1966 The preliminary report from the 3M consulting hydrologist was distributed.
- August 17, 1966 3M representatives met with the Township Board, State Health Department representatives, State Rep. Howard Albertson, and interested citizens at the Woodbury Township Hall regarding this water problem. 3M indicated that isopropyl ether was identified as the source of the odor and agreed to continue working on the laboratory identification of any contaminants, the testing of water samples from nearby residences for contamination, and to proceed with a testing program to define the problem.
- September 13, 1966 The drilling of the 12" test hole at the Woodbury Site was started.
- Sept. 19, 1966 Through the coordination of the Township Board, 18 well water samples were collected from the nearby residences.
- October 18, 1966 3M reported to the Township Board that no contamination from the 3M disposal site was found in all the well water samples collected. Eleven of the 18 wells were suspected to be polluted by local sources such as surface drainage, etc.
- December 15, 1966 3M engineering called the township engineer to bring them up to date on the progress of 3M's test program.
- December 18, 1966 The Woodbury Township Chairman contacted 3M and requested 3M to be present during the Township meeting scheduled on December 19. Through negotiation on December 19, the chairman of the Woodbury Township Board agreed to carry this matter for 3M during the township meeting. However, 3M should submit a progress report to the Board.
- December 20, 1966 Engineering met with other people within 3M concerned about this problem. A progress report was forwarded to the Township Board with a copy to the State Health Department and the Township engineer.
- December 22, 1966 As a result of the request from Rep. Howard Albertson to the State Health Department on December 20 regarding a status report on this matter, a separate progress report was submitted to the State Health Department. Field test hole operation completed.

December 21, 1966

CHRONOLOGICAL HISTORY - WOODBURY DISPOSAL SITE (CONT.)

PUBLICITY

THE SOUTH WASHINGTON COUNTY REPORTER:

June 1, 1966	"Woodbury Seeks Answers to Water Contamination Question"
August 3, 1966	"Well Contamination Still Mystery in Woodbury"
August 24, 1966	"Water Contamination Continues in Woodbury"

TOTAL VOLUME OF SCRAP DISPOSED

Approximately 6.0 million gallons of wet scrap was disposed at the Woodbury Site including at least 200,000 gallons of isopropyl ether. Approximately 50% of this material was disposed during the period from 1960 to 1963 in unlined pits. The waste scrap was composed of approximately 50% liquid and 50% solids. Since 1963 the disposal pits were burned 4 times, twice due to accidents and twice by control burning. The major chemicals in the waste scrap are heptane, acetone, MEK, and toluol. The isopropyl ether is not considered very toxic. The median lethal dose (LD-50) is 5 to 6 gr./kilograms of body weight. Other chemicals of less concentration found in the water such as methyl isobutyl ketone and methyl cellosolve are about twice as toxic; that is their LD-50 is about 2.0 to 2.5 gr./kilograms of body weight.

RECOMMENDATIONS

3M engineering is compiling all the laboratory and field test data and working with 3M geologists and consulting hydrologists on this matter. A report, including stepwise recommendations and cost estimates, will be submitted for consideration by the end of January, 1967.

August 7, 1967

*File:
Woodbury
disposal*

CHRONOLOGICAL HISTORY - WOODBURY DISPOSAL SITE

- February 2, 1967 A progress report submitted to the State Health Department outlining our progress and proposals for solving the problem.
- February 4, 1967 Reviewed progress of the project with the staff of the Minnesota Water Pollution Control Commission.
- March 31, 1967 Requested from the Minnesota Water Pollution Control Commission a discharge permit for the pumped ground water in the vicinity of the disposal site to the Mississippi River.
- April 17, 1967 Date of permit from the Minnesota Water Pollution Control Commission to discharge the ground water to the Mississippi River.
- April 28, 1967 Started soil borings at the disposal site through the disposal pits.
- May 18, 1967 Report of George M. Schwartz, Consulting Geologist, retained by Cottage Grove Village to review the problem and 3M's proposed solution.
- June 26, 1967 Application for permit to appropriate ground water. Applied to the Division of Water, Minnesota Dept. of Conservation.
- July 11, 1967 Ground Water Appropriation permit issued to 3M by the Division of Waters, Minnesota Dept. of Conservation.
- July 19, 1967 Received preliminary engineering report from Otto Bonestroo regarding various methods and routes of conveying well water from the 3M disposal site to the Mississippi River.
- August 1, 1967 Met with Cottage Grove Officials, Mayor Harold Kirkamp, Village Clerk, Carl Meissner and Councilman Glen Brown and also Otto Bonestroo and Mr. & Mrs. Jack Healey to discuss alternate routes for locating the disposal line.
- August 2, 1967 Met with Cottage Grove Village Officials and representatives from the Woodbury Village Council (Mayor Orville Nielsen and Councilman R. Wolterstorff) to get approval of proposal. No approval given at this meeting.